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THE

## *Closure* ISSUE

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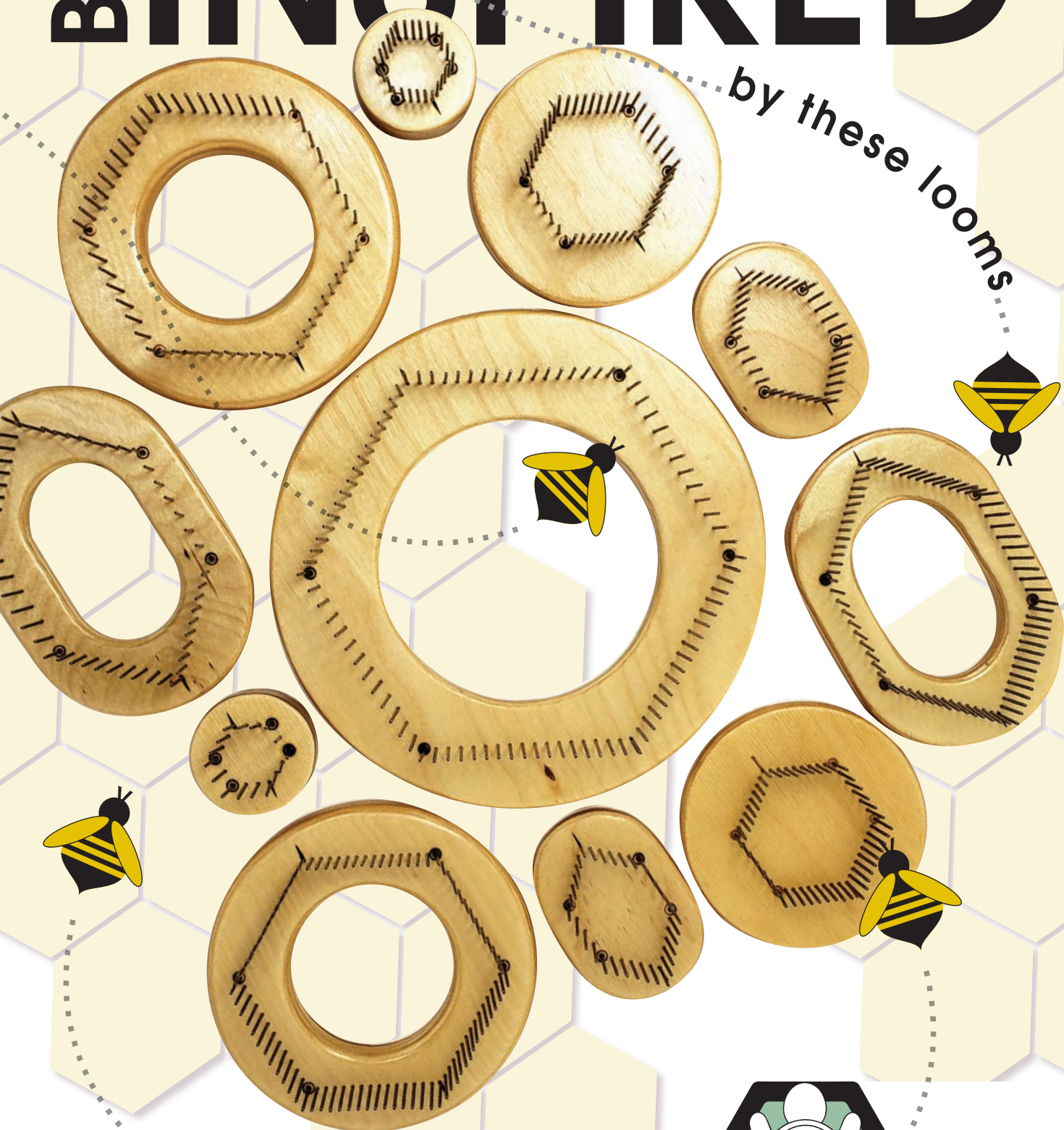
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Clockwise from left: courtesy of Historic Northampton; photo by Matt Graves; and courtesy of the Metropolitan Museum of Art, New York

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*Cover photo by Matt Graves*

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# Notions

*Needlework, all buttoned up.*

The idea of dedicating an entire issue of *PieceWork* to closures of all kinds has been in the works for several years. In 2019, I (digitally) stumbled upon the trove of buttonhole samplers held by the Smithsonian. I'd seen images and discussions of these textiles, but modern online collections allow us to pore over each stitch—such a joy! Besotted, I contacted needlework expert Deanna Hall West and collections specialist Susan J. Jerome, and an article and project pair was published in the Summer 2020 issue of *PieceWork*.

Those buttonholes sent me on a quest to improve my own plain-sewing skills, and as I felled yard after yard of ever-improving seams, I had time to think beyond the buttonhole—eyelets, hooks and eyes, clever draping that eliminates the need for any device at all. Each of these opens endless conversation regarding the ability to dress oneself, the time dedicated to getting dressed, and freedom of movement.

We begin this issue with a fantastic article by **Susan Strawn** on closures and self-dress, take a close look at Japanese obi with **Rebecca J. Martin**, and revel in early twentieth-century crochet buttons with **Pat Olski**.

We also explore ways that textiles symbolize cultural closure. **Nancy Nehring** discusses the many ways that George Washington Carver sought to end poverty in the rural South and the textiles he created to teach short lessons in needlework. **Heather Vaughan Lee** starts a research journey with a needlework publication written for young women moving from childhood to married life.

From buttons to burlap doilies, join us as we explore “closure.”



Kate Larson  
Editor



Placket Sampler, Germany, 1871; Bequest of Gertrude M. Oppenheimer (1981-28-309).  
*Courtesy of Cooper Hewitt, Smithsonian Design Museum*

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# By Post



## Not Argyles, but Close!

I know they aren't exactly argyle, but very close. In 1952, my aunt, Barbara Glick, now ninety-six (lifetime knitter), knitted socks for her brother-in-law for Christmas. My dad, Warner Krause, is now ninety-two and wore them for decades, finally deciding they were so out of style that even he couldn't pull them off anymore. He did wear them to cut grass or shovel snow. He felted the soles, and as a result, there are no holes in them, and they have never been mended that we can see. We have used them for the last ten years or so as extra Christmas stockings for guests. Always, we are careful with them. Aunt Barb remembers that she disliked making them so much that it was a long time before she made others. She remembers the pattern being very fiddly, and she did reinforce the heel and toe with nylon or something like that.

The socks are two years older than I am! They were very stylish in 1952, and the color hasn't even faded much. I hope you appreciate them as much as we do.

**Mary Cast**

*Via email*

## From Our Readers' Hands Pandemic Project

As a longtime subscriber and fan of *PieceWork* magazine as well as a longtime knitter, quilter, and tatter, I wanted to share these photos of the project I spent many hours making during the COVID-19 pandemic shutdown. It is a simple, four-block wall hanging, handquilted and embellished with hand-tatted hearts and edgings that were attached by hand using a fine monofilament (invisible) thread. I make no claims of this being an original piece except, perhaps, for the particular way I combined the two different hobbies. I used purchased stencils for the quilting design, four different published tatted edging patterns by Anne Orr, and a tatted heart pattern by Teri Dusenbury from her book of tatted heart patterns.

*PieceWork* magazine has inspired me for years with the many articles on thread-work history from around the world. I fell in love with knitted lace shawls and scarves after being introduced to Orenburg and Estonian knitting by *PieceWork*. I have completed several scarves using patterns from both styles while studying the different techniques. Thank you, *PieceWork*, for enriching my needlework skills and knowledge!

**Nancy Shirley**

*Via email*





## From Our Readers' Hands: White Ginger Lei Quilt

I am attaching pictures of my Lei Awapuhi (White Ginger Lei) quilt. This pattern was copied from the Hannah Baker Collection at the Bishop Museum (#100a,b) by a friend of mine from the Haole Connection, a group of quilters in Denver, Colorado, that makes Hawaiian-style quilts. I cut out and basted the motif when I lived in Denver and finished the quilt in February 2016 after we moved to Kapa'a, Kaua'i, Hawai'i. The quilt was awarded first-place Viewer's Choice at the Kauai Quilt Show in 2016 and was displayed at the Waimea Quilt Show (Hawaii) in 2017.

**Joanne K. Watson**  
*Via email*



# Necessities

LIZ GOOD

## Lustrous Vintage Linen

The Linen Thread Card Sets from Linladan include 14 meters each of six coordinating shades of vintage linen embroidery thread from 1960s Sweden. Linladan (Swedish for flax barn) is a project that shares this linen thread with the world along with more textile treasures that were hidden in a United Kingdom haberdashery for decades. Shown in the Bloom colorway. [linladan.com](http://linladan.com)

## Soft, Rustic Wool Blend

Four Corners Fiber Collective is a group of indigenous and rural fiber artists and shepherds from the southwestern United States. Handspun High Desert 2 is made from 60% Merino and 40% Navajo Churro, making it lustrous and strong with Merino softness. Shown in worsted-weight Medium Sage (2111). [feyarns.com](http://feyarns.com)

## Natural Comfort

Winter's Past Farm is a small family farm with a flock of Coopworth sheep located in the heart of New Jersey. All products, including these cushy 1/2-inch thick felted insoles, are made on the farm from the wool produced by the sheep. Perfect for boots, the insoles are available in four sizes—just trim for a custom fit. [winterspastfarm.com](http://winterspastfarm.com)

## Colored Thread without Dye

Foxfibre Colorganic is naturally colored multipurpose organic cotton sewing thread from cotton-breeding pioneer Sally Fox. The cotton is grown in New Mexico, and the large 7.5-ounce (5,000-meter) cones of thread are spun in Japan. The thread shown is a subtly heathered mix of off-white Sea Island cotton and coyote brown cotton. [vreseis.com](http://vreseis.com)

# The Long Thread

*Voices from Our Community*

Anne Butcher, Head of Studio and Teaching, Royal School of Needlework



Anne Butcher (*left*) managing studio projects.  
*Photos courtesy of the Royal School of Needlework*

## **How did you become a needleworker?**

I have always been a practical person, even as a child, and after receiving an embroidery kit when I was thirteen years old, I was hooked on embroidery.

## **Tell us how you came to join the Royal School of Needlework (RSN).**

I was given a copy of the RSN Friends newsletter, which featured an article about being an RSN Apprentice. This inspired me to apply, and I started at sixteen as an apprentice in 1982. Next year, it will be my fortieth anniversary at the RSN! I am now Head of Studio and Teaching, which has been my role since 2015.

## **What types of classes and programs does the RSN offer, and how have they changed over the years?**

We offer a range of courses for beginners through advanced. Students can choose to study a variety of classes online and on-site, including day and evening classes and the Certificate and Diploma in Technical Hand Embroidery. The RSN also offers the BA (Hons) Hand Embroidery degree and the Future Tutors Programme, which trains tutors for the next

generation. We teach across the United Kingdom, in North America and Japan, and online. We also host Online Talks each month.

I have seen the organization develop hugely over the years, including expansion, moving locations, and the introduction of live online classes during the global pandemic. The latter has been the biggest recent development for us, and we're enjoying teaching students online. Students just need access to Zoom, ideally on a screen bigger than a phone, but smartphones can be useful for sending images of work to the tutor on WhatsApp. We have taught people of all ages, and the main comment has been how much like a face-to-face class the Zoom classes are!

## **Tell us about the Embroidery Studio at the RSN.**

The RSN Embroidery Studio is based at Hampton Court Palace. Our team of expert embroiderers create bespoke commissions for the future as well as bring historical textiles back to life. We conserve and restore textiles, breathing new life into fragile and treasured pieces, from large projects, such



as embroidered wall hangings and pieces of art, to smaller personalized cushions and badges. We feel very privileged to be able to work on such treasured possessions. Each piece comes with its own unique story, and it is wonderful to be able to keep that story alive by conserving or restoring it.

**Tell us about a memorable or especially challenging needlework project that you've worked on.**

Our clients include private individuals, fashion designers, places of worship, TV/film production companies, and the Royal Family. One of the most memorable projects I have worked on is the wedding dress of Kate Middleton, now the Duchess of Cambridge. The lace design and process was influenced by traditional Carrickmacross lace which originated in Ireland in the 1820s. Carrickmacross lace uses the appliqué technique and is worked by applying organdy fabric to a delicate net background and edging each motif with fine cord-like thread. Each lace motif (some as small as a five-pence piece) was applied with minute stitches every two to three millimeters. We washed our hands every 30 minutes to keep the lace and threads pristine; needles were renewed every three hours and only short lengths of thread were used, each no longer than 30 centimeters. Also, to maintain an even appearance, no securing knots were used as it was important that the back of the work looked as neat as the front, another RSN hallmark. It was an absolute honor to work on the wedding dress and such an exciting time at the RSN.

**What project are you currently working on?**

We have been working on a range of conservation projects, from tablecloths, stitched samplers, and chair covers to altar frontals. Conservation work may entail canvas reweaving, surface cleaning, mounting, and much more. No two pieces are the same, but based on our experience over time of handling different examples, we know the best way to conserve and restore them.

**How does historical needlework influence your own needlework?**

The RSN's unique textile and archive collection provides us with a huge resource and library of not only embroideries but also designs. We often use these designs to restore a motif that has worn away on a textile to ensure it is relevant to that period of time.

**What advice do you have for stitchers who want to improve their needlework skills?**

Everyone starts somewhere. We run Introduction to Embroidery classes that are suitable for the complete beginner. The classes cover everything from threading a needle and tying a knot (yes, there is a professional way to do this!) to ensuring a comfortable sitting position, to how to use an embroidery hoop and determining the best length for your thread. Once you have the basics right, then you can learn a variety of techniques and start creating beautiful work.

*Learn more at [royal-needlework.org.uk](http://royal-needlework.org.uk).*



Project from the metalwork online day class at the RSN.



From the archive: RSN stitchers working on the Queen Mother's coronation robe.

# The Art of Self-Dress

*Closures and Independence*

SUSAN STRAWN



Back-lacing corset with handstitched lacing eyelets, circa 1780. Wool, leather, linen, and reeds. American. Brooklyn Museum Costume Collection at the Metropolitan Museum of Art, Gift of the Brooklyn Museum, 2009; Gift of E. A. Meister, 1950 (2009.300.3100a, b).  
*Courtesy of the Metropolitan Museum of Art, New York*

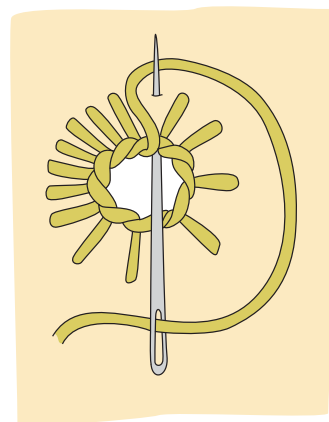
Over several months, I worked in a former music practice room, an attic garret really, the only workspace available on my university campus to accession nearly two hundred garments into a teaching collection. Provenance largely unknown, the collection held mainstream American women's clothing from the 1860s through the 1980s. One by one, I photographed, accessioned, and prepared each piece for archival storage.

Every time I placed a garment on a mannequin for a photograph, I saw the relative ease—or difficulty—of putting the piece on, taking it off, and fastening the closures. Working on my own in a small space, my thoughts turned to the lives of the women who had worn the clothing. Could a woman have dressed herself in this garment, or would she have needed someone to help her?

In antiquity, clothing had not required many fasteners until the late Middle Ages (1300–1500). Before then, men and women dressed more or less alike in wrapped and draped clothing secured with a simple tie, straight pin, brooch, or fibula (similar to a safety pin). The invention of clothing cut and tailored to fit the body—clothing that differentiated male from female—required more complex closures such as thread-sewn eyelets for lacing, sewn buttonholes for buttons, and hooks and eyes.

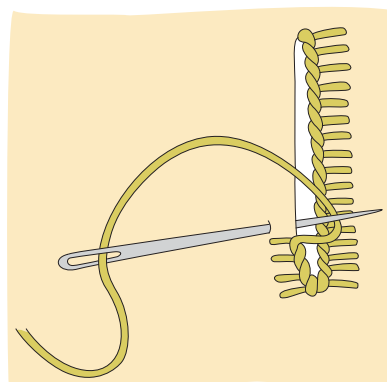
In the collection, each bodice and jacket that dated from the mid- to late nineteenth century fastened in front with either hooks and eyes or buttons. Hooks and eyes have a long history, at least back to the fifteenth century. For example, the burial clothing of Eleonora de Medici, a Spanish princess, included a velvet bodice (circa 1560) with 18 pairs of hooks and eyes down the center front. Similarly, buttons have a long history, stretching at least to the first half of the thirteenth century. Thread-sewn eyelet openings for lacing preceded techniques that fourteenth-century tailors mastered to stitch buttonholes for buttons (cloth or metal) used to fasten hoods and sleeves.

In the collection, an 1860s silk bodice and 1880s bustle-era wool jacket were fastened with hooks and eyes, closely spaced down the front. Brass buttons fastened the front closure of an 1890s tailor-made



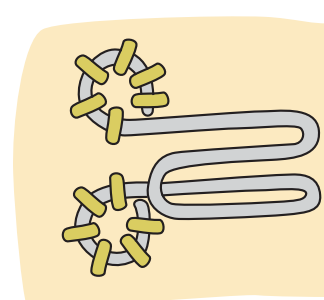
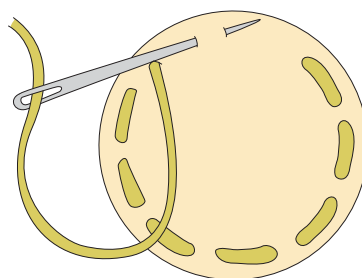
A thread-sewn eyelet worked on cloth secures openings for lacing.

*Illustrations by Ann Sabin Swanson*



A thread-sewn buttonhole worked on fabric secures openings for buttons.

A cloth button formed by stuffing material in the center of the stitched circle and tightening the thread. The thread is tightened to create a shank.



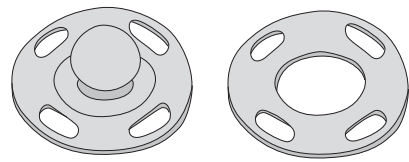
A hook-and-eye fastener has a metal hook attached on one side and either a metal loop or a stitched loop on the other side of an opening.

suit (a skirt and jacket fashioned by a tailor instead of a seamstress). A woman who wore any of these practical nineteenth-century pieces could have dressed herself, perhaps to participate in the ongoing fight for her economic, educational, and political rights. Perhaps she was among the growing number of single women who worked in clerical and teaching positions. Or she may have been one of a handful of women who earned bachelor's degrees, their number growing from nearly fourteen hundred in 1870 to more than five thousand by 1900.

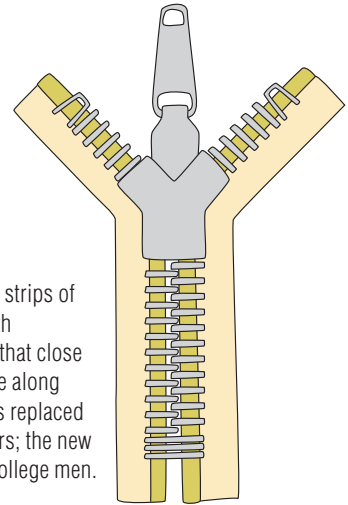
Underneath, however, she would have worn a corset and needed assistance for lacing, though not necessarily. After the mid-nineteenth century, many corsets closed in front with a slot-and-stud fastener that let a woman put on and take off her own corset. The Industrial Revolution (about 1760–1840) made it possible for most women to afford a corset, and women wore them as a sign of gentility and respectability. Although the collection included no corsets, a corset would have been worn under each garment in the collection well into the mid-twentieth century (when they were renamed girdles or foundations).

Corsets often symbolize restrictions in women's lives, especially among straightlaced Victorians. Much of this is myth. Women were restricted, but corsets were not to blame. Metal eyelets invented in 1828 did replace thread-sewn eyelets and made tighter lacing possible. However, many nineteenth-century medical men warned against overly tight lacing, and the press ridiculed the practice as vanity. There is no evidence that women had ribs surgically removed for tight lacing, and those notorious iron corsets in museum collections probably corrected spinal deformities.

In the collection, I noticed that dresses worn for special occasions made women dependent on assistance for dressing. Hooks and eyes closed the back opening of a circa 1913 lingerie dress—a delicate white cotton garment trimmed with lace—likely worn for a graduation ceremony. Three wedding gowns dating to 1909, 1930, and 1950 closed snug bodices with a long line of small buttons down the back. Another wedding gown, dated to 1918, closed with snap fasteners and hooks and eyes, also down the back. Traditionally, attendants have sheltered a bride and assisted her in dressing for her wedding ceremony, a practice consistent with the ancient belief that a bride was vulnerable to evil in the world



A snap fastener, relative newcomer to clothing closures, has a pair of interlocking metal (or plastic) disks that snap together with a cap on one that fits into the socket of the other. Several inventors claimed patents for snap fasteners in the late 1800s.



A zipper has two flexible strips of metal or plastic teeth with interlocking projections that close or open by pulling a slide along them. After 1937, zippers replaced buttons on men's trousers; the new style was first worn by college men.

during the time she left her family, before joining with her husband in marriage.

It was easy to slip the collection's beaded, one-piece dresses from the 1920s onto the mannequin, with only an occasional hook and eye or snap to fasten the neckline. The dresses fell straight from the shoulders and were likely worn over a "flattener" corset that smoothed the body. Loose-fitting garments with few fasteners paralleled women's newfound freedom of movement and political independence, especially the right to vote gained in 1920. The Victorian grip on society had loosened after World War I (1914–1918) and single women, especially, took on more work outside the home. The number of women earning bachelor's degrees climbed from more than sixteen thousand in 1920 to nearly fifty thousand in 1930.

I took particular interest in two children's dresses that family photos dated to 1910; the dresses were small versions of adult clothing typical at the time—a child's lingerie dress fastened with hooks and eyes, and a dress with layered underblouse, overblouse, and skirt fastened with tiny buttons and snaps. Both dresses closed down the back and made a child helplessly dependent on an adult to get dressed. Dressing children as miniature adults was soon to change.

*Every time I placed a garment on a mannequin for a photograph,  
I saw the relative ease—or difficulty—of putting the piece on, taking it off,  
and fastening the closures. Working on my own in a small space,  
my thoughts turned to the lives of the women who had worn the clothing.  
Could a woman have dressed herself in this garment,  
or would she have needed someone to help her?*

In the 1920s, clothing activists in the Bureau of Home Economics (established in 1923 by the United States Department of Agriculture) developed “self-dress” (or self-help) clothing. Self-dress endorsed simple clothing styles designed to let a child dress without the help of another person. Loose-fitting clothing needed no fasteners at all or just simple elastic facings. Fewer and larger buttons or snaps in front replaced tiny buttons or hooks and eyes on the back of clothing worn in the past. Educators and psychologists believed children who dressed themselves matured into confident, self-reliant citizens better prepared to participate in a democratic society. Besides, children who got into and out of clothing by themselves spared caregivers the time and tedium of dressing them.

Zipper companies jumped on the self-dress movement. Aggressive advertising convinced children’s clothing designers and parents that small-scale zippers should replace buttons, snaps, and hook-and-eye fasteners. In a 1930s *Parents* magazine, for example, zipper manufacturer Talon advertised, “These completely buttonless garments are easily fastened . . . even by a two-year-old . . . because of the Talon Fastener. Talon-fastened clothes teach self-reliance and sturdy independence to the youngsters in a practical way they’ll like.” Department stores also screened the promotional film *Bye-Bye-Buttons*, starring children who dressed themselves in zippered clothing.

Before then, the zipper—known by names such as slide fastener and hookless fastener—had struggled to find markets, selling best to World War I military troops as closures for money belts. In 1923, B. F. Goodrich registered the word “zipper” as both a trademark and the name for rubber boots that closed with a slide fastener. The word zipper caught on as a generic term during the twenties, and by the early thirties, zippers were no longer a novelty.

In the collection, a metal zipper sewn along one side closed each dress that dated to the 1930s.

The magic of side zippers allowed women to dress themselves with ease in slender, clingy styles made fashionable by Paris designers and movie stars. A woman who wore a zippered dress also conquered “gap-osis”—the dreaded gaping spaces left by buttons on side closures—according to Talon’s advertising (see page 38). Despite the Great Depression, the 1930 census showed that more than a quarter of women worked outside the home, mostly single and underpaid, but employed, and in the final year of the decade nearly eighty thousand women received bachelor’s degrees.

Buttons and snaps, not a zipper, closed the collection’s dresses and suits from the early 1940s. Zippers joined the long list of materials unavailable to consumers during wartime cutoff of copper alloy. Each dress from that period buttoned in front, and a wool suit complied with Regulation L-85, the government mandate that conserved fabric on civilian clothing for military usage. The suit’s hem and facings were narrow, the skirt was short and slender, and the pockets were reduced to mock flaps. “Make Do and Mend for Victory” was the watchword, and the cuffs and collar on the suit had been mended with care. In the work world, many women took jobs formerly held by men during peacetime. The number of degrees that women earned fell during the war but rebounded by war’s end.

A woman who wore one of the collection’s post-war dresses from the late 1940s and early 1950s would have found it difficult, if not impossible, to dress by herself. A long zipper ran the length of the back in each dress. With perfect timing, zippers resumed production in 1944 and became the fastener of choice for “New Look” silhouettes in all their corseted and padded, curvy, and voluptuous glory. Encouraged to return to dependent roles as wives and mothers, women freed many jobs and deferred college for returning veterans. Census data, however, indicates that there were more

*A woman's ability to reach and fasten closures determined, in part, her freedom to dress by herself.*



French ad that reads, “Madame dresses alone with the American zipper which replaces buttons and hooks to close skirts and bodices.” From the personal records of Gideon Sundback, inventor of the modern zipper.

*Courtesy of Special Collections, Pelletier Library, Allegheny College*

women in the labor force after the war than before it. Interestingly, the number of women who earned bachelor's degrees climbed to roughly one hundred thousand by 1949 but plateaued until the late fifties, the only time in 120 years that growth in higher education for women has stalled.

Dressing the mannequin in clothing that dated from the 1960s through the 1980s was a breeze, thanks in part to the types and locations of fasteners as convenient as those on men's clothing. A bright pink suit from the sixties, for example, had a slipover top with no fasteners, a matching skirt with a smooth nylon side zipper, and a front-buttoned jacket. Similarly, casual pant-and-top outfits in psychedelic colors from the sixties fastened with easy-to-reach nylon zippers. Loose-fitting dresses dating to the seventies slipped on easily, with few or no fasteners. The jacket of a Dior business suit with prominent shoulder pads closed in front with buttons that were as decorative as they were functional. By the early eighties, for the first time, more women than men earned bachelor's and master's degrees. Numbers of professional and doctoral degrees lagged, but gradually, a share of single and married women alike moved from traditional careers—teachers, nurses, bookkeepers—into professions formerly held by men.

