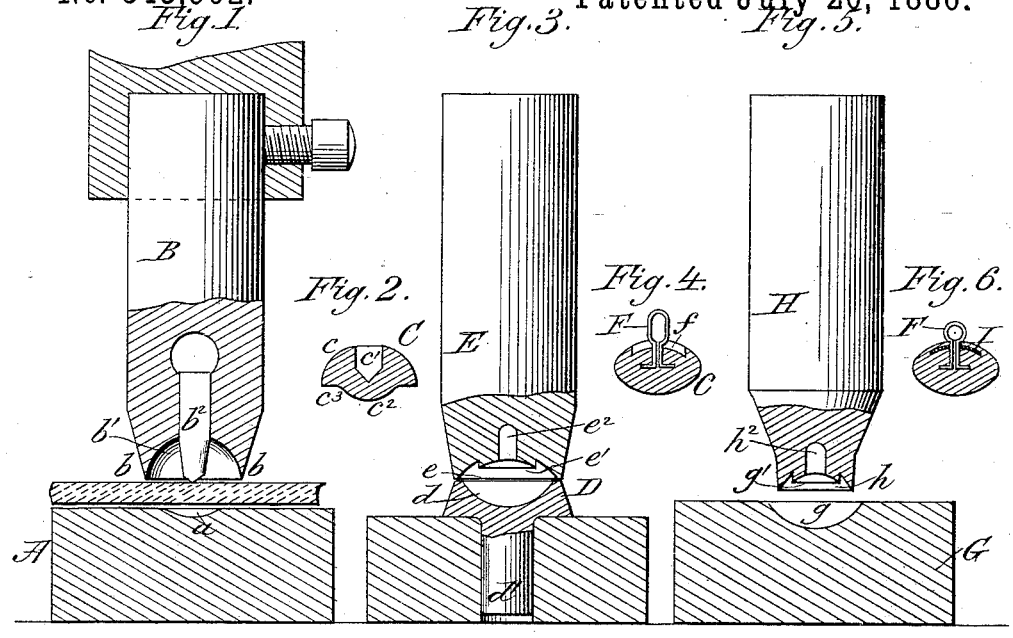
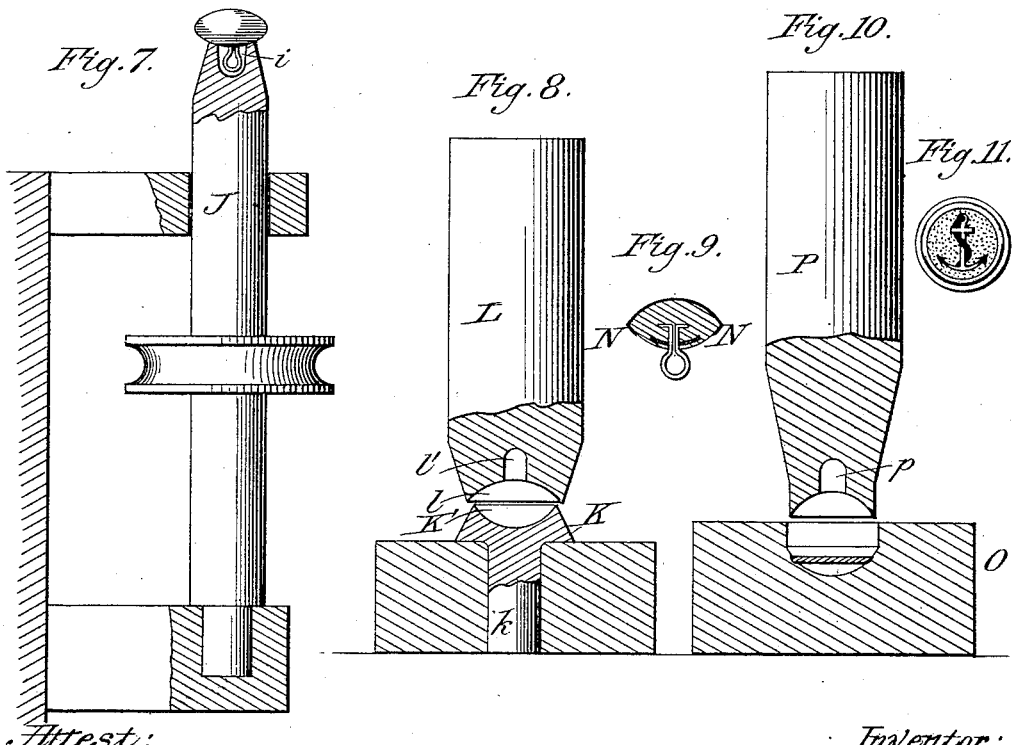
(No Model.)

T. F. N. FINCH.

MANUFACTURE OF BUTTONS AND OTHER ANALAGOUS ARTICLES.

No. 345,962. Patented July 20, 1886.





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UNITED STATES PATENT OFFICE.

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MANUFACTURE OF BUTTONS AND OTHER ANALOGOUS ARTICLES.

SPECIFICATION forming part of Letters Patent No. 345,962, dated July 20, 1886.

Application filed May 20, 1884. Serial No. 132,226. (No model.)

To all whom it may concern:

Be it known that I, THOMAS F. N. FINCH, of Worcester, in the county of Worcester, England, have invented a new and useful Improvement in Processes of Manufacturing Buttons and Analogous Articles; and I declare the following to be a specification thereof, reference being had to the accompanying drawings.

This invention relates to the manufacture of buttons and analogous articles from leather by cutting the leather, suitably moistened, and pressing it into the desired shape; and it consists in a novel process of securing the shank or other fastening device in place, and also in a novel process of fastening a brace or stay in place by causing the leather to overlap its edges adjacent to the shank or other fastening device.

