

No. 680,672.

Patented Aug. 13, 1901.

W. W. BURSON.  
KNIT MITTEN.

(Application filed Sept. 27, 1880.)

(No Model.)

Fig. 1.

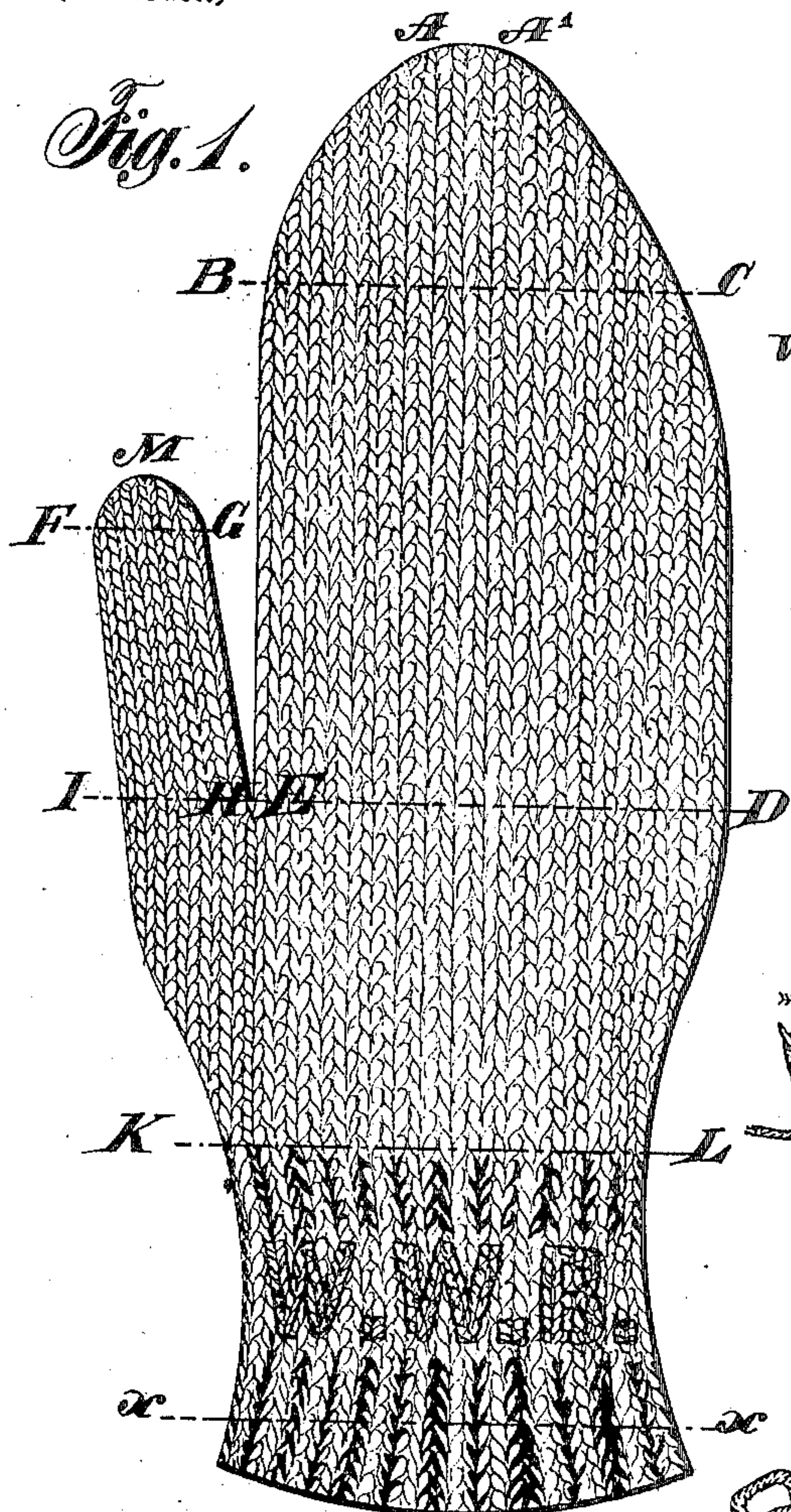


Fig. 2.