After all the garments in the collection were documented and stored, I closed the door to my attic garret for the last time. Working with each piece,

one by one, I had observed 120 years of history in women's clothing—and observed a hidden history of closures. The types and locations of closures had changed with fashion, technology, advertising, historical events, and the eternal craving for novelty. Closures and the freedom for self-dress paralleled the progress—with a brief retreat during the 1950s—toward women's independence. ❖

## RESOURCES

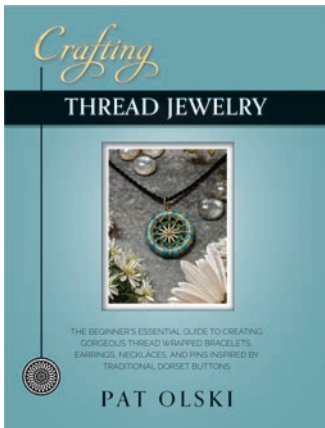
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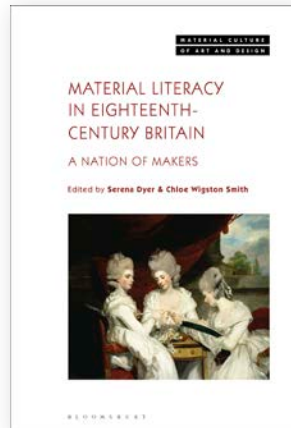
# Bookmarks



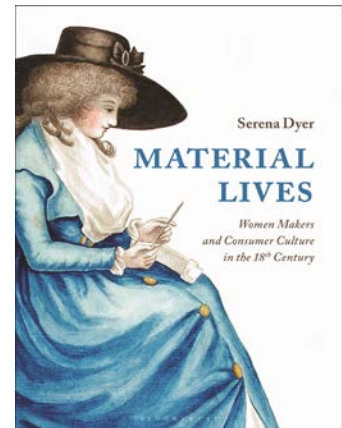
*Learn more about the rich and ongoing tradition of various forms of needlework.*



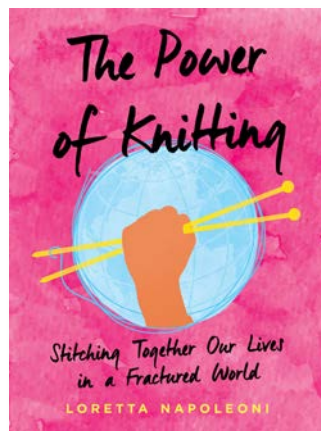
**Crafting Thread Jewelry:**  
*The Beginner's Essential Guide to Creating Gorgeous Thread Wrapped Bracelets, Earrings, Necklaces, and Pins Inspired by Traditional Dorset Buttons*  
Pat Olski  
River Edge, New Jersey: YarnWhirled Press, 2021. Paperback, 118 pages, \$24.95.  
ISBN 9780578907291.



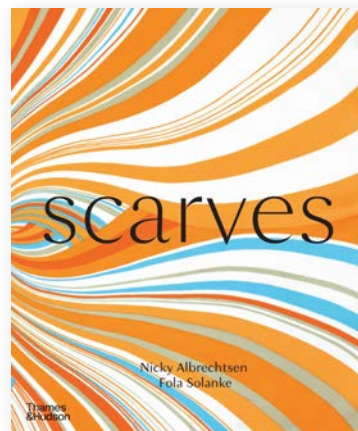
**Material Literacy in Eighteenth-Century Britain:**  
*A Nation of Makers*  
Serena Dyer and Chloe Wigston Smith, Editors  
New York: Bloomsbury Visual Arts, 2021.  
Hardcover, 328 pages, \$135.  
ISBN 9781501349614.



**Material Lives:**  
*Women Makers and Consumer Culture in the 18th Century*  
Serena Dyer  
New York: Bloomsbury Visual Arts, 2021.  
Paperback, 272 pages, \$36.95.  
ISBN 9781350126961.



**The Power of Knitting:**  
*Stitching Together Our Lives in a Fractured World*  
Loretta Napoleoni  
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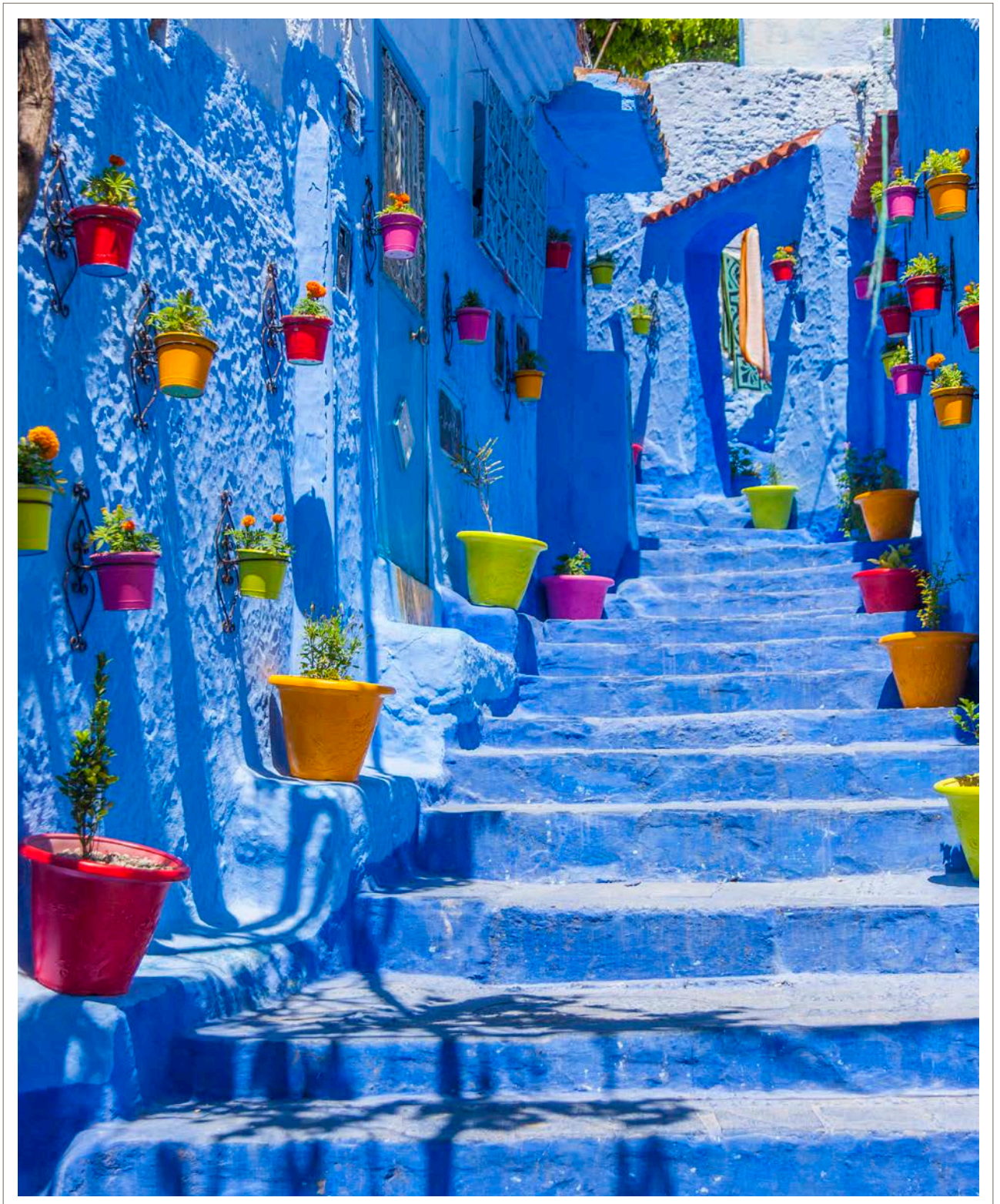


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Nicky Albrechtsen and Fola Solanke  
New York: Thames & Hudson, 2021.  
Hardcover, 304 pages, \$40.  
ISBN 9780500296172.

# Moroccan Buttons and Trims

*A Textile Traveler Searches*

CYNTHIA LECOUNT SAMAKÉ



Chefchaouen, Morocco's "Blue City," lives up to its name—and is the perfect foil for the author's vivid yellow gown.  
*Photo by Joe Coca*

Azure walls, indigo stairways, periwinkle pathways—the hues of Chefchaouen, Morocco’s “Blue City,” are visually amazing. As I strolled along, I suddenly caught a flash of yellow out of the corner of my eye. Hanging on a cerulean door in front of a tailor’s shop was the most remarkable dress I had ever seen. Closer inspection revealed a full-length sheer silk georgette “coat” over a sumptuous, heavy satin dress, both pieces in the same eye-catching sunny yellow. But the superb trims! Deep burgundy and yellow buttons fastened the front, and complex trim in matching colors scalloped the edges. Little sequin bouquets adorned the front and sleeves of the outer layer. My mind was whirling, envisioning the hundreds of hours involved in decorating this treasure and puzzling over how the buttons could be knotted so perfectly.

The shop owner stuck his head out the door and asked if he could help. After confirming that the whole ensemble, called a *takchita*, was indeed made by hand, I asked if I could take it to my nearby hotel to try it on. He agreed and off I went with the gorgeous yellow outfit over my arm. Chefchaouen is that kind of place: trusting, cozy, and agreeable.

I climbed cornflower-blue steps to the hotel where I ducked into my room and carefully pulled on the dress. The women working there oohed and aahed and snapped my picture. I decided it looked okay but would fit better if I stopped eating the flaky and delicious chicken *b’srilla* that had become my favorite dinner! Back at the little store, the tailor and I hit upon a price that warranted the trim, sequins, slippery fabric, and all the buttons. And he revealed that a wealthy partygoer had worn it once to a special event, and then, not wanting to appear twice in the same outfit, sold it back to him—apparently not an uncommon situation.

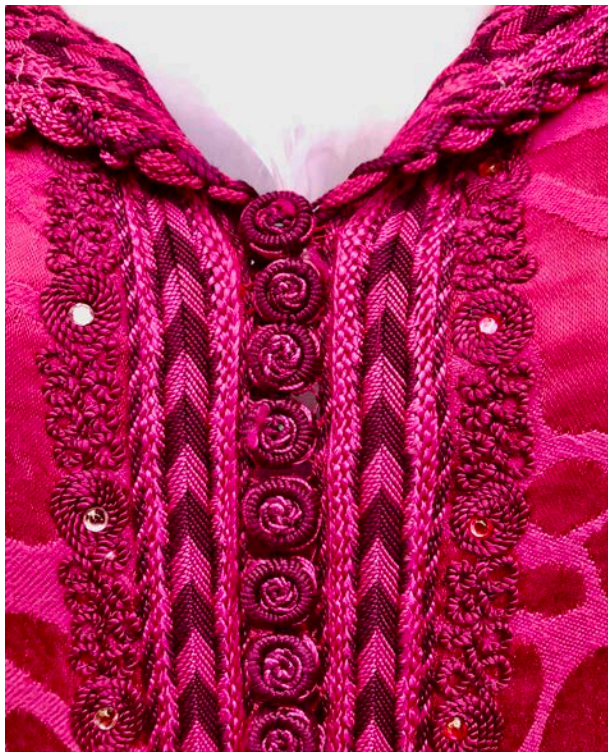
This experience only solidified my obsession with Moroccan buttons and trims. I knew these buttons, and it was my experience with them that made me



At a distance, the intense yellow of this festive outfit catches the eye. Up close, the cascade of intricate handmade buttons and braids demands detailed inspection.

*Photos courtesy of Cynthia LeCount Samaké unless otherwise noted*

crazy about the complex two-color swirly-twist buttons on my new ensemble. Every year, my textile tour groups visit a cooperative in Morocco headed by my friend Bouchra (more about her later) for a button-knotting workshop in a town near Fes called Sefrou. And despite the best attempts of the women in the co-op to teach me the simplest button version, I always produced just a wild tangle of thread at the end of a pointy rod. Just imagining the time and



Detail of *djellaba* with embroidery, *sfifa*, and handknotted buttons.



There's no end to the variations on handmade Moroccan buttons, all accomplished by various interlacements of rayon thread and color sequences.

Photo by Joe Coca

skill it took to make the long rows of intricate yellow and red buttons on my new ensemble made my head spin.

#### FASHION BASICS

Back in Fes, the yellow marvel inspired a formal lesson in Moroccan traditional dress. My friend and guide Ali, who is generally in charge of imparting such cultural knowledge, started by explaining that tailors make the men's garments, and seamstresses stitch the women's robes. And the simplest and most common outfit for both men and women is a *djellaba*. This loose, long-sleeved overgarment falls to the ankles and typically has a hood called a *qob*. As usual, Ali was wearing a chic, hoodless version of a *djellaba* (called a *gandoura*) over a shirt and slacks, which showed through the sheer dark purple fabric.

Long ago, he explained, the original handwoven sheep's wool *djellabas* were strictly men's garments, protecting shepherds and farmers in the High Atlas Mountains. Today, men can choose from a variety of comfortable *djellaba* versions—custom tailored or ready-made in a range of fabrics from light cotton or rayon to soft Ultrasuede. (Many Moroccan men such as Abdel, the group's driver, wear jeans and polo shirts instead, depending on their work and the occasion.) Abdel added that in summer, people prefer to wear lighter colors and cool, airy fabrics, and in winter, darker colors and heavier fabrics are most popular. Men's winter *djellabas* handwoven from white carded wool with a nubby texture called *laine de haba* are the exception.

As women eventually became more independent and assertive, they, too, adopted the comfortable *djellaba* robes instead of wrapping up in the traditional lengths of fabric called *haik*. Tailors and bazaar vendors now offer a range of fabrics and qualities in unisex versions. No matter the base fabric, *djellabas* always have flat braid or trim called *sfifa* embellishing the front and sleeves, and a row of handknotted buttons down the front placket. The buttons on *djellabas* for both men and women may have loops for unfastening the first dozen buttons to make the neck opening large enough to pull the robe over the head. The buttons below that are securely stitched in place, not meant to be opened. Some *djellabas* even have a cleverly sewn plastic coil zipper behind the buttons to open the front far enough to let the wearer step in.

Similar to the djellaba but without a hood is the *caftan*, women's other most typical garment. Caftans vary from monochromatic with matching *sfifa*, a bit of couched embroidery, and a dozen buttons to elegant silky versions with complex hand or machine embroidery, a hundred buttons, and a wide belt.

Abdel then explained that the yellow satin dress of my ensemble is called a caftan, too, and the light "coat" (like an open caftan) is called *dfina*. Both parts have wide, flowing sleeves decorated with complicated trim and buttons. The two pieces always match or coordinate perfectly and are worn with an intricately decorated wide belt called a *mdamma*. The belt is typically embellished with *squalli* (or *skalli*), a flat trim made with metallic threads. Real or imitation gemstones adorn the most elegant *mdammas*.

Moroccan women give great importance to their special-occasion clothing because it reflects their social identity. The caftan and *dfina* combination (*takchita*) is made to order by bespoke seamstresses who work as professionals. Women choose and purchase the fabric for both pieces, then take the yardage to their favorite trusted seamstress with exact specifications for the desired ensemble. The seamstresses often offer suggestions as to the latest fashion and most popular colors. An elaborate *takchita* can cost an amazing amount of money; the fabric alone can cost hundreds of U.S. dollars. The work of cutting and stitching the clothing plus

embellishment with complicated handknotted buttons, piping on the seams, fancy hand-plaited *sfifa*, and sequin embroidery can add several hundred more dollars, depending on the complexity of the handwork and the type of adornments used. Women wear such elegant combinations to very special family events and gala celebrations, and to attend important ceremonies as wedding guests. (Brides typically wear long white, voluminous dresses.)

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#### THE TRIMS CALLED *SFIFA*

When Ali saw how interested we were in the plaited *sfifa* trim, he led us through narrow passageways in the medina to a shop with thousands of colorful bobbins of rayon thread. Carefully arranged in no particular order that we understood, the bamboo bobbins held thick strands of untwisted rayon thread. Now we knew the *sfifa*-makers' materials, but we still hadn't seen the traditional hand-plaiting process. Ali promised that for the next day.

#### Machine-Made *Sfifa*

After lunch, we trooped downhill through the Fes medina to find the mechanical *sfifa*-maker's workplace. Deafening noise led us to a room crammed with a half-dozen frantically clanking machines and one young, multitasking worker. At the front of each apparatus, full spools sat upright on metal plates careening along zigzag tracks in an intricate and repetitive pattern to interlace the threads. Each



Bouchra, a braid-maker in Fes, is master of all the steps of creating *sfifa*: twisting rayon threads into colorful cords, interlacing the cords into intricate braids, and flattening the braids for application onto costumes for special occasions.



Rayon thread on bamboo spools in Morocco.



Cleverly devised braiding machines make *sfifa* embellishment affordable for the less affluent.



*Sfifa* examples from Morocco. The braid on the left was made by machine, and the four braids on the right were handmade.

machine spouted out yards of *sfifa* of different widths and colors. Then the *sfifa* flew through flat-rimmed pressing wheels and finally wrapped around a take-up wheel at the top.

Moving from machine to machine, the worker monitored the whirring contraptions. I steered my group away from getting caught in a machine and entangled in yards of *sfifa*. He smiled and ducked down to a box on the floor to hand me a bundle of end trimmings as samples. Some of these *sfifa* samples were ½ inch wide and flat, made of tightly woven metallic threads for a fancy caftan or djellaba. Most of the machine-made trim will decorate less-expensive ready-to-wear djellabas, available in the souks.

Some *sfifa* trim looks like thin, round, silky shoelaces. Similar to piping and called *kabel*, these fine strips are sometimes braided by smaller, hand-cranked machines. Tailors neatly handstitch these lengths along all the seams of djellabas for a more refined look. Several versions of industrial sewing machines are used to stitch these specific trims onto garments (and to embroider the twist into couched, curlicue patterns).

### Handcrafted *Sfifa*—*Berchmane*

Ali had asked around at his tailor's shop and discovered a maker of handcrafted *sfifa* willing to demonstrate the art. The next morning, a smiling, generous woman named Bouchra (from Fes) bustled into the *riad*, carrying a small wooden spinning wheel and a bag of other materials. She laid out the wheel and supplies, sat down on the floor, and proceeded to show our group of textile enthusiasts how she plaits the complicated handmade *sfifa* trim that embellishes handmade djellabas.

She began by using the wheel to twist or spin the rayon threads from the spool, and then she measured and cut lengths of red and white to make a small sample. For caftan or djellaba lengths, she would need meters-long strands. Working with loops on each finger, something like a cat's-cradle arrangement, she plaited the strands into a flat strip and knotted the end. Then came the surprising part. She took an old shaving brush from a cup of water and wetted the strip. Then she rubbed a large bone repeatedly along the strip, flattening it perfectly. She repeated the process, making short samples in other patterns and color combinations of twisted thread. Bouchra's demonstration made me realize how long it must have taken to plait the *sfifa* on my yellow outfit, plus the time to interlace the eight strips down each side and attach them invisibly.

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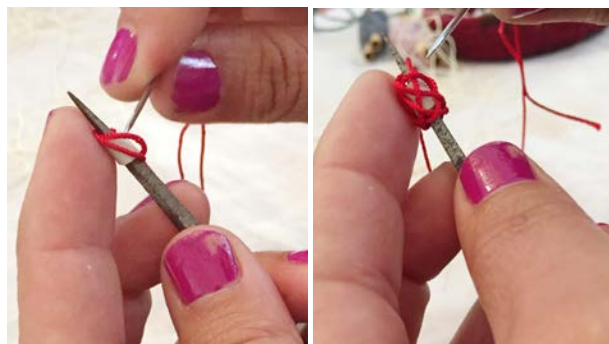
## HANDKNOTTED BUTTONS

What about my yellow and red twisted, swirled buttons? The laborious little objects are made with a single, tapestry-type sewing needle threaded with rayon twist, worked around a core. The final desired button shape dictates the core; often it's a ½-inch length of plastic tubing or a small plastic ring or a round bead. The process is rather like embroidery in midair, stitching in and out of the foundation stitches. As I said, I can't make the simplest buttons, but the ingenious and infinite variations of loops and swirls fascinate me.

The total button count for my two-piece outfit is 122. Handknotted or needle-woven buttons can range from about ⅓ inch to ⅞ inch. On a very prestigious garment, the buttons are often tiny and run from neck to hem, 120 or more on a single djellaba.

My friend from Sefrou, also named Bouchra, directs one of the 40-odd cooperatives of button-makers who either make a living or supplement the family income with their creations. The story goes that long ago, Jewish women in the area used to make the buttons and taught the technique for one basic version to their Muslim neighbors. At the time, male tailors paid the female button-makers a pittance for their work, so eventually they banded together to form associations and co-ops with the goals of setting their own prices and receiving fair pay for their skills. And the activity became increasingly popular because women were eager to earn their own money—especially when it involved being creative and enjoying the companionship of other women with similar goals.

The initial materials are relatively inexpensive, requiring only a needle and an awl or sharpened drill



The simplest button, often called the “jacquard,” begins with thread wrapped around a base. The thread makes subsequent passes following the same pattern. Fancier styles of buttons are created in essentially the same way but with endless variations.

*Photos courtesy of Linda Ligon*



Vibrant handmade buttons.

*Photo by Joe Coca*

bit, plus rayon twist and plastic tubing or beads for the button core. Women can work on the tiny and portable craft between children's naps and cooking supper, or they can take supplies to a friend's house to make buttons as they chat, much the same way as a knitter might work on sock projects or afghan squares.

Over time, organization and cooperation gave the button-makers power to demand higher prices for their work, and their creative minds resulted in new and more interesting button shapes. Some look like seedpods or coral polyps; all of them have a specific name related to the shape and complexity. In Fes, women have access to hundreds of hues of smooth rayon thread, so they use multiple colors to create everything from flat, twisted cupcake shapes to round, swirling three-dimensional buttons such as those on my wonderful takchita. I am still waiting for an elegant event that warrants wearing it! ❖

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## RESOURCES

Davis, Susan Schaefer. *Women Artisans of Morocco: Their Stories, Their Lives*. Loveland, Colorado: Thrums Books, 2018.

**CYNTHIA LECOUNT SAMAKÉ** lives in Santa Fe, New Mexico, and leads textile and culture tours to Morocco, Turkey, Uzbekistan, and other exotic places with Behind the Scenes Adventures. See her company's website, [btsadventures.com](http://btsadventures.com). Abdelhak Gourra of Fes and Latifa Sami from Essaouira also contributed to this article.

See the process for making the simplest Moroccan button, the jacquard, demonstrated by Amina Yabis in a short video shot by Susan Schaefer Davis during a ClothRoads/Thrums Books tour to Morocco in 2019. Susan is the author of *Women Artisans of Morocco: Their Stories, Their Lives* (see Resources). [youtube.com/watch?v=fgTGvBwHlGA](https://www.youtube.com/watch?v=fgTGvBwHlGA).

# Specialties of the House

*Elizabeth Laird Mathieson, J & P Coats, and The Spool Cotton Company*

HEATHER VAUGHAN LEE

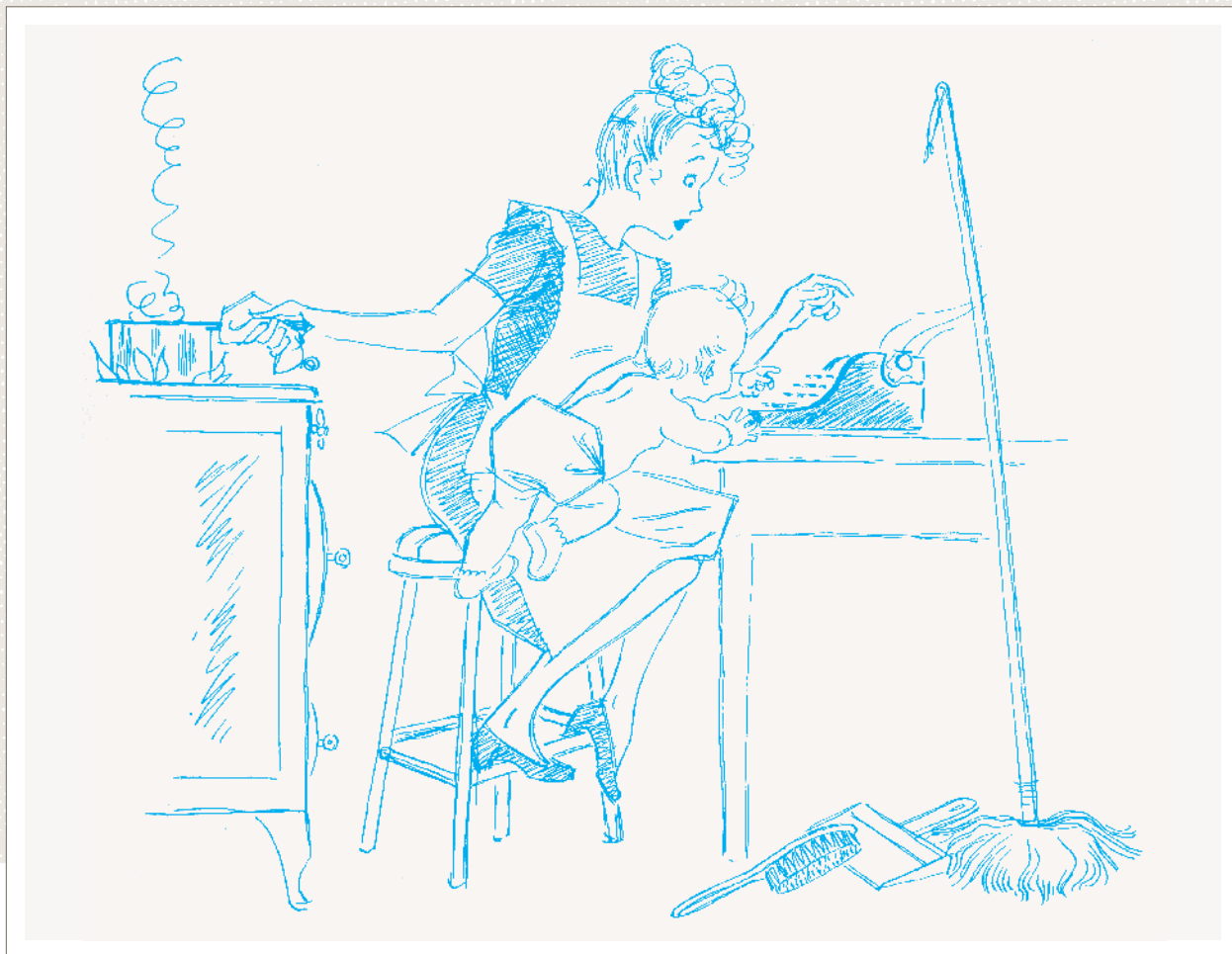


Illustration from *The Needlework Library* (1949) by Elizabeth Laird Mathieson, illustrations by Ruth Wood.  
Courtesy of Heather Vaughan Lee unless otherwise noted

One of the magical things about knitting and crochet is the ability of the fabric to change and stretch to fit the wearer and the situation. Similarly, women have often had to change, learn, and grow in response to new circumstances. Elizabeth Laird Mathieson's *The Complete Book of Knitting* (1947) reflects the challenges faced during World War II and demonstrates the postwar return to domesticity and renewed prosperity.

