

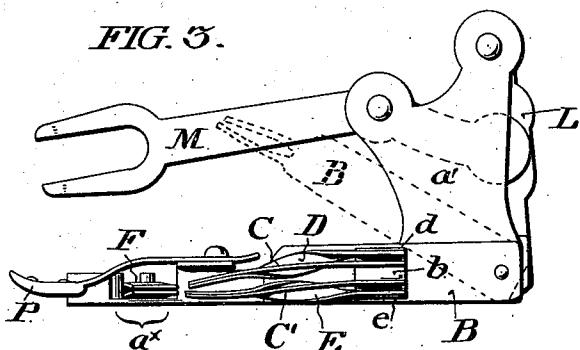
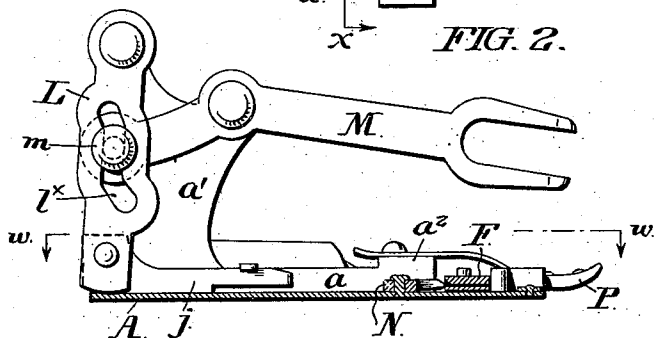
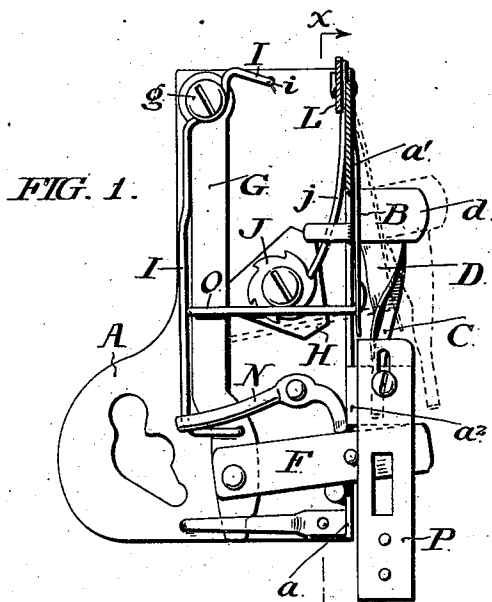
(No Model.)

H. WYNKOOP.

EDGE TURNING ATTACHMENT FOR SEWING MACHINES.

No. 550,311.

Patented Nov. 26, 1895.



WITNESSES:

N. E. Paige
James Loughran

Henry Wynkoop
INVENTOR

By his attorneys
Shawbridge & Taylor

UNITED STATES PATENT OFFICE.

HENRY WYNKOOP, OF PHILADELPHIA, PENNSYLVANIA.

EDGE-TURNING ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 550,311, dated November 26, 1895.

Application filed August 4, 1893. Serial No. 482,344. (No model.)

To all whom it may concern:

Be it known that I, HENRY WYNKOOP, a citizen of the United States, residing in the city and county of Philadelphia, in the State of Pennsylvania, have invented an Improved Edge-Turning Attachment for Sewing-Machines, of which the following is a specification.

It is the object of my invention to provide a device by which the edges of two pieces of fabric may, as said fabrics are fed toward the needle of a sewing-machine, be symmetrically and uniformly turned in between said fabrics, so that when they reach and are operated upon by the needle they will be secured in such inturned position.

My improved device is of utility in finishing off the cut edges existing upon the inner face of a garment along the lines of the regular seams formed therein, as well as in numerous other applications.

In the accompanying drawings I show and herein I describe a preferred form of a convenient embodiment of my invention, the particular subject-matter claimed as novel being hereinafter definitely specified.

Figure 1 is a partly-sectional top plan view of my improved device, section being supposed in the plane of the dotted line *w w* of Fig. 2. Fig. 2 is a central vertical longitudinal partly-sectional elevation of the device shown in Fig. 1, section being supposed on the line *x x* of Fig. 1 and sight being taken in the direction of the arrows upon said line. Fig. 3 is a view in side elevation of the said device, sight being taken from the right-hand side of Fig. 1.

Similar letters of reference indicate corresponding parts.

In the drawings, A indicates a plate upon which the various devices constituting my improved attachment are assembled, the same being adapted to be secured in adjacency to the needle of a sewing-machine, an up-turned flange *a* being formed upon said plate upon that edge of the same along which the fabrics operated upon travel.

My improved edge-turning device, which is mounted upon the plate A, is adapted to contemporaneously turn inward or toward each other two fabric edges subjected to its action, and, generally stated, said device con-

sists of two mandrels and two curved guides or shapers, one of which is employed in connection with each of the mandrels.

B is a spring-tongue, of metal, the rear end of which is pivotally attached to the flange *a* at the rear end of the attachment, and *b* is a stud outwardly projecting from said spring-tongue.

C C' are respectively the upper and lower mandrels, the same being simply strips of metal of considerable stiffness, secured as to their respective rear extremities, respectively, to the upper and lower faces of the stud *b*, and extending, as to their bodies, forward to the vicinity of the cloth-holding jaws, whereof hereinafter.

D is a guide or former employed in connection with the mandrel C, said guide being a strip of metal of considerable stiffness, the rear end of which is flat and supported a short distance above and in parallelism with said mandrel, the intermediate portion of which passes in the form of a spiral curve to the rear of and beneath said mandrel, and the front end of which is flat and exists below and in parallelism with the front end of said mandrel.

E is a guide or former employed in connection with the mandrel C', said guide being a reversely-disposed counterpart of the guide D, being a strip of metal of considerable stiffness, the rear end of which is flat and supported a short distance below and in parallelism with said mandrel, the intermediate portion of which passes in the form of a spiral curve to the rear of and above said mandrel, and the front end of which is flat and exists above and in parallelism with the front end of said mandrel.

The guides or formers D E are free as to their outer ends and are conveniently supported by the attachment of their rear ends, respectively, to the studs *d e* projecting from the spring-tongue B.

As will be understood, a piece of fabric or one of the cut edges extending along the seam of a garment, fed between the mandrel C and guide or former D at the right-hand end of the device (see Fig. 3) and advanced toward the left will, as its inner edge encounters the curved or spiral portion of the guide or former D, be deflected down behind the man-

drel, and as said fabric in its further advance reaches the front end of the mandrel and former be, by the flat front end of the guide or former, carried against the under face of said mandrel, so that the edge of said fabric will be folded back upon itself over the mandrel. The distance between the mandrel and former constantly decreases from the right-hand to the left-hand end, Fig. 3, so that when the fabric reaches said left-hand end it is quite tightly clasped between the former and the mandrel and a flat fold is formed in it. As will also be understood, a piece of fabric or the other of the cut edges extending along the seam of a garment, contemporaneously fed between the mandrel C' and the guide or former E at the right-hand end of the device (see Fig. 3) and advanced toward the left, will be folded or turned in a direction the opposite of that in which the fabric or edge first referred to will be folded—that is to say, as its inner edge encounters the curved or spiral portion of the guide or former E, it will be deflected up behind the mandrel C', and as said fabric in its further advance reaches the front end of the mandrel and former be, by the flat front end of the guide or former, carried against the upper face of said mandrel, so that the edge of said fabric will be folded back upon itself over the mandrel. As will be obvious, the fabric edges advanced through the edge-turning device described will be uniformly and symmetrically inturned toward each other.

F F are a pair of cloth-holding jaws extending through an aperture a^x in the flange a , the outer ends of which jaws are in line with and in front of the free ends of the mandrels and are adapted to receive and retain the edges of the fabrics, and the inner ends of which are pivotally mounted upon one extremity of a rock-arm G, the other extremity of which is pivotally connected to the plate A by a pivot-screw g .

H is a cam mounted for rotation upon the plate A in proximity to said arm G, the faces of said cam being, as shown, alternately at a greater and a less distance from its axis.

I is a spring, one end of which is entered in an opening i in the plate A, the intermediate portion of which is bent about or around the pivot-screw g and the other extremity of which is carried forward to the front end of the rock-arm G and entered in an opening in said rock-arm, the function of said spring, which is thus secured upon the screw g and in the hole i , being to force the rock-arm constantly against the cam H referred to. As will be understood, the rotation of said cam will occasion the reciprocation of the rock-arm fabric-holding jaws and fabrics held by said jaws, and the result of the lateral reciprocation of the fabrics as they are fed to the needle is that the stitching formed by the needle is zigzag, or of the character known as "overcasting." In order to provide for the rotation of said cam I equip it with a toothed

boss J, in which engages a pawl j , carried upon the lower end of a hanger-arm L, the upper end of which is pivotally connected to a vertical extension a' of the plate A.

M is a lever, also pivotally mounted upon the vertical extension a' of the plate A, one end of which lever is provided with a stud m engaged in a slot l^x in the hanger-arm L, and the other extremity of which is forked and adapted for engagement with an adjacent moving portion of the sewing-machine. The movement of such moving part of the machine occasions the vibration of the lever M, and through the engagement of the latter with the hanger-arm L the oscillation of said hanger-arm, and therefore the reciprocation of the pawl, the intermittent rotation of the toothed boss and cam, and the reciprocation of the fabric-holding jaws and fabric. The central portion of the slot l^x is straight, but the respective extremities of said slot are curved or exist upon lines concentric with respect to the axis of the lever M, so that after the stud m of the said lever M has, in its passage through the straight portion of said slot, occasioned the throw of the hanger-arm and pawl to effect a partial rotation of the toothed boss, said stud, by passing into the curved concentric end of the slot, ceases to occasion movement of the hanger-arm and pawl, and therefore said curved portions prevent excessive throw of the pawl.

N is a wedge-nosed lever, pivotally supported in proximity to the cloth-holding jaws, the front extremity of which is adapted to be temporarily forced between the fabric-holding jaws to occasion their temporary separation to receive the fabric. Said jaws, upon the withdrawal of the lever, automatically close together and clasp the fabric.

In order to secure the edges, inturned as described by my duplex edge-turning device, by overcasting stitching, the said edge-turning device is so mounted and applied that it has lateral movement in unison with the lateral movement of the fabric-holding jaws. As stated and as shown in the drawings, said duplex inturning device is mounted upon a spring-tongue B, and the said spring-tongue is provided, as shown in Fig. 1, with a connecting-link O, one end of which is secured to said spring-tongue and the other end of which is secured to the rock-arm, by virtue of which arrangement it results that as the rock-arm is reciprocated to occasion the lateral movement of the jaws, the said inturning device will also, by said rock-arm through the link O, be laterally moved in and out at the same time. The inner end of the said link or bar O is not fixedly attached to the rock-arm, but is provided with a downturned end which is simply engaged between the rock-arm G and the spring I.

When it is not desired to use the edge-inturning device, said device may upon the withdrawal of the inner end of the link O from between the rock-arm and its spring be rotated

upwardly on its pivot into the position shown in dotted lines in Fig. 3.

P is a presser-foot mounted upon an outward extension a^2 of the flange a of the base-plate.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. The combination to form a duplex edge turning device, of a pair of mandrels and a pair of guides or formers, said guides or formers being flat as to their rear ends, curved as to their intermediate portions, and flat as to their front ends, and supported in such positions that their front ends are between and their rear ends exterior to said mandrels, substantially as set forth.

2. In combination, a pair of fabric holding jaws, means for occasioning the reciprocation of said jaws, a duplex edge-turning device, and means for occasioning the lateral reciprocation of said duplex edge-turning device in unison with the movement of the jaws, substantially as set forth.

3. In combination, a pair of cloth holding jaws, a rock arm upon which said jaws are mounted, mechanism for occasioning the vibration or reciprocation of said rock arm, an edge-turning device, and a link or bar connective of said edge-turning device and said rock arm, substantially as set forth.

4. The combination to form a sewing machine attachment, of a plate, a pair of cloth-holding jaws mounted thereon, mechanism for occasioning the reciprocation of said jaws, a duplex edge-turning device, a spring tongue upon which said edge-turning device is mounted, and mechanism for occasioning the lateral vibration of said spring tongue, substantially as set forth.

5. The combination, to form a sewing machine attachment, of a plate, a pair of cloth-holding jaws, a rock arm upon which said jaws

are mounted, a cam, mechanism for occasioning the rotation of said cam, a spring tongue mounted upon said plate, a duplex edge-turning device mounted upon said tongue, and a link connective of said duplex edge-turning device and said rock arm, substantially as set forth.

6. The combination, to form a sewing machine attachment, of a plate, a pair of cloth-holding jaws, a rock arm upon which said jaws are mounted, and mechanism to be operated by a moving part of a sewing machine for occasioning the movement of said rock arm, a tongue pivotally attached to said plate, a duplex edge-turning device mounted upon said tongue, and a link by which said tongue is detachably connected to said rock arm, substantially as set forth.

7. The combination, to form a sewing machine attachment, of the jaws, a rock arm upon which said jaws are mounted, the cam, the spring adapted to force the said rock arm against said cam, the toothed boss, the pawl and means for reciprocating said pawl, the spring tongue mounted upon said plate, mechanism connective of said spring tongue and a moving part of the mechanism, and a duplex edge-turning device mounted upon said spring tongue, said device consisting of a pair of mandrels and a pair of curved guides or formers, the rear ends of which guides or formers are exterior to said mandrels, the front ends of which are between said mandrels, and the intermediate portions of which curve behind said mandrels, substantially as set forth.

In testimony that I claim the foregoing as my invention I have hereunto signed my name this 3d day of August, A. D. 1893.

HENRY WYNKOOP.

In presence of—

F. NORMAN DIXON,
JAMES LOUGHRAN.