

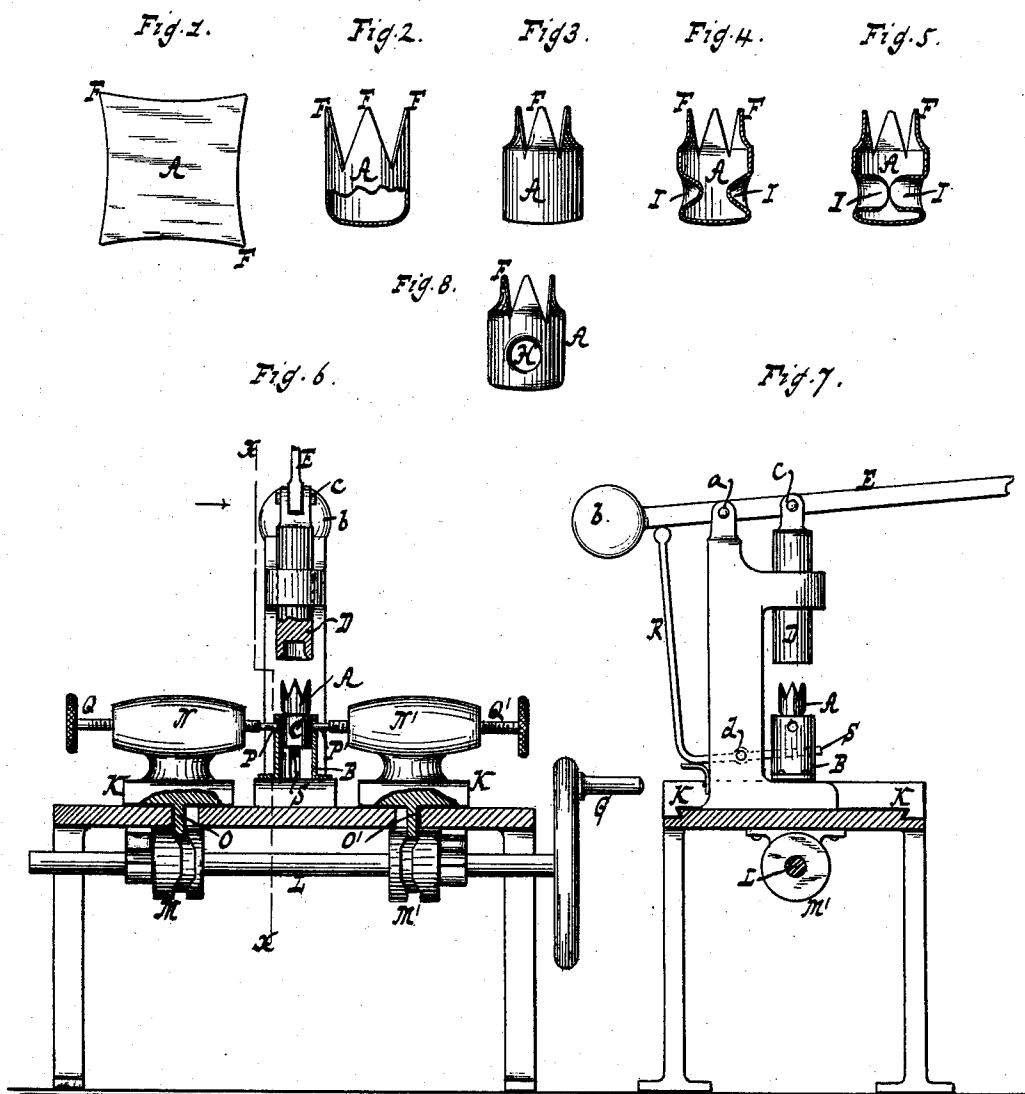
(No Model.)

E. REVOL.

METHOD OF MAKING LACING BUTTONS.

No. 393,721.

Patented Nov. 27, 1888.



WITNESSES:

William Miller.
Edmund Wolff.

INVENTOR,

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UNITED STATES PATENT OFFICE.

ETIENNE REVOL, OF PARIS, FRANCE, ASSIGNOR OF ONE-HALF TO ALFRED TROLLET, OF SAME PLACE.

METHOD OF MAKING LACING-BUTTONS.

SPECIFICATION forming part of Letters Patent No. 393,721, dated November 27, 1888.

Application filed June 7, 1888. Serial No. 276,349. (No model.) Patented in France November 11, 1887, No. 186,924.

