No. 751,512. PATENTED FEB. 9, 1904.

J. T. HOGAN.

STITCHED BUTTONHOLE.

APPLICATION FILED OCT. 24, 1903.

NO MODEL.

Fig. 3,

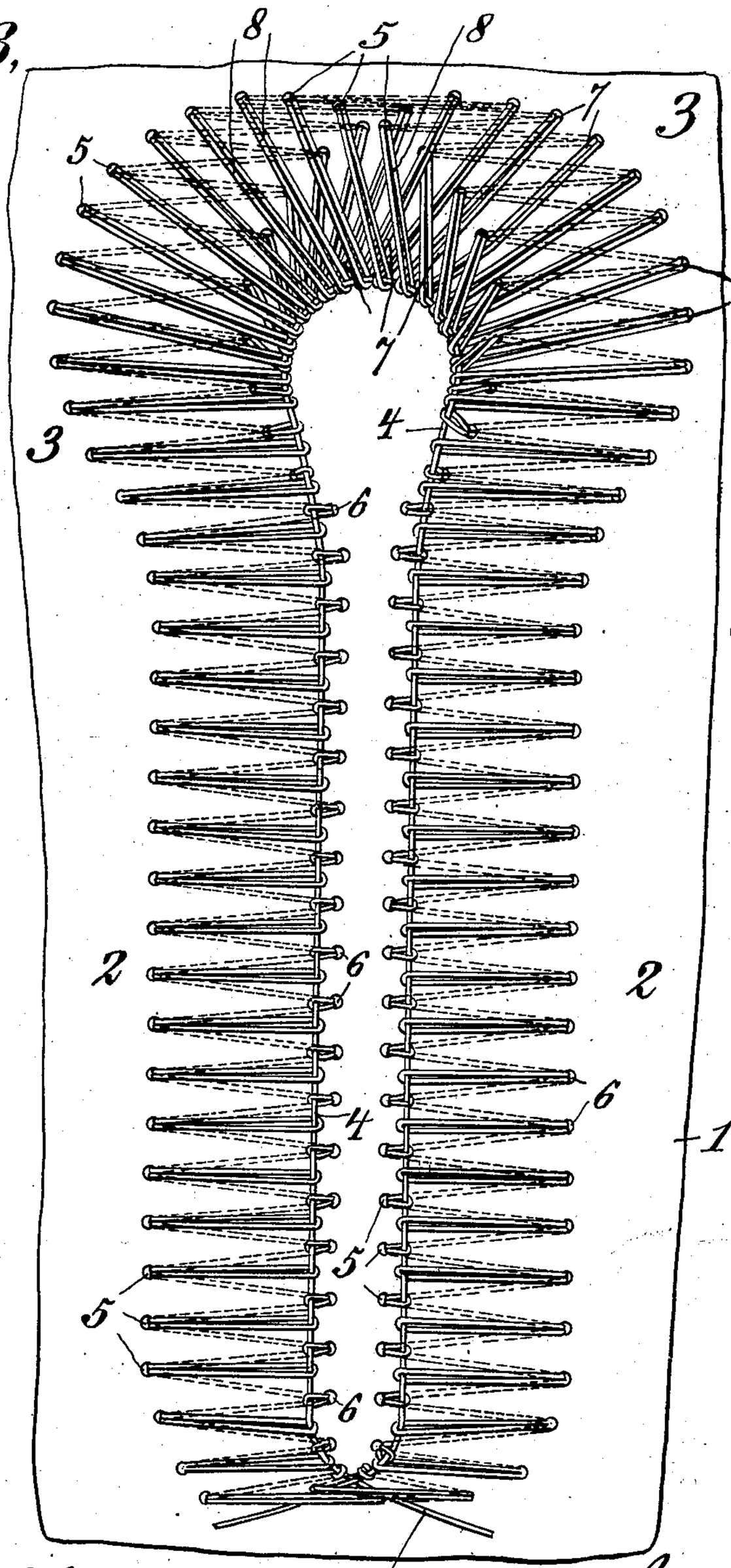


Fig. 1,

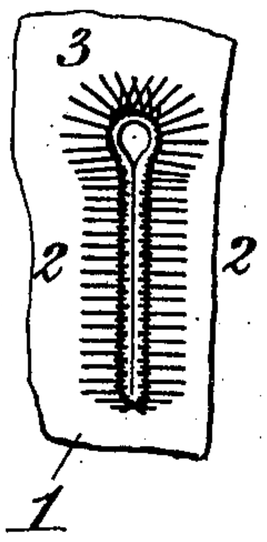
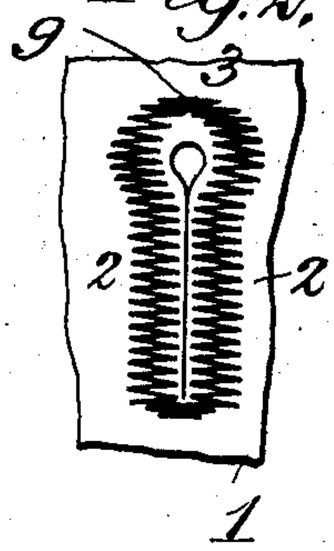


