

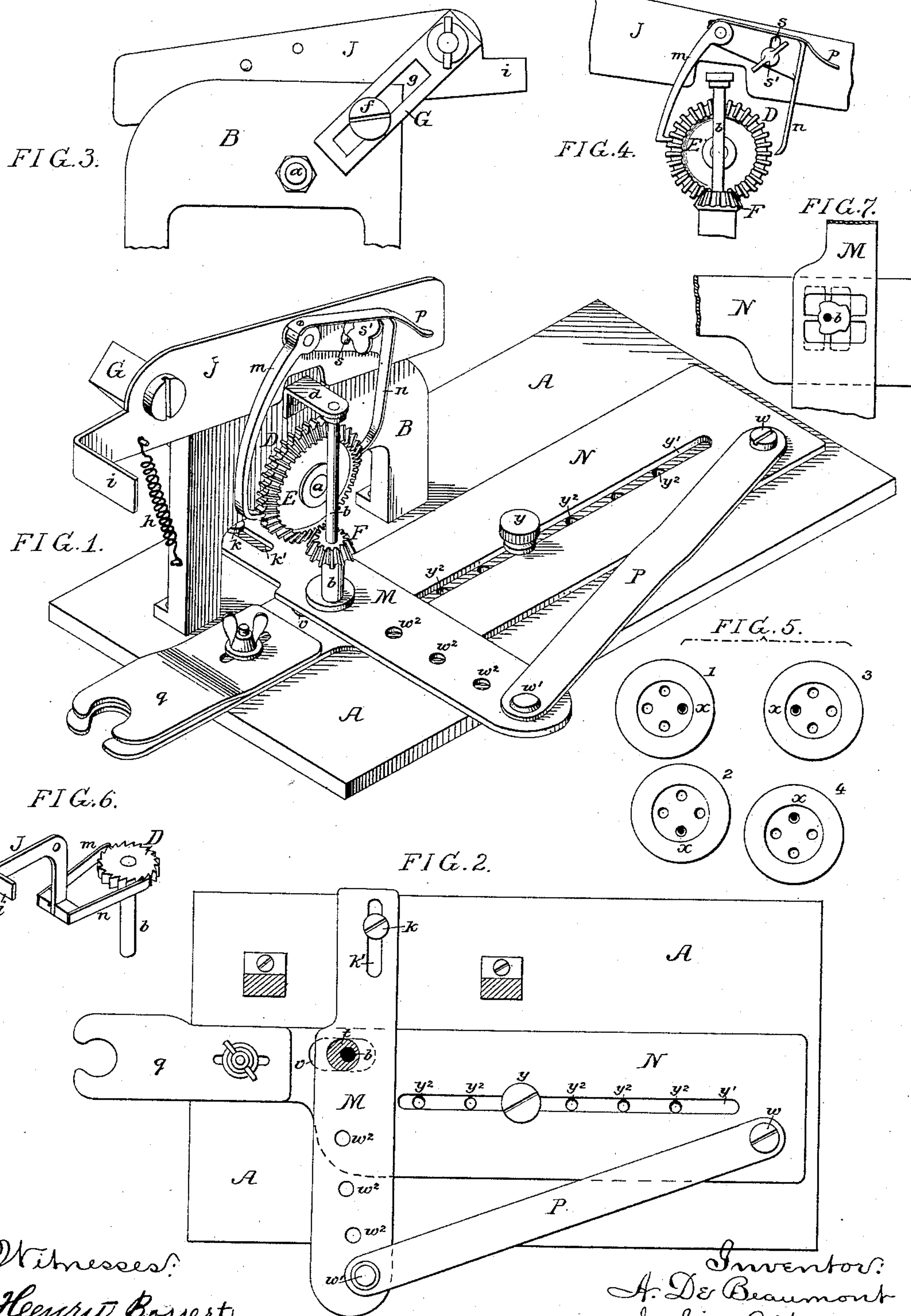
(No Model.)

A. DE BEAUMONT.

SEWING MACHINE ATTACHMENT FOR STITCHING BUTTONS TO FABRICS.

No. 328,298.

Patented Oct. 13, 1885.



Witnesses:
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UNITED STATES PATENT OFFICE.

