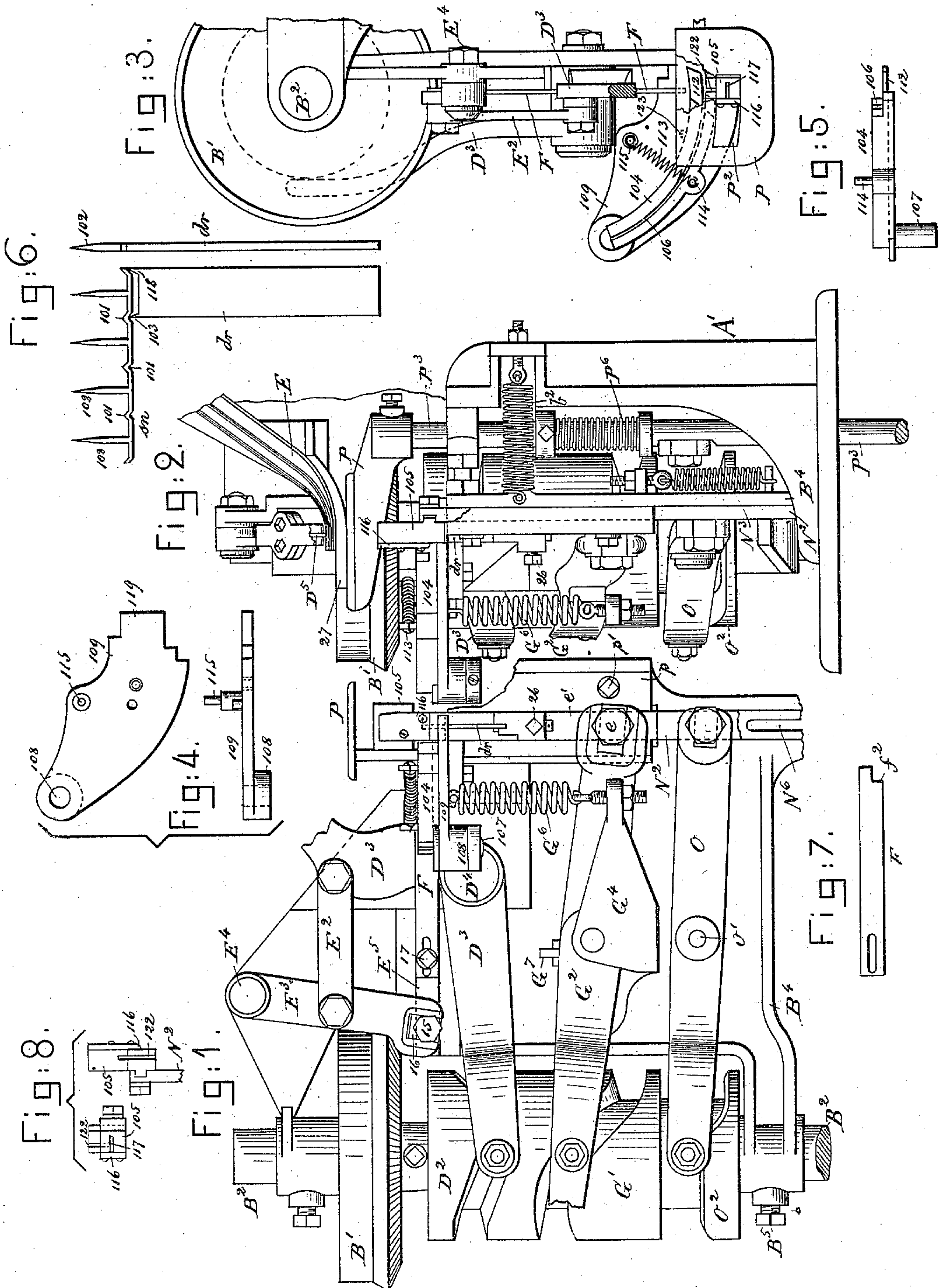


(No Model.)

E. WOODWARD.
BUTTON SETTING MACHINE.

No. 311,457.

Patented Jan. 27, 1885.



Witnesses.
Henry Marsh
John F. C. Printlock

Inventor.
Erasmus Woodward
by Crosby & Gregory attys.

UNITED STATES PATENT OFFICE.

ERASTUS WOODWARD, OF SOMERVILLE, ASSIGNOR TO WILLIAM A. BOLAND,
OF LYNN, MASS., AND GEORGE W. PRENTICE, OF PROVIDENCE, R. I.

BUTTON-SETTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 311,457, dated January 27, 1885.

Application filed April 28, 1884. (No model.)

To all whom it may concern:

Be it known that I, ERASTUS WOODWARD, of Somerville, county of Middlesex, State of Massachusetts, have invented an Improvement in Button-Setting Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention is an improvement on the machine represented in application No. 94,977, filed May 15, 1883, to which reference may be had, the object of my present invention being to adapt the said machine to the employment of strip nails or fastenings, as will be described, each nail or fastening being cut off and driven as wanted.

Figure 1 is a partial side elevation of a machine for attaching buttons to shoes or other articles, sufficient in connection with the machine described in the said application to enable my present invention to be fully understood. Fig. 2 is a right-hand elevation of Fig. 1, part of the button-chute, the plate 27, and the anvil D^5 being added. Fig. 3 is a top view of Fig. 1, partially broken away at one side the shaft B^2 to save space on the drawings, and with the presser partially broken out. Fig. 4 shows in top and edge view the bracket to support the said strip-guide; Fig. 5, a detail in side elevation of the said nail-strip guide; Fig. 6, enlarged details of the driver and nail-strip; Fig. 7, a detail of the transferrer, and Fig. 8 details of the upper end and inner side of the nail-guide detached.

