D. W. G. HUMPHREY.

Sewing Machine Buttonhole Stitch.

No. 36,616. Patented Oct. 7, 1862.

Fig. 1

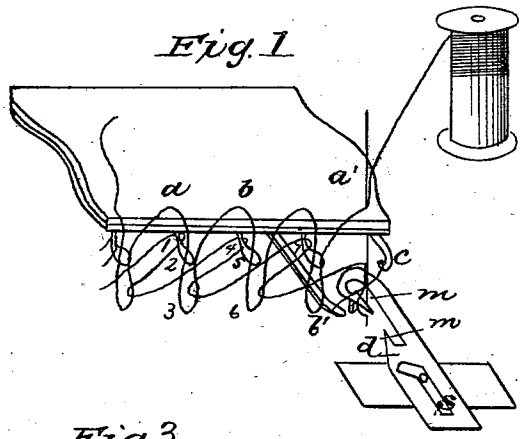


Fig. 2

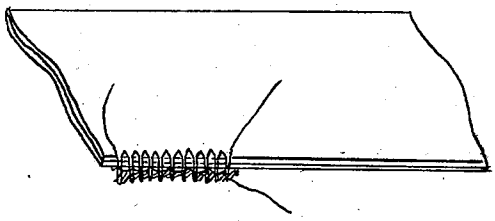


Fig. 3

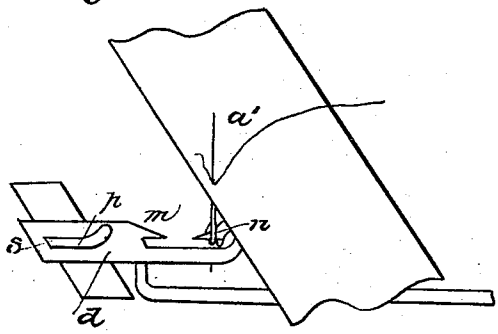


Fig. 4

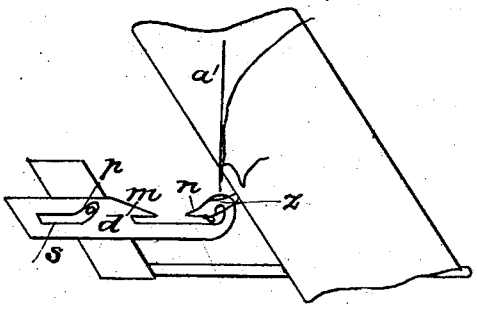


Fig. 5

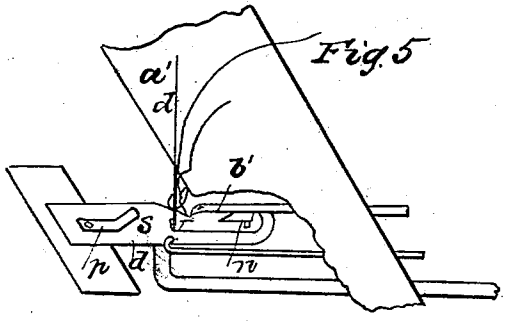
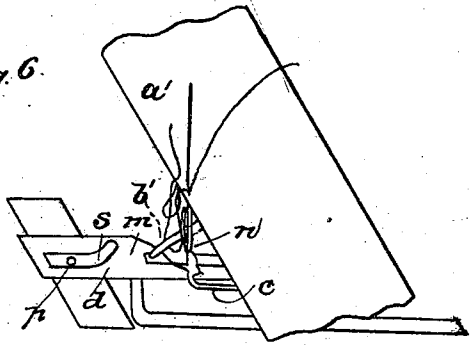


Fig. 6



Witnesses

Eugene Humphrey

Thomas Pennell

Inventor

D. W. G. Humphrey

UNITED STATES PATENT OFFICE.

D. W. G. HUMPHREY, OF CHELSEA, MASSACHUSETTS.

IMPROVED BUTTON-HOLE STITCH.

Specification forming part of Letters Patent No. **36,616**, dated October 7, 1862.

To all whom it may concern:

Be it known that I, D. W. G. HUMPHREY, of Chelsea, in the county of Suffolk and State of Massachusetts, have invented a new Stitch for Button-Hole or Edge Finish; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, which make a part of this specification, in which—

Figure 1 represents a piece of cloth with the stitch made over its edge and left loose that the interlooping of the two threads may be more easily traced. The black line represents the finishing-thread, or the thread which is alternately carried through the cloth, and then over its edge. The red line represents the binding-thread, or thread interlooped with the finishing-thread for the purpose of binding its stitches. At *a*, Fig. 1, loop 2 of the finishing-thread is passed through the cloth and through loop 1 of the binding-thread. Loop 2 is then carried in a side direction by the edge of the cloth far enough to receive loop 3 of the finishing-thread over the edge. Through loop 3 is passed loop 4 of the binding-thread. Loop 4 is a repetition of loop 1, ending the first stitch and beginning the second. Then loop 5 of the finishing-thread is passed through the cloth at *b* and through loop 4 of the binding-thread. Loop 5 is then carried in a side direction by the edge of the cloth far enough to receive loop 6 of the finishing-thread over the edge. Through loop 6 is passed loop 7, and thus the stitches may be repeated. In a succession of stitches the loops of the finishing-thread pass alternately—one through a loop of the binding-thread and around the succeeding loop of its own thread, the other through the preceding loop of its own thread and around a loop of the binding-thread, the binding-thread passing alternately around one loop of the finishing-thread and through the next, as represented.

Fig. 2 represents the stitches made shorter or nearer together, and drawn nearly close. When closely drawn they form a cord or finish on the edge, much resembling the button-hole stitch made by hand.

Fig. 1 shows, in addition to the manner of interlooping the threads, the mechanical parts which are combined to produce the stitch. *a'* and *b'* are needles with eyes near their points. *a'* works alternately through and over the edge of the cloth. *b'* works only on one side of the cloth. *c* is a hook which assists in forming the loops of the binding-thread. *d* is a loop-carrier, with two points, *m* and *n*, which work alternately and enter the loops from opposite directions. Needle *a'*, Fig. 3, carries a loop of the finishing-thread through the cloth, which loop is entered by the point *n*. *a'* then retreats, leaving its loop on the point *n*, Fig. 4. The loop-carrier *d* then moves farther forward, and at the same time laterally far enough to receive the needle *a'* as it descends over the edge of the cloth through the loop on point *n* at *z*. The lateral motion of the loop-carrier is produced by the slot *s* as it slides on the pin *p*. As soon as the needle *a'*, carrying its loop over the edge of the cloth and through the loop which was carried through the cloth, enters at *z*, the loop-carrier *d* retreats, leaving the loop carried through the cloth over the needle *a'*. The over-edge loop is then entered by the point *m*, Fig. 5. The needle *b'*, Fig. 6, then passes a loop of the binding-thread through the over-edge loop. Point *m* and needle *a'* retreat, leaving the loop over needle *b'*. Hook *c* seizes the loop of the binding-thread and holds it open until needle *a'* carries another loop through the cloth and through this loop of the binding-thread. Point *n* again comes into the loop, as in Fig. 3. The needles *a'* and *b'*, hook *c*, loop carrier *d*, and the feeding arrangement are moved by cams driven by suitable mechanical devices.

I claim—

The button-hole or edge-finish stitch made from two threads and interlooped, substantially as described.

D. W. G. HUMPHREY.

Witnesses:
WILLIAM GALLISON,
SAMUEL ORCUTT.