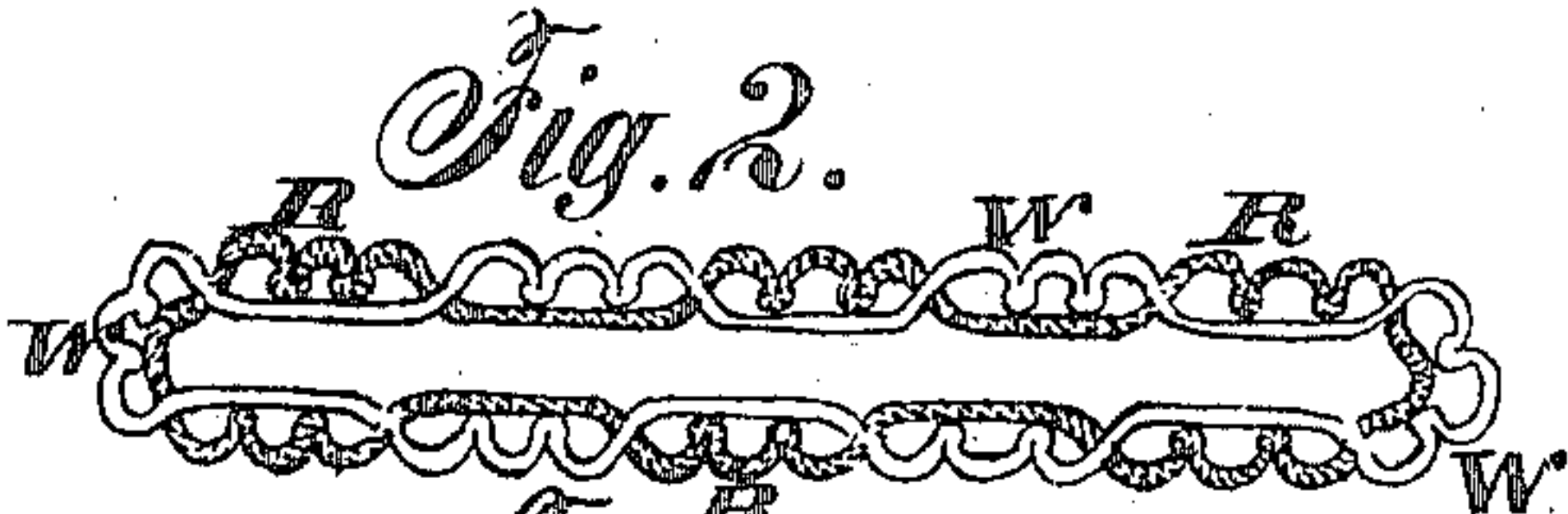


Fig. 3.