In this application the bevel-gear B' , shaft B^2 , swinging frame B^4 , set-screw B^5 , cam-hub D^2 , anvil-carrier D^3 , anvil D^5 , button chute or conductor E , link E^2 , radius-bar E^3 , pivoted at E^4 , block 16, bolt 15, slide E^5 , bolt 17, fastener-transferrer F , cam G' , lever G^4 , spring G^6 , stop G^7 , projection e , engaged by lever G^2 , driver-bar e' , screw 26, bar N^2 , spring N^3 , slot N^6 , lever O , cam O^2 , gib p , screw p' , the under side, 27, of the button chute or conductor E , presser-foot or work-support P , its throat P^2 , presser-bar P^3 , rigid frame A' , spiral spring P^6 , and spring b^2 are all as in the said application, where the like parts are designated by like

letters, the said parts in this present application being operated as in the application referred to.

To enable the present machine to use strip nails or fastenings, or nails or fastenings connected together in a strip, I have removed the tack chute or conductor from the machine shown in the said application, and also the centering device, and in place of the said parts I have added a strip-guide, 104, and a nail or fastening guide, 105, the latter being attached to the bar N^2 in place of the centering device. The strip-guide 104, grooved at 106 for the reception of the nail or fastening strip sn , (shown in Fig. 6,) has a shank, 107, which enters a socket, 108, in a bracket or plate, 109, bolted to the swinging frame B^4 . The strip-guide 104 at its front end has projecting from it a finger, 112, which passes under the nail-guide 105 (see Fig. 8) when the strip-guide 104 is pushed forward by the transferrer F against the action of the spring 113, attached at one end to a pin, 114, on the strip-guide, and a pin, 115, on the bracket 109, the said finger at such time acting against the side of the head of the endmost nail of the strip and forcing its shank into the straight or vertical slot 122, made in the nail-guide 105, (see Fig. 8,) and into position above the driver dr . The slot 122, into which the shank of the endmost nail is entered as described, is in line with the movement of the transferrer and tangential to a circle described from the center of motion of the strip-guide, so that the shoulder f^2 of the transferrer F as it meets the finger 112 turns the strip-guide on its pivot 107, and at the same time pushes the endmost nail of the nail-strip into the slot 122, which results, it will be obvious, in drawing the nail-strip forward in the moving strip-guide, for the endmost nail is prevented from backward movement with the strip-guide. The driver dr , attached by screw 26 to the driver-bar e' , is a flat steel blade, preferably as wide as the head of the nail is long, and it carries with it a cutter member, 103, which is adapted to strike against the nail-strip at its under side, as in Fig. 6, to sever the said strip by a blow between the said cutter member 103 and the

lower edge of the steel cutter-plate 116, attached to the nail-guide 105, such edge acting as the upper member of the cutting mechanism and entering one of the transverse grooves 101, which it is preferred to make in the nail-strip, such groove not only serving to enable the nails to be separated uniformly and unerringly, but also making a projection at the under side of the nail-head to enter the leather. The driver has a second projection, 118, which prevents the nail from moving or jumping horizontally when it is severed from the strip, and also acts to turn the outer end of the head into the material as the cutter 103 turns in the inner end of the nail. The bracket 109 has a projection, 119, on which the head of the endmost nail of the strip rests as its shank is being carried into the groove 122 in the nail-guide 105. The shanks of the nails are marked 102, there being four nails in the strip shown in Fig. 6. The strip will be cut from sheet metal, and may be of any suitable length. The nail-guide has at its top an opening, 117, out through which the nail is driven when the upper end of the nail-guide is thrown up against the under side of the work by the lever O, the work or material to which the button is to be attached resting on the presser P, and between it and the plate 27, where it is held clamped, and the end of the nail driven through the material is clinched to surround the shank of the button, as described in the said application.

Herein I have shown the cutter member 103 as part of the driver; but it might be an independent piece.

Instead of the particular nail-strip used, I may use any other suitable or well known strip, or, if desired, a strip in which the metal shanks are connected by means of paper.

The nail-strip shown in Fig. 6 will form the subject-matter of another application.

I claim—

1. The anvil, and the nail-guide provided with the slots 122 and 117, and cutter-plate 116, combined with the nail-strip guide, and driver and under cutter, 103, to operate substantially as described.

2. The anvil, the nail-guide provided with the slots 122 and 117, and the pivoted nail-strip guide 104, provided with the finger 112, combined with the reciprocating slide or transfer F, to operate the nail-strip guide in one direction, substantially as described.

3. In a machine for setting buttons, a nail-guide and cutter-plate, 116, combined with a driver provided with a projecting cutter member, 103, to operate substantially as described.

4. The driver provided with the cutter 103 and projection 118, to cut and act upon the ends of the head of a nail, and embed the same into the material into which the nail is driven, substantially as described.

5. In a button-setting machine, a support, P, for the material upon which the button is to be attached, a button conductor or chute, and anvil, combined with the movable nail-strip guide, and driver and cutter working from below the said support and acting to cut a nail from the strip and drive it into the material and through the eye of the button, substantially as described.

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

ERASTUS WOODWARD.

Witnesses:

G. W. GREGORY,
W. H. SIGSTON.