Mathieson's chapter "Specialties of the House" includes knitting patterns intended for a bride personalizing her postwar home. It emphasizes the

ideals of the American Dream. "Every girl as she grows to womanhood—and every woman as she yearns over the decorating magazines—has a private, a very personal, dream of the kind of home she would like to have."

But as it turns out, Elizabeth Laird Mathieson never married, never had any children, and was originally from Scotland. However, she was skilled at adapting and also deeply rooted in the textile traditions of her homeland. She was committed to educating Americans in the art of needlework: crochet, knitting, embroidery, quilting, and even tatting. Her book jacket noted, "She has traveled extensively, lecturing and instructing, meanwhile acquainting herself with American skills and gaining an insight into American taste."

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## THE MILLS

Known as Bessie to her family, she was born in Paisley, Scotland, in 1898. In the nineteenth century, the town was famous for producing Paisley shawls. Her grandfather James Mathieson (1821–1898) was a weaver of the tear-drop-motif patterned Kashmir-style shawls in Paisley for 30 years. Paisley is also known for its thread mills, established in the early nineteenth century by the Clark’s firm, later J & P Coats. Industrial mills replaced the handloom weaving industry, and women became the principal breadwinners. According to historian Sandra Heffernan, J & P Coats was Britain’s largest multinational company even before World War I.

Mathieson likely worked in the Paisley mills, possibly taking classes through needle-arts education courses offered there. According to Heffernan, J & P Coats provided design and embroidery classes for its mill workers across Europe. Coats worked directly with many Scottish educational institutions, such as Glasgow School of Art, to further needlework education (and hence sell more thread). Mathieson’s education with historically significant institutions and valuable handcrafts would prove helpful as circumstances changed.

During World War I, the Paisley mill girls supported the troops by knitting comforts, and it’s likely Mathieson joined them. The mill girls formed a work party and by 1914, had supplied thousands of socks and shirts, as well as helmets, cuffs, and scarves to the troops. The *Glasgow Herald* noted that “in response to the appeal of Queen Mary and Lord Kitchener, 3,000 pairs of socks for soldiers have been sent.”<sup>1</sup> Kitchener is remembered for devising the seamless grafting stitch for socks still used today (then called a “Kitchener toe”).

In 1926 at age twenty-eight, Elizabeth immigrated to the United States to work as a mill operator in J & P Coats’ mill in Pawtucket, Rhode Island, where her brother and uncle already worked. She traveled from Liverpool to Boston aboard a ship named the *Samaria* along with many weavers, spinners, burlers, menders, machinists, and mechanics.

Ship records show that she returned to Paisley for a year in September 1932, possibly to take courses in needle arts and education. Sources differ about Mathieson’s exact educational background. Both *Women’s Wear Daily* and her needlework book’s dust jacket say that she graduated from the Glasgow

School of Art as a pupil of Miss Isabelle Scott, a “British expert.”<sup>2</sup> (Despite best efforts, Glasgow School of Art cannot confirm her attendance or the presence of Isabelle Scott due to the current COVID-19 global pandemic.)

While the *Fort Worth Star-Telegram* claimed she graduated from the College of Art in Edinburgh, this is unlikely.<sup>3</sup> The archivist at the University of Edinburgh did not find Mathieson on any class rosters.<sup>4</sup> According to Matthew Jarron, museum curator at the University of Dundee, she would have attended the local school closest to her, which would have been Glasgow School of Art.<sup>5</sup> Family members also believe this is the case. J & P Coats was on the verge of organizing a needle-arts educational partnership with several schools in Scotland. In 1933, the College of Domestic Science in Glasgow collaborated with the Glasgow School of Art to offer classes to train art and art needlework teachers.<sup>6</sup> In whatever fashion, she learned valuable skills that changed the trajectory of her career.

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## SPOOL COTTON COMPANY

Mathieson next became a sample maker for the Spool Cotton Company, the sole distributor of J & P Coats thread in the United States, likely after her return from Scotland.



The No. 1 Spinning Mill, Ferguslie Mills, Paisley, Scotland.  
*Courtesy of the Paisley People’s Archive*

As Mathieson began her new career in sample knitting, her skills expanded. Her nephew David explained:

She may have learned her basic skills from her mother, but as things got serious between my father and mother [in 1933], Bessie sought help with problem pieces that she was assigned in New York from my mother, who was very accomplished in knitting, crocheting, and tatting. Bessie would often take the train up to Pawtucket, staying the weekend picking my mother's brain on how to accomplish a particular task and then take this info back to NYC completing the task.

The Educational Bureau at Spool Cotton had produced sewing, crochet, and knitting booklets since at least 1933.<sup>7</sup> The first Bureau director, Helen Powell (later Smith), was hired in 1929, and she likely hired Mathieson sometime after September 1933.<sup>8</sup> Powell explained that as director, she “developed books and leaflets for crochet, knitting and sewing [and] promotional ideas for use in schools and college

through a monthly news bulletin service.”<sup>9</sup> According to the company's timeline, these publications helped sell crochet and embroidery cotton whose production had been disrupted by World War I. They also enabled women to stretch their budgets during the Great Depression.

Spool Cotton began distributing Chadwick's Red Heart yarns in 1936, producing accompanying knitting patterns to push sales. The Bureau started publishing the monthly news bulletin *Stitch in Time* to provide sewing tips in 1939.<sup>10</sup> By this time, Mathieson had worked her way up from sample maker to stylist to editor. She went to Scotland in 1938 to exhibit her work at the prestigious British Empire Exhibition in Glasgow. Not surprisingly, J & P Coats was one of the largest supporters of the exhibition.

## WORLD WAR II

In the early 1940s, Spool Cotton began introducing patriotic pattern booklets using Chadwick's Red Heart yarn. *Knit for Defense* (1941) included military-regulation sweaters, helmets, gloves, caps, and socks,



*Stitch in Time: Two for Little More Than the Price of One! Argyles for You and Your Beau.* The Spool Cotton Company. Courtesy of Kate Larson



*Knit for Defense.* The Spool Cotton Company. Courtesy of Debbie Blair

likely calling on Mathieson's experience knitting with the Paisley Mill girls during World War I. The 1942 booklet *Make and Mend for Victory* aimed to help women "be patriotic and pretty both" by recycling or updating older clothing.

Next, Spool Cotton became a national sponsor of 4-H sewing programs, providing competitions, prizes, and college scholarships. In 1943 alone, "more than 425,000 girls carried 4-H clothing projects, in which they not only made 2 million dresses but remodeled, patched or mended 600,000 old garments."<sup>11</sup> The Bureau offered courses in sewing, knitting, and crochet to help the American public "make do and mend," associated with the mandatory rationing of clothing. As part of this program, Mathieson taught classes in knitting and crochet.<sup>12</sup> Bureau staff also produced educational pamphlets, booklets, and other free materials to be used in schools.<sup>13</sup> Mathieson and the team promoted Spool Cotton's distributed products by participating in store events nationwide, judging contests, and offering their expertise to the public.<sup>14</sup>

Mathieson was appointed head of the Book Department at Spool Cotton in 1944. *Women's Wear Daily* noted that Mathieson would oversee "all styling for the numerous instruction books issued regularly by the company. . . . She has traveled in the United States and Great Britain, lecturing and instructing on art needlework, is a designer of note, and author of many books on crocheting, knitting, and embroidery."<sup>15</sup> After World War II, she helped transition the team from its focus on wartime support to crafting the American Dream.

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#### POSTWAR AMERICA

From 1946 to 1949, Mathieson released a book each year with Spool Cotton Company. These were primarily groupings of patterns previously published by Spool Cotton as pattern booklets with new introductory remarks, brief histories, adorable illustrations by Ruth Wood, and general instructions.

The books were backed by substantial advertising and promotional campaigns; Mathieson made store appearances and the books were listed in major newspapers and even reviewed in the *New York Times*.<sup>16</sup> *The Complete Book of Crochet* reportedly sold 300,000 copies in the first 18 months.<sup>17</sup> Her other books were *The Complete Book of Knitting*



Photo of Elizabeth Laird Mathieson that appeared frequently in her books and press releases.

(1947), *The Baby Book of Knitting and Crochet* (1948), and *The Needlework Library* (1949). They were even sold in the Sears Catalog from 1948 to 1951 and were used to develop homemaking curricula for high schools.<sup>18</sup> These books encouraged readers to use their newfound skills to help their families, stretch budgets, and enjoy their new, more stable lives.

Between 1952 and 1957, Mathieson copyrighted over 50 pattern booklets of doilies, edgings, accessories, and other home-decorating designs. She copyrighted a special crocheted medallion pattern celebrating the coronation of Queen Elizabeth II in 1953 and several booklets for the emerging teen market. With a new Park Avenue address, the company prospered, and Bureau staff continued traveling to trade shows and educational events.

Mathieson continued educating herself in the arts, taking classes at the Art Students League on West 57<sup>th</sup> Street in Manhattan, often taking her nephew with her when he was in town. During the height of her career, Mathieson had significant medical issues. Her nephew shared, "Bessie was a cancer survivor from the late 40s and early 50s. In two separate instances, she had to have mastectomies performed and survived." After Mathieson's retirement in 1958, she

returned to Paisley, where she enjoyed spending time with her family for the next 20 years. She died on January 31, 1981, at age eighty-two.<sup>19</sup>

Ultimately, Elizabeth Laird Mathieson helped Americans learn the skills to make it through the war. Afterward, she helped them see their postwar futures positively and thoughtfully, complete with touches of handwork “that spell[ed] domestic felicity.” She noted in 1947, “In our modern world, where life races by at such an astonishing tempo, it is good to keep a piece of knitting at hand.” ❖

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#### NOTES

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8. Cornell University, Office of the Dean of the University Faculty, Helen Powell Smith Memorial Statement, 1997, [ecommons.cornell.edu/handle/1813/18043](https://ecommons.cornell.edu/handle/1813/18043).
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*Author’s Note:* Special thanks go to David Mathieson and his sister Jean (nephew and niece of Elizabeth Laird Mathieson) for providing such helpful details about their aunt.

**HEATHER VAUGHAN LEE** is a frequent contributor to *PieceWork* and a fashion historian focused on the late nineteenth through the twentieth centuries. She loves knitting and its ties to history. Her book, *Artifacts from American Fashion* (ABC-CLIO, 2019), is available wherever books are sold. Learn more about her at [fashionhistorian.net](https://fashionhistorian.net). Find her on Ravelry @FashionHistoria.

# A Pair of Mathieson's Mats

HEATHER VAUGHAN LEE

Elizabeth Laird Mathieson's 1947 book, *The Complete Book of Knitting*, provides the inspiration for this placemat pattern. Mathieson included the project in her "Specialties of the House" chapter, but it was originally published in the 1945 leaflet, *Gifts Crocheted and Knitted* (#226) from Clark's O. N. T. and J & P Coats, distributed by The Spool Cotton Company.

Mathieson's pattern for five placemats doesn't name the eyelet pattern motif, but it appears to be a variation of traditional fern lace. It is remarkably similar to Barbara G. Walker's "Diagonal Fern Lace," shown in her masterful work *A Treasury of Knitting Patterns*, published in 1968.

Mathieson offers the staggered fern motifs in panels framed by decrease edge stitches and divided by moss stitch. Whether intentional or not, these moss and fern designs hint at the beautiful Scottish greenery of Mathieson's homeland. While her pattern calls for size 5 pearl cotton knitted on size 1 needles, the modernized pattern below knits up much more quickly at a larger gauge.

## RESOURCES

- Mathieson, Elizabeth Laird. *The Complete Book of Knitting*. New York: World Publishing Co., 1947.
- Walker, Barbara G. *A Treasury of Knitting Patterns*. New York: Charles Scribner's Sons, 1968.

## MATERIALS

- ◆ Elsebeth Lavold Hempty, 41% cotton, 34% hemp, 25% modal, DK weight, 153 yd (140 m)/1.76 oz (50 g), 3 balls of #081 Pale Pistachio
- ◆ Needles: size 3 (3.25 mm) or size needed to obtain gauge
- ◆ Stitch markers
- ◆ Tapestry needle

**Finished measurements:** 16¼" (41.3 cm) wide and 13" (33 cm) high, after blocking and before ironing.

**Gauge:** 23 sts and 24 rows = 4" (10.2 cm) in lace pattern after blocking.

## Special Stitches

**Skp:** Slip 1 as if to knit, knit 1, pass slipped stitch over—1 stitch decreased.

*Visit [pieceworkmagazine.com/abbreviations/](http://pieceworkmagazine.com/abbreviations/) for terms you don't know.*

## INSTRUCTIONS

### Placemat

Using the long-tail method, CO 97 sts while placing markers (pm) as follows: CO 5, pm, \*CO 15, pm, CO 3, pm, repeat from \* 3 more times, CO 15, pm, CO 5.

### Lower Border

Rows 1–8: K1, \*p1, k1; rep from \* to end.

### Pattern Section

**Notes:** Each lace panel begins with 15 stitches that are temporarily increased to 17 stitches after completing a RS row. On the following WS row, these 17 stitches are decreased back to 15 stitches. Check your stitch count after finishing a WS row when the lace panels have been restored to their starting number of 15 stitches.

**Row 1 (RS):** K1, [p1, k1] twice, sl m, k2tog, k5, [yo, k1, yo, k2] twice, skp, \*sl m, k1, p1, k1, sl m, k2tog, k5, [yo, k1, yo, k2] twice, skp; rep from \* to last 5 sts, sl m, k1, [p1, k1] twice.

**Even-Numbered Rows 2–10 (WS):** K1, [p1, k1] twice, sl m, p2tog, p13, p2tog, \*sl m, k1, p1, k1, sl m, p2tog, p13, p2tog; rep from \* to last 5 sts, sl m, k1, [p1, k1] twice.

**Row 3:** K1, [p1, k1] twice, sl m, k2tog, [k4, yo, k1, yo] twice, k1, skp, \*sl m, k1, p1, k1, sl m, k2tog, [k4, yo,

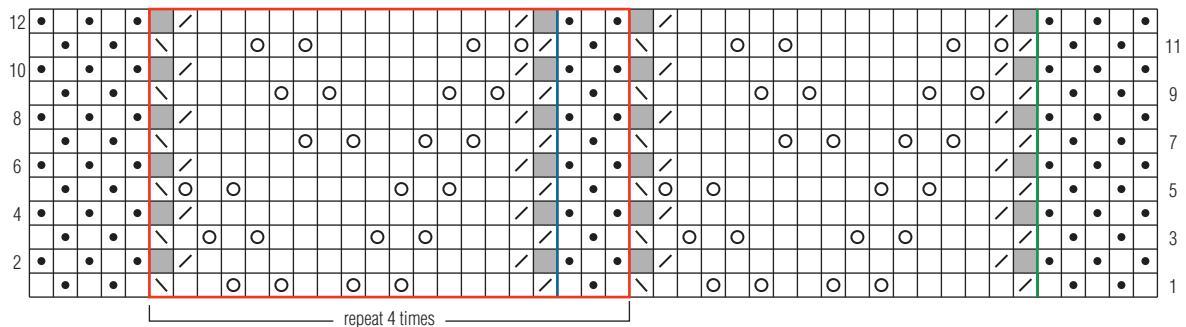


The fern motif creates a gently scalloped edge.



Knit a set of 1940s placemats worthy of pretty vintage teacups.  
*Photos by Matt Graves*

## Fern Lace Pattern



### Key

|                          |           |
|--------------------------|-----------|
| k on RS; p on WS         | yo        |
| p on RS; k on WS         | no stitch |
| k2tog on RS; p2tog on WS | marker    |
| ssk or skip on RS        |           |



The fern lace motif undulates gently as you work pattern repeats.

k1, yo] twice, k1, skp; rep from \* to last 5 sts, sl m, k1, [p1, k1] twice.

**Row 5:** K1, [p1, k1] twice, sl m, k2tog, k3, yo, k1, yo, k6, yo, k1, yo, skp, \*sl m, k1, p1, k1, sl m, k2tog, k3, yo, k1, yo, k6, yo, k1, yo, skp; rep from \* to last 5 sts, sl m, k1, [p1, k1] twice.

**Row 7:** K1, [p1, k1] twice, sl m, k2tog, [k2, yo, k1, yo] twice, k5, skp, \*sl m, k1, p1, k1, sl m, k2tog, [k2, yo, k1, yo] twice, k5, skp; rep from \* to last 5 sts, sl m, k1, [p1, k1] twice.

**Row 9:** K1, [p1, k1] twice, sl m, k2tog, k1, [yo, k1, yo, k4] twice, skp, \*sl m, k1, p1, k1, sl m, k2tog, k1, [yo, k1, yo, k4] twice, skp; rep from \* to last 5 sts, sl m, k1, [p1, k1] twice.

**Row 11:** K1, [p1, k1] twice, sl m, k2tog, yo, k1, yo, k6, yo, k1, yo, k3, skp, \*sl m, k1, p1, k1, sl m, k2tog, yo, k1, yo, k6, yo, k1, yo, k3, skp; rep from \* to last 5 sts, sl m, k1, [p1, k1] twice.

**Row 12:** Work as for Row 2.

Rep the last 12 rows 4 more times—60 total pattern rows.

### Upper Border

**Rows 1–8:** K1, \*p1, k1; rep from \* to end.

BO all sts.

### Finishing

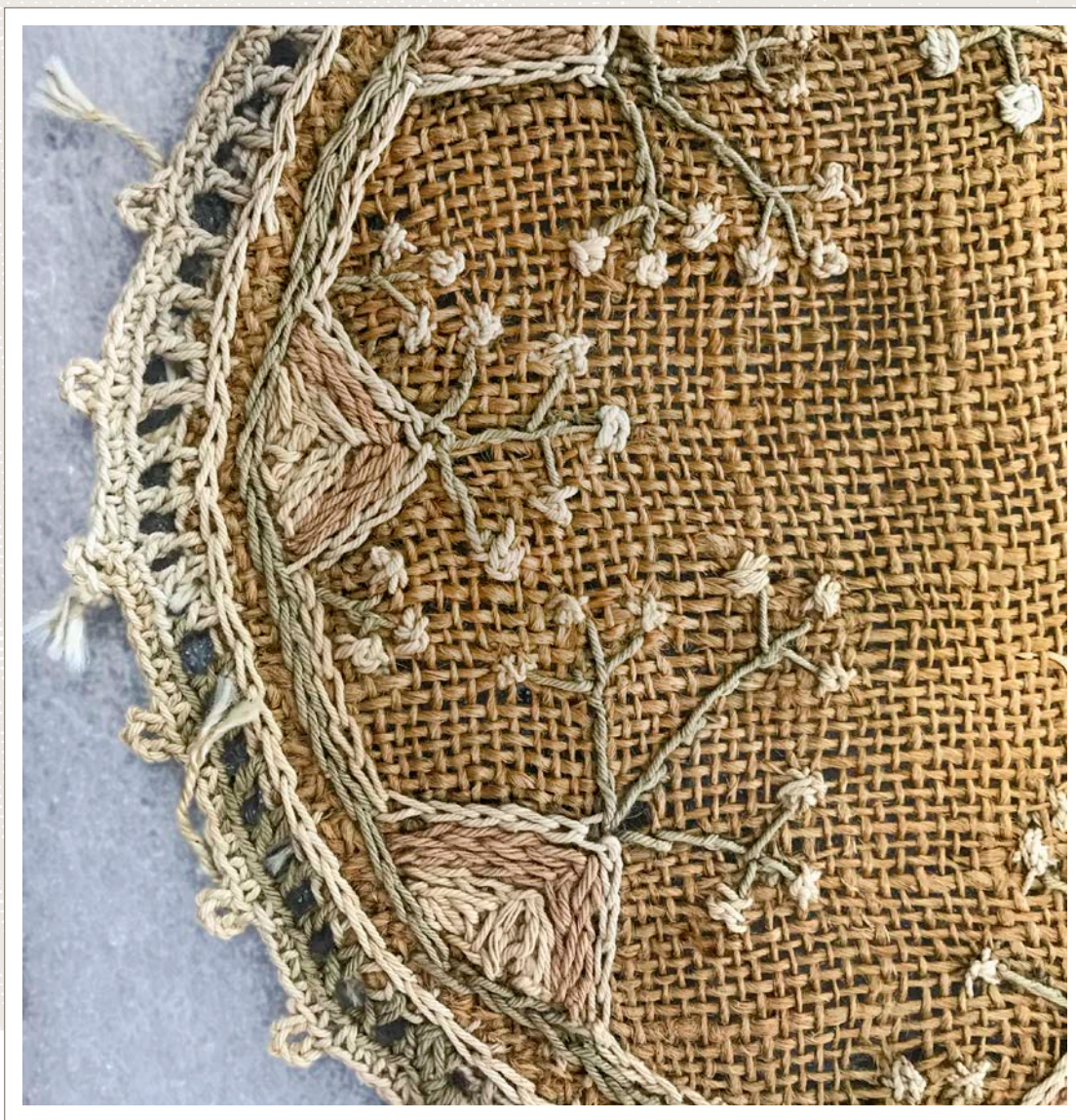
Handwash, pin to measurements while wet for blocking, and allow to air-dry. Weave in ends. Iron once dry using a pressing cloth and heat setting appropriate for the fiber used.

**HEATHER VAUGHAN LEE**, a frequent contributor to *PieceWork*, is a fashion historian focused on the late nineteenth through the twentieth centuries. She loves knitting and its ties to history. Her book *Artifacts from American Fashion* (ABC-CLIO, 2019) is available wherever books are sold. Learn more about her at [fashionhistorian.net](http://fashionhistorian.net).

# George Washington Carver

*Textiles by Extension*

NANCY NEHRING



Detail of a doily created with burlap and white, terra-cotta, and sage-green threads.

*Photos by Nancy Nehring and published courtesy of the National Park Service, Tuskegee Institute National Historic Site, Tuskegee Airmen National Historic Site, and the Selma to Montgomery National Historic Trail unless otherwise noted*

Most of us know George Washington Carver (about 1864–1943) as the famous African American agronomist from Tuskegee Institute (now Tuskegee University) who spent his career working to improve the lives of poor Southern farmers.<sup>1</sup> As head of the Agricultural Department at Tuskegee, he was instrumental in establishing and conducting educational outreach programs for rural farmers who were unable to leave their farms for a school term or to travel for night or weekend classes.

These programs could have been strictly limited to teaching about crops and livestock, but from their inception, Carver chose to take a broader approach by addressing the farm lifestyle in general. He included domestic topics in his programs, made possible by his own personal expertise. Carver's programs, including domestic topics, became models for land-grant college Experiment Station and Cooperative Extension programs. As an experienced needleworker, Carver developed a variety of beautiful and functional textiles that families could create with materials at hand.

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#### EARLY LIFE

George Carver's early life on a southwest Missouri farm owned by Moses and Susan Carver taught him both farming and domestic skills that he would

use throughout his life. He was born into slavery at the close of the Civil War.<sup>2</sup> During the short time between his birth and the end of slavery, he was kidnapped with his mother and sister and was returned to the Carvers "nearly dead with whooping cough" as he would later describe.<sup>3</sup> He and his brother, Jim, continued living with the Carvers, where George recovered slowly and would spend much of his time helping with domestic work. He would rely on these skills learned from Susan—cooking, laundry, and fancywork—to pay for the years of education that lay ahead.

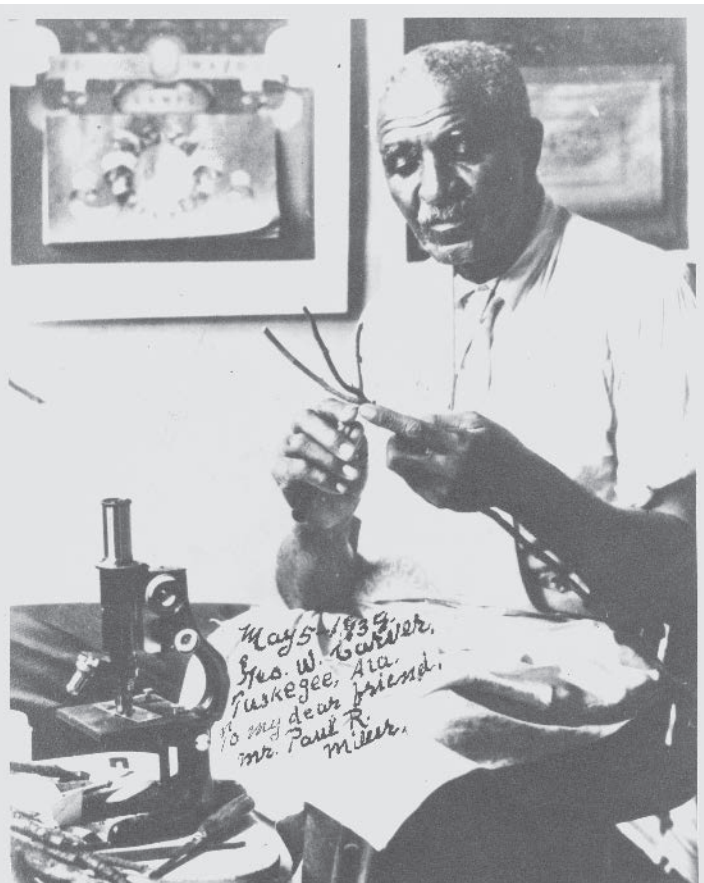
The 240-acre farm near Diamond Grove was outside the traditional cotton-growing regions to the east, and the Carvers raised field crops, poultry, hogs, dairy cows, and racehorses. They had an orchard with fruit and nut trees and a vegetable garden. The farm was successful and diverse, providing George with a hands-on education, but formal education was another matter. Moses and Susan taught George basic reading and writing but didn't have much schooling themselves. When he was eleven, the Carvers allowed him to go to the Neosho Colored School eight miles away, which he would later say, "simply sharpened my appetite for more knowledge." George would spend the next 20 years struggling to gain an education, moving from one town to another through Missouri, Kansas, and Iowa, searching for schools with more advanced curricula that would accept him.

