

(No Model.)

W. F. BROOKS, A. V. ABERCROMBIE & S. W. HOUGHTON.  
CORDING ATTACHMENT FOR SEWING MACHINES.

No. 366,147.

Patented July 5, 1887.

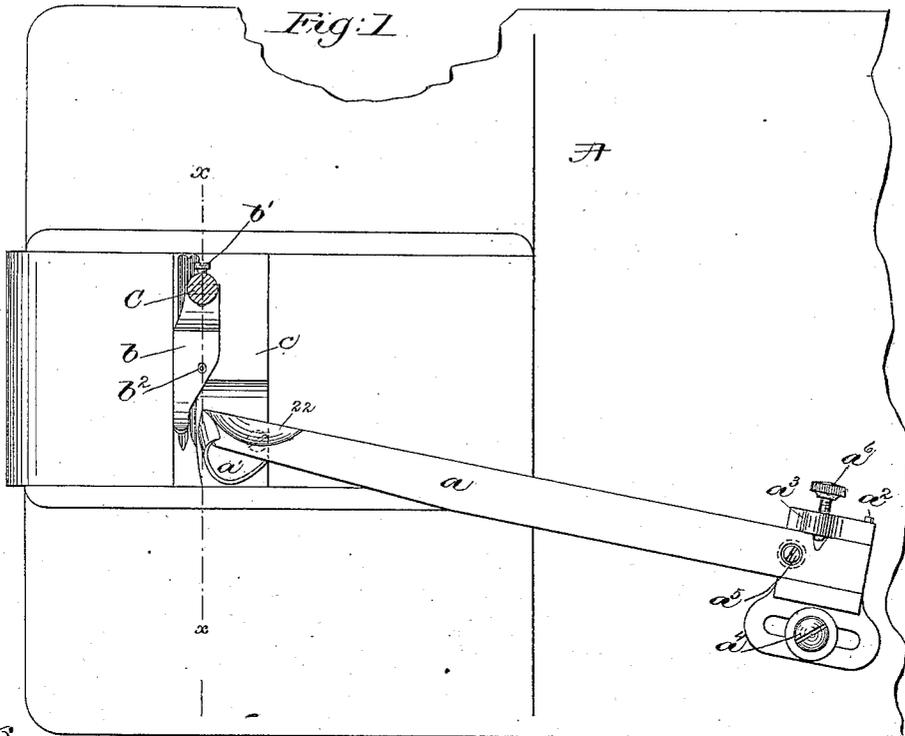


Fig. 6.

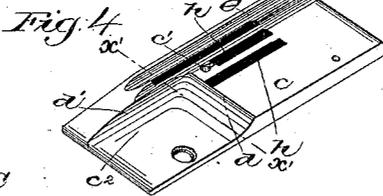
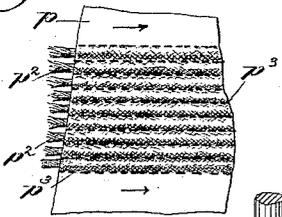


Fig. 5.

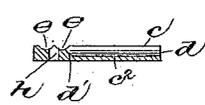


Fig. 2.

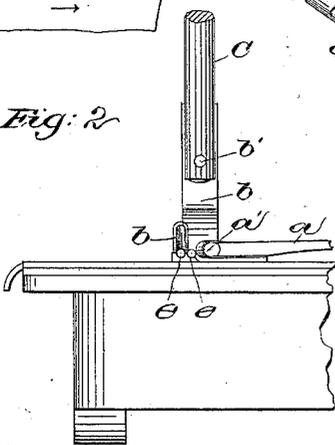


Fig. 3.

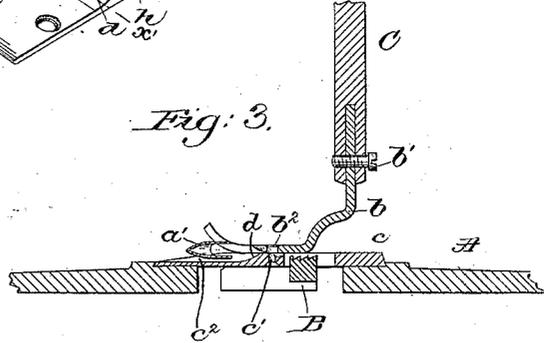
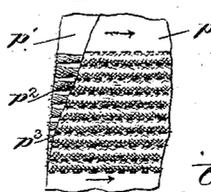


Fig. 7.



