

