By 1896, the now Dr. Carver had completed a master's degree in botany at Iowa Agricultural College (now Iowa State University) and was a member of the faculty. He turned down multiple offers to teach at southern colleges until he met Booker T. Washington (1856–1915). Washington was president of Tuskegee Institute and a leader in the African American community. He convinced Carver to come to Tuskegee to head the Agricultural Department, where he could use his position to "help his people."

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#### DR. CARVER IN ALABAMA

Carver had never been to the Deep South before he arrived in Tuskegee, Alabama. Following Washington's example of weekend trips into the country to recruit students, Carver set out on his own trips to better understand the state of agriculture in the South. He was shocked by the agricultural practices and the standard of living that he saw in



George Washington Carver examining a plant stalk. Carver used basketmaking techniques with plant materials, such as stems from cotton, okra, and wisteria, to make demonstration mats for his extension programs.

*Courtesy of United States Department of Agriculture*

many of the communities he visited.<sup>4</sup> At that time—30 years free from slavery—many farmers were those who had labored in cotton fields. Most formerly enslaved people with artisan or domestic skills had left the farms for better-paying jobs. Those who remained lacked many of the skills Carver felt were necessary for a well-run farm based on his early childhood on the Carver farm. Farmers frequently had acquired few skills for raising food through gardening or animal husbandry. They had no domestic skills, such as cooking, cleaning, and sewing, and had no training in healthcare topics, such as nutrition, sanitation, and sick care. With limited carpentry skills, housing had not improved either; farm families were still living in dismal, one-room shanties with dirt floors. He found that many of “his people”<sup>5</sup> were living in abject poverty.

Carver used a variety of methods, including demonstrations, fairs, and talks, to bring education to rural farm families. His earliest effort was simply to take a buggy full of tools and materials on his weekend trips, giving demonstrations along the way. This expanded into the Tuskegee Movable School and continued until 1944. Carver held agricultural fairs on the Tuskegee campus that were eventually incorporated into the Alabama State Fair. He gave talks and lectures to local groups. In all of these endeavors, he included demonstration textiles.

Textiles such as plain mats and rugs were helpful on a well-run farm, but Dr. Carver included colorfully dyed mats and embroidered doilies in his demonstration textiles. Carver was not only a scientist but an artist. When he first entered college, he had intended to become a fine art painter, and he must have found the dismal surroundings in the houses depressing. He introduced some simple artistic textiles into his extension programs to bring a little beauty into people’s homes. Carver realized that his clientele could not afford to purchase new materials so, calling on the frugality that his foster parents instilled in him, he created textiles from discarded and free materials. The textiles fell into two groups: recycled textiles and textiles from found plant materials.

### Recycled Textiles

Carver sought out used materials that were readily available for his textile demonstration pieces. Burlap was probably his most-used recycled textile. He used the fabric to make embroidered doilies, centerpieces, and table runners and raveled the thread for weaving and sewing projects. The burlap itself probably came

from worn-out cotton and tobacco shipping bags. Because it was loosely woven and scratchy, it wasn’t suitable for clothing. Another source of needlework thread was the heavy string used to stitch flour, cotton, and tobacco bags together.

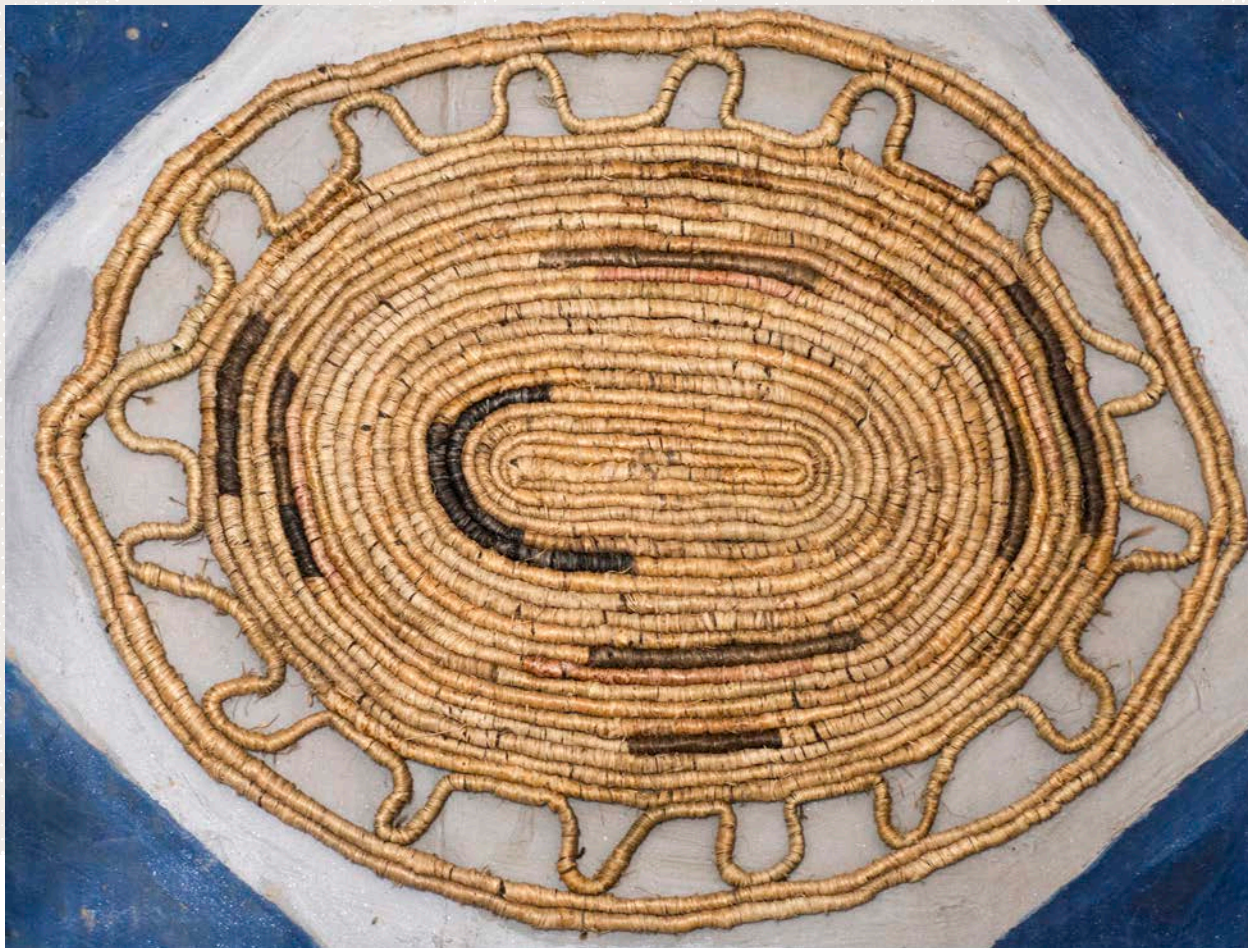
Demonstrations had to be simple, fast, and easy to remember, whether they were dyeing, embroidery, or weaving. Dyeing was a favorite technique because it brought a little color into otherwise drab lives. He demonstrated dyeing techniques using plant dyes and clay pigments sourced from local materials such as walnuts, mulberries, and ochre clay. Carver might dye any recycled or plant material to be woven into mats: burlap, string, leaves, or plant stems. He was an expert dyer, having learned natural dyeing methods from Susan Carver on the Carvers’ Missouri farm.

For embroidered pieces, he used only the simplest of stitches, those easy to teach and easy to learn. Carver relied on chain and stem stitches and cross-stitches to create elegant pieces. However, many of the doilies had an optional edge in crochet, which was a great passion of Carver’s.<sup>6</sup>

The weaving of mats and rugs required simple looms and simple weaving techniques. He made pin looms from recycled materials. Raveled burlap, string from bags, bits of yarn, and rag strips were all recycled as weaving materials. Most of the demonstration



Weaving demonstration by George Washington Carver using a pin loom made from recycled materials. The warp is raveled burlap from a burlap bag, and the weft is raveled burlap, strings, yarns, and rag strips.



Banana leaf mat by George Washington Carver made with coiled-basket techniques.

pieces were woven in plain weave, but he used at least one demonstration piece with uneven rows and multidirectional weaving, most likely to avoid dictating rules for beginners (see page 30).

### Waste Agricultural Textiles

Another source of material for textiles in Carver's extension work was agricultural waste, including such things as corn husks, cotton stalks, okra stalks, and banana leaves. He sometimes added hedgerow materials such as wisteria vines to these projects. For cotton stalks, okra stalks, and similar materials, the whole stalk might be used or the outer "skin" might be peeled off and used. Carver dyed these materials with local plant dyes just as he did recycled textiles. Demonstration projects were mostly mats that packed easily when traveling to and from demonstrations and were made using basketweaving techniques.

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### CARVER'S LEGACY

Carver's extension programs were extremely popular, and demand grew rapidly. By 1906, he obtained a dedicated wagon for the weekend horse-and-buggy

demonstrations, and the program was turned over to a United States Department of Agriculture (USDA) extension agent. Carver moved on to become head of agriculture research and the Experiment Station at Tuskegee. The Tuskegee Institute Movable School program added a full-time home demonstration agent in 1914 and a registered nurse in 1920.

Although Dr. Carver was no longer involved in the Movable School program, he continued to be in demand for talks and demonstrations. Church groups, women's clubs, and other organizations were interested in providing their members with ideas for recycling. In 1938, Carver sent a letter to Henry A. Wallace—whom Carver had known during his time in Iowa and who was now U.S. Secretary of Agriculture—that said in part, "I wish so much that you could have witnessed a demonstration that I gave before our Women's Club last Friday night. The subject of the demonstration was 'An Hour With Rags and Strings.' I had at least 30 pieces on exhibition, consisting of rugs, carpets, various types of weaving, many types of fibers, etc., made from things that we now throw away."

Although Carver himself published fewer than 50 Experiment Station Bulletins (none of them on recycling or textile topics), his work is evident in Cooperative Extension Service and USDA publications. Publications featuring recycled textiles were especially popular during the Great Depression and during and after World War II. These resources were, and continue to be, available to all. ❖

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#### NOTES

1. I include the entire farm family when using the term “farmer.” Before emancipation, about half of all slave farm labor in the cotton fields was performed by women.

2. For a discussion of slavery in southwest Missouri, see Diane L. Krahe and Theodore Catton, *Walking in Credence: An Administrative History of the George Washington Carver National Monument* (n.p.: National Park Service, 2014), 21–23.

3. George Washington Carver, “1897 or Thereabouts,” an original letter based on reflections of his early life. [nps.gov/gwca/learn/historyculture/index.htm](https://nps.gov/gwca/learn/historyculture/index.htm).

4. Black farmers in the Deep South after emancipation were either sharecroppers who owned no land or equipment and farmed for a portion of the crop, tenant farmers who owned some equipment

and rented land, or farmers who owned both land and equipment. Carver worked with rural people from all of these groups, but the vast majority of farmers were sharecroppers; they are the focus of this article.

5. I put “his people” in quotes here because Carver was from a very different socioeconomic background than sharecroppers around Tuskegee. Carver grew up on a middle-class farm, had an education, had work skills, and, at times, owned property. During the six years prior to moving to Tuskegee, he lived in middle-class white communities and held a respected position at the Iowa Agricultural College.

6. Nancy Nehring, “George Washington Carver: A Scientist’s Lifetime of Crochet,” *PieceWork* (Spring 2021): 18–22.

*Author’s Note:* This article would not have been possible without the assistance of Robyn Green Harris, Museum Specialist, Tuskegee Institute National Historic Site, and Curtis Gregory, Park Ranger, George Washington Carver National Monument, and I thank them.

**NANCY NEHRING** grew up on a farm in Iowa and regularly used Iowa State Cooperative Extension publications to improve her sewing and cooking skills. She still has several of them in her library.



Mats made by George Washington Carver using coiled-basket techniques and banana-leaf (*left*) and cotton-stalk (*right*) fibers.

# Cotton Field Doily

NANCY NEHRING

The Cotton Field Doily is my re-creation of an original, unnamed design by George Washington Carver. The original (accession number TUIN 1360) is in the collection of Tuskegee Institute National Historic Site, U.S. National Park Service. I visited the collection several years ago and, with the kind help of museum specialist Robyn Green Harris, was able to learn more about the original doily.

Carver made this textile and many others as models for his extension demonstrations (see page 28). The original doily would have been made from recycled materials: burlap from worn-out cotton or tobacco shipping bags and string used to stitch flour sacks.

The entire embroidery pattern uses only three stitches: chain, split, and blanket stitches. Carver had to teach people attending his demonstrations how to work the stitches in a short, one-time lesson. This

doily was originally finished with a blanket stitch around the outer edge, which is still in place, but Carver's favorite pastime was crochet, and he just couldn't resist adding a crocheted edge.

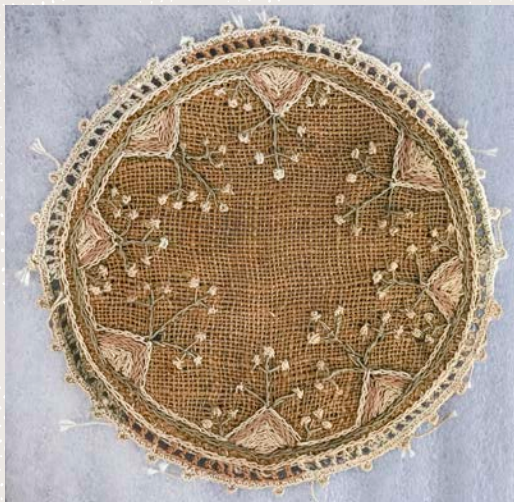
In keeping with the spirit of the original, my doily is made from an old gunnysack, but you can purchase burlap new. The pattern is a combination of surface embroidery and charted design. Because the thread count of burlap varies, you may need to adjust the size of the doily. If your burlap is 9 or more threads per inch (2.5 cm), you can use the pattern as is. At 9 threads per inch, your doily will be as shown. As the threads per inch increase, the distance between the triangle motifs increases and the open center area gets larger. If this is the case, you may want to drop down to size 10 crochet thread for the embroidery. If you have burlap that is 9 threads per inch and want a more open design, just start with a larger burlap circle and follow the instructions here. Burlap is loosely woven, so the work won't be perfect. Embrace the rustic look, which is a perfect fit for outdoor use when warm weather returns.

## MATERIALS

- ◆ Burlap, about 9 threads/inch (2.5 cm), 15" (38.1 cm) square
- ◆ Aunt Lydia's Crochet Thread, Fashion 3, 100% cotton, 100 yd (91.4 m) per ball, ½ ball of Natural, small amount of Sage, small amount of Warm Rose
- ◆ Scrap paper, 15" (38.1 cm) square
- ◆ Cardboard, 20" (50.8 cm) square, or large cutting mat or other surface you can tape and cut on
- ◆ Pencil
- ◆ Compass, or pin placed at the center and tied to a pencil with string the length of the radius
- ◆ Masking tape
- ◆ Water-soluble disappearing marker
- ◆ Craft knife
- ◆ Dressmaker's shears
- ◆ Embroidery scissors
- ◆ Brown sewing thread to match the burlap
- ◆ Needles: #7 sharp sewing needle, #18 tapestry needle
- ◆ Crochet hook, #4 (2 mm) steel
- ◆ Serger or zigzag sewing machine (optional)

**Finished measurements:** 12" (30.5 cm) diameter

*Visit [pieceworkmagazine.com/abbreviations](http://pieceworkmagazine.com/abbreviations) for terms you don't know and [pieceworkmagazine.com/basic-embroidery](http://pieceworkmagazine.com/basic-embroidery) -stitches for illustrations of the embroidery stitches.*



## Carver's Original Doily

The original is held by the Tuskegee Institute National Historic Site, part of the U.S. National Park Service. The George Washington Carver Museum opened in 1941 on the Tuskegee Institute campus. To learn more about the museum, visit [nps.gov/tuin](http://nps.gov/tuin).

Embroidered burlap doily with crocheted edge designed by George Washington Carver, accession number TUIN 1360.  
Photo by Nancy Nehring



Nancy Nehring invites us to re-create one of George Washington Carver's original extension models. Designed as a teaching tool, this beautiful doily can be created with simple stitches and recycled materials.  
*Photos by Matt Graves unless otherwise noted*

## INSTRUCTIONS

### Prepare the Burlap

With the compass (or pencil and string), on the 15" (38.1 cm) paper, draw three concentric circles with 10", 12", and 14" (25.4, 30.5, and 35.6 cm) diameters. Cut out the circle along the 14" (35.6 cm) diameter line.

Keeping the grain of the burlap square, tape the burlap to the cardboard, cutting mat, or flat surface.

Mark the center of the burlap with disappearing marker.

Center the paper pattern on the burlap. Trace around the 14" (35.6 cm) circle with the disappearing marker. Remove the paper pattern and cut the pattern along its 12" (30.5 cm) circle. Again, center the pattern on the burlap and trace around the circle. Repeat for the 10" (25.4 cm) circle. The side of the burlap with the marked circles is the right side.

Burlap raveling easily, so cut the tape at the edge of the burlap with a craft knife to remove the burlap from the surface.

Serge or zigzag stitch and trim along the 14" (35.6 cm) circle. If you do not have a serger or sewing machine, cut the burlap along the 14" (35.6 cm) circle and handle it carefully to avoid raveling.

Place the burlap on a flat surface with the right side down. Working around the piece, fold on the 10" (25.4 cm) line. Pin at the fold and at the cut edge, evenly adjusting the excess fabric at the cut edge between pins. About 3" (7.6 cm) at a time, cut the burlap ½" (1.3 cm) outside of the 12" (30.5 cm) line. Fold the cut edge under at the 12" (30.5 cm) line and overcast with brown sewing thread, working under 1 thread of right-side fabric and 2 or 3 threads of the fold. Place the stitches ⅛" to ¼" (3.2 to 6.5 mm) apart. Excess fabric will easily compress into a flat hem. After the hem is finished, steam-press the doily.

### Edging

Work loosely! Do not pull the embroidery stitches so tight that they distort the weave of the burlap. All embroidery is worked on the right side of the doily. Use a single strand of Fashion 3 thread and a #18 tapestry needle.

With Sage, work a round of chain stitch over about 3 threads of burlap ½" (1.3 cm) in from the outer edge. Adjust the length of the chain stitches near the end for an even look.

Next, work the outer edge over the fold with Natural. If you do not crochet, work a round of blanket stitch over the fold 2–3 threads in from the edge and 3

threads spaced along the edge of the burlap. If you do crochet, work the following edging over the fold:

*Rnd 1:* Insert hook 2–3 threads from fold, yo, pull thread through burlap and complete sc, adjusting placement of stitches around the edge so the crocheted edge lies flat, \*ch 1, sk 2–3 strands of burlap along the edge, sc; repeat from \* around doily, ending with ch 1, sk 2–3 strands, sl st in first sc to join.

*Rnd 2:* Adjusting tension or hook size so crochet lies flat, ch 4 (counts as first dc, ch 1), [sk next ch-1 sp, dc in next sc, ch 1] around, sl st in 3<sup>rd</sup> ch of beginning ch 4 to join.

*Rnd 3:* Ch 2 (counts as first sc), \*[sc in next ch-1 sp, sc in next dc] 3 times, ch 4, sl st in same dc as last sc (picot made); repeat from \* around, sl st in 2<sup>nd</sup> ch of beginning ch 2 to join. Fasten off. Adjust tension or stitch pattern so that crochet lies flat. Adjust ch-4 picot placement making picots 2–4 dc apart near the end of the round so 2 picots aren't right next to each other.

The tips of the blanket or crochet stitches worked over the fold will be uneven. To hide the unevenness, work a round of chain stitch in Natural over about 3 threads of burlap just inside the outer edge over the tips of the blanket or crochet stitches.



Like the original textile, Nancy's re-creation incorporates basic embroidery stitches and a crocheted edge.

Figure 1a Triangle on straight grain

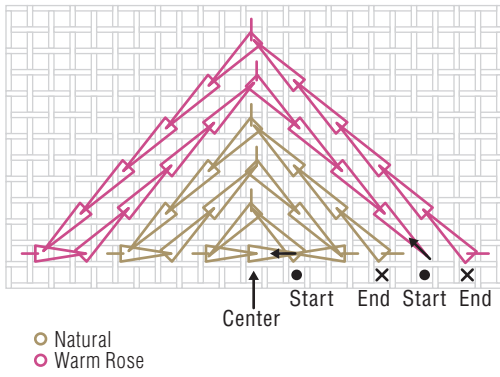
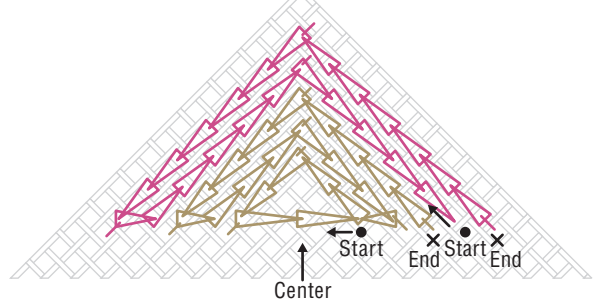


Figure 1b Triangle on bias grain



Stitch key

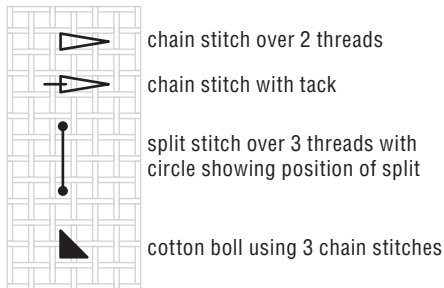
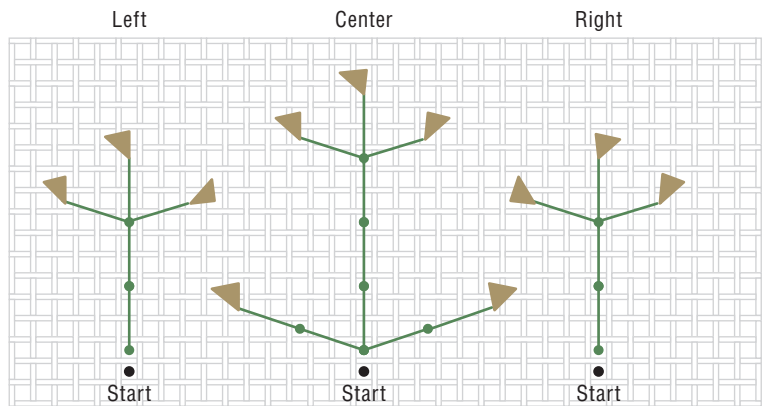


Figure 2a Cotton plants on straight grain



○ Natural  
○ Sage

Figure 2b Cotton plant on bias grain

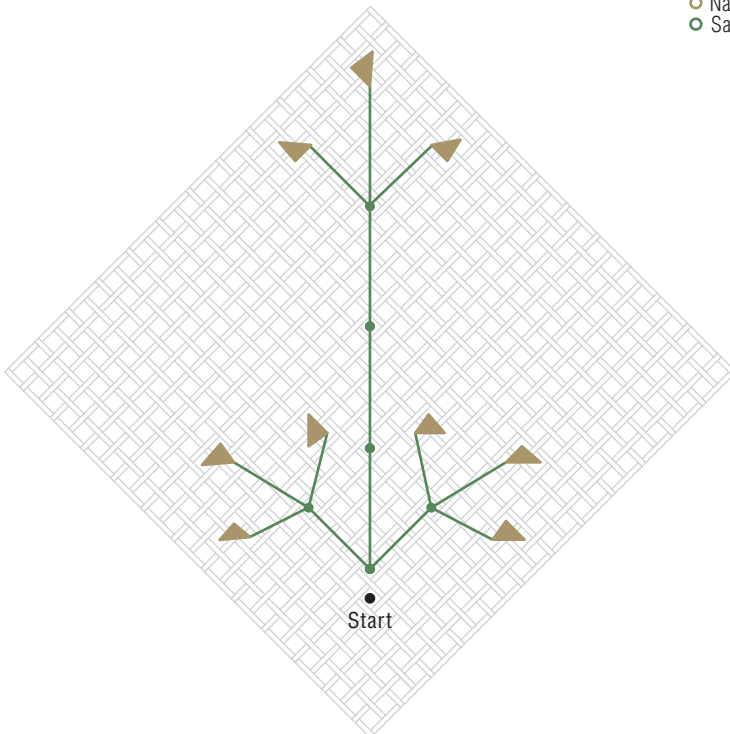
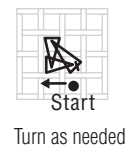


Figure 3 Cotton boll





Simple stitches, such as chain and stem stitch, are used to create the field and cotton-plant motifs.

### Embroidery

Next, work the triangles. Four of these are worked on the straight grain and four on the bias. Divide the doily into eighths: First mark quarters by folding the doily in half along the grain each direction and then matching two adjacent quarter marks to locate the four bias positions. Triangles are placed immediately above the Sage chain stitch and centered on the marks.

Stitch the triangles on straight grain according to the diagram in Figure 1a using Natural for the first 3 rows and Warm Rose for last 2 rows. Work over 2 threads or 2 intersections of burlap. At each turn, stitch over 1 thread at the tip of the chain stitch to tack it in place so the chain stitch doesn't collapse.

Stitch the triangles on bias grain according to the diagram in Figure 1b. Work over 2 threads of burlap except for turns along the bottom; work over 1 intersection as shown in the diagram. Tack the tips of the triangles on straight grain.

With Natural, work chain stitch along inner edge of the Sage chain stitch and triangles, generally over 3 threads of burlap but adjusting to 2 or 4 threads as necessary to fit in the chain stitches.

Now make the cotton plants. Remember, work loosely! Stitch the plants on straight grain (Figure 2a) with Sage, placing the center plant at the triangle peak. The left and right plants are placed where the triangles and Sage chain stitch meet. The stitches for the stem are worked in split stitch, which helps lock these long stitches into place. Begin with the center plant with a split stitch at the bottom of the stem and work to the top. Do not split the stitch at the very top but return to the previous split on the back and go through the split again. Stitch one branch from this point, again returning to and going through the split. Repeat for the other branch. On returning to the center after the second branch, do not go through the split but come up next to it. Work a running stitch over 1 or 2 threads down along the same line used to work the main stem (the running stitches will fall behind the split-stitch stem) and come up through the beginning split. Work the side branches. Because these stitches are so loose, it is easy for them to come undone, so tie off the thread tails on the back and weave in the ends. Complete left and right plants using the same method. The cotton plants on bias grain (Figure 2b) are worked the same as those on straight grain, but you need to work even more loosely, paying particular attention not to distort the weave of the burlap.