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# UNITED STATES PATENT OFFICE.

WILLIAM F. BROOKS AND ALEXANDER V. ABERCROMBIE, OF BRIDGEPORT, CONNECTICUT, AND STANLEY W. HOUGHTON, OF SPRINGFIELD, MASSACHUSETTS; SAID HOUGHTON ASSIGNOR TO SAID BROOKS AND ABERCROMBIE.

## CORDING ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 366,147, dated July 5, 1887.

Application filed September 25, 1886. Serial No. 214,534. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM F. BROOKS and ALEXANDER V. ABERCROMBIE, both of Bridgeport, county of Fairfield, and State of Connecticut, and STANLEY W. HOUGHTON, of Springfield, county of Hampden, and State of Massachusetts, have invented an Improvement in Cording Attachments for Sewing-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

In the process of cording with sewing-machines by means of the attachments commonly used for that purpose, of the two plies between which the cord is laid the upper ply in its progress toward the needle is bent in a direction transverse to the line of stitching as the work to be commenced is introduced under the presser-foot to be stitched, and consequently the upper ply so bent down at its end and stitched to the under ply is taken up and shortened by the thickness of the cords interposed between the said plies, such shortening or taking up of the upper ply being increased by the laying in or stitching of successive parallel and contiguous cords. This difficulty or defect has been overcome to some extent by the use of what is called a "right and left corder," whereby the successive cords are laid and stitched in opposite direction, so that the ply which is held back in one direction when commencing to stitch the two plies together with a cord between is held back in the opposite direction in stitching the next cord, and the edges of the two plies are thus kept measurably even. We have overcome this difficulty by so constructing the cording mechanism that the degree of bending of the upper ply is diminished as the material is first introduced under the presser-foot to be stitched, and the two plies are subjected to substantially uniform amount of bending, or meet with the same resistance in passing toward the needle, so that neither ply is held back of the other. To this end we have made the throat-plate thicker than heretofore, and have provided it with a recess below the general surface or level thereof, to receive the delivering end of the

planes the adjacent part of the anterior end of the throat-plate, so that the rise is gradual from the bottom of said recess to the general surface of the plate. We have also provided means for so adjusting the corder-arm that it may be made to press more or less against either of the two plies and still be held rigidly in position. By this construction the under ply, passing under the corder-arm and up the said inclined plane, is bent transversely, as stated, to the same extent as the upper ply, passing under the inclined front end of the presser-foot and over the corder. If there should be any difference or inequality of transverse bending at the commencement of the cording, as stated, such bending may be equalized by slightly raising or lowering the corder-arm. This contrivance is equally applicable to either of the common styles of cording—viz., that in which the under ply remains flat and is corrugated over the cord, and that in which the two plies are corrugated on opposite sides of the cord. In the former case the presser-foot only is provided with grooves to cover the ridges formed by the cords. In the latter both presser-foot and throat-plate are grooved.

Our invention consists, essentially, in the combination, with a throat-plate having in its upper surface a recessed or sunken portion in front of the needle-hole, said recessed portion terminating at its rear end in an incline rising to the level of the main portion of the upper surface of said plate, of a corder to enter the said recess, whereby the under ply of the material to be corded may be bent upward in a manner to correspond with the downward bend of the upper ply, substantially as will be described.

Other features of our invention will be hereinafter described, and particularly defined in the claims at the end of this specification.

Figure 1 is a plan view of a sufficient portion of a sewing-machine to illustrate our invention, the figure showing our improved cording attachment and part of the bed of a sewing-machine, the presser-foot, and the shank thereof. Fig. 2 is an elevation of a part of Fig. 1, looking at it in the direction of the ar-

row, Fig. 1. Fig. 3 is a section of Fig. 1 in the dotted line  $x x$ . Fig. 4 is a perspective view of the throat-plate removed from the machine. Fig. 5 is a section of Fig. 4 in the line  $x' x'$ . Fig. 6 shows a piece of corded material as it will appear at its end when corded by our improved corder; and Fig. 7, a like piece of material corded upon an ordinary corder, one ply being made to fall short of the other in the process of cording.