Fig. 2,



WITNESSES:

Edgar D. Williams

C. F. Cunningham

INVENTOR

James T. Hogan

BY

Chapin Hayward Mable

his ATTORNEYS

No. 751,512. Patented February 9, 1904.

UNITED STATES PATENT OFFICE.

JAMES T. HOGAN, OF JERSEY CITY, NEW JERSEY, ASSIGNOR TO THE NATIONAL MACHINE COMPANY, OF MAMARONECK, NEW YORK, A CORPORATION OF NEW YORK.

STITCHED BUTTONHOLE.

SPECIFICATION forming part of Letters Patent No. 751,512, dated February 9, 1904.

Application filed October 24, 1903. Serial No. 178,332. (No model.)

To all whom it may concern:

Be it known that I, JAMES T. HOGAN, a citizen of the United States of America, and a resident of Jersey City, county of Hudson, and State of New Jersey, have invented certain new and useful Improvements in Stitched Buttonholes, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to improvements in stitched buttonholes, and particularly to that class of stitched buttonholes known as "eyelet-ended" buttonholes.

In my improved buttonhole the side stitching may be of the usual form—that is to say, it may comprise a plurality of substantially parallel stitches arranged laterally of the buttonhole-slit. The stitching around the eyelet end comprises a plurality of stitches inserted around the eyelet end of the buttonhole in lines approximately parallel with each other and with the side threads of the stitches. The stitches so inserted, however, are drawn into approximately radial form on one side of the fabric, so that the resulting product is a buttonhole having stitches comprising a plurality of approximately parallel threads around its eyelet end on one side of the fabric and approximately radial threads upon the other. Further, the loops of the stitches drawn to approximately radial form near the top of the eyelet end of the buttonhole are formed in two series of divergent lines, lines of one series crossing lines of the other.

The method I preferably employ for stitching a buttonhole to produce the foregoing results is as follows: I produce lock-stitches by the employment of two threads, as is usual in lock-stitching, and I perform the stitching by inserting the needle carrying one of the threads through two rows of holes, the lines connecting the holes of one row with the next succeeding holes of the other row being approximately parallel, and I apply such tension to the needle-thread as to draw the loops formed by the other thread around the needle-thread into approximately radial lines upon one side of the fabric. The needle-thread will then bound the slit of the buttonhole on one side of the fabric, while the loops formed around same by the other thread will radiate from said needle-thread on that side of the fabric, the portions of the thread connecting the loops upon the other side of the fabric remaining in approximately parallel lines. A buttonhole so stitched will have the appearance on the face of an ordinary eyelet-ended buttonhole, in which stitch-threads are inserted in two series of holes, the lines connecting which radiate, but will be very much stronger because the stitch-threads at the rear will overlap each other at the end of the buttonhole transversely of the buttonhole-slit and will so reinforce and strengthen the buttonhole at this point, while the two series of divergent lines of stitching upon the face of the fabric which cross each other will further strengthen and reinforce this portion of the buttonhole.

I will now proceed to describe my invention with reference to the accompanying drawings and will then point out the novel features in claims.

In the drawings, Figure 1 shows a face view of a piece of fabric having a stitched buttonhole embodying my invention. Fig. 2 shows a view of the rear side thereof. Fig. 3 shows a very much enlarged view illustrating the formation and arrangement of the stitching at both the front and rear of the fabric.

The fabric is designated in the drawings by reference character 1, the side stitching and opposite sides of the buttonhole-slit by reference characters 2 2, and the stitching around the eyelet end of the buttonhole as a whole by reference character 3.

The stitching on the face of the fabric comprises a plurality of loops formed, preferably, by one continuous thread, said loops inclosing a thread 4, which bounds the buttonhole-slit on the face of the fabric. The loops are connected upon the rear side of the fabric, as shown in full lines in Fig. 2 and in dotted lines in Fig. 3, the lines formed by the thread being approximately parallel throughout, the

only divergence from parallelism being that necessarily accruing from the feed or advance from one stitch to the next.