The cotton bolls are worked with 3 chain stitches in a triangle (Figure 3). The idea is to work 2 chain stitches over 1 thread of burlap and the third stitch over an intersection of 2 threads. You can work the 3 stitches in any order. These chain stitches are not tacked at the tips, causing the chain stitches to collapse on themselves making a jumbled "knot." Run the thread from boll to boll only where bolls are close to each other. The loose weave of the burlap lets long strands of embroidery thread on the back show through, and long strands can distort the weave. Tie off the thread ends on the back and weave the ends only through the boll. Cut ends to ¼" (6.5 mm).

### Finishing

Steam-press the doily flat to finish.

**NANCY NEHRING** learned to embroider from extension booklets. One of her favorite beginner booklets is *Decorative Stitches* by Mildred B. Elder (1924, Home Economics Bulletin No. 50, Iowa State College of Agriculture and Mechanic Arts Extension Service, [https://digital.library.cornell.edu/catalog/hearth7134598\\_8325\\_041](https://digital.library.cornell.edu/catalog/hearth7134598_8325_041)), given to her by her grandmother.



"First Plako on tape—Made by hand in shop under direction of Mr. Sundback. 9/25/08" Object from the personal records of Gideon Sundback. Courtesy of Special Collections, Pelletier Library, Allegheny College

# Who Invented the Zipper?

MIMI SEYFERTH

Colonel Lewis Walker (1855–1938), a Pennsylvania lawyer and investor, and Gideon Sundback (1880–1954), a Swedish electrical engineer, were an unlikely pair. But together they developed the reliable and cost-effective automatic fastener now known as the modern zipper. Sundback, who is widely recognized as the inventor of the modern zipper, obtained U.S. patents for both the modern zipper and the precision equipment required to manufacture it. Relying on Sundback's patents, Walker established the company that became the preeminent zipper manufacturer in the United States.

Walker was born on June 4, 1855, in Wellsville, Ohio. He trained as a lawyer after graduation from Allegheny College in Meadville, Pennsylvania, acquiring the lifelong title of colonel through his service in the Pennsylvania National Guard. He first encountered a precursor to the modern zipper at the 1893 Chicago World's Fair where Whitcomb Judson (circa 1844–1909), an inveterate inventor, promoted what he called a "Clasp Locker or Unlocker for Shoes." While Judson was not the first inventor of an automatic

fastener, his device was unique in employing a slide to join clasps placed on opposite sides of an opening.<sup>1</sup>

The illustration accompanying Judson's 1891 patent application shows a high-top shoe with rows of bulky clasps running along the flaps on each side of the shoe. A "fastening guide" ran between the rows of clasps, designed to pull together each pair of opposing clasps. In a second patent application submitted in 1892, Judson substituted flexible wire hooks for the bulky clasps. The United States Patent Office issued patents for both applications in 1893, even though neither patent produced a serviceable product.

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## THE UNIVERSAL FASTENER COMPANY

Walker, who had previously invested significant sums of his wife's family fortune in Judson's unsuccessful plans for a pneumatic railway, decided to pursue commercial development of Judson's fastener. To that end, Walker founded the Universal Fastener Company in Chicago in 1894 and later moved the company to Hoboken, New Jersey.

Even after his first two patents were issued, Judson continued to modify his fastener designs. In his application for a "Separable Fastener" patent, which was issued in 1905, Judson specified that the

fastening elements would be opposing hooks and eyes clamped on opposite sides of a beaded cloth tape that could be sewn into the final application. Judson called his new design the C-curvity fastener. Walker renamed his company the Automatic Hook and Eye Company to reflect Judson's new design.

While efforts to manufacture Judson's prior designs faced insurmountable technical problems, the Automatic Hook and Eye Company began to produce the C-curvity fastener in its Hoboken factory in 1905. Traveling salespeople marketed the C-curvity fastener for use in tailoring and dressmaking under the slogan, "A Pull and It's Done!" Customer satisfaction with the C-curvity fastener was low, however, because it was difficult to install and cumbersome to use. Notably, it had to be removed for laundering, the

fastener easily separated when worn, and the sharp steel fastening elements tended to tear fabric.

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#### GIDEON SUNDBACK'S EARLY DEVELOPMENTS

To address the problems the C-curvity fastener presented, Walker hired Swedish engineer Gideon Sundback. Born Otto Fredrik Gideon Sundback on April 24, 1880, to a prosperous farm family in Sweden, Sundback studied electrical engineering in Germany. In 1905, after serving in the Swedish army, he immigrated to the United States to work for the Westinghouse Electric and Manufacturing Company in Pittsburgh. But Sundback did not stay long at Westinghouse; he left in the summer of 1906 to work for the Automatic Hook and Eye Company.

After joining the company, Sundback first attempted to increase the flexibility of the C-curvity device by developing new, substantial eyes for the device to make it less likely that the hooks would disengage during use. He named the new device, introduced in 1908, the Plako fastener. Although an improvement on the C-curvity device, the Plako suffered from similar problems as its predecessor.

Undeterred, in 1912 and 1913, Sundback continued to try to devise an improved fastener. In his own words, he was "fed up with hooks and eyes," and Sundback worked on hookless fasteners for which patents were ultimately issued in 1917. The first of these designs, the Hookless Fastener #1, used a slider to force the corded edge of the cloth tape on one side of the fastener between the jaws of the steel clamps on the other side of the fastener. However, the design was never put into production because the corded tape would wear out with use. Nevertheless, the promise of a hookless fastener so intrigued Walker that he disbanded the Automatic Hook and Eye Company and, in May 1913, established the Hookless Fastener Company in his hometown of Meadville.

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#### PROMISING HOOKLESS FASTENERS

By December 1913, Sundback had designed the Hookless Fastener #2, which was identical to the modern metal zipper. The Hookless Fastener #2 was unique in size, style, and placement of the teeth, or "scoops" as they are known by zipper manufacturers, located on each side of the cloth tape. Whereas the C-curvity and Plako fasteners featured four scoops per

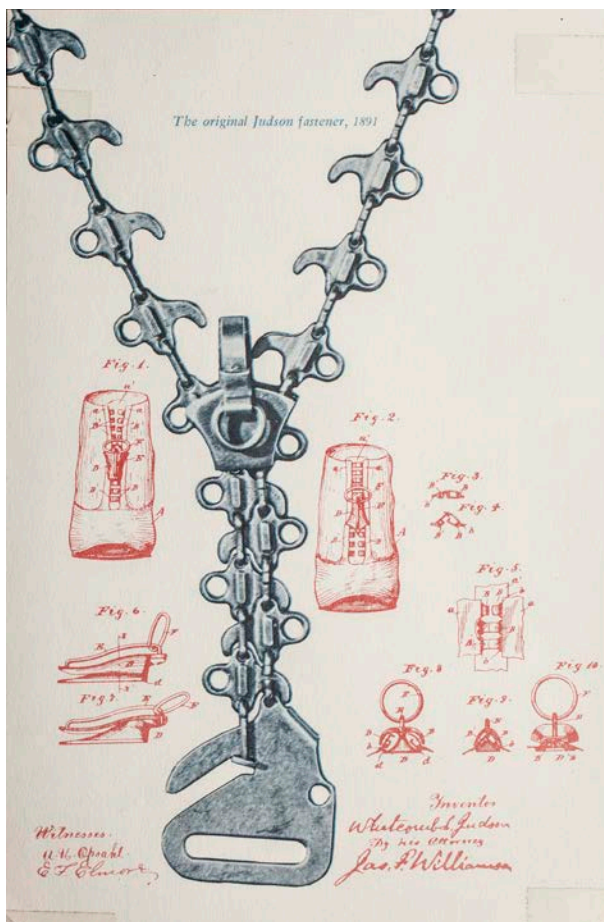
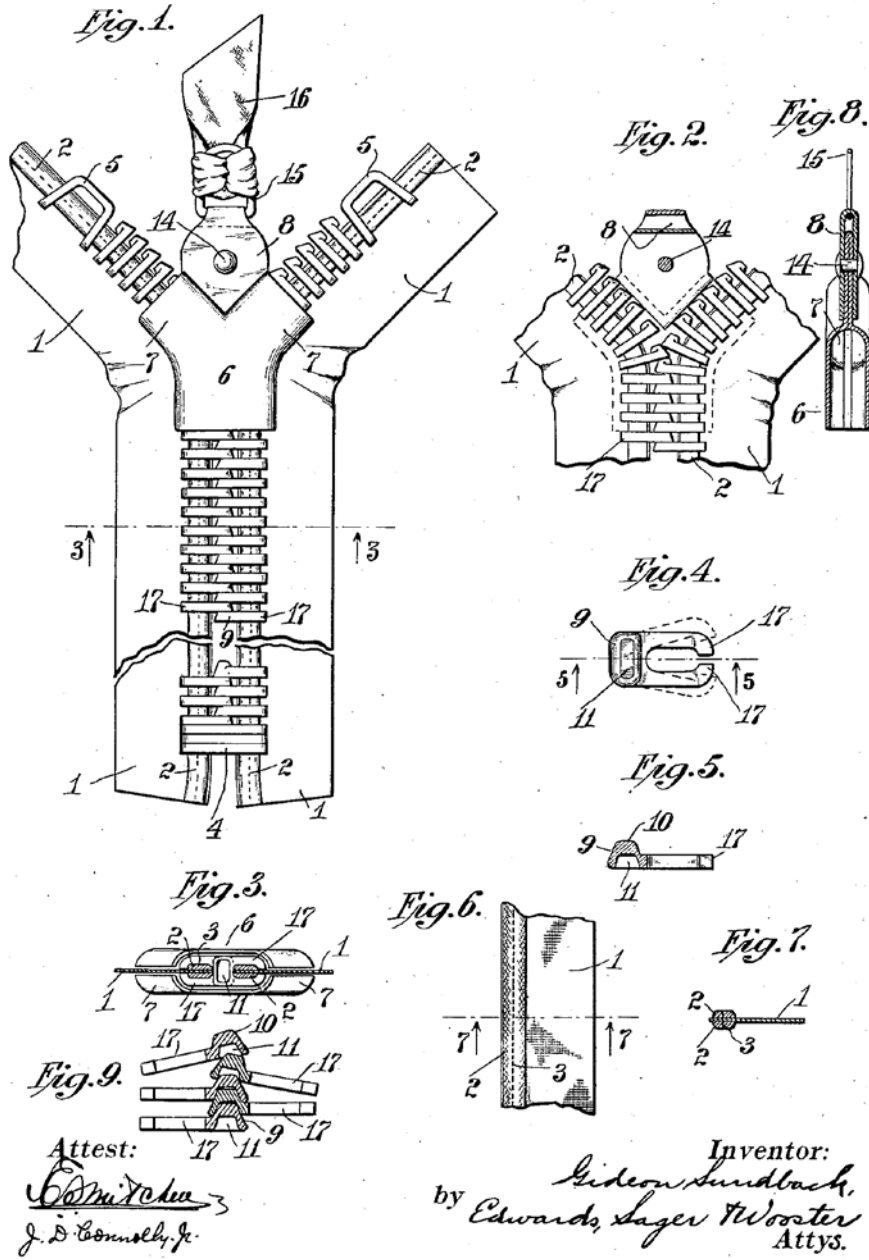


Illustration based on the original patent drawings for W. L. Judson's patent for the "Clasp Locker or Unlocker for Shoes." Text reads, "The original Judson fastener, 1891." Object from the personal records of Gideon Sundback.

*Courtesy of Special Collections, Pelletier Library, Allegheny College*

1,219,881.

Patented Mar. 20, 1917.



Patent illustration of Gideon Sundback's Hookless Fastener #2, patented on March 20, 1917, as the "Separable Fastener," number 1,219,881.

Courtesy of the United States Patent Office

inch, the Hookless Fastener #2 featured 10 or 11. Each scoop of the Hookless Fastener #2 had an oblong projection on one side and an oblong recess on the other. The scoops were staggered such that an individual scoop on one side of the tape would fit tightly between two scoops on the other side of the tape, with the projection on one side of the scoop fitting into a recess

in an opposing scoop and the recess on the other side of the scoop receiving the projection from another opposing scoop. A Y-shaped slider served to interlock or disengage the opposing scoops.

Because the Hookless Fastener #2 possessed a lateral flexibility that the C-curity and Plako fasteners lacked, the Hookless Fastener #2 was not susceptible

to the separation problems of its predecessors. This flexibility was attributable to the oblong shapes of the projections and recesses that, once interlocked, could not easily swivel apart when the fastener was twisted or bent.

Sundback then designed manufacturing equipment with sufficient precision to mass-produce the Hookless Fastener #2. By 1921, Sundback had received six patents relating to hookless fasteners and the machinery for making them. Between 1921 and 1942, he received 78 additional patents. Under his employment contract with the Hookless Fastener Company, Sundback retained the foreign rights to these patents.

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FROM HOOKLESS FASTENER  
TO ZIPPER

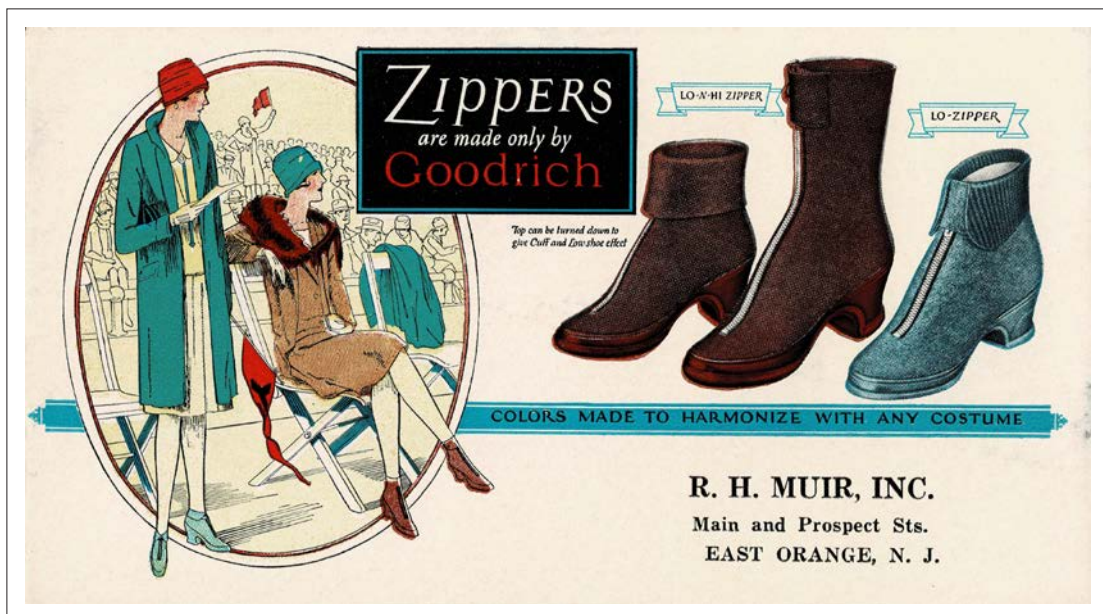
With manufacturing of the Hookless Fastener #2 under way in the fall of 1914, Walker recruited his two sons—Lewis Jr. (1881–1935) and Wallace (1887–1939)—to spearhead an active marketing campaign to generate public demand for the new device. Walker’s sons adopted a two-pronged marketing approach. First, they focused on the New York garment district, trying to convince clothing manufacturers to incorporate the Hookless Fastener #2 in their garments. Second, they encouraged department

store buyers to stock clothing featuring the new device. These efforts were largely unsuccessful. While clothing manufacturers and buyers might show initial interest in the Hookless Fastener #2, they ultimately were not interested in trying a new product; they feared that the Hookless Fastener #2 shared the same shortcomings as the Plako device, and they objected to the relatively high cost of the Hookless Fastener #2 versus other available fasteners, such as hooks and eyes, snaps, and buttons.

The Walkers struggled to find novel applications for the Hookless Fastener #2. One unanticipated demand for the fasteners arose during World War I (1914–1918) when a New York tailor designed a money belt utilizing the hookless fastener. These money belts were enormously successful, particularly among U.S. Navy sailors, whose uniforms lacked pockets.

Hookless fasteners were also used by leather companies in Gloversville, New York, as closures on tobacco pouches. Sales of the pouches were widespread, with Gloversville leather manufacturers purchasing approximately 70 percent of the Hookless Fastener Company’s output for several years.

Then, in the 1920s, the B. F. Goodrich Rubber Company began to employ hookless fasteners as closures for its rubber galoshes. Goodrich’s president was so enthusiastic about the new device that he



Promotional ink blotter stating, “Zippers are made only by Goodrich.”  
Photo by Kate Larson



Gideon Sundback in 1937 laying the cornerstone at a building site for Lightning Fasteners in St. Catharines, Ontario, Canada. Courtesy of St. Catharines Museum, St. Catharines Standard Collection, S1937.17.2.1

renamed Goodrich's rubber boot (previously known as the Mystik boot), calling it the Zipper based on the sound the fastener made when it was closed and opened. The public quickly adopted the term "zipper" as the generic name for the hookless fastener.

As the only manufacturer of zippers in the United States between 1917 and 1926, the Hookless Fastener Company enjoyed increasing success, while the Walkers continued to push to find new uses for the zipper. In 1929, Sam Kinney (1888–1964) replaced Lewis A. Walker Jr. as sales manager and soon instigated an aggressive campaign to use zippers in children's clothing based on child psychologists' theory that children would become self-sufficient if they could dress themselves, something children could do more easily with zipper fastenings than with buttons or snaps.

Zippers also became more acceptable in adult clothing during the 1930s. The zipper conclusively won what Kinney described as the "battle of the fly" on men's trousers when Edward VIII (1894–1972), then the Prince of Wales, began wearing pants with zippered flies. Women's haute couture of the 1930s also featured zippers as design elements in the slim silhouettes of that period. The Paris designer Elsa Schiaparelli (1890–1973) even introduced plastic

zippers dyed in special colors as ornaments on evening dresses in her 1935 collection.

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#### TALON INC.

Colonel Walker continued as the head of the Hookless Fastener Company through its 1937 reorganization into Talon Inc., a name intended to invoke the strength of an eagle's claws. On January 24, 1938, Colonel Walker died at age eighty-two.

Sundback retired from Talon in 1939. Having retained *inter alia*, the Canadian rights to his patents, Sundback had become president of a Canadian zipper manufacturer, Lightning Fastener Ltd., in 1925. In 1947, he transferred his interests in Lightning Fastener to Talon and became a member of Talon's board of directors. In 1950, the Royal Swedish Academy of Engineering Sciences awarded Sundback its Gold Medal. He died on June 21, 1954, at age seventy-four.

In the decades following Sundback's death, Talon continued to lead the U.S. zipper market, even as it faced increased competition from the new zipper manufacturers and assemblers that emerged after Sundback's patents expired. However, in the 1970s, Talon's market position was challenged by YKK, a Japanese zipper manufacturer

that had established major zipper manufacturing plants in the United States. By the 1980s, YKK's U.S. sales exceeded Talon's.

Today, with less than 3 percent of the clothing purchased in the United States produced domestically, few zippers are manufactured in the United States. Talon's current owners have moved its manufacturing operations to Asia. The historian Robert Friedel perhaps best encapsulated the saga of the zipper when he described the zipper as "an invention made in America, perfected and sold by American businessmen, and at century's end, quite out of the control of American industry."<sup>3</sup> ❖



One of many United States Department of Agriculture manuals containing designs and advice for creating children's clothing that supported "attempts at self-dependence." This 1929 manual describes "sliding fasteners" as closing "more securely and tightly than any other kind" of closure.<sup>2</sup>

## NOTES

1. Elias Howe (1819–1867), the inventor of the sewing machine, obtained a U.S. patent in 1851 for a garment fastener identified as an "Automatic, Continuous Clothing Closure." However, while the illustrations for Howe's fastener resemble a modern zipper, his device was actually a drawstring connected to a series of clasps.

2. Bess M. Viemont, *Play Suits for Winter* (Washington, D.C.: U.S. Department of Agriculture, leaflet no. 54, 1929): 5.

3. Calvin Woodward, "Check Your Fly: Author Figures There's a Story in the Zippering of America," *The Daily InterLake*, November 3, 1994, D1.

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**MIMI SEYFERTH** is an attorney who lives outside Washington, D.C. She would like to thank Christopher Bakken, an English professor at Allegheny College in Meadville, Pennsylvania, for introducing her to the life of Gideon Sundback.

# Obi: Tied Up in Beautiful Knots

REBECCA J. MARTIN



Long enough to wrap around a waist twice and then shape into an intricate knot, these traditional Japanese sashes are useful as well as artistic. Hand-tinted gelatin silver print, nineteenth to twentieth century, Japan. *Courtesy of the Minneapolis Institute of Art*

**M**ost westerners who visit Japan expect, and hope, to see kimono-clad women strolling the streets doing their shopping. Over many decades, successful Japanese marketing campaigns have presented the kimono as a cultural icon and a national treasure. Yet, despite their knowledge of kimono, westerners are less likely to have heard of obi—the delightfully ornate tie that holds the garment together.

Obi are wide sashes that secure the kimono's left-over-right wrap front. Functioning as belts that close

the opening as well as hold up the garment's excess length, they attract the eye with elaborate designs, while also complementing the colors and motifs on the kimono itself. Compared with Western belts, obi are quite long, usually 10 to 12 feet and sometimes over 13 feet. Their width also varies somewhat. I've owned about 20 obi over the years, most close to 12 inches wide but none exactly the same length.

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## TIES TO KIMONO HISTORY

Obi are literally and figuratively tied to the kimono. Since the early nineteenth century, wearing a kimono without an obi would be a breach of etiquette—and not just a cultural error, but an aesthetic one.

A kimono ensemble isn't complete without an obi around the waist, functioning as a closure and an artistic palette.

Numerous resources discuss the kimono evolving over centuries from short, loose-fitting robes called *kosode*, whose shape was largely borrowed from Chinese court robes. These loose-fitting garments had rectangular body and sleeve panels and lacked darts or gussets for shaping—very similar to the modern kimono. *Kosode* were held closed by narrow ties worn around the hips and knotted in front.

The obi we see most commonly today appeared on the scene after large, fluttering kimono sleeves came into vogue in the late eighteenth and early nineteenth centuries. Because extra wide sleeves are difficult to manage when fully attached to a garment, seamstresses detached the sleeves at the side seams (a feature still seen on kimono today). This



The *darari* obi knot requires an extra long obi because of its tails. This style of knot is usually worn only by dancers or actors.

Courtesy of Nullumayulife via Flickr

gave obi room to expand, and by 1800, 12-inch-wide obi provided a canvas on which weavers could splash breathtakingly intricate designs. The quality and complexity of kimono and obi signaled the wearer's occupation and status.

Over time, obi knots became more complex and moved from the front of the wearer's body to the back, where they wouldn't interfere with arm movement. On the back, they could also draw attention to the elaborate hairstyles worn by courtesans.

By design and construction, kimono and obi present the wearer's body as almost perfectly cylindrical from the front. Most kimono wearers even pad their bodies to hide their natural curves. Instead of the wearer's figure being the focal point, the emphasis is on the colors, weaves, and motifs of the fabrics.

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#### HOW TO WEAR AN OBI

If you've never handled an obi, you'd likely be surprised by its heft. Many are lined to create stiffness; this gives substance when the obi's ends are tied into a knot. Brocade and tapestry fabrics are heavy to begin with, and then add a backing of similar weight and quite a bit of length, and you begin to understand why wearing these belts requires skill.

While Japanese traditional dress is beautiful, it's also complex, with rules governing the wearing of kimono and obi. Obi with gold or silver threads are almost always for formal occasions, such as weddings or coming-of-age ceremonies. Rarely worn today, *maru* obi require real skill to tie because of their width and stiffness. The least formal are called *hanhaba*, and are easy to handle because they're narrow, unlined, and supple. Between these two extremes are a range of options. The narrow *nagoya* and the formal *fukuro* are most common. *Nagoya* has a thin section for wrapping around the waist and a wide end for tying into a bow or knot. The only patterned cloth sections (that is, expensive) are those that are visible when worn, making this an economical choice. *Fukuro* are formal and typically tied into complex bows. They're wide along the entire length, although sometimes made with sections of less expensive fabric that will be hidden when worn.

A compilation of the hundreds of known obi knots would fill a book. Generally, the more formal the occasion, the more intricate the knot. Instructors use clips and ties to hold the obi in place while they work. One of the ties, an *obi-age*, is artfully tucked so it



Weavers in Kyoto's Nishijin district perfected a technique of introducing flashy gold or silver leaf into their obi. This involves gluing metallic foil to paper, shredding it, and then weaving the resulting strips as they would yarn.

Photo by Rebecca J. Martin



Sash (Obi). Silk, brocaded with metal thread; Edo or Meiji period, nineteenth century, Japan. 58½ × 11½ inches (148.6 × 29.2 centimeters) (1921.1145.b)

Courtesy of the Cleveland Museum of Art

## Virtual Visit to Nishijin Workshops

“How to Make Nishijin Okamoto Silk Fabric with Golden Designs.” Nishijin Okamoto, [youtube.com/watch?v=ppkzUA2x-NY](https://www.youtube.com/watch?v=ppkzUA2x-NY)

“Nishijin Ori Weaving: Japan Traditional Crafts Aoyama Square.” Japan Concierge Inc., [youtu.be/B3JdxI9e0yg](https://youtu.be/B3JdxI9e0yg)

“Kyoto Walkabout: Nishijin Ori.” Hinode Visuals, [youtube.com/watch?v=6qyYe4zu59M](https://www.youtube.com/watch?v=6qyYe4zu59M)

peeps above the sash on the front. A board or stiffener known as an *obi-ita* is worn around the waist beneath the sash. Complex knots often require an *obi makura*, or cushion, to bulk them up; the boxy *taiko* knot is one example. And an obi is usually finished with a tasseled cord called an *obi-jime*. For those who don't have months (or even years) to devote to learning how to properly tie an obi, you can find pre-tied sashes with hook-and-eye fasteners.

### NISHIJIN DISTINCTION

If you're unsure whether the obi you've purchased is suited to formal occasions, chances are very good if it's silk, made of the same brocade or tapestry fabric on both front and back, and has interwoven gold or silver threads. Often these “threads” are gold or silver leaf that has been glued to high-quality paper, shredded, and then woven into obi. This technique was perfected at Nishijin, a district in Kyoto famous for its luxurious formal obi since the fifteenth century.

Nishijin's weavers are renowned for producing sculptural fabrics—brocades woven on Jacquard and power looms, and a type of tapestry called *tsuzure*, or “fingernail weaving,” in which the weaver's index fingernails are filed like sawteeth and used as a comb to tamp in the weft. Weavers take years to master the highly skilled *tsuzure* technique; the weaver places an original drawing of the design beneath the warp on the handloom and follows it entirely by eye.