ALEXANDRE DE BEAUMONT, OF PHILADELPHIA, PENNSYLVANIA.

SEWING-MACHINE ATTACHMENT FOR STITCHING BUTTONS TO FABRICS.

SPECIFICATION forming part of Letters Patent No. 328,298, dated October 13, 1885.

Application filed January 12, 1885. Serial No. 152,643. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDRE DE BEAUMONT, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have
5 invented certain Improvements in Sewing-Machine Attachments for Stitching Buttons to Fabrics, of which the following is a specification.

My invention relates to that class of sewing-
10 machines in which a button-clamp is operated by mechanism under control of the needle bar or arm of the sewing-machine, one of the objects of my improvement being to construct a simple attachment of this class, and further
15 objects being to adapt the attachment for sewing on shank-buttons, or buttons having either two or more eyes, and to permit ready adjustment of the parts to suit buttons having eyes at a greater or less distance apart.

20 In the accompanying drawings, Figure 1 is a perspective view of my improved sewing-machine attachment; Fig. 2, a sectional plan view of the same; Fig. 3, a rear view of part of the device; Fig. 4, a front view of part of the same with the parts adjusted to a different
25 position from that shown in Fig. 1; Fig. 5, a diagram illustrating the operation of the machine, and Figs. 6 and 7 views showing modifications.

30 A is the base-plate of the attachment, which is constructed for being secured to the work-plate of a sewing-machine in any suitable manner.

35 A vertical standard, B, is secured to the base-plate, and from this standard projects a stud, *a*, on which is free to turn a combined ratchet and bevel wheel, D E, the bevel-wheel E gearing into a pinion, F, on a shaft, *b*, which is adapted at the lower end to a bearing in the
40 base-plate, and at the upper end to a bearing in a bracket, *d*, on the standard B.

An arm, G, is secured to the standard B by means of a screw, *f*, adapted to a slot, *g*, in the arm, as shown in Fig. 3, and to this arm is
45 hung a lever, J, the short arm of which has a finger, *i*, or is otherwise so constructed that it can be struck and moved by a projection on the needle bar or arm of the sewing-machine as the latter rises, a spring, *h*, serving to re-
50 store the lever to its former position as the needle bar or arm descends, so that on each reciprocation of the needle-bar there will be

a vibration of the lever, this vibration taking place as the needle is approaching and receding from the limit of its upward movement, 55 or, in other words, when the point of the needle is above the work-plate.

Hung to a pin on the long arm of the lever J are two pawls, *m* and *n*, the former being hooked so as to act on the ratchet-wheel D on 60 the upward movement of the lever-arm, and the pawl *n* being constructed to act on the wheel on the downward movement of said arm.

The pawl *n* is acted upon by a spring, *p*, 65 which serves to keep it in gear with the teeth of the wheel D, but the pawl has a slot, *s*, for the reception of a set-screw, *s'*, so that said pawl can be thrown out of gear, as shown in Fig. 4, and held in this position when desired. 70

On the shaft *b* is an eccentric, *t*, which is adapted to an opening in a lever, M, and to a slot, *v*, in a lever, *n*.

The lever M is pivoted to the base-plate by a screw, *k*, adapted to a slot, *k'*, in the lever, 75 and said lever is connected to the lever N by a rod, P, pivoted to said lever N by a pin, *w*, but having at the opposite end a pin, *w'*, which can be adapted to any one of a number of openings, *w''*, in the lever M, the row of open- 80 ings being concentric with the pin *w*, and the openings being at different distances from the eccentric *t*.

The lever N is pivoted to the base-plate by a screw, *y*, adapted to a longitudinal slot, *y'*, 85 in the lever, and to any one of a series of openings, *y''*, in the base-plate, and on the outer end of said lever N is the button-clamp, which in the present instance consists of a spring-plate, *q*, secured to the lever and adapted to 90 bear upon the top of the button with pressure sufficient to retain the same in place, but not enough to interfere with the ready insertion and withdrawal of the button.