To all whom it may concern:

Be it known that I, ETIENNE REVOL, a citizen of the French Republic, and a resident of Paris, France, have invented certain Improvements in Hollow Perforated Lacing-Buttons, (for which I have obtained a patent in France, No. 186,924, dated November 11, 1887,) of which the following is a specification.

This invention relates to improvements in that kind of buttons at present in use for lacing boots and shoes, corsets, gloves, cart-sheets, sails, military outfits, and the like. An objection to articles now in use for that purpose is that they rapidly wear out the lace and also the parts of the clothing brought in contact with them on account of the sharp edges or roughnesses on their surface. I obviate this defect by manufacturing a lacing button or eyelet, as set forth in the following specification and claims, and illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of a blank. Fig. 2 is an elevation, partly in section, of a partly-formed button. Fig. 3 is an elevation showing the process of making the button further advanced than in Fig. 2. Fig. 4 is a section showing said process further advanced than in Fig. 3. Fig. 5 is a section showing said process further advanced than in Fig. 4. Fig. 6 is a front elevation, partly in section, of a piercing-machine. Fig. 7 is a section along the line *xx*, Fig. 6. Fig. 8 is an elevation of a complete button.

From suitable material—such as sheet brass, zinc, iron, or the like—a blank is cut having the body A and points F, Fig. 1. The blank is bent into a capsule or hollow body, Fig. 2, having the body A and points or prongs F. This bending or forming of the capsule can be accomplished by any suitable well-known bending tool or dies. The capsule is then placed on a slide, C, moving in a guide or tube, B. When pressure is brought to bear on the capsule by means of a piston or plunger, D, worked by a lever, E, the capsule and slide C are pressed into the guide B, leaving only the prongs projecting beyond the guide B. The pressure of the plunger D, the working end of which is hollowed, as seen in

Fig. 6, presses the prongs F from the position shown in Fig. 2 to the position shown in Fig. 3. The body A of the capsule being within the guide B, the crank or handle G of the shaft L is actuated so as to move the cams M M', which communicate motion through the rods O O' to the supports N N' of the punches P P'. Screws Q Q' enable the punches to be properly adjusted in the supports. The guide B has perforations for the passage of the punches. The punches, acting on the capsule-body A, press the portion I I of the capsule to the position shown in Fig. 4, and then to the position shown in Fig. 5. The motion of the cams M M' being continued, the punches P P' move away from the body A. Said punches, which are flat or dull punches, are then replaced by pointed punches, or the body A is put into an apparatus like that shown in Fig. 6, having pointed or sharp punches in place of dull punches. These pointed punches pierce the body A, which thus receives an eye or perforation, H, Fig. 8, through which a cord or lacing can be drawn. The capsule is thus formed into a button. The supports N N' rest on slides K, which can travel back and forth along suitable ways, so that as the cams M M' continually rotate the punches P P' are by said action of the cams alternately caused to approach one another and then separate, as will be noticed by the form of the cam-grooves shown on the cams M M'. When the body A is finished, the lever E is released, and the weight b moves said lever about its fulcrum a and moves the plunger D away from the capsule or button. The plunger D is connected at c to the lever E. The weight b carries the lever E into contact with the arm R, swinging about the joint or pivot d, so that the end S of said arm R moves the slide C, so as to move the button out of the guide B. The guide B is slotted for the passage of the extremity S.

What I claim as new, and desire to secure by Letters Patent, is—

1. The method herein described of making lacing-buttons, which consists in forming a quadrangular blank of sheet metal with corner points, bending such blank into a tube closed at one end and pronged at the other end, and

transversely perforating the tube between the closed and pronged ends, substantially as set forth.

2. The method herein described of making lacing-buttons, which consists in bending a sheet-metal blank into a tubular body closed at one end and pronged at the other end, depressing opposite sides of the tubular body inward toward each other, and perforating the inner end of the depressed portions, substantially as set forth.

3. The method herein described of making lacing-buttons, which consists in bending a sheet-metal blank into a tube closed at one end

and pronged at the other end, compressing the pronged end inwardly to a less diameter than the remainder of the tube, depressing opposite sides of the tube toward each other, and finally perforating the inner ends of the depressed portions, substantially as set forth.

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

ETIENNE REVOL.

Witnesses:

LOMBARD GANNEVILLE,

CHAS. BROWN.