Nishijin obi often sport seasonal motifs that are clues to what time of year they should be worn—for example, chrysanthemums in autumn and cherry

blossoms in spring. While many people associate bamboo with kimono, scholars indicate that the motif was originally Chinese and adapted by Japanese designers and exporters during the Western Japonisme craze at the end of the nineteenth century. Mei Mei Rado's excellent article, "The Hybrid Orient: Japonisme and Nationalism of the Takashimaya Mandarin Robes," explores the relationship between Japan's search for national identity and Western markets during that time.

The Nishijin district hosts all steps in the obi production process, including design, dyeing of silk threads, warping, and weaving. Many weavers work in their homes or small factories, and some demonstrate their art to the public at the Nishijin Textile Industry Association (see Resources). Historian Tamara Hareven made contacts through the organization and interviewed two hundred Japanese weavers during the 1980s. She discovered many who were disillusioned at the piecemeal prices they earned from manufacturers and wholesalers, while the latter turned around and marked up the textiles dramatically.

By 1990, the average Japanese woman could no longer afford a high-end Nishijin obi, sold in Tokyo department stores for the equivalent of US\$10,000. As consumer demand declined, the price of silk yarn remained high. Sadly, the demand for Nishijin obi has

steadily decreased, and many weavers have retired and not been replaced.

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#### FASHION - FORWARD

As obi and kimono are worn together, their popularity waxes and wanes together. Kimono culture has been eroding since at least the mid-twentieth century. During World War II, the Japanese government frowned on the wearing of silk garments as excessive. Postwar, while the country rebuilt, many of its citizens donned styles worn by the occupiers and common to the West's movies and television programs. By the 1960s, Japanese women who wished to wear traditional garments had to enroll in academies for instruction because the kimono code had skipped a generation.

But these academies tended to reinforce the notion that kimono and obi could only be worn if the wearer had encyclopedic knowledge. Is this obi too formal for that kimono? Is my obi right for the season? Are its colors too gaudy for my age? With so many opportunities for error, Japanese women relegated kimono and obi to special occasions only once or twice a year. When I visited Tokyo about a decade ago, I was disappointed to see just two

## A Basic Obi Knot

With practice, it's possible to tie an obi by yourself on the front of your body, and then turn the bow to the back when finished. The following basic steps will create a simple bow and are best tried using a narrow, supple obi. First, use your arm to measure out one and a half arm lengths at one end and drape that end over your shoulder. Where the obi crosses your waist vertically in front of your body, fold it to become horizontal, and wrap it around your waist twice. Remove the end from your shoulder and tie it into a bow with the remaining end, which will be much longer; pass that longer end under and up over the obi that encircles your waist to create a loop. Drape the free end over the top of the bow's knot and adjust the length of the draped part to your taste. Then roll up the long loop hanging below and tuck it under the obi. Adjust the bow and the loop to remove folds and wrinkles. When you've finished, slide the obi around your waist so the bow is on your back. Confused? So was I the first time. YouTube features excellent tutorials, most in Japanese; for an English version, I recommend watching Billy Matsunaga's channel (see Resources).



A woman tying her obi. Print by Kitagawa Utamaro, 1799. The Miriam and Ira D. Wallach Division of Art, Prints and Photographs: Print Collection, The New York Public Library. *Courtesy of the New York Public Library Digital Collections*

women wearing traditional garments—quite possibly rented—to pose under the blooming cherry trees.

Tokyo fashion designer Yohji Yamamoto claimed that the reason behind kimono culture's slow death is "its tendency to aspire to 'perfection'" and advised to "forget about attending kimono lessons." Some fashion-forward Japanese appear to be listening, as cultural critics have documented a kimono revival since the early twenty-first century.

Today's market for new obi and kimono is definitely constricted. But the secondhand and thrift scene is lively, as a subset of young people have discovered they don't have to take out a loan to buy unique, stunning clothing. Somewhat ironically, they perceive the westernized clothing worn by their parents and grandparents as too traditional. These aficionados find each other on social media and socialize in person via kimono clubs. Plastic charms may dangle from their obi-jime cords, and Doc Martens may pop from beneath their kimono hemlines. Unburdened by the old code, they may tie obi tightly to accentuate their waistlines, or combine eye-popping colors in ways that would have shocked their elders. Some enjoy cosplay ("costume play") and put together ensembles inspired by

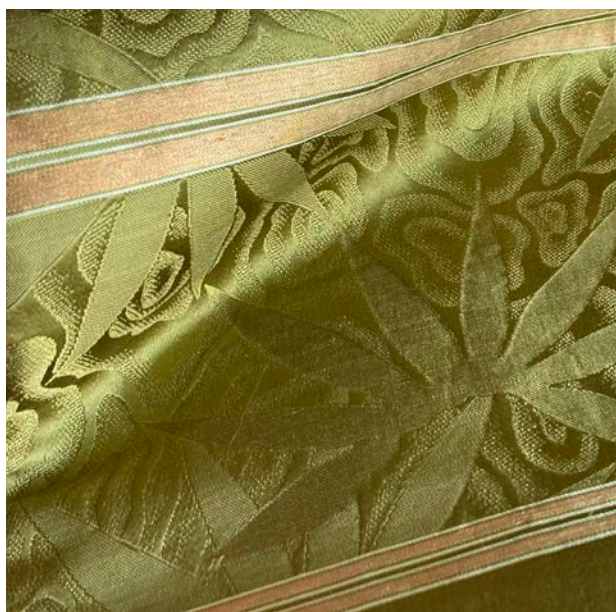
anime characters. Perhaps this infusion of new ideas will reinvigorate the obi-kimono partnership for the twenty-first century. ❖

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**REBECCA J. MARTIN** is an editor and writer living in Cairo, Egypt, with a small obi collection, one husband, and two cats. Follow her travels at [youtube.com/user/msgrasslands](https://www.youtube.com/user/msgrasslands).



Formal *fukuro* obi in the author's collection, made of a single width of silk brocade folded in half and seamed along one edge so the motif is identical on both sides. The gold stripes are known as end lines and are intended to be visible when worn.



This is the green bamboo *fukuro* obi's liner, which stiffens the obi and helps prevent wrinkling during wear. The liner appears to be made of wool warp with a linen or hemp weft.  
*Photos this page by Rebecca J. Martin*

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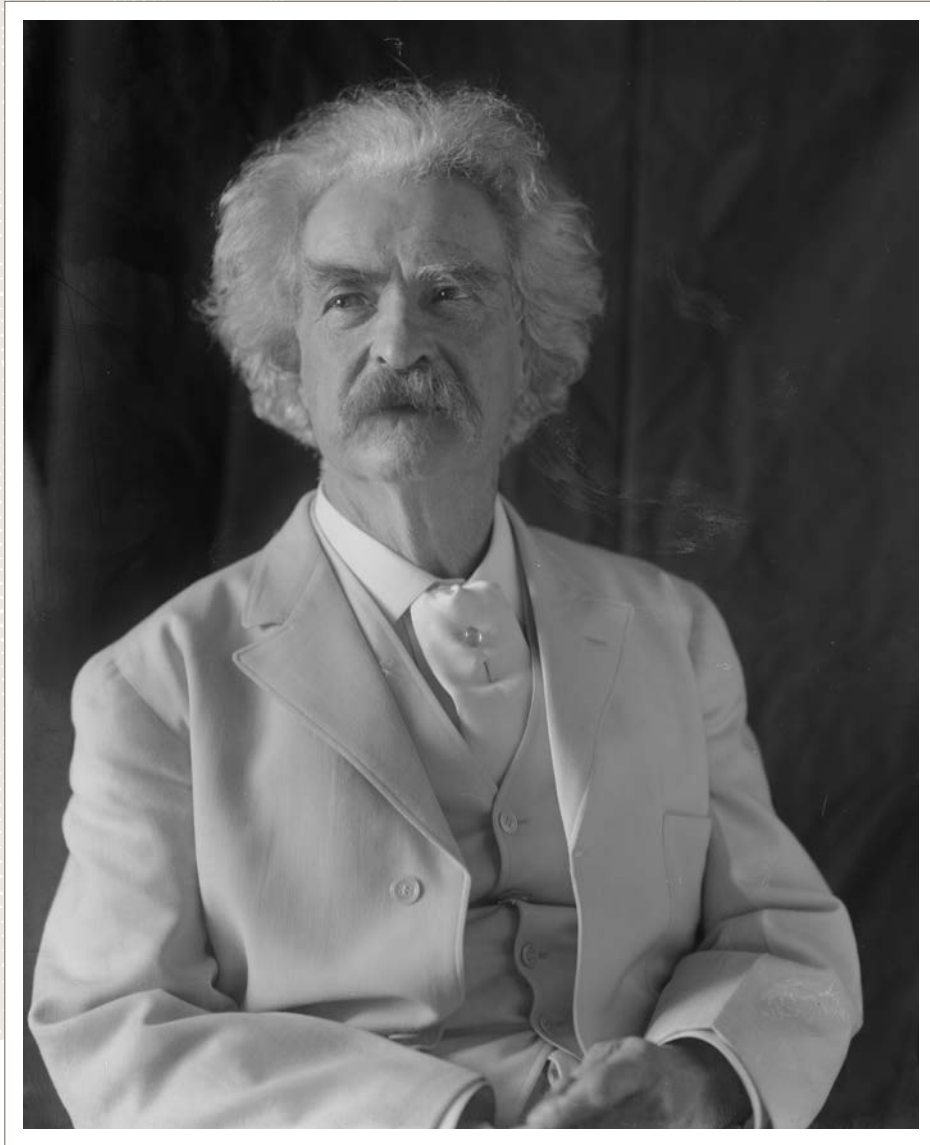


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Samuel L. Clemens, better known as Mark Twain.  
*Courtesy of the Library of Congress Prints and Photographs Division*

# Mark Twain and the Bra Strap

MIMI SEYFERTH

The famed author Samuel L. Clemens (1835–1910), better known by his pen name, Mark Twain, was also an inventor with three U.S. patents to his credit. He received the first of these patents, which is the subject of this piece, in 1871 for an “Improvement in Adjustable and Detachable Straps for Garments.” He received his second patent in 1873 for a self-adhesive scrapbook and his third in 1885 for a history game.

Clemens designed his adjustable and detachable garment strap, which he also called a vest strap, as a device to make various garments, such as men’s vests, pantaloons, and women’s corsets, fit more snugly. Clemens prescribed that the vest strap should be made from elastic in two parts fastened by buttonholes to buttons on the garment to be tightened, and that the elastic parts, in turn, would be joined by an adjustable clasp. In his patent specifications, Clemens asserted that “[t]he advantages of such an adjustable and detachable strap are so obvious that they need no explanation.”

Clemens's vest strap patent application became the subject of an "interference" contest when the Patent and Trademark Office identified a competing application by a Henry C. Blackwood (dates unknown) of Baltimore, Maryland. As was usual in such a contest, the Patent and Trademark Office asked each applicant to provide a preliminary statement, setting forth the dates and facts pertaining to his invention. Clemens submitted his preliminary statement in the form of a short story, stating that "[f]or four or five years I turned the idea of such a contrivance over in my mind at times, without a successful conclusion, but on the 13<sup>th</sup> of August [1871], as I lay in bed, I thought of it again, & then I said I would ease my mind and invent that strap before I got up—probably the only prophecy I ever made that was worth its face." The competing applicants' attorneys settled the interference in Clemens's favor because his patent application had been filed before Blackwood's.

Ultimately, as noted in the *Atlantic*, Clemens's vest-strap invention "only caught on for one snug garment, the bra." However, the modern bra was not patented until 1914, long after Clemens's patent for his vest strap had expired. Although the 1914 bra was "backless" and fastened with cross ties, the backs of most modern bras are secured by a two-part elastic band joined with adjustable hooks or clasps that is remarkably similar to Clemens's vest strap.

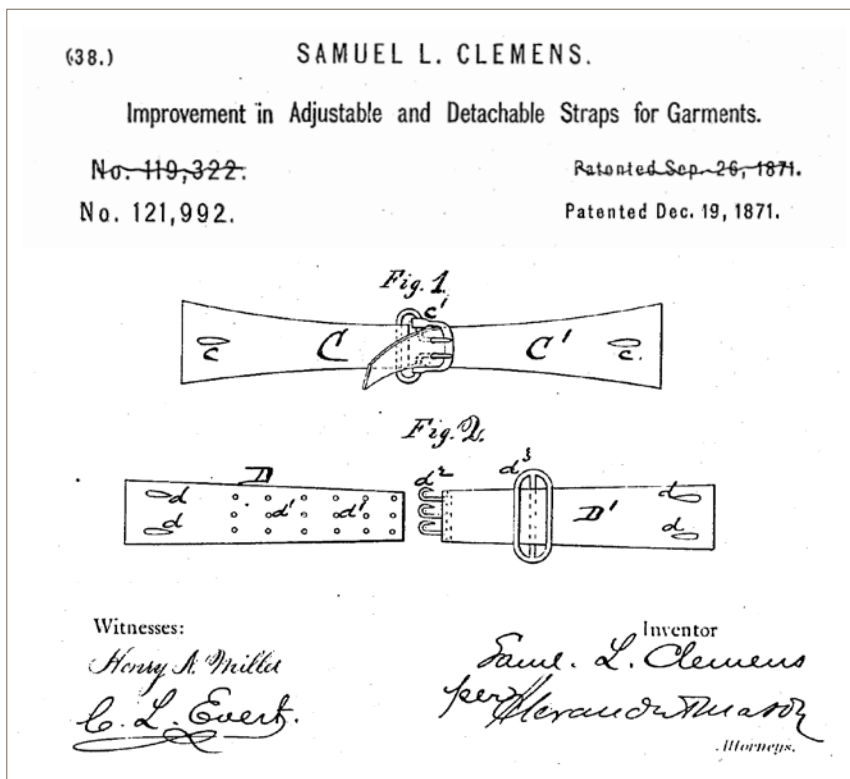
Later in his life, having gone bankrupt backing third parties' failed inventions, Clemens became disillusioned with the patent process. According to his biographer, when an author asked Clemens to endorse a book intended to help inventors and patentees, Clemens responded, "If your book tells how to exterminate inventors, send me nine editions. Send them by express." Notwithstanding this animus, Clemens likely would have appreciated the irony of the

similarities between modern bra straps and the vest strap of his expired patent. ❖

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**MIMI SEYFERTH** is an attorney who lives outside Washington, D.C. She stumbled upon the story of Mark Twain's vest strap while researching her article about the development of the zipper, also included in this issue of *PieceWork*.



Samuel L. Clemens's 1871 patent for "Improvement in Adjustable and Detachable Straps for Garments." Patent number 121,992. Courtesy of the United States Patent and Trademark Office

# Crocheted Closure Craze of the Early Twentieth Century

PAT OLSKI



*Columbia Book of Yarns, 1916.  
Courtesy of the Library of Congress*

*Crochet buttons, olives, and balls are prominent. . . . Designers are at work to reproduce in crochet ornaments certain of the vivid colorings and startling motifs that have come to us on the wave of popularity attending the Ballet Russe, the Spanish movement sweeping around Goyescas, the Chinese influence . . . [and] the militaire with its combinings of national colors of the Allies.*

—Notions and Fancy Goods, *Button and Trimming Section*, May 1916

Fashion forward and proud of her career as an executive secretary in Manhattan, my grandmother Sylvia Randall Bodiford could sew unlike anyone I have ever known. She was truly a couture seamstress, and every sophisticated jacket she created was replete with tailoring details: graded and pounded seams, weighted hems, and perfectly employed herringbone and hemstitching. As a little girl, I was mesmerized by the treasures in her sewing box, and it is to her credit that she didn't flinch (much) as I pored over the exciting contents.

She helped spark my interest in anything fiber related, and I was excited when someone taught me how to crochet because I knew I had seen a hook in her basket. When I showed off my newfound skill, I asked her if she could teach me more. She was shocked and said resolutely, "I don't crochet—I only know how to sew." When I pointed to the slim metal hook in her workbasket, she said "Oh, oh no, that is for sewing," and proceeded to show me the tiny chain stitches she made to secure the hang of a lining, a delicate button loop at the top of a jacket, loops to keep a self-belt anchored, a length with snaps on either end to corral a wayward lingerie strap, and a neat row of crocheted buttons or frogs on a blouse, all constructed with intimidatingly even stitches and fine thread. Self-taught in her teens from reading old how-to books and magazines, she genuinely believed that she didn't know how to crochet.

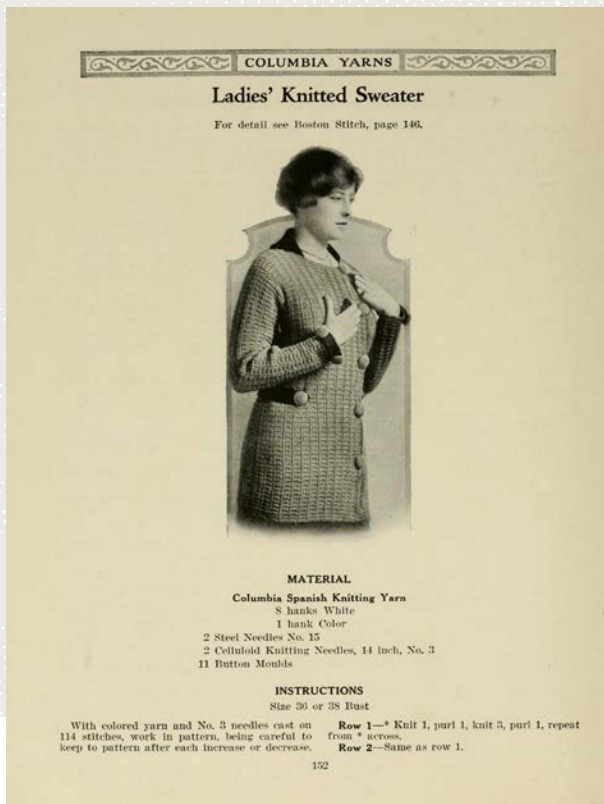
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#### NEEDLEWORK ON THE MOVE

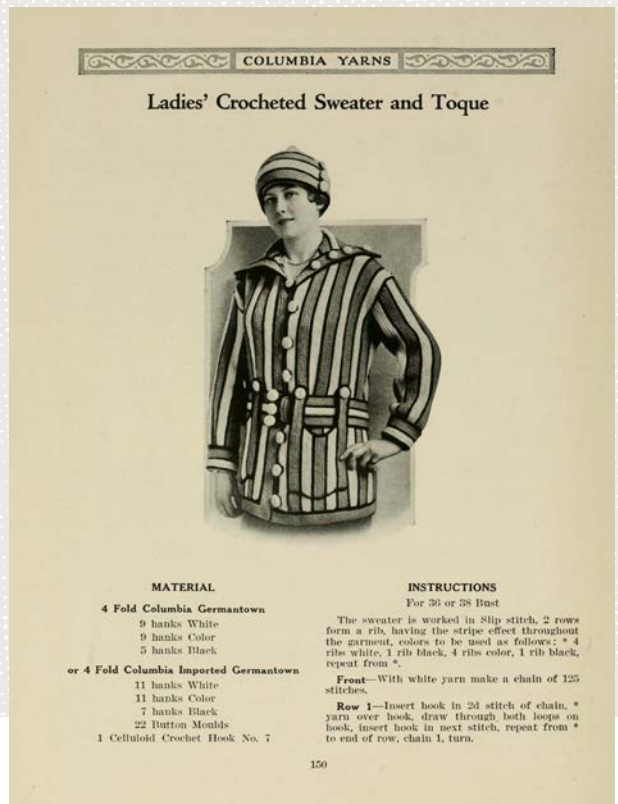
Most immigrants to the United States in the second half of the nineteenth century came from Ireland, Germany, and Britain—cultures that valued fine needlecraft. They brought crocheting and lacemaking skills to a country whose women excelled in practical handicraft, such as knitting, sewing, weaving, and quilting. The beauty of crochet was that it could be made to imitate costly lace, it was inexpensive, and it was easily taught. By the dawn of the twentieth century, more women joined the workforce, and they had neither discretionary time nor money to spend on painstakingly re-creating European lace. However, they could proudly don homemade outfits embellished with the same accessories that the newspapers and magazines claimed to be de rigueur Parisian fashion.

The unique sculptural quality of crochet lent itself readily to the creation of haberdashery items. Novelties such as crochet buttons, buckles, ties, and frogs were firmly on trend in 1916, and the newly created button section of the trade journal *Notions and Fancy Goods* was laden with advertisements by crochet button vendors and glowing descriptions of the crochet craze that had taken over the art embroidery, fashion, and home decor industries.

By the middle of World War II, this comprehensive trade journal reflected the many societal changes that were impacting fashion. Ads promoting crocheted belts and buckles for tennis and golf clothing as well as swimwear were meant to appeal to a growing sporty set. The costly and high-maintenance ruffled lace and voluminous fabric from previous years made way for more economically appropriate ensembles. Skirts paired with fitted jackets, sweaters, or tunics were more suitable for both working women and those



*The Columbia Book of Yarns, 1916.  
Courtesy of the Library of Congress*



*The Columbia Book of Yarns, 1916.  
Courtesy of the Library of Congress*

who labored at home while their loved ones were away in the armed services. Structured and simple, they were a perfect foil for orderly adornment.

A hand-crocheted collar, buckle, or decorative row of buttons could elevate an outfit—and a mood—with minimal cost or effort. In the “From Paris” section of *Harper’s Bazar* in 1916, writer Emilie de Joncaire pondered a garment from the atelier of Callot Soeurs: “What could be smarter than a three-piece suit of cherry valerdine . . . [trimmed with] innumerable crochet buttons”—a nice endorsement for a notion that was easy to make at home. A little time with some thread and a hook and a working-class crafter could adorn her clothing with the same sophisticated touches sported by the leisure class.

Military-style closures were newly popular on ladies’ tops. Rows of buttons or frog closures on tailored jackets gave an aura of strength and authority to women, which was a fitting reflection of the times. In the 1910s, Alva Belmont, socialite and former wife of William Vanderbilt, formed what would become the National Woman’s Party with suffragist Alice Paul. The group organized the first-ever picket march in front of the White House, and the Nineteenth Amendment was later ratified in 1920. Contemporary patterns aimed at the home stitcher also featured pairs of crocheted buttons with cords wrapped around them

to mimic the passementerie clasps from regimental coats of the seventeenth and eighteenth centuries.

**BUTTON TRADE VS. HOMEMADE**  
It is easy to perceive a crochet fastener as a folksy thing, easily made by hand and a giveaway as to the home manufacture of the garment, but in fact, that was not the case. Crocheted buttons were a commodity, and their manufacture and sales were detailed in government trade reports. At least one newspaper column of the time suggests that the cost of making a button at home would defray the price of expensive premade crocheted buttons, and one article sent in by a reader suggests economizing by placing leftover scraps of lace over fabric buttons to imitate crochet.

Crochet thread had many advantages—it was both affordable and accessible. Button-makers suffered during this period, as war and an embargo meant that there was a scarcity of dyestuffs—natural materials such as logwood and the aniline dyes that were still fairly new. The ability to make colored cloth and notions diminished. Most of the crochet thread on the market was white, which could be used to match almost anything, filling the gap in the button industry. Eventually, the burgeoning popularity of crochet—steadily rising through the Victorian era—created a

logjam, and thread manufacturers could barely keep up with the demand. Domestic production of cotton and silk fiber gave rise to many new mills.

Desperate to keep the momentum going, these companies vied with one another for a share of the customer base. The widespread use of rotogravure prints meant that mills were able to create pamphlets full of photographs to entice new customers and to market their wares. Pattern books proliferated—some with faithful reproductions of European trends and some with original designs ranging from excellent to outlandish. Knitted and crocheted pieces with handmade laces, buttons, and frogs were abundant, and often it was assumed that a reader would know how to cover a button with single crochet, so only scant, if any, direction was given.

The rise of news syndication services afforded stitchers in small towns in the Midwest the same up-to-the-minute style columns and patterns to read as the fashion journals in major cities. Proclamations such as one that the newest ensembles for summer would be graced with crocheted buckles were

undoubtedly met with enthusiasm by the home stitcher. With inexpensive materials, crocheters could produce all manner of clothing and home decor items, from gossamer to robust, and, improbably, they could even sculpt dimensional items, such as brimmed hats and starched baskets. By and large most of the crochet fasteners were washable, although some of the patterns of the time called for the crochet to be worked over a foundation of cardboard. The instructions recommended that the buttons be removed before laundering, which was a reasonably common practice then, although one that was probably not met with much favor.

Cotton and silk crocheted closures were featured on every type of fabric, clasping front bands of furs and tailored wool suits, ornamenting linen dresses, sprinkled daintily among crocheted lace handbags and gowns, and adorning knitted cardigans. They were utilitarian and versatile. For a busy woman, a handmade crochet lingerie clasp, a delicate chain to lace a lingerie yoke, a belt buckle, a beauty pin, a button, or a frog could be a quick-to-create gift or element of style.