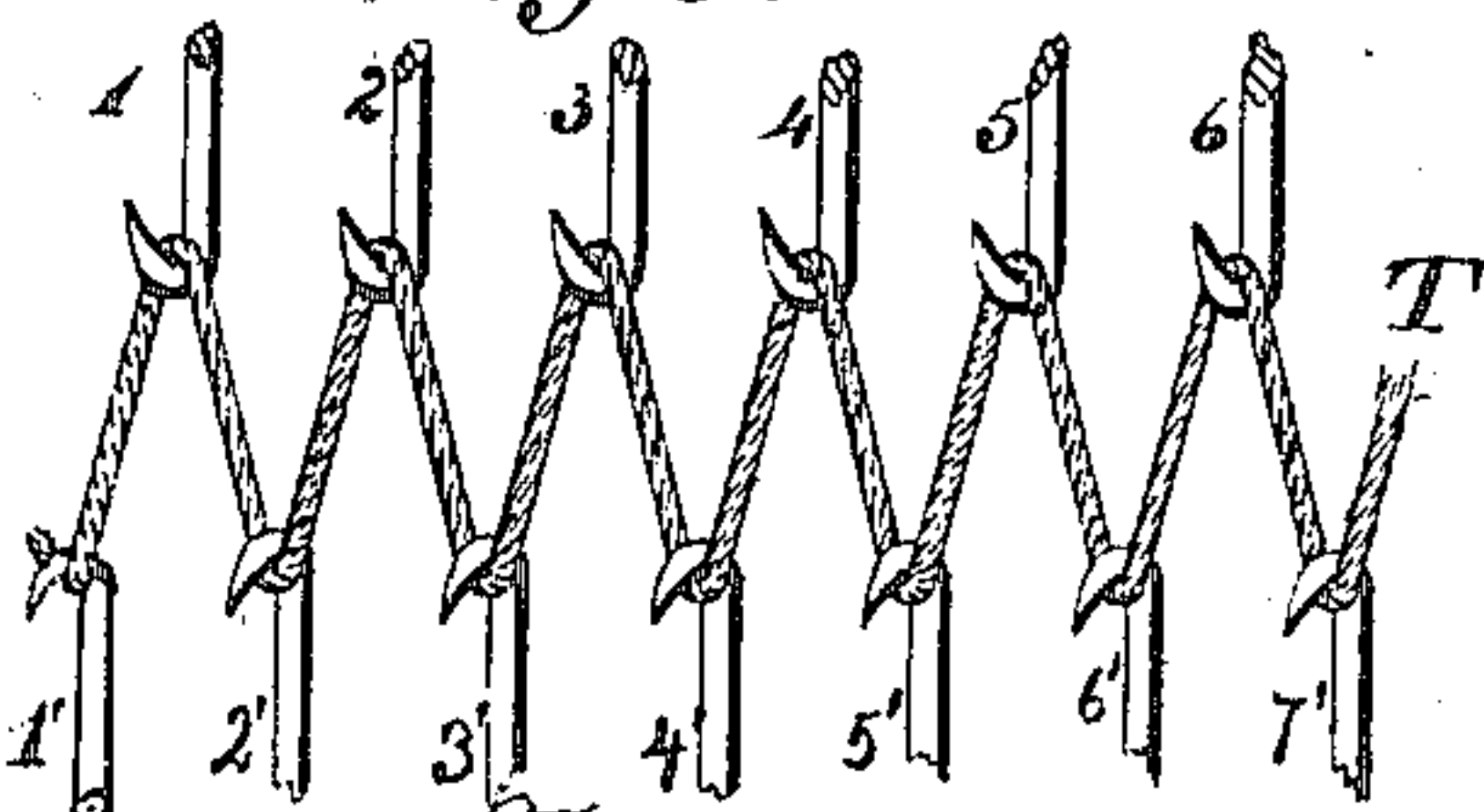


Fig. 4.

