

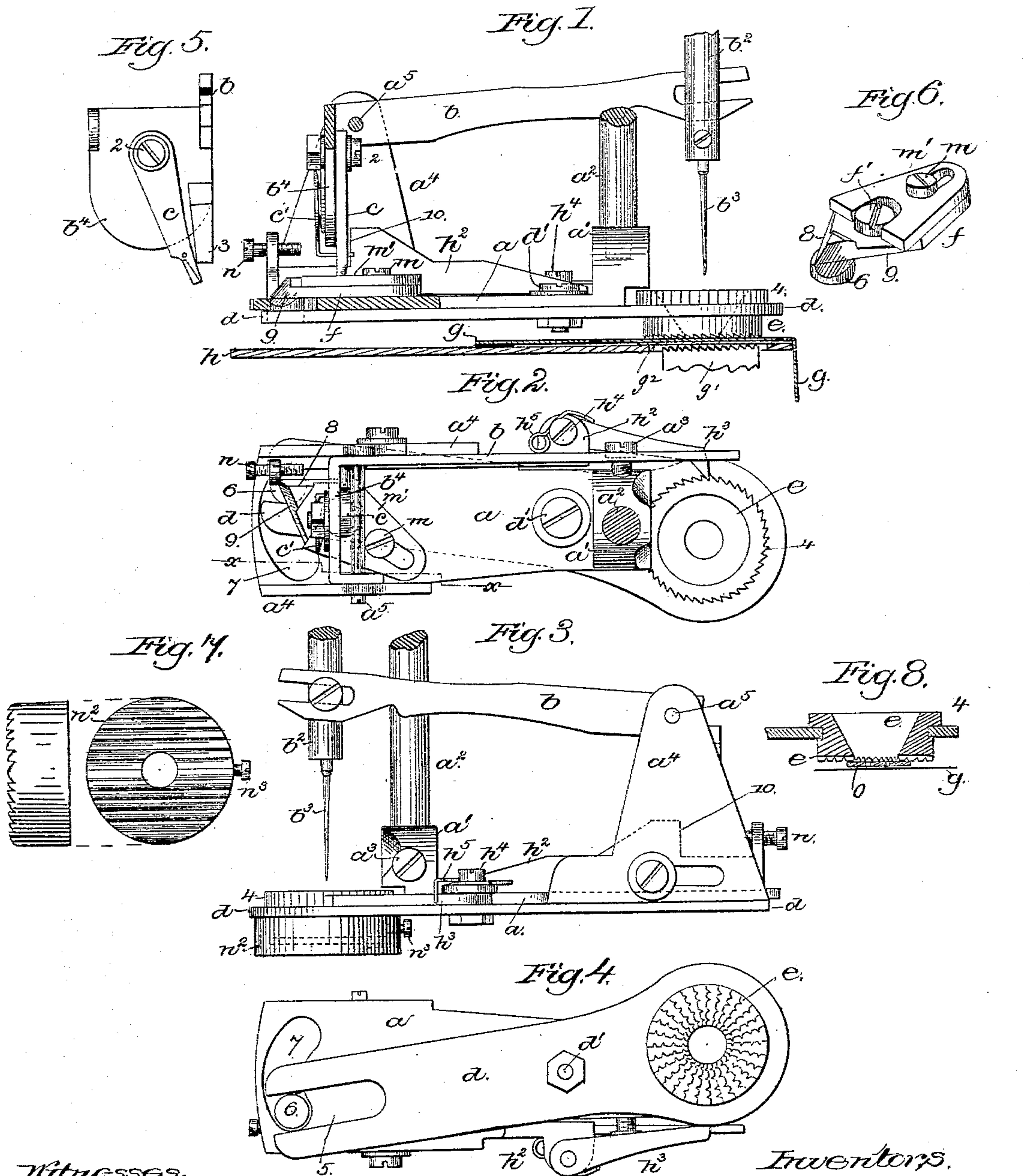
(No Model.)

E. T. THOMAS & T. S. HUNTINGTON.

SEWING MACHINE ATTACHMENT.

No. 300,531.

Patented June 17, 1884.



Witnesses.

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# UNITED STATES PATENT OFFICE.

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## SEWING-MACHINE ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 300,531, dated June 17, 1884.

Application filed January 10, 1884. (No model.)

*To all whom it may concern:*

Be it known that we, EDDY T. THOMAS and THOMAS S. HUNTINGTON, both of New York, county and State of New York, have invented an Improvement in Sewing-Machine Attachments, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

Our invention has for its object the production of an attachment by which to move a fabric or garment provided with eyelet-holes or slits in the proper direction, to enable the said holes or slits to be worked, stitched, or "finished over the edge," as it is called, and also to enable buttons to be sewed upon cloth or other material.