It took many years as a novice crocheter before I attempted to use a tiny metal hook, and I was always daunted by how time consuming thread projects were to make. Early twentieth-century crocheted fasteners are a great foray into delicate thread crochet, as they are timeless, functional, and quick to make at the same time. My grandmother's judicious deployment of thread crochet buttons and buckles proved that a simply wrought detail can elevate any piece of clothing. And, to use one of her signature phrases, "They are just stunning." ❖

## RESOURCES

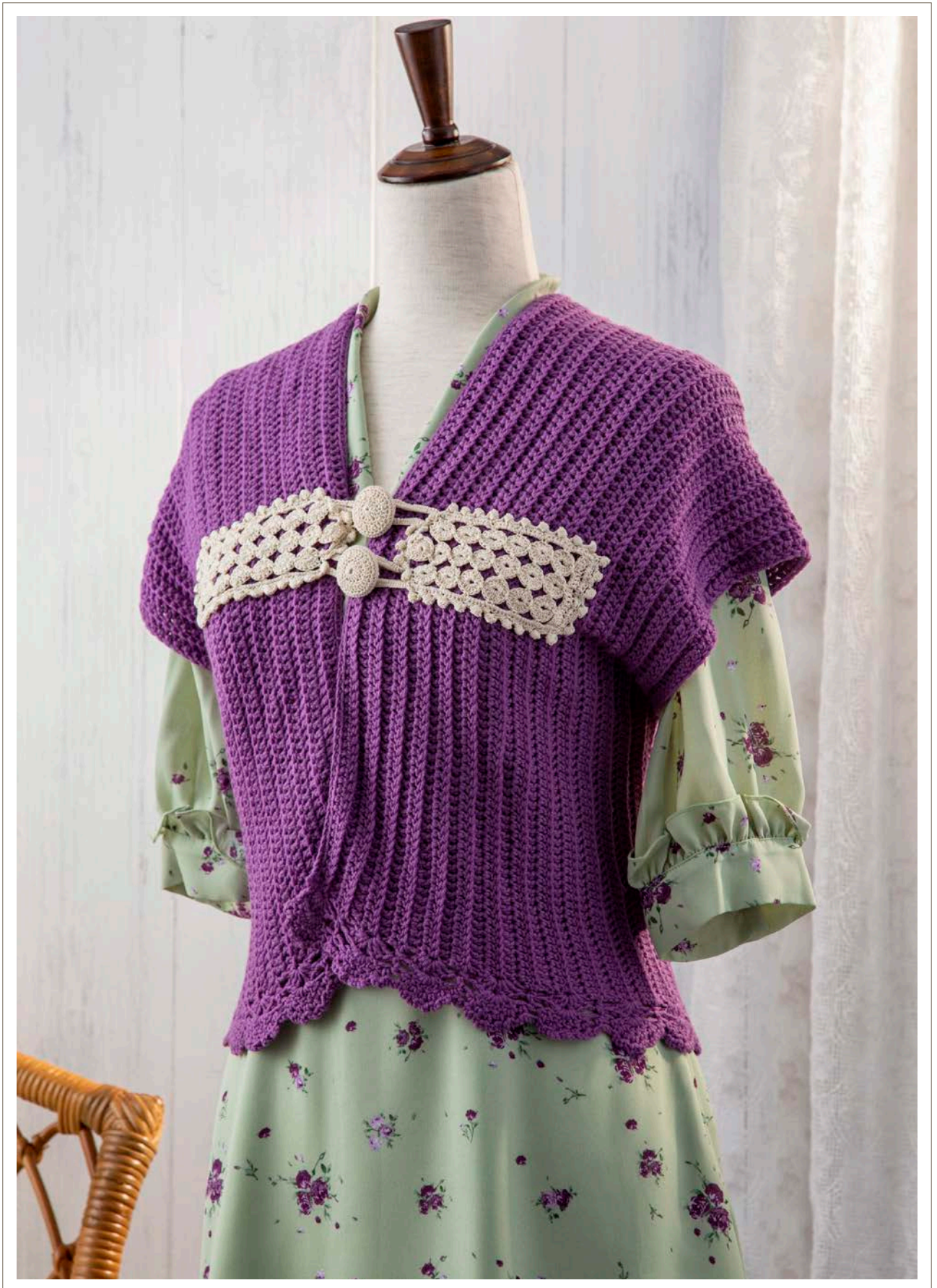
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**PAT OLSKI** is a New Jersey-based needlecraft designer, writer, and instructor who loves historic techniques and old needlework books. Her book *Crafting Thread Jewelry* teaches heritage Dorset button techniques; and her history, reference, and project-based title, *Creating Dorset Buttons*, will be published in early 2022. Learn more @yarnwhirled on Instagram and Facebook and at yarnwhirled.com.



German-made buttons sold as "the best buttons for washable dresses." Nineteenth century.

Photo by Kate Larson



*Photos by Matt Graves unless otherwise noted*

# Brandenburg Button Boudoir Jacket with Frog Closure

PAT OLSKI

*“Put all thy wardrobe’s glories on,  
and yield in frogs and fringe to none  
but the great Regent’s self alone. . . .”*

—Intercepted letter VIII from Colonel Thomas to Skeffington, Esq. Published by Thomas Moore, 1895.

While the use of passementerie on men’s jackets had reached satirical heights long before Thomas Moore published a poem about flaunting “frogs and fringe,” delicate frog closures would be advertised as a “new” option for ladies’ dress in the nineteenth century. Provision dealers J. Lockitt, Son & Co.’s of Fulton Street in New York City ran an ad in the October 13, 1858, issue of the *Brooklyn Daily Eagle* that announced “a new and large supply of . . . (something entirely new) Crochet Cloak Frogs and Leaves.”

Although the word “frog” has been in use since the mid-1700s, primarily in reference to regimental jacket decoration and fasteners, another word—Brandenburg—also referred to these closures, which were usually composed of a flat ornamental piece with loops that fastened over buttons or toggles to bridge the opening of the front bands on a garment. In the 1912 book *The Drygoodsman’s Handy Dictionary* by Frank Manning Adams, the term Brandenburg is defined as an “oblong button thickest at the middle, made of a mold covered with thread, and usually attached to a braided ornament.” Later, a 1916 report by the U.S. Department of Commerce entitled *Foreign Trade in Buttons*

detailed “a button in general use by the Chinese in their native style garments . . . [that was a] cloth knot of the same material as the garment: the buttonhole is a small loop of the same material stitched in braid form to the garment.” Still popular in 2021, the original seventeenth-century Chinese intricate *pankou* closures on Manchurian *qipaos* were likely the inspiration for early European frogs and Brandenburgs.

Crochet is the perfect technique to use to construct three-dimensional objects and to mimic the braid that made up the early fasteners. As a twenty-first-century crocheter, I admire the ingenuity that inspired nineteenth-century crocheters to try to replicate a haberdashery item that was traditionally made of metal or silken threads. The crocheted boudoir jacket adapted from a 1916 Corticelli Silk Mills pattern is timeless and flattering. When accentuated by a magnificent Corticelli-designed crocheted frog closure embellished with Clones knots and matching crochet-covered buttons, this jacket is truly a fun piece to re-create and wear.

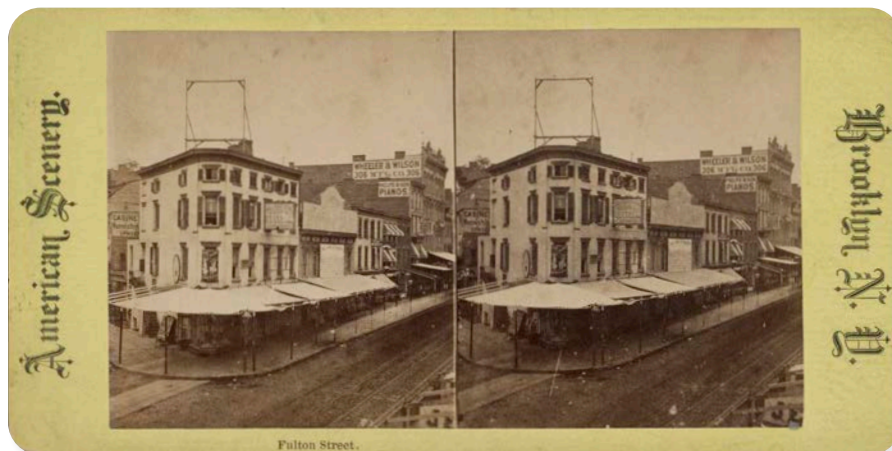
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Provision dealers J. Lockitt, Son & Co. of Fulton Street in New York City advertised crochet cloak frogs and leaves as “something entirely new” in 1858. Stereograph card, 1860 (2017656500).

*Courtesy of the Library of Congress Prints and Photographs Division*

## MATERIALS

- ♦ DMC Woolly, 100% superwash Merino wool, 136 yd (124 m)/1¼ oz (50 g) skein, 6 skeins, #63 purple
- ♦ Crochet hook, size E/4 (3.5 mm) or size needed to obtain gauge
- ♦ Locking stitch markers

**Finished size:** Ladies Small/Medium, 37" (94 cm) bust circumference, about 20" (51 cm) long from the bottom front edging to the shoulder line.

**Gauge:** 18 sts and 12 rows = 4" (10 cm) in ridged pattern.

*Visit [pieceworkmagazine.com/abbreviations/](http://pieceworkmagazine.com/abbreviations/) for terms you don't know.*

## Special Notes

Because of the modular construction of this jacket, it can easily be made larger or smaller. The foundation chain folded in half represents the length of the front of the jacket, so to make the jacket longer, make the foundation chain longer. To make the jacket wider, continue to work Rows 3–4 until the piece is as wide as you desire. The shorter rows are the side pieces, and they can be adjusted to your custom width by adding more stitches or by working more rows.

The crochet pattern ridged effect is created by working the double crochet stitches of every other row in the back loop of the stitch from the previous row.

## INSTRUCTIONS

### Boudoir Jacket

#### Body

Loosely, ch 181.

**Row 1 (RS):** Sc in 2<sup>nd</sup> ch from hook and in rem 179 ch across, turn—180 sc.

**Row 2 (WS):** Work all dc sts in the front loop of the previous row. Ch 3 (counts as first dc throughout), dc in next 87 sc, 2 dc in next 2 sc, ch 1 (center ch-sp), 2 dc in next 2 sc, dc in rem 88 sc, turn.

**Row 3 (RS):** Work all dc sts in the back loop of the previous row. Ch 3, dc across to last dc before center ch-1 sp, 2 dc in last dc, (2 dc, ch 1, 2 dc) in center ch-1 sp, 2 dc in next dc, dc across, turn.

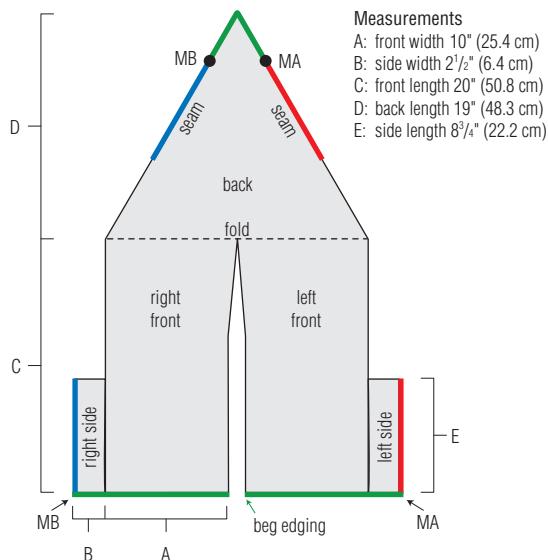
**Row 4 (WS):** Work all sts through both loops of the previous row. Ch 3, dc across to last dc before center ch-1 sp, 2 dc in last dc, (2 dc, ch 1, 2 dc) in center ch-1 sp, 2 dc in next dc, dc across, turn.

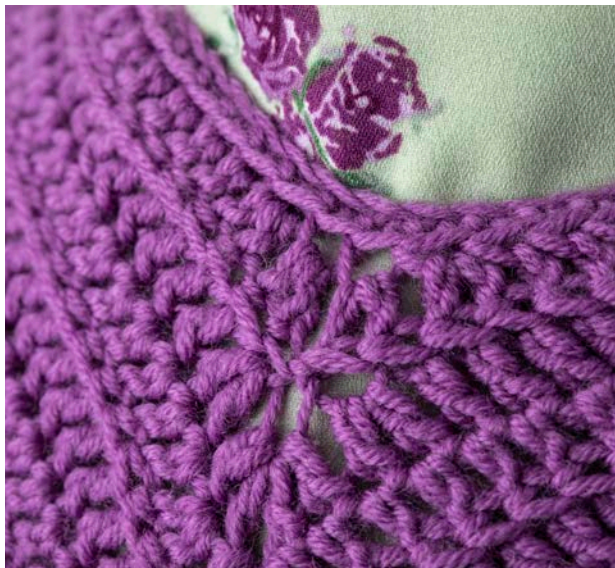
Rep Rows 3–4 for patt until you are satisfied with the width of the front pieces. The sample shown has



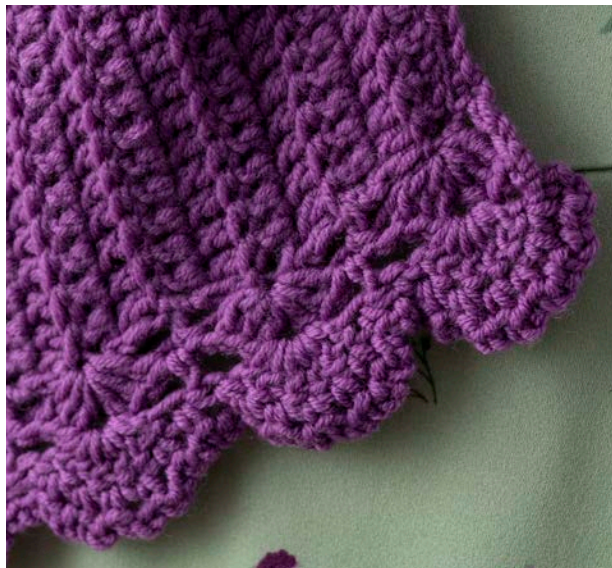
Simple in construction, the garment contours gently for a variety of body types.

Figure 1 Assembly





Shaping at the center back neck is created by the body's V shape, providing a comfortable fit.



A scalloped edge finishes the bottom edge.

14 ribs and 15 repetitions of the pattern rows. Do not fasten off.

#### Left Side

Beginning with RS facing and working over first 40 sts (or desired number of sts for the bottom front of the jacket to the bottom edge of the armhole), continue in rib pattern as above for 10 rows or for desired underarm width. Fasten off.

#### Right Side

With RS facing, join yarn in 40<sup>th</sup> st (or same number of sts as used for Left Side) from the bottom edge at the opposite side and continue in rib pattern for 10 rows or for the same number as for Left Side. Fasten off.

#### Assembly

Block gently. Count 20 sts from the center ch-1 sp of the back tip to both sides and place a marker (MA and MB, see Figure 1).

Fold the jacket at the shoulders with RS held together, lining up the bottom edge of the side piece with the corresponding marker.

Beginning with the 21<sup>st</sup> st from the center ch-1 sp, sc together (or sew) each side piece with the back of the jacket.

#### Hem Edging

**Row 1:** With RS facing, join yarn in bottom left front corner, ch 3, sk to first ridge at the bottom of the jacket,\* (3 dc, ch 1, 3 dc) in next ridge row-end, dc in next ridge row-end; rep from \* across bottom of jacket front to the side seam placing last dc in last row-end before the side seam, dc in first dc after side seam (20<sup>th</sup> st), working along back tip, [sk next 3 dc, (3 dc, ch 1, 3 dc) in next dc, sk next 3 dc, dc in next dc] 2 times, sk last 3 dc, (5 dc, ch 1, 5

dc) in center ch-1 sp of back tip (cluster made), sk next 3 dc, dc in next dc, [sk next 3 dc, (3 dc, ch 1, 3 dc) in next dc, sk next 3 dc, dc in next dc] 2 times placing last dc in last dc before side seam (20<sup>th</sup> st), working along bottom of jacket again, dc in first row-end after side seam, \*(3 dc, ch 1, 3 dc) in next ridge row-end, dc in next ridge row-end; rep from \*\* across, placing last dc in sc row-end at the bottom right front, turn.

**Row 2 (WS):** Ch 3, \*6 dc in next ch-1 sp (shell made), dc in next single dc; rep from \* to cluster at the tip of the V skipping one of the two single dc at the side seam, ch 3, (5 dc, ch 1, 5 dc) in the center ch-1 sp (cluster made), ch 3, dc in next single dc, \*\*6 dc in next ch-1 sp, dc in next single dc; rep from \*\* to end, turn.

**Row 3 (RS):** \*Ch 3, sc in first dc of next shell, [ch 3, sc in next dc of shell] 5 times, sk next single dc; rep from \* to cluster at the tip of the V, ch 3, sc in first dc of next shell, [ch 3, sc in next dc of shell] 4 times, [ch 3, sc in center ch-1 sp] 2 times, ch 3, sc in first dc of next shell, [ch 3, sc in next dc of shell] 4 times, \*\*ch 3, sk next single dc, sc in first dc of next shell, [ch 3, sc in next dc of shell] 5 times; rep from \*\* to last dc, ch 3, sc in last dc. Fasten off.

#### Finishing

Weave in all ends. Mark the placement for the two buttons on the left front of the jacket. (The sample shown has the bottom button placed approximately 8" (20 cm) from the bottom edging.) Sew on the buttons. Baste the two fastener pieces in place, checking to make sure that they are aligned with the buttons. Sew the fasteners onto the jacket. Weave in the ends.



Re-creation of fastener from *Corticelli Lessons in Crochet Book No. 2*, published in 1917.

# Crochet Frog Fastener with Buttons

## MATERIALS

- ♦ DMC Cebelia, 100% double mercerized cotton, size 10, 295 yd (270 m)/1¾ oz (50 g), color 712, 1 ball
- ♦ Steel crochet hook, size 4/0 (1.75 mm) used for this sample. Gauge is adjustable.
- ♦ 2 metal button forms, Dritz Home Half Ball Cover Buttons #44413 size 1½" (2.9 cm)
- ♦ Small piece of lightweight cotton fabric to cover button form in a color to match crochet thread
- ♦ Tapestry needle, size 24, to weave in ends

**Finished measurements:** 2 pieces, 2½" (6.4 cm) × 5¼" (13.3 cm) with 1½" (3.8 cm) loops.

*Visit [pieceworkmagazine.com/abbreviations/](http://pieceworkmagazine.com/abbreviations/) for terms you don't know.*

## Special Notes

The fastener is composed of two identical crocheted pieces with attached loops and two buttons.

## INSTRUCTIONS

### Buttons

Make 2.

**Preparation:** Cover the two button forms with the cotton fabric, following the manufacturer's instructions. Set aside. Note that the fabric-covered button will be inserted under the crocheted cover after Round 7. The subsequent crochet rounds serve to secure the crochet cover in place over the button form.

### Crochet Cover

*Rnd 1:* Ch 3, work 14 dc in first ch (skipped 2 ch count as first dc), sl st in top of ch 3 to join in the rnd—15 dc.

*Rnd 2:* Ch 1 (counts as first sc), [2 sc in next st, sc in next 2 sts] 5 times, sl st in beg ch 1 to join—21 sc.

*Rnd 3:* Ch 3 (counts as first dc), dc in next 2 sts, [2 dc in next st, dc in next st] 9 times, sl st in top of beg ch 3 to join—30 dc.

*Rnd 4:* Ch 1 (does not count as st throughout), [2 sc in next st, sc in next st] 15 times, sl st in beg ch 1 to join—45 sc.

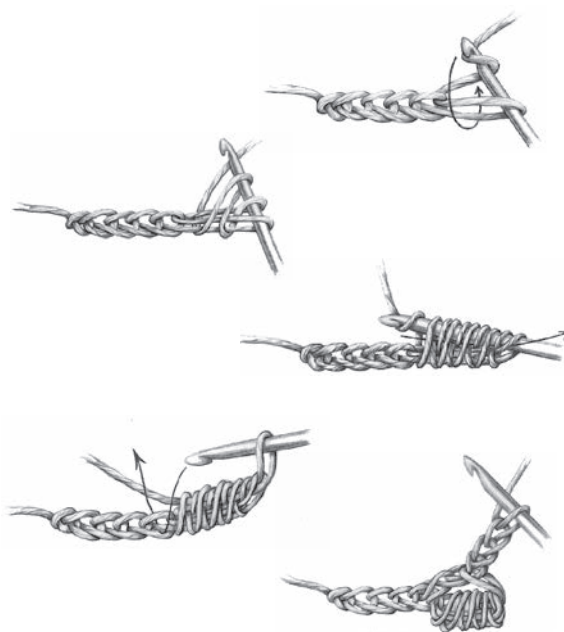
*Rnd 5:* Ch 1, sc around, sl st in beg ch 1 to join.

*Rnd 6:* Ch 1, [sc in next st, sc2tog] 15 times, sl st in beg ch 1 to join—30 sc rem.

*Rnd 7:* Ch 1, [sc in next st, sc2tog] 10 times, sl st in beg ch 1 to join—20 sc rem.

## Special Stitches

**CK—Clones knot:** Draw out a chain. The length of the chain will dictate the size of the Clones knot. Yarn over hook and pass the hook under the chain from front to back, yarn over hook and pass the hook back under the chain from back to front. Repeat this movement 3 times, or until the enlarged chain is covered, yarn over hook and draw the yarn through all the loops on the hook. Single crochet into the last chain before the Clones knot.



Insert covered button and continue to crochet until the back of the button is covered.

*Rnd 8:* Ch 1, [sc in next st, sc2tog] 6 times, sc in last 2 sts, sl st in beg ch 1 to join—14 sc rem.

*Rnd 9:* Ch 1, sc2tog 6 times, sc in last 2 sts, sl st in beg ch 1 to join—8 sc rem.

Fasten and cut thread, leaving tail to secure. Using tapestry needle, weave in all cut-thread ends.

### Frog Fastener Pieces

Make 2.

**Preparation:** For each fastener, cut four 2 yd (1.8 m) pieces of thread and set them aside.

*Foundation row (RS):* Loosely, ch 18, dc in 3<sup>rd</sup> ch from hook (skipped 2 ch count as first dc), 2 dc in next 2 ch, turn.

### First row of circles,

*Row 1 (bottom half of circles):* [(With WS facing) ch 6, sl st in first ch to close ring, turn work so that RS is facing, ch 1, 7 dc in ch-6 ring (bottom half of circle made), turn work] 5 times, (with WS facing) ch 6, sl st in first ch to close ring, turn work so that RS is facing, ch 1, 14 dc in ch-6 ring, sl st in beg ch 1 to close circle (end circle made).

*Row 2 (top half of circles):* [(With RS facing) 7 dc in next ch-6 ring (2<sup>nd</sup> half of circle completed), sl st in beg ch 1 to close ring] 5 times, dc in next 5 open ch of Foundation row, turn—6 circles.

### Second row of circles,

*Row 3 (bottom half of circles joined to previous row of circles):* [(With WS facing) ch 6, sl st in first ch to close ring, turn work so that RS is facing, ch 1, 3 dc in 6-ch ring (beg segment of circle made), arrange circle segment so that first row of circles is at the top, sc in 4<sup>th</sup> dc of next circle made from Row 2, continue with 4 dc in same ch-6 ring (bottom half of circle completed), turn work] 6 times, (with WS facing) ch 6, sl st in first ch to close ring, turn work so that RS is facing, ch 1, 14 dc in ch-6 ring, sl st in beg ch 1 to close circle (end circle made).

*Row 4 (top half of circles):* [(With RS facing) 7 dc in next ch-6 ring, sl st in beg ch 1 to close circle] 6 times, dc in next 5 open ch of Foundation row, turn—7 circles.

### Third row of circles,

*Row 5 (bottom half of circles joined to previous row of circles):* [(With WS facing) ch 6, sl st in first ch to close ring, turn work so that RS is facing, ch 1, 3 dc in 6-ch ring (beg segment of circle made), arrange circle segment so that last row of circles made is at the top, sc in 4<sup>th</sup> dc of next circle made from Row 4, continue with 4 dc in same ch-6 ring (bottom half of circle completed), turn work] 6 times not turning work after last half circle, (with RS still facing) 7 dc in ch-6 ring, sl st in beg ch 1 to close circle (end circle made).

*Row 6 (top half of circles):* [(With RS facing) 7 dc in next ch-6 ring, sl st in beg ch 1 to close circle] 5 times, 2 dc in last 3 open ch of Foundation row, turn—6 circles.

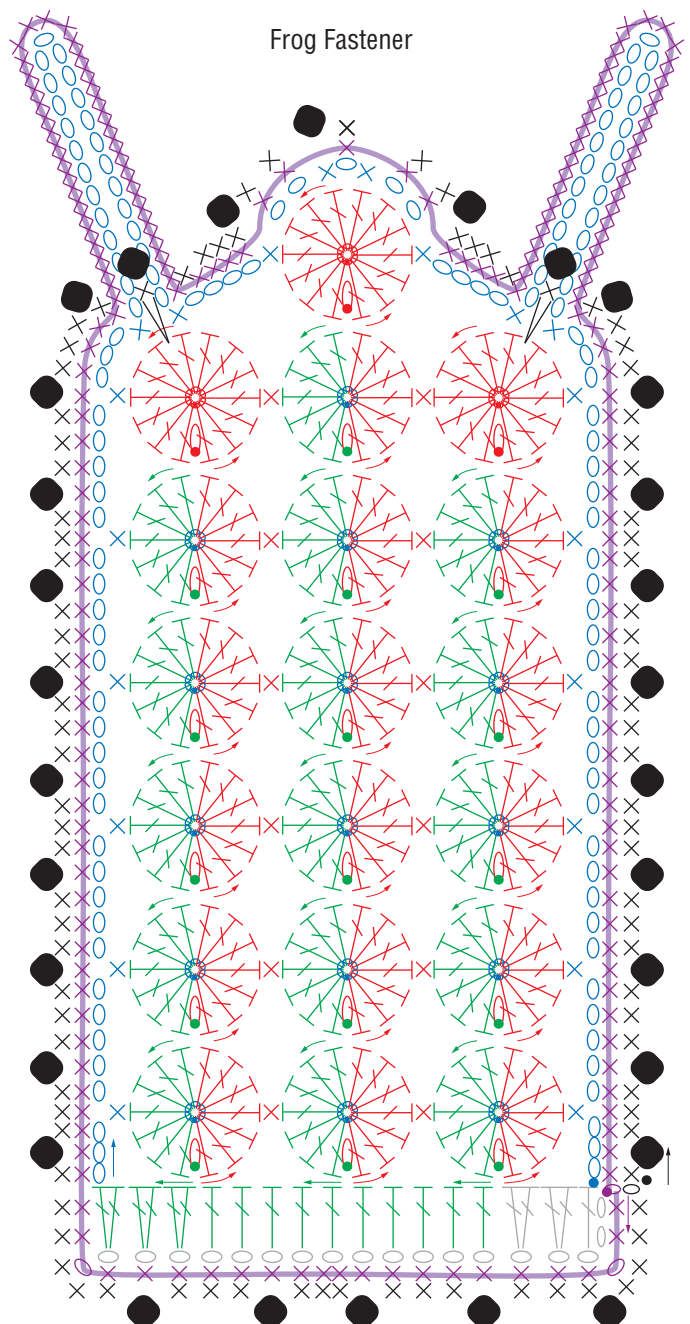
### Edging Rounds

(Continue from the last dc made from Row 6.)

*Rnd 1 (WS):* Ch 3, sc in 4<sup>th</sup> dc of last circle made of Row 6, [ch 5, sc in 4<sup>th</sup> dc of next circle] 5 times, ch 3, sk next dc, sc in next dc (6<sup>th</sup> dc of same circle), ch 25 (for button loop), sc in next dc of same circle, ch 4,

### Stitch Key

- = slip stitch (sl st)
- = chain (ch)
- × = single crochet (sc)
- └ = double crochet (dc)
- = ch 3, Clones knot, ch 2
- gray = Foundation row
- red = Rows 1, 3, and 5
- green = Rows 2, 4, and 6
- blue = Edging Rnd 1
- purple = Edging Rnd 2
- black = Edging Rnd 3



sc in 4<sup>th</sup> dc on side of last circle of middle row, ch 2, sk next 2 dc, sc in next dc, ch 1, sc in next dc, ch 2, sk next 2 dc, sc in next dc (11<sup>th</sup> dc of same circle), ch 4, sc in 8<sup>th</sup> dc of next circle, ch 25 (for button loop), sc in next dc, ch 3, sk next 2 dc, sc in next dc (11<sup>th</sup> dc of same circle), [ch 5, sc in 11<sup>th</sup> dc of next circle] 5 times, ch 3, sl st in first dc of Foundation row.