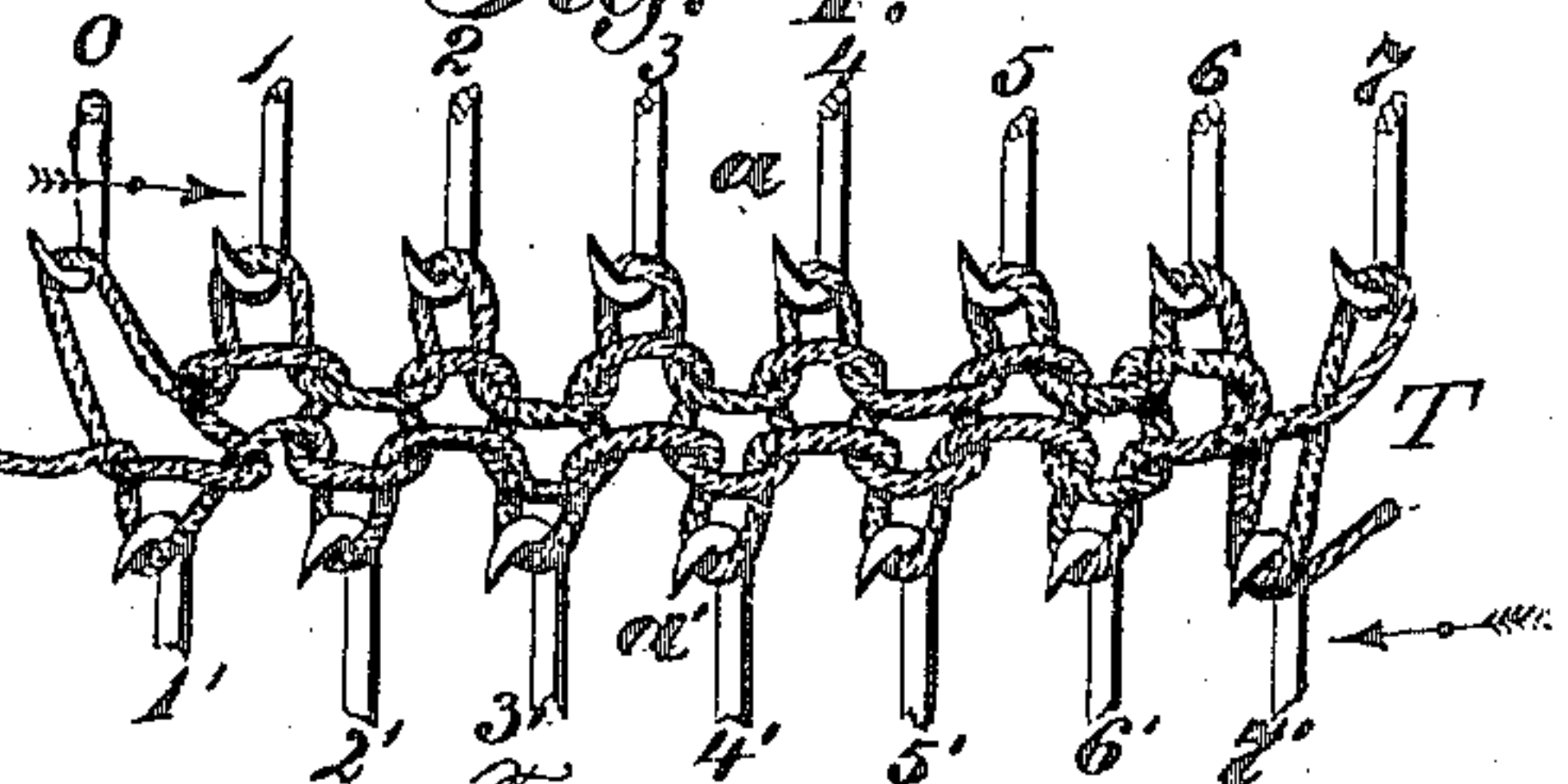
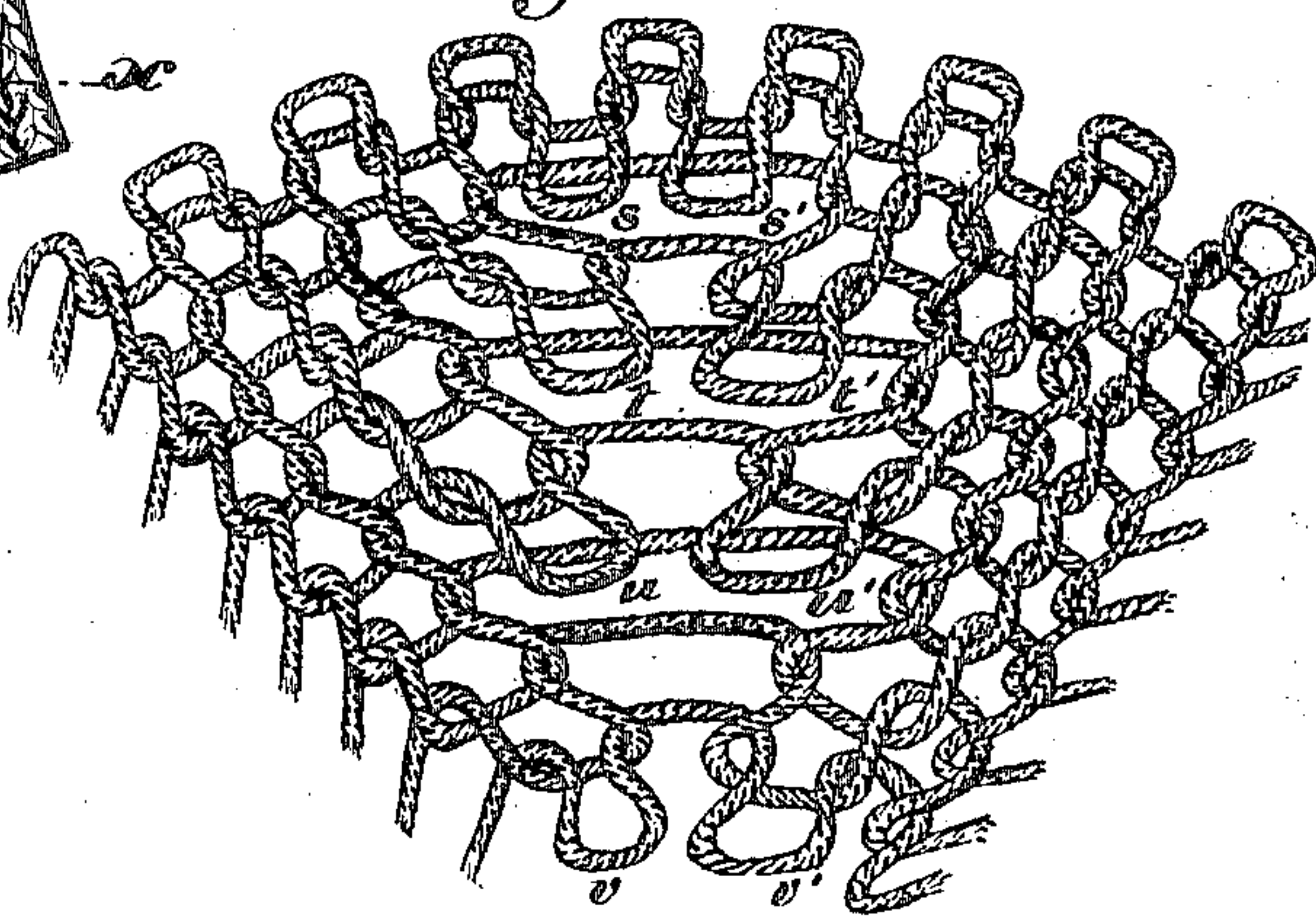