In the accompanying drawings, Figure 1 represents a central longitudinal section of a pair of dies and appurtenances employed in carrying out my invention. Fig. 2 is a central section of the blank formed by such dies. Fig. 3 is a central longitudinal section of another pair of dies and appurtenances. Fig. 4 is a central section of the blank as shaped by the latter dies. Fig. 5 is a central longitudinal section of another pair of dies and appurtenances. Fig. 6 is a central section of the blank as shaped by the latter. Fig. 7 is a sectional side view of an apparatus for trimming or smoothing the buttons formed from the blanks. Fig. 8 is a central longitudinal section of a pair of dies, whereby a metallic shell is secured to the button. Fig. 9 is a central section of a button with a metallic shell in place. Fig. 10 is a central longitudinal section of a pair of dies for ornamenting the surface of the buttons, and Fig. 11 is a face view of the finished button.

Referring to Fig. 1, A designates a die consisting, in the present instance, of a block of steel or other suitable material, having in its upper face a small concave cavity, *a*. B designates a die, shown as consisting of a cylindric piece of steel or other material, having an annular cutting-edge, *b*, an inner concave cavity, *b'*, and a central gouge-like cutter, b^2. These dies may be used in any suitable press adapted to force them together and draw them apart. A piece of sole or other thick scrap leather, suitably moistened, is subjected to them, and a blank, C, (see Fig. 2,) is produced having one convex side, *c*, containing a recess, *c'*, and one smaller convex side, c^2, surrounded by an annular flat portion, c^3. The recess *c'* is of suitable size to receive a shank having an eye and outwardly-extending horns or prongs, whereby it is secured in place. It will thus be seen that the cutting and a portion of the shaping, as also the forming, of a receptacle for the means whereby the button is to be attached are done at one operation. The shank is inserted in the said recess, and the blank C and shank are subjected to the pair of dies D E. (Shown in Fig. 3.) These dies may be made of steel or other suitable material and operated similarly to those above described. The lower die, D, contains a concave cavity, *d*, and is provided with a shank, *d'*, whereby it is secured to a supporting bed or block. The upper die, E, is provided with a concave cavity, *e*, of corresponding diameter, an inwardly-projecting dent, *e'*, on the under side, and a central recess, e^2, for the reception of the shank before referred to. The blank, with the shank, is fitted between the dies, and by the operation of the latter the leather is crowded or forced tightly around the part of the shank within it and over the horns thereof, tightly securing the same in place. A recess, *f*, is also formed in the blank C, around the shank F, for the reception of a back plate or brace. The blank with a concavo-convex plate of sheet metal fitted in the recess *f*, around the shank F, is next subjected to dies G H, whereby the back plate or brace, I, (see Fig. 6,) is secured in the said recess. The lower die, G, is shown as consisting of a block of steel or other suitable material provided with a concave recess, *g*. The upper die, H, consists of a cylindric block provided with a concave cavity, *h*, a dent, *g'*, concave on the under side, though less so than the dent *e'*, before described, and a recess, h^2, for the shank F, similar to that e^2, before described, but shorter and wider, the cavity *h* being suitably shaped, and the dent *g'* being less concave or flatter. The back plate or brace, I, is flattened and spread out, and the leather adjacent to it is forced inward; consequently the edges of the said back plate are embedded int

the leather, as shown in Fig. 6, and it is secured firmly to the blank so as to brace and stay the shank laterally. Owing to the shortness and increase in width of the recess h^2 the outer part or eye of the shank is spread out laterally. The button is now fully shaped. It is next trimmed up so as to render its surface smooth. This may be effected by placing the button in an upright rotary spindle, J, (shown in Fig. 7,) and so shaped as to allow the edge or longest portion of the button to protrude beyond it. The shank fitting in a flat recess, *i*, causes the button to rotate with the spindle. As the button rotates, any suitable abrasive substance is pressed against it, so as to remove all rough or jagged portions.

In some cases the button is to be covered with a thin metallic plate. When this is the case, the button with a very thin metal shell—for instance, a brass shell—fitted upon it is subjected to dies K L. (Shown in Fig. 8.) The lower die, K, has a concave cavity, K′, and a shank, *k*, for securing it to a supporting bed or block. The upper die, L, has a concave cavity, *l*, larger in diameter than the edge of the die K, and a recess, *l′*, for the shank *f*. The button, with the metallic shell upon it, is placed in the lower die, and the upper die descending upon it forces the edges of the shell inward over the back of the button, as shown at N in Fig. 9, and secures it in place.

Where it is desirous to ornament or embellish the face of the button, it is subjected, either with or without the metallic shell upon it, to dies O P. The lower die, O, has a pattern engraved or otherwise delineated in it, and the upper die, P, forces down the button onto it, meanwhile accommodating the shank of the button in a recess, *p*.

Various styles of buttons and analogous articles with shanks or other fastening devices may be manufactured with dies suitably modified, as also may nail-heads be made and secured to their shanks. When finished, they may be coated with any suitable coloring agent or varnish.

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

1. In the manufacture of buttons and analogous articles from leather by moistening, cutting, and pressing, the process of cutting and shaping the moistened leather and forming a cavity therein at one operation, substantially as shown and described, and then securing a shank or other fastening device by inserting it in said cavity and pressing the leather around it, substantially as specified.

2. In the manufacture of buttons of leather, having a shank or other fastening device, the process of cutting and shaping a piece of moistened leather and forming a cavity therein at one operation, substantially as shown and described, and then fastening a brace or stay in place in said cavity by causing the leather to overlap its edges adjacent to the shank or device, substantially as specified.

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