Hold 4 cut threads together to form the padding cord. Add the padding cord to run along and crochet over for the next rnd.

*Rnd 2 (WS):* Ch 1, 2 sc in beg ch 2 of Foundation row, ch 1 for corner, sc in next 8 sts of Foundation row, 2 sc in next st, sc in next 7 sts of Foundation row, ch 1 for corner, 2 sc in dc row-end, 3 sc in next ch-3 sp, [sc in next sc, 5 sc in next ch-5 sp] 5 times, sc in next sc, 3 sc in next ch-3 sp, sc in next sc, 40 sc in next ch-25 loop, sc in next sc, 4 sc in next ch-4 sp, sk next sc, 2 sc in next ch-2 sp, sk next sc, sc in next ch-1 sp, sk next sc, 2 sc in next ch-2 sp, sk next sc, 4 sc in next ch-4 sp, sc in next sc, 40 sc in next ch-25 loop, sc in next sc, 3 sc in next ch-3 sp, [sc in next sc, 5 sc in next ch-5 sp] 5 times, sc in next sc, 3 sc in next ch-3 sp, sl st in beg ch-2 sp to join, turn. Cut padding cord, leaving enough length to weave in the ends behind the fastener.

*Rnd 3 (RS) (Clones knot rnd):* Beg in last sc of prev

rnd, ch 1, [sc in next sc, ch 3, Clones knot (CK, see Special Stitches), ch 2, sk next sc, sc in next 2 sc] 9 times, sc in next sc, ch 3, CK, ch 2, sc in next sc (corner sc before button loop beg), sk button loop, sc in sp bet 6<sup>th</sup> and 7<sup>th</sup> dc of last circle of first circle-row, ch 3, CK, ch 2, sc in next sc (corner sc after button loop), sk next sc, [sc in next 3 sc, ch 3, CK, ch 2] 2 times, sc in next 2 sc, ch 3, CK, ch 2, sc in next 3 sc, sk next sc, sc in next sc (corner sc before next button loop), sc in sp bet 8<sup>th</sup> and 9<sup>th</sup> dc of last circle of 3<sup>rd</sup> circle-row, ch 3, CK, ch 2, sc in next sc (corner sc after button loop), ch 3, CK, ch 2, sc in next sc, [sc in next 2 sc, ch 3, CK, ch 2, sk next sc, sc in next sc] 9 times, sc in next 2 sc, 2 sc in corner ch-sp, [sc in next sc, ch 3, CK, ch 2, sk next sc, sc in next 2 sc] 4 times, sc in next sc, ch 3, CK, ch 2, 2 sc in corner ch-sp, sc in last 2 sc, sl st in first sc to join. Fasten off.

### Finishing

Block lightly and weave in all ends.

**PAT OLSKI** is a New Jersey-based needlecraft designer, writer, and instructor who loves historic techniques and old needlework books. Her book *Crafting Thread Jewelry* teaches heritage Dorset button techniques; and her history, reference, and project-based title, *Creating Dorset Buttons*, will be published in early 2022. Learn more @yarnwhirled on Instagram and Facebook and at yarnwhirled.com.



The Clones Knot Edging was very popular in the early twentieth century.

# A Flood of Buttons

LYNNE ZACEK BASSETT



Vegetable ivory buttons, circa 1860–1900. Collection of Historic Northampton.  
*Photos courtesy of Historic Northampton unless otherwise noted*

Buttons have come and gone in fashion for centuries. They can be made of myriad materials, fancy or plain. In seventeenth-century New England, sumptuary legislation dictated that elegant buttons of precious metal could be worn only by the economic and social elite, and those of the wrong “station” who dared to wear gold or silver buttons risked being brought before the court and fined heavily for the offense.

While buttons had been common on men’s clothing since the 1500s, women’s fashions generally fastened with pins, lacing, or hooks and eyes until

the mid-nineteenth century. Technological developments of the Industrial Revolution led to cheaper mass-produced buttons, spurring a fashion for front-opening women’s dresses featuring glass, ceramic, and metal buttons. New button materials of vegetable ivory (made from certain nuts), thermoplastic, and mother of pearl added to the list of possible choices for pretty and functional closures.

The region surrounding Northampton, Massachusetts, prided itself as a leader in the American button industry in the nineteenth century, with multiple factories specializing in a wide variety of materials, from plain tin-covered wood to elegant enameled metal. One manufacturer had particularly important and long-lasting significance: Alfred Pilkington Critchlow (1813–1881).

### CRITCHLOW'S EARLY BUTTONS

Born in England, Critchlow lost his mother as a boy and was apprenticed to learn the trade of making dies (used for cutting or molding various products) at the age of fourteen. While working in his horn button business in Birmingham, he met Josiah Hayden, a button manufacturer from Haydenville, Massachusetts. Hayden convinced Critchlow to come to America to make buttons. Arriving in 1843 with his wife and two daughters, Critchlow eventually made his way to Florence, a mill village within the town of Northampton. There, he started a business making buttons from wild laurel wood.

Critchlow was a very inventive and entrepreneurial man. His lasting fame rests on his development of "Florence Compound," an early form of plastic made from shellac, wood fiber, and lampblack. It was dyed and molded and made into buttons, hairbrush

handles and daguerreotype cases. In 1857, he sold that business (to which we will return) and took a trip to South America, where he learned of palm trees that produced a milky white nut suitable for carving—"vegetable ivory." Upon returning home to Florence, Critchlow purchased an old woolen mill in Leeds (another mill village in Northampton) with the thought of manufacturing buttons from these nuts; he was the first to do so in the United States.

The most common form of vegetable ivory comes from the *Phytelephas* genus of palms found in South America. Each fruit weighs between 20 and 25 pounds, and each tree produces six to eight fruits. Inside each fruit is a "drupe," and each drupe holds between six and nine seeds, the largest of which are about 2 inches in diameter. The seeds (endosperm) are initially liquid, but after about two months, the liquid hardens and becomes the tagua nut.



Portrait of John Freake, artist unknown, circa 1671, altered circa 1674. John Freake of Boston showed off his wealth in his portrait, wearing a coat with dozens of silver buttons along with a lace collar, which was also controlled by sumptuary legislation. He toys with his silver collar tassels to show off his gold pinkie ring. From the collection of the Worcester Art Museum, Massachusetts, USA.

© Worcester Art Museum / Bridgeman Images



Tagua palm fruits (nuts), once aged and hardened, can be carved into intricate shapes. Illustration of *P. macrocarpa* from *Florae Columbiae: Terrarumque Adiacentium Specimina Selecta in Peregrinatione Duodecim Annorum Observata* by Hermann Karsten, mid-nineteenth century.

Courtesy of the Biodiversity Heritage Library



Employees standing in front of the Mill River Button Company, Leeds, 1872. Collection of Historic Northampton.

Critchlow began making buttons with a process requiring a small circular saw to slice the tagua nuts lengthwise to avoid the natural hole in the center. After drying in a kiln, turning on a lathe, polishing, and drilling for thread holes, the material could be dyed if desired. Dyes do not penetrate beyond the surface of vegetable ivory, so attractive layered effects can be created. Vegetable ivory buttons eventually became a huge industry; the United States imported 40 thousand tons of tagua nuts at the turn of the century, and by 1920, vegetable ivory formed 20 percent of all buttons manufactured in the United States.

Patent number 71,429 was a "Machine for Ornamenting Buttons" invented by John Tunnecliff and Patrick Cahill for Critchlow in 1867. It produced undulating grooves in vegetable ivory and other carvable materials, as seen in this button. Collection of Historic Northampton.



#### THE MILL RIVER BUTTON COMPANY

Sources give a variety of dates for the commencement of Critchlow's Mill River Button Company and the beginning of vegetable-ivory button manufacturing, but the 1860–1861 *Northampton Business Directory and General Advertiser* states it was in 1859. Within a few years, the company had 50 lathes turning out more than two hundred thousand buttons each working day. The company was self-sufficient, constructing its own machinery and even making the paper boxes for packaging the buttons, which were stitched onto cards. Children age eight and up were employed for much of the work, except sawing and turning. Working 10 hours a day, 5½ days a week, they earned \$3 to \$4. Additionally, many families in town did piecework for the company, sewing buttons onto cards and doing other tasks not requiring presence at the mill. Critchlow encouraged innovation among his more mature employees, and they rewarded him with various inventions, some resulting in new patents.

Due to failing health, Critchlow sold the Mill River Button Company in 1871 to his son-in-law George P. Warner (1841–1902), who had started as a clerk at the

company and married Critchlow's daughter Mary. Critchlow remained active with the business, and by 1872, the Mill River Button Company was the largest establishment of its kind in the country.

### The Flood

Disaster struck in 1874. The east branch of the Mill River had been dammed in 1866 by a consortium of businessmen (including Alfred Critchlow), creating a reservoir to control the river's flow and provide water in the summer months for all of the factories along its banks. The poorly constructed dam had been leaking for years, and the slow disintegration caused it to start breaking apart from the bottom early on the morning of May 16. Witnessing slabs of earth falling off the face of the dam, its keeper, George Cheney, jumped on his horse and galloped along the river shouting warnings. Others relayed the message, racing in wagons and on horseback to warn people in the factory towns of the imminent danger.

The dam burst with a tremendous *boom* that was heard miles away, and a wall of water 40 feet high plowed down the valley, taking everything in its path. Witnesses described it as a wall of debris so thick the water wasn't even visible. It took an hour for the 600-million-gallon reservoir to empty, ultimately depositing splintered houses, factory buildings,

trees, boulders, and the bodies of animals and people in the Florence meadows just south of Leeds. It was America's first and worst dam disaster until the Johnstown Flood of 1889. Four villages were destroyed (Leeds, Williamsburg, Skinnerville, and Haydenville), and 139 people were killed. The brave warnings of George Cheney and others undoubtedly saved hundreds of lives.

The button mill was in the direct path of the flood. The entire property was swept away, at a loss calculated at the time of \$100,000 (\$2,000,000 today). The exact loss of workers at the Mill River Button Company is unknown, but the sad toll has been estimated at between seven and two dozen. Local committees formed to organize financial relief and facilitate cleanup. The Massachusetts state government provided \$120,000 to rebuild the valley's infrastructure. More importantly, the disaster inspired states to begin regulating (though weakly at first) dam construction.

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### REORGANIZATION

Warner quickly rebuilt, and within five years, the new two-story brick building employed 275 people, paid at the average rate of about one dollar per day. But

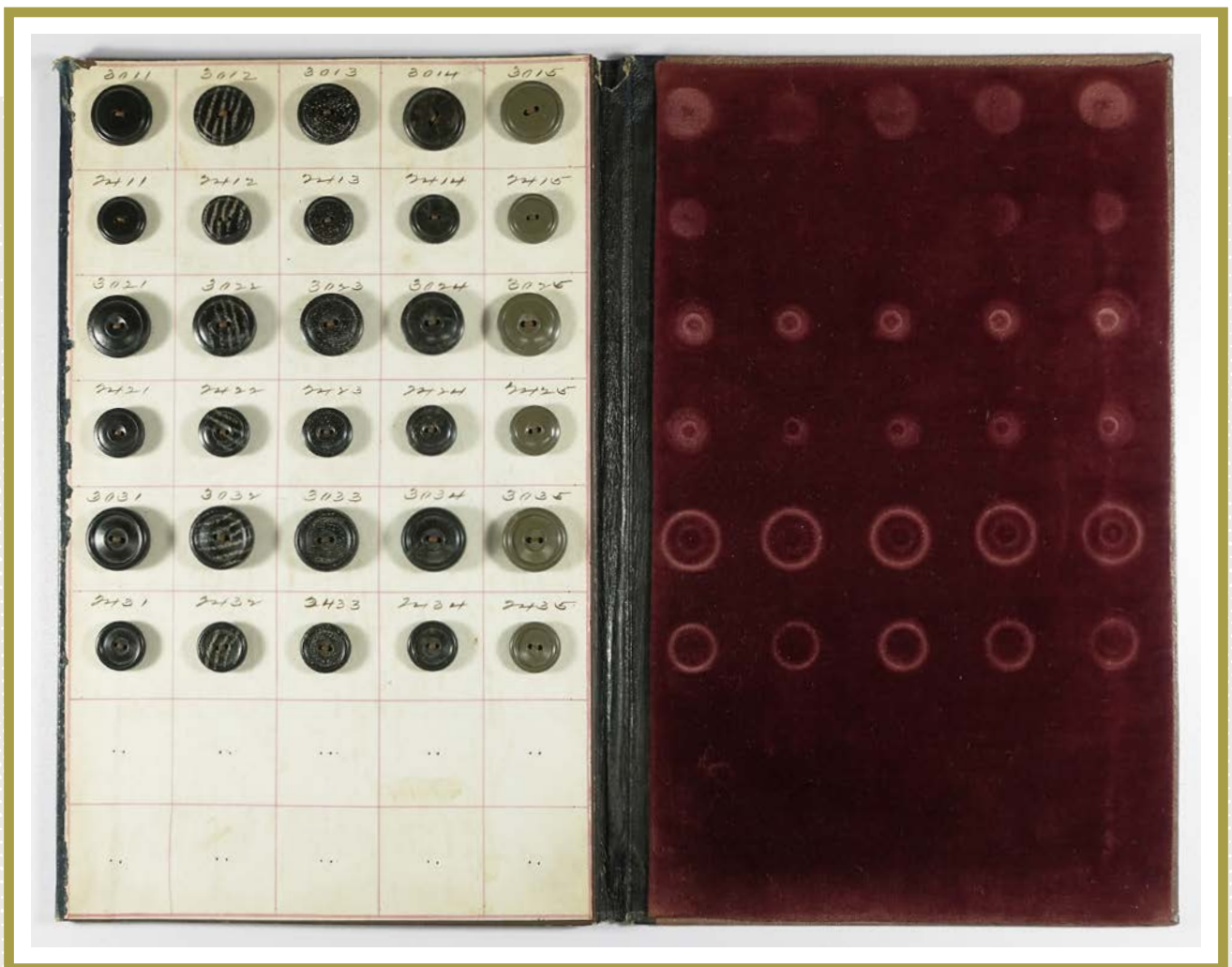


Stereograph by Knowlton Brothers, 1874, "Ruins of George P. Warner's Button Factory from the west—Leeds"  
Courtesy of Meekins Library, Williamsburg, Massachusetts

misfortune again befell the company—this time in the form of less expensive buttons imported from Europe, where workers were paid between 6 and 30 cents per day. By 1884, the Mill River Button Company was on the ropes. An attempt by stockholders to save it with extra investing and leadership reorganization proved fruitless. On April 26, 1887, the *Hampshire Gazette* reported, “All hope of a reconstruction of the Mill River Button Company is abandoned and the property is advertised for sale. . . . It is one of the best plants for this business in the country.” The Nonotuck Silk Company bought the buildings cheaply but left them idle for the next 20 years, dashing the hopes of those seeking immediate reemployment. The old mill buildings were finally torn down in the 1930s when the silk company left Leeds altogether.

Although the vegetable-ivory button business ultimately failed, Alfred Critchlow’s initial business of making items with Florence Compound, the early plastic material, continued to prosper. In 1854, Critchlow had gone into business with Samuel L. Hill and Isaac S. Parsons to make buttons and union cases for daguerreotype and ambrotype photographs, calling the firm A. P. Critchlow & Co. When Critchlow bowed out of the partnership in 1857, D. G. Littlefield took over, and the business became Littlefield, Parsons & Co. Its daguerreotype cases are highly prized by collectors today.

With the ascendancy of photography on paper instead of glass, the company reorganized as the Florence Manufacturing Company and focused its production on buttons, hand mirrors, and



Florence Manufacturing Company, men’s suiting buttons, circa 1900. Collection of Historic Northampton.



This celluloid button (*bottom*) was a gift to the author from her mother-in-law, Norma Bassett, and started the research that led to this article. Norma grew up in Northampton and was an employee of Pro Brush, or “the brush company” as locals called it. (*Top*) Norma Bassett wearing the coat her mother made for her with the button, Union Street, Northampton, 1930.

toothbrushes. At the time of the Mill River flood, the employees of the Florence Manufacturing Company all escaped, but the mill itself received heavy damage, with the first floor submerged, the stock destroyed, and part of the brick building washed away. But like most of the companies in the path of the flood, the Florence Manufacturing Company returned to business as soon as possible. Examples from the company’s archives (now in the collection of Historic Northampton) show that the dark Florence Compound produced buttons suitable for men’s suits, pants, and coats. The company also made buttons of celluloid, a very early plastic that was made from paper.

In 1924, the company changed its name to the Pro-phy-lac-tic Brush Co. In 1955, it became Pro-Brush; in 1963, the company name was Pro Brush-Vistron; and in 1980, it became Pro Corporation. The company closed in 2007 after 153 years in business. ❖

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#### SELECTED RESOURCES

Historic Northampton Museum and Education Center,  
[historic-northampton.org](http://historic-northampton.org).

*Northampton Business Directory and General Advertiser, 1860–1861*. Northampton, Massachusetts: Trumbull and Gere, 1860.

Sharpe, Elizabeth M. *In the Shadow of the Dam: The Aftermath of the Mill River Flood of 1874*. New York: Free Press, 2007.

*The author is sincerely grateful to the staff of Historic Northampton for their assistance with this article: Elizabeth Sharpe, Laurie Sanders, Marie Panik, and Kelsy Sinelnikov.*

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# PIECEWORK. Retail Shop Directory

## ARIZONA

**Fiber Creek**  
Suite 123  
1046 Willow Creek Rd  
Prescott, AZ 86301  
(928) 717-1774  
[fibercreekprescott.com](http://fibercreekprescott.com)

## CALIFORNIA

**Lacis Museum of  
Lace & Textiles**  
2982 Adeline St  
Berkeley, CA 94703  
510-843-7290  
[lacis.com](http://lacis.com)

**Babetta's Yarn & Gifts**  
4400 San Juan Ave #20  
Fair Oaks, CA 95628  
(916) 965-6043  
[babettas yarnandgifts.com](http://babettas yarnandgifts.com)

**Dharma Trading Co**  
1604 4th Street  
San Rafael, CA 94901  
(435) 456-1211  
[dharma trading.com](http://dharma trading.com)

**Needlecraft Cottage**  
870 Grand Ave  
San Diego, CA 92109  
(858) 272-8185  
[needlecraftcottagesd.com](http://needlecraftcottagesd.com)

**Cardigans Yarn and Fiber**  
3030 State St  
Santa Barbara, CA 93105  
(805) 569-0531  
[cardigans yarnandfiber.com](http://cardigans yarnandfiber.com)

## COLORADO

**Lambspun of Colorado**  
1101 E Lincoln Ave  
Fort Collins, CO 80524  
(800) 558-5262  
[lambspun.com](http://lambspun.com)

**Shuttles Spindles & Skeins**  
760 S 43rd St.  
Boulder, CO 80305  
(303) 499 4822  
[shuttlesspindlesandskeins.com](http://shuttlesspindlesandskeins.com)

## FLORIDA

**A Good Yarn**  
5736 Clark Rd  
Sarasota FL 34233  
[www.agood yarnsarasota.com](http://www.agood yarnsarasota.com)

## IOWA

**Blue Heron Knittery**  
300 W Water St  
Decorah, IA 52101  
(563) 517-1059  
[blueheronknittery.com](http://blueheronknittery.com)

**It's Sew Tempting**  
407 Broad Street  
Story City, IA 50248  
515-733-0182  
[www.itssewtempting.com](http://www.itssewtempting.com)

## ILLINOIS

**Fine Line Creative Arts  
Center**  
37W570 Bolcum Rd.  
St Charles, IL, 60175  
(630) 584-9443  
[fineline.org](http://fineline.org)

## INDIANA

**Trading Post for Fiber Arts**  
8833 S 50 West  
Pendleton, IN 49286  
(765) 778-3331  
[tradingpostfiber.com](http://tradingpostfiber.com)

## KENTUCKY

**LSH Creations**  
1584 Wellesley Dr.  
Lexington, KY 40513  
(859) 321-7831  
[lshcreations.com](http://lshcreations.com)

## MASSACHUSETTS

**WEBS - America's Yarn Store**  
75 Service Center Rd  
Northampton Rd, MA 01060  
(800) 367-9327  
[yarn.com](http://yarn.com)

## MAINE

**Belfast Fiber Arts**  
171 High St. Ste 8  
Belfast, ME 04915  
(207) 323-5248  
[belfastfiberarts.com](http://belfastfiberarts.com)

## MICHIGAN

**Chicks With Sticks, LLC**  
5401-3 Portage Rd  
Kalamazoo, MI 49002  
(269)552-9276  
[chickswithsticksyarns.com](http://chickswithsticksyarns.com)

**The Hen House Quilt Shop**  
211 S Cochran Ave  
Charlotte, MI 48813  
(517) 543-6454  
[thehenhousemi.com](http://thehenhousemi.com)

**Tawas Bay Yarn Co**  
1820 East US 23  
East Tawas, MI 48730  
(989) 362-4463  
[tawasbayyarn.com](http://tawasbayyarn.com)

**Knit & Spin**  
6544 W. Johnson Rd  
Shelby, MI 49455  
(937) 477-5531  
[www.knitandspin.biz](http://www.knitandspin.biz)

**Timeless Stitches**  
112 N Evans St #3  
Tecumseh, MI 49286  
(517) 423-0808

## MINNESOTA

**Ingebretsen's**  
1601 E Lake St  
Minneapolis, MN 55407  
(612) 729-9333  
[ingebretsens.com](http://ingebretsens.com)

**Stitchville USA**  
12945 Ridgedale Dr  
Minnetonka, MN 55305  
(952) 474-1700  
[stitchville.com](http://stitchville.com)

## MISSOURI

**Cecilia's Samplers**  
2652 Shepherd of the Hills Ex-  
pressway  
Branson, MO 65616  
417-336-5016  
[www.ceciliassamplers.com](http://www.ceciliassamplers.com)

**Hillcreek Yarn Shoppe**  
4093 E. Ketterer Rd  
Columbia, MO 65202  
(573) 825-6130  
[hillcreekyarn.com](http://hillcreekyarn.com)

**Yarn Social**  
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Kansas City, MO 64111  
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[yarnsocialkc.com](http://yarnsocialkc.com)

## MONTANA

**Camas Creek Cottage**  
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[camascreekcottage.com](http://camascreekcottage.com)

**Beads Yarns & Threads**  
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Missoula, MT 59801  
(406) 543-9368

## NORTH CAROLINA

**Yadkin Valley Fiber Center**  
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Elkin, NC 28621  
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[yadkinvalleyfibercenter.org](http://yadkinvalleyfibercenter.org)

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[theplumnelly.com](http://theplumnelly.com)

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[woolbearers.com](http://woolbearers.com)

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**Spinning Room of Altamont**  
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[spinningroom.net](http://spinningroom.net)

**Fiber Kingdom**  
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**Fiber Arts in the Glen**  
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Watkins Glen, NY 14891  
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[fiberartsintheglen.com](http://fiberartsintheglen.com)

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**Acorns & Threads**  
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[acornsandthreads.com](http://acornsandthreads.com)

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**Needle & Thread Design**  
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[loftyfiber.com](http://loftyfiber.com)

## UTAH

**Desert Thread**  
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Moab, UT 84532  
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[desertthread.com](http://desertthread.com)

**Needlepoint Joint**  
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[needlepointjoint.com](http://needlepointjoint.com)

### VERMONT

**Six Loose Ladies Yarn & Fiber Shop**  
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[sixlooseladies.com](http://sixlooseladies.com)

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**Sheeps Clothing**  
3311 W Clearwater Ave, STE B120  
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[aknottyhabit.com](http://aknottyhabit.com)

**Blizzard Yarn & Fiber**  
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Vancouver, WA 98661  
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[blizzardyarnandfiber.com](http://blizzardyarnandfiber.com)

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**Sow's Ear**  
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[knitandsip.com](http://knitandsip.com)

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**Ewe Count**  
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[thestitchersmuse.com](http://thestitchersmuse.com)

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Embroidery in a moving train is a challenge. At the same time, it is a calming activity.  
 Photo by Ruben Stellingwerf



The entire travel diary with the months on the left and the dates in each box.  
 Photo by Marjolein Bartels

# An Embroidery Travel Diary

Marjolein Bartels

In the spring of 2019, my boyfriend and I set out on a very special journey. We boarded a train in our hometown Zevenaar in the Netherlands. Via Berlin and Moscow, we traveled to Beijing on the Trans-Mongolian Railway—a train journey of about 10,000 kilometers over land. From the train, we saw many beautiful landscapes and spoke to people of 17 different nationalities throughout the trip. So special to experience!

Several years earlier, I had done a 365-day challenge and embroidered 7x7 cross-stitches every day. These relatively short projects yielded a lot of awareness and creativity; they became a kind of diary. When we made the plans for our train trip, I wanted a similar challenge. I wanted to capture the special experience in a wearable textile. Making something small every day provides a moment of relaxation and awareness, and this textile project had to be feasible in terms of time and energy. Moreover, it should not take up much space because our backpacks were already quite full. Embroidery was the most logical choice for decorating my sweater.

You cannot photograph some experiences, but you can embroider them, keeping the memory alive. The more iconic rendering provides a rich memory of the moment. A photographic image, however, can sometimes take over my memory.

An example of moments that we were not allowed to record are border and passport controls. We don't experience this within the European Union, so this was a special part of our journey. Passports were thoroughly checked for the correct visas, and drug dogs

walked through the carriages and along the platforms. At the border crossing between Mongolia and China, they took our passports outside the train to check them, but in the meantime, the train started running again. We were anxious about getting our passports back. Fortunately, the train's movement turned out to be only to change the restaurant carriage.

Another memorable moment concerned our leftover Mongol money, called *tugrik*. We decided to tip the chambermaids who cleaned the hostel so well. At first, they thought it should go to the manager, so they were very surprised and happy that it was for themselves. That day, I embroidered an icon of the *tugrik*.

In Mongolia, we took an unforgettable tour that introduced us to nomadic Mongolians. We were struck with the beauty of their lifestyle in the steppes. We lived with no running water, no sewer, and no electricity for a week, but the challenges don't matter if you look at the wonderful experiences this tour brought.

The special thing about this travel diary is that I made it on the spot: on the train, in various hotels, and in Mongolian *gers*. Embroidery in a moving train is a challenge, but that is the charm of this project.

I embroidered with DMC Perlé 5 yarns. This is maybe not your average embroidery floss, but the colors are very beautiful. ❖

**MARJOLEIN BARTELS** is a graphic designer with a label for handmade products called Atelier groenblauw. She uses a variety of craft techniques and recycled materials. Learn more at [groenblauw.nl](http://groenblauw.nl) and on Instagram @groenblauw.