Fig. 5.



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# UNITED STATES PATENT OFFICE.

WILLIAM WORTH BURSON, OF CHICAGO, ILLINOIS, ASSIGNOR TO HIMSELF,  
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## KNIT MITTEN.

SPECIFICATION forming part of Letters Patent No. 680,672, dated August 13, 1901.

Application filed September 27, 1880. Serial No. 17,952. (No specimens.)

*To all whom it may concern:*

Be it known that I, WILLIAM WORTH BURSON, of Chicago, in the State of Illinois, (formerly of Rockford, in said State,) have made  
5 a new and useful Improvement in Mittens and the Method of Producing the Same, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

10 Figure 1 illustrates a completed mitten made in accordance with the invention. Fig. 2 illustrates the mode of knitting the wrist. Fig. 3 illustrates the mode of setting up the work. Fig. 4 illustrates the mode of knitting  
15 from the point shown in Fig. 3 and the mode of widening. Fig. 5 illustrates the mode of narrowing in knitting and of dropping stitches to be afterward closed up by hand.

This invention is specially adapted to be  
20 carried into effect with the aid of parallel row-knitting machines, wherein each needle is separately controlled by pattern devices. A knitting-machine suitable for the purpose is presented in United States Letters Patent  
25 No. 616,600, granted to me December 27, 1898.

My invention consists in a knit mitten embodying certain novel characteristics and in a mode of knitting mittens and tubular fabrics in which several peculiar steps of  
30 widening, narrowing, and finishing or varying the character of the knit work made are carried out successively upon one set of two rows of needles in the same fabric, substantially as illustrated and as set forth herein-  
35 after. These peculiar steps consist in, first, a mode of widening in which each new needle brought into action for widening has its thread caught by a needle in the other row between the said widening-needle and the  
40 needle which was previously the end of its row, so as to close and prevent the formation of an open eyelet-hole; second, a mode of narrowing in which each needle included in knitting a tubular fabric and which is to be  
45 omitted in narrowing is held with its stitch thereon out of action, while one or more rounds are knit on the other needles without it and then has its stitch dropped off and afterward closed up by hand, and, third, a mode  
50 of varying the character of the fabric in which several sections of needles are separately knit

for one or more rounds and then intermediate sections are separately knit in a like way.