Our invention is embodied in an attachment adapted to be secured to the lower end of the usual presser-bar of a sewing-machine, instead of the usual presser-foot. The base or frame of the attachment has pivoted upon it a vibrating arm, which at its outer end has a rotating rough-surfaced cloth-feeding ring or annulus, the under side of which rests upon the fabric immediately about that portion of it which is entered by the usual eye-pointed needle, the latter having only a vertically-reciprocating movement. The upper end of the feeding-annulus is provided with ratchet-teeth, to be engaged by a reciprocating pawl actuated by a lever on the base or frame and operated by the needle-bar. This "actuating-lever," as we shall call it, has pivoted upon it a finger, which is normally held at one side of a vertical line by a spring. The end of this spring-held finger, during the vibration of the actuating-lever by the needle-bar, strikes alternately against the oppositely-inclined ends of a switch-lever pivoted on the base or frame at the rear of the pivot of the vibrating arm referred to as carrying the feeding-annulus, and has a pin to enter a slot in the said arm, so that the movement of the switch in one direction positively turns the said arm about its pivot in the opposite direction, and as the arm is so moved the feeding-annulus is rotated partially to rotate the fabric about the needle as a cen-

ter, as is necessary to enable an eyelet-hole to be stitched or finished over its edge, in usual manner, by the thread carried by the eye-pointed needle and an under thread carried by any usual under-thread carrier—as, for instance, a shuttle. We have provided the serrated feeding-annulus with a shoe having teeth extended across it only in the direction of the movement of the fabric by the usual under four-motioned feeding device of the sewing-machine, such shoe being employed and secured to the feeding-annulus only when stitching is to be done over a straight edge, or when parallel edges of cloth are to be abutted and stitched together. The feeding-annulus may be used to hold and feed a button having transverse holes, and the former be rotated far enough to bring the holes of the button correctly under the descending needle.

Our invention consists in an organized attachment substantially such as hereinafter described, and in combinations of mechanical devices referred to in the claims at the end of this specification.

Figure 1 is a partial side elevation and section of one of our attachments applied to the presser-bar of a sewing-machine of usual construction, the drawing also showing a needle, part of a needle-bar, and a part of the bed-plate of a sewing-machine, and a line to represent the fabric, the parts being in section taken on line *xx*, Fig. 2. Fig. 2 is a top view of our attachment; Fig. 3, a view of Fig. 1 from the rear side, the shoe, Fig. 7, being, however, added; Fig. 4, an under side view of Fig. 1; Fig. 5, a detail of part of the left-hand end of Fig. 1; Fig. 6, a detail showing an under side view of the switch detached; Fig. 7, an under side view of the shoe, to be referred to; and Fig. 8, a section of the feeding-annulus.

The base or frame part *a* has a socket-piece, *a'*, to receive in it the lower end of the usual presser-bar, *a''*, which is fastened to the said bar by a set-screw, *a'''*. The base *a* has an upwardly-extended portion, *a''''*, which serves to hold the pivot *a''''''* for the actuating-lever *b*. (Shown as an elbow-lever slotted at its front end, and adapted to be connected, in well-



known manner of ruffling attachments, with and to be moved by the needle-bar  $b^2$ , which carries the usual needle,  $b^3$ .) The rear end of the actuating-lever  $b$  is turned down, forming a wing,  $b^4$ , (shown best in Figs. 1 and 5,) upon which is pivoted loosely at 2 the finger  $c$ , normally held against the stop or lug 3 at one side of the wing  $b^4$  by a spring,  $c'$ . The lever  $d$ , pivoted to the under side of the frame  $a$  at  $d'$ , is made open at its front end to receive in it the feeding-annulus  $e$ , serrated at its lower end, as shown in Figs. 1 and 4, and provided at its upper end with an enlarged portion or collar cut to form a ratchet, 4, the under side of the collar resting directly upon the lever  $d$ , as shown in Figs. 1 and 3. The lever  $d$ , at its rear end, has a slot, 5, (see Fig. 4,) which receives in it a pin, 6, carried by the switch  $f$ , pivoted at  $f'$  on the base  $a$ , the pin 6 being extended down through a slot, 7, in the base  $a$ . The switch  $f$  has two oppositely-inclined edges, 8 9, and the switch  $f$  has adjustably secured to it by a screw,  $m$ , a shouldered plate,  $m'$ . The finger  $c$  strikes against one and then the other of the edges 8 9 and the shouldered plate next the said edge. As the lever  $b$  is moved by the rising needle-bar  $b^2$ , and as the switch is swung about its pivot  $f'$  by the said finger, the pin 6 acts to turn the lever  $d$  in the opposite direction about its pivot or fulcrum  $d'$ , causing the feeding-annulus, resting with its notched lower end directly upon the fabric  $g$ , laid upon the bed-plate  $h$ , to move the fabric, so that the needle  $b^3$  (it having last descended, it will be supposed, through the fabric) will at its next descent pass over the edge of the fabric or down through the eyelet-hole therein, as is well known. The stop or lug 3 on the wing  $b^4$ , when the actuating-lever  $b$  is moved by the ascending needle-bar, strikes a shoulder, 10, (shown best in Fig. 3,) on a pawl-carrier,  $h^2$ , suitably held and guided in the base or frame, and moves the said pawl-carrier forward, so that its pivoted pawl  $h^3$ , connected to it by a screw or pin,  $h^4$ , and acted upon by a spring,  $h^5$ , or otherwise held in engagement with the ratchet-teeth 4 of the feeding-annulus  $e$ , will rotate the latter for a distance of one or more teeth, according to the work being done.