The bed-plate A, the feed B, and the presser-foot shank C are supposed to be the same as in the Wheeler & Wilson sewing-machine, style No. 10. The cord-guiding arm  $a$ , having at its outer end a cord-guide,  $a'$ , of usual shape, is beveled or reduced at its front edges, as at 22. The cord-guiding arm  $a$  is herein shown as pivoted by a pin,  $a^2$ , in a block,  $a^3$ , attached by a screw,  $a^4$ , to the bed-plate, in the usual way. The said block has a shouldered screw or other device,  $a^5$ , for raising or lowering the arm  $a$ , and also a thumb-screw or other device,  $a^6$ , for securing the arm  $a$  in the proper position to which it has been brought by means of the device  $a^5$ . The screw or other device,  $a^6$ , may be turned outward, so as to allow the arm  $a$  to be turned back away from the stitching-point. The presser-shank C, at its lower end, is provided with a presser-foot,  $b$ , attached thereto in usual manner, for cording, said foot being provided with a needle-hole,  $b^2$ , and being attached to the said shank by a screw,  $b^1$ , as is usual.

The throat-plate  $c$ , or the plate surrounding or co-operating with the feed and the presser-foot and the needle, is shown as cut away, recessed, or sunken, as at  $c^2$ , from a point just in front of the needle-hole  $c'$  toward the operator, to receive in it not only the under ply of material, but also part of the delivery end of the corder. The surface of the recessed or sunken part  $c^2$  of the plate  $c$  serves to support the under ply of material in front of the needle-hole at a lower level than at the throat-plate immediately about the needle-hole, the inclined portion or surface  $d$  of the throat-plate acting to bend the under ply of the material upward just as the upper ply is bent downward by the presser-foot.

We do not desire to limit our invention to the exact construction of the plate  $c$ , or to making the plate having the recess  $c^2$  and the incline  $d$  as an integral part of the throat-plate  $c$ , although such construction is preferred.

In Figs. 6 and 7,  $p$  represents the upper and  $p'$  the lower ply, and  $p^2$  the cording between the parallel rows of stitches  $p^3$ . In Fig. 6 the ends of the two plies come even one with

the other, because the under ply is bent upward by the inclined portion  $d$  of the throat  $c$  as much as the upper ply is thrown down by the inclined toe of the presser-foot; but in Fig. 7 the upper ply is shortened by being bent more than the under ply.

The arrows in Figs. 6 and 7 designate the direction of the feed.

We claim—

1. A sewing-machine throat-plate having in its upper surface an open recessed or sunken portion,  $c^2$ , for the reception of the corder-arm, said recessed portion terminating at its rear end, in front of the needle-hole, in an inclined portion,  $d$ , extending upward to the level of the main portion of the upper surface of said plate, combined with a corder to enter said recess, whereby the under ply of material to be corded may be bent upward in a manner to correspond with the downward bend of the upper ply, substantially as set forth.

2. A sewing-machine throat-plate having in its upper surface an open recessed or sunken portion,  $c^2$ , for the reception of the corder-arm, said recessed portion terminating at its rear end, in front of the needle-hole, in an inclined portion,  $d$ , extending upward to the level of the main portion of the upper surface of said plate, combined with a cord-guide arranged in said recessed portion, and with a suitable presser-foot, substantially as set forth.

3. The throat-plate  $c$ , having in its upper side the open recessed or sunken portion  $c^2$ , terminating rearwardly, in front of the needle-hole, in the curved or inclined portion  $d$ , and having at its side the curved or inclined portion  $d'$ , substantially as set forth.

4. The throat-plate  $c$ , having in its upper surface the open recess  $c^2$ , terminating at its rear end, in front of the needle-hole, in the curved or inclined portion  $d$ , combined with the pivoted corder-arm  $a$ , carrying the cord-guide  $a'$ , arranged in said recess, the adjusting devices or screws  $a^5$   $a^6$  for said arm, and the block or plate to which the said arm is pivoted, substantially as set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

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