The holes for the stitches are arranged in two rows, one row designated by reference character 5 and the other row designated by reference character 6. The row of holes 5 commences at the bottom of the buttonhole, follows up along the outer line of the stitching on the left-hand side thereof, around the left-hand outer edge of the stitching at the eyelet end to the highest point of the buttonhole, and then passes down through the stitching upon the other side of the eyelet end of the buttonhole down along the inner edge of the stitching at the right-hand side of the buttonhole. The row of holes 6 commences at the bottom of the buttonhole upon the inside of the line of stitching at the left-hand side of the buttonhole-slit and continues upward parallel with the line 5 through the stitching at the left-hand side of the eyelet end of the buttonhole, out near the apex of the stitching at the extreme upper end of the buttonhole, and around the outer edge of the stitching at the right-hand side of the buttonhole down to the foot of the buttonhole.

The distance between the two rows of holes 5 and 6 upon any horizontal line (transverse of the buttonhole-slit) throughout the buttonhole is substantially uniform, and the stitching is formed by inserting the thread successively through holes alternately in the two rows, the lines connecting successive holes being approximately parallel. The departure from parallelism in the lines connecting succeeding holes between the two rows is only such as is sufficient to feed from one stitch to the next.

The loops of the rear thread are formed around the front thread 4, and said loops will upon the front of the fabric be substantially parallel throughout the said stitching upon both sides of the buttonhole-slit. The loops around the eyelet end of the buttonhole will pass through holes from the rear of the fabric, which are in lines approximately parallel with the side stitches, but such loops, being drawn down by the thread 4, will form radiating lines upon the face of the fabric, as shown in Figs. 1 and 3 of the drawings. The tension of the thread 4 will in no way affect the positions of the stitch-threads at the rear of the fabric, so that the said threads will remain in approximately parallel lines throughout both the side stitching and the stitching around the eyelet end of the buttonhole upon the rear of the fabric, as clearly shown in full lines in Fig. 2 and in dotted lines in Fig. 3. The threads at the eyelet end of a buttonhole so formed will upon the front of the fabric be in two series of divergent lines, lines of one series crossing lines of the other. The lines of one series are designated by reference character 7 and are crossed by the lines 8 of the other series. These crossing threads tend to greatly strengthen the stitching of the buttonhole at the eyelet end, while in actual practice the stitching is so close as to render the overlapping of the threads hardly noticeable.

At the rear of the fabric the stitch-threads at the apex of the eyelet end—namely, those designated by reference character 9 in Fig. 2 of the drawings—form, in effect, end bar-ring-stitches, which reinforce and further strengthen the end of the buttonhole. An eyelet-ended buttonhole is ordinarily weak at this point, because there are no lateral or transverse stitches thereat to give strength thereto. In this construction the lateral or transverse threads on one side of the buttonhole and the crossing radiating threads upon the other side of the buttonhole combine to give great strength, while the buttonhole so formed differs hardly at all in appearance upon the face from the usual form of buttonhole just described.

In practice I find that the most convenient method of stitching the buttonhole is by the use of an ordinary lock-stitch bottonhole-sewing machine, the relation of movement between the work and the needle mechanism being such as to produce substantially parallel stitches along the sides and around the eyelet end of the buttonhole, the tension of the upper or needle-thread being arranged to exceed the tension of the shuttle or lower thread to such an extent as to draw the loops formed by the shuttle-thread around the needle-thread into the positions shown and described.

What I claim is—

1. A fabric having a stitched eyelet-ended buttonhole, the stitch-threads whereof, around the eyelet end, are approximately parallel on one side of the fabric, and approximately radial on the other.

2. A fabric having a stitched eyelet-ended buttonhole, the side stitches of which are substantially parallel throughout, and the stitch-threads around the eyelet end of which are approximately parallel with the side stitches on one side of the fabric, and approximately radial on the other.

3. A fabric having a stitched eyelet-ended buttonhole, the stitches at the eyelet end of which are inserted through two rows of holes, the lines connecting the holes of one row, with the next succeeding holes of the other row, being approximately parallel, the thread forming the loops of the said stitches drawn to approximately radial lines upon one side of the said fabric.

4. A fabric having a stitched eyelet-ended buttonhole, the threads forming the stitches around the eyelet end, upon one side of the said fabric, being in two series of divergent lines, lines of one series crossing lines of the other, and upon the other side of the fabric be-

ing in approximately parallel lines, and transverse of both the series of lines upon the first said side of the fabric.

5. A fabric having a stitched eyelet-ended buttonhole, the stitches at the eyelet end composed of two threads, one thread bounding the buttonhole and the other thread forming loops inclosing the first-mentioned thread, the lines of said loops being approximately radial on one side of the fabric, and the lines of the said loop-forming thread being approximately parallel on the other side of the fabric.

JAMES T. HOGAN.

Witnesses:
D. HOWARD HAYWOOD,
C. F. CARRINGTON.