The tubular work or mitten is knit of two lateral halves formed of parallel rows of  
55 stitches, which are knit on the two parallel rows of needles of such a machine as referred to. These have all the widening and narrowing on the junction-lines of such two lines of fabric by varying the number of needles in  
60 the two rows in the work, and the two halves are united to form the tube or mitten along the edges thereof by the setting up of the work and also by passing the thread in knitting along one row of needles and then back  
65 along the other, crossing over from the one row to the other at the ends to form a connection of the fabric. The work is set up by operating both rows of needles upon one thread during its passage one way, so as to leave the  
70 thread caught by each needle of the two rows and extended back and forth between them, as in Fig. 3. This sets up stitches and serves to close the end of the tube or fabric to be knit therefrom. A suitable limited number  
75 of needles are set up in this way to form the end of the hand part of the mitten and a less number to form the end of the thumb. The hand and thumb are knit, each part separately, and increased by widening as re-  
80 quired until the two parts occupy adjoining needles in the two rows. To make the tip of the hand from A to A', the work is set up, as illustrated in Fig. 3, by throwing forward simultaneously portions of the needles  
85 in both rows of needles, so as to take the thread—say six needles in each row—from 6 to 1 in row *a* and 6' to 1' in row *a'*, these needles being located in the center of the needles devoted to the hand, needle 7' be-  
90 ing thrown forward also simply to catch and put a tension on the starting end of the thread. The thread having been passed along from the point T, Fig. 3, and the needles having been drawn back, the thread will be caught  
95 and drawn in the manner shown. The yarn is carried to needle 0, then back along series *a* to needle 6, thence across to needle 7' of series *a'* and back to needle 7 of series *a*, thence to needle 6' of series *a'* and the re-  
100 mainder of the latter series. Then I knit back on row *a'* from needle 6', omitting nee-



dle 7', as illustrated in Fig. 4. On the next round I knit to needle 6 on row *a* and then cause the next needle on row *a'* beyond needle 7' to engage the thread and then knit needle 7 on row *a* and then back on row *a'* from needle 7'. In this way I have widened one needle on each row, and the result will be to draw threads across both eyelet-holes, so as to avoid such eyelet-holes being drawn open in use, which is one evil attending the ordinary mode of widening by the addition of needles. In this way I go on adding needles to each row on each side as often as needed to give the proper size and form for the hand. It is preferred not to widen the two rows at the same place on successive rounds unless it is really necessary. The knitting and widening are carried on in this way to the proper extent to form the hand part down to the thumb-junction line D. Then the needles thereof are left idle, holding their stitch-loops out of action, while in a like way the thumb part is set up and knit down to line I on the adjoining needles, and then both sets of needles are knit together for a few rounds, so as to unite and form the hand and thumb parts into the palm part as a single tube. After a few rounds have been knit on the palm part from the line I D as one tube the fabric is narrowed on the thumb edge I to K, Fig. 1, and on the other edge, so as to reduce the size to the proper extent for the wrist. The mode of effecting this narrowing is illustrated by Fig. 5, where the last needle in each row has been stopped and held with its stitch unknit, while one or more succeeding rounds are knit on the remaining needles tubewise. These stitches so held unknit are represented by *s s' t t' u u' v v'* in Fig. 5 as in pairs, one stitch on each row of needles; but one stitch alone may be left at one time; or any other suitable variation in the order may be made to secure the proper degree of narrowing. These stitches are dropped from the needles without knitting after one or more rounds, to be afterward sewed or crocheted up for finishing the article, as will be understood. The hand portion is knit plain or, as desired, to the line K L at the wrist, and the wrist portion is then knit on the same needles continuous therewith from this line, so as to form an elastic and contracted part. In forming the wrist portion the needles are caused to work in alternating sections of two or other small number each. One alternating series or set of these sections is caused to knit two or other small number of rounds, the intermediate sections remaining at rest, and then the series or set of sections located in alternation with the first sections is brought into action, the idle series or set of sections holding their stitches while the other series or set of sections is being knit. These two series or sets are knit thus alternately with either the same or different colored thread, according to the effect it is desired to secure, as illustrated in Fig. 2.

Any desired variation in the arrangement and alternation of the sections or sets may be provided for. The result is to form an elastic and ornamental top for the wrist portion of the mitten. Any required design of letters, &c., may be produced. (See Fig. 1.) I prefer to end with a few rounds of plain knitting.

In carrying out the several steps the needles are controlled separately by guide-patterns in the machine referred to, so that each needle may be separately knit or held without knitting at the required times, as may be necessary in order to secure the desired results in the product.

It is evident that on the principles stated various modifications may be made in the procedure and in the product.

I claim as my invention—

1. The improved method of widening in knitting tubular fabric on a machine having two parallel rows of needles, which consists in throwing an additional needle into action and forming a widening stitch-loop thereon at the end of one of the rows of stitches, catching the thread between such new loop and the last previous stitch in the same row by a needle in the opposite row to form a supplemental loop, and knitting such widening stitch-loop and supplemental loop in a succeeding course, substantially as described.

2. The improved method of narrowing in knitting tubular work on a machine having two parallel rows of needles, which consists in throwing out of action a needle bearing an end loop or stitch, causing the thread to knit back and forth around the fabric tubularwise without knitting such stitch, dropping such stitch from the needle on a succeeding course, and subsequently catching up such stitch by hand, substantially as set forth.

3. The improved method of giving an elastic top finish to the fabric in knitting plain tubular work on a machine having two rows of needles, which consists in knitting a portion of the fabric plain with all the needles in regular order, and then knitting another portion of the fabric of elastic ribbed work continuous therewith, by knitting the needles in sections or sets, leaving intermediate sections unknit for one or more rounds, and then knitting the remaining sections in the same way, omitting those knit before, substantially as described.

4. The improved method of knitting a mitten, which consists in setting up stitches on two rows of needles for the tip end of the hand part, knitting around tubularwise, widening as required by knitting an additional needle at the end of one of the rows, and each time of widening catching the thread by a needle in the opposite row between such added needle and the one next preceding it in the same row, stopping work on the hand part after the latter has been knitted to the base of the thumb, setting up and knitting a thumb on adjacent needles in the same rows of needles,



then uniting the hand and thumb parts by knitting around both thereof tubularwise, then knitting the wrist, narrowing the same by leaving end stitches idle and unknit while  
 5 knitting around the remainder, afterward dropping such idle stitches from their needles, and closing them by hand, substantially as set forth.

5. The improved method of knitting a mitten, which consists in setting up stitches on two rows of needles for the tip end of the hand part, knitting around tubularwise, widening as required by knitting an additional needle at the end of one of the rows,  
 15 and each time of widening catching the thread by a needle in the opposite row between such added needle and the one next preceding it in the same row, stopping work on the hand part after the latter has been knitted to the  
 20 base of the thumb, setting up and knitting a thumb on adjacent needles in the same rows of needles, then uniting the hand and thumb parts by knitting around both thereof tubularwise, then knitting the wrist, narrowing the  
 25 same by leaving end stitches idle and unknit while knitting around the remainder, afterward dropping such idle stitches from their needles, and closing them by hand, and then knitting the top of the wrist tubular with  
 30 elastic ribs which are continuous with the remainder of the wrist on the same needles by knitting on alternate sections of said needles in successive rounds, substantially as set forth.

35 6. The improved knit mitten formed with a widened tip on its hand portion, a narrowed wrist portion, and an elastic top finish continuous with the latter and formed of elastic ribs consisting of sections pertaining  
 40 to one course and alternating with sections pertaining to a succeeding course, substantially as described.

7. A widened seamless knit fabric having the eyelet-hole at each widening closed by  
 45 means of a loop caught up from the course in which the widening-loop is formed between the widening-stitch and the next preceding

stitch and knit in a subsequent course, substantially as described.

8. A narrowed seamless knit fabric having  
 50 the narrowings produced by dropped stitches, with one or more courses intervening between successive narrowings, and with the said dropped stitches hand-caught, substantially  
 55 as described.

9. The improved mitten having a seamless tip and widened hand portion, a seamless-shaped thumb part, a narrowed upper hand portion, and an elastic wrist portion continuous with an adjoining portion of plain fabric  
 60 and consisting of separated sections of loops knit in one course and alternating sections of loops knit in another course, substantially as described.

10. The improved seamless machine-knit  
 65 mitten, having the opposite sides of its hand portion united at the tip thereof by a starting course, widenings along the edge of the hand having the eyelet-holes closed by means of a  
 70 loop drawn up next adjacent the widening-loop at each place of widening, a seamless thumb knit to the said hand portion, and the upper part of the hand narrowed by dropped  
 75 stitches and having the said dropped stitches hand-caught, substantially as described.

11. The improved seamless machine-knit mitten, having the opposite sides of its hand portion united at the tip thereof by a starting course, widenings along the edge of the hand having the eyelet-holes closed by means of a  
 80 loop drawn up next adjacent the widening-loop at each place of widening, a seamless thumb knit to the said hand portion, and the upper part of the hand narrowed by dropped  
 85 stitches and having the said dropped stitches hand-caught, and an elastic wrist portion composed of alternating sections of loops forming portions of successive courses, substantially as described.

WILLIAM WORTH BURSON.

Witnesses:

SEYMOUR G. BRONSON,  
 ALFRED P. WELLS.