As the shaft *b* is turned a combined lateral 95 and longitudinal reciprocation is imparted to the button-clamp, the lateral movement being due to the action of the eccentric on the lever N, and the longitudinal movement to the action of the eccentric on the lever M, which 100 movement is transmitted to the lever N through the medium of the rod P. The extent of lateral movement of the lever N is governed by shifting the fulcrum-pin *y* of said lever from one

hole y^2 to another, so as to increase or diminish the distance between the same and the eccentric, and the extent of longitudinal movement is regulated by adjusting the pin w' to an opening, w^2 , of the lever M nearer to or farther from the eccentric, this adjustable connection having the same effect as an adjustable fulcrum-pin for the lever M; and, if desired, an adjustable fulcrum may be used instead of the adjustable connection. By this means the movement of the button can be increased or diminished in accordance with the distance between the eyes of the button, so as to insure the proper presentation of one of the eyes to the needle on each descent of the latter.

The device shown in the drawings is intended for use with buttons having either two or four eyes, the gearing being such that on each up and down movement of the needle each pawl will effect a movement of the parts sufficient to cause a quarter-turn of the shaft b , the button consequently having a fourfold movement for each rotation of said shaft.

When the pawl m only is in gear with the ratchet-wheel D, there will be a succession of quarter-turns of the shaft, and a like succession of quarter movements of the button, so as to bring each of four eyes in the button in succession under the needle, but when both pawls are in gear, the shaft b will have two quarter-turns imparted to it, and the button will have two quarter movements on each up and down movement of the needle. This will be understood on reference to Fig. 5, which shows the four positions of the button in respect to the needle x when the shaft b has a succession of quarter-turns imparted to it. When the shaft has a half-turn, however, on each movement of the needle, the button will be shifted from the position 1 to the position 3. In other words, the needle on its second descent will enter an eye opposite that which it entered on its first descent. Shank-buttons may be attached by this latter movement, the needle passing alternately through the shank and outside of the same. The construction of the clamp in this case should be modified to adapt it to a shank-button.

When the button has three eyes, the shaft b should have a third of a turn on each reciprocation of the needle.

Where adjustment for different sizes of eyes is not required, a single lever under direct control of the eccentric may be used with good effect; but for general use the attachment with two levers is preferred, on account of the adaptability of the device for operating on different buttons.

Various means may be employed for rotating the shaft b from the reciprocating needle bar or arm. In Fig. 6 I have shown one such modification, in which a bell-crank lever replaces the plain lever J, the two pawls being

hung to this lever, and the joint being such that one or other of the pawls can be readily thrown out of engagement with the ratchet-wheel D, which in this case is directly on the shaft b .

The shaft b may, if desired, be rotated continuously from some part of the machine, the eccentric in this case being replaced by a cam or cams having the necessary dwell, so that there will be no movement of the button-clamp while the needle is down. (See Fig. 7.)

I claim as my invention—

1. The combination of a lever having a button-clamp, an adjustable fulcrum for said lever, a shaft having an eccentric or cam for acting on the lever, and means for rotating said shaft, as specified.

2. The combination of a pair of levers crossing each other and connected together, a button-clamp on one of said levers, a shaft having a cam or eccentric acting on both levers, and means for rotating said shaft, as set forth.

3. The combination of a pair of levers crossing each other and connected together, a button-clamp carried by one of said levers, adjusting devices for regulating the throw of each lever, a shaft having a cam or eccentric for acting on both levers, and means for rotating said shaft, as set forth.

4. The combination of a lever having a button-clamp, a shaft above the bed-plate having a cam or eccentric acting on said lever, a ratchet-wheel on or geared to said shaft, and a lever, J, under control of the needle bar or arm of the machine, and having a pawl adapted to said ratchet-wheel, as set forth.

5. The combination of the lever having a button-clamp, the shaft having a cam or eccentric for operating said lever, the ratchet-wheel, and the lever J, with its pawls, one of which is adjustable, so as to be thrown out of action, as set forth.

6. The combination of the lever or levers forming the button-carrier, the shaft b , having a cam or eccentric, and bevel-wheel F, the wheel E, and ratchet-wheel D, and the lever J, with its two pawls, m and n , as set forth.

7. The combination of the lever or levers forming the button-carrier, the shaft b , with cam or eccentric for operating said carrier, the lever J, means whereby the movement of said lever is transmitted to the shaft b , and an adjustable fulcrum for said lever, as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALEXANDRE DE BEAUMONT.

Witnesses:

HENRY BOSSERT,
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