$n$  is a set-screw or equivalent device adjustable in the rear end of the pawl-carrier  $h$ , and acted upon by the wing  $b^4$ , according to its extent of projection toward said wing to vary the throw or extent of movement of the pawl  $h^3$ . When the pawl  $h^3$  is thrown or turned out of engagement with the toothed feeding ring or annulus  $e$ , the latter will not be rotated.

When the device so far described is in use, the arm  $b$  will be arranged at right angles to the usual overhanging arm of the sewing-machine, and the usual four-motioned feeding-dog,  $g'$ , will be covered by a thin smooth metal plate,  $g^2$ , so that the under feed does not assist in any way in moving the fabric. By adjusting the shouldered piece  $m'$  on the switch  $f$ , the finger  $c$  may be made to act sooner or later

on its shoulders as it travels along over the inclined edge 8 9, and turn the lever  $d$  more or less, according to the depth of the over stitch from the edge of the eyelet or slit, the edge of which is being finished. If it is desired simply to vibrate or move the fabric laterally with relation to the usual four-motioned feeding device, so as to over stitch a straight or to unite two abutting edges, the shoe  $n^2$ , having a series of parallel grooves, as shown in Fig. 7, is attached to the feeding-annulus  $e$ , as in Fig. 3, and the pawl  $h^3$  is thrown out of engagement. The grooves of the shoe will point in the direction of the movement of the fabric by the usual under feed, so that the fabric may be readily moved forward under the shoe by the usual under feed, while the teeth of the shoe resting against the fabric will act to move the latter laterally after each ascent of the needle.

If a button,  $o$ , is to be sewed upon a fabric, it will be laid upon the fabric, as in Fig. 8, with one of the holes in the button under the line of descent of the needle, and the needle will be thrown down and through the hole in the button, and the needle-thread will be locked and a stitch formed. The needle having risen, the pawl  $h^3$  will have given to it sufficient movement to turn the feeding-annulus far enough to place another hole in the button in line with the needle, when another stitch will be made, and so on until the button is fully secured.

The feeding-annulus is held down upon the fabric by the force of the usual presser-bar spring, which will be made adjustable in any usual way.

We claim—

1. The combination, substantially as shown and described, of the base  $a$ , having the socket  $a'$  and set-screw  $a^3$ , the lever  $d$ , pivoted to said base, the feed-annulus  $e$ , fitted to said lever, and provided with a ratchet, the spring-pawl  $h^3$  in contact with such ratchet, the pawl-carrier, the lever  $b$ , and means to vibrate the lever  $d$ , as and for the purpose set forth.

2. The combination, substantially as shown and described, of the base  $a$ , having the socket  $a'$  and set-screw  $a^3$ , the lever  $d$ , pivoted to said base, the feed-annulus  $e$ , fitted to said lever, and provided with a ratchet, the spring-pawl  $h^3$  in contact with such ratchet, the pawl-carrier, the lever  $b$ , having the wing  $b^4$  and spring-finger  $c$ , and the switch comprising the pivoted member  $f$ , having the stud 6, and the shouldered plate  $m'$ , as set forth.

3. The frame or base, the pivoted lever  $d$ , provided with the annulus  $e$ , and the detachable grooved shoe  $n^2$  thereon, combined with the actuating-lever  $b$  and the switch, substantially as shown and described.

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

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THOS. S. HUNTINGTON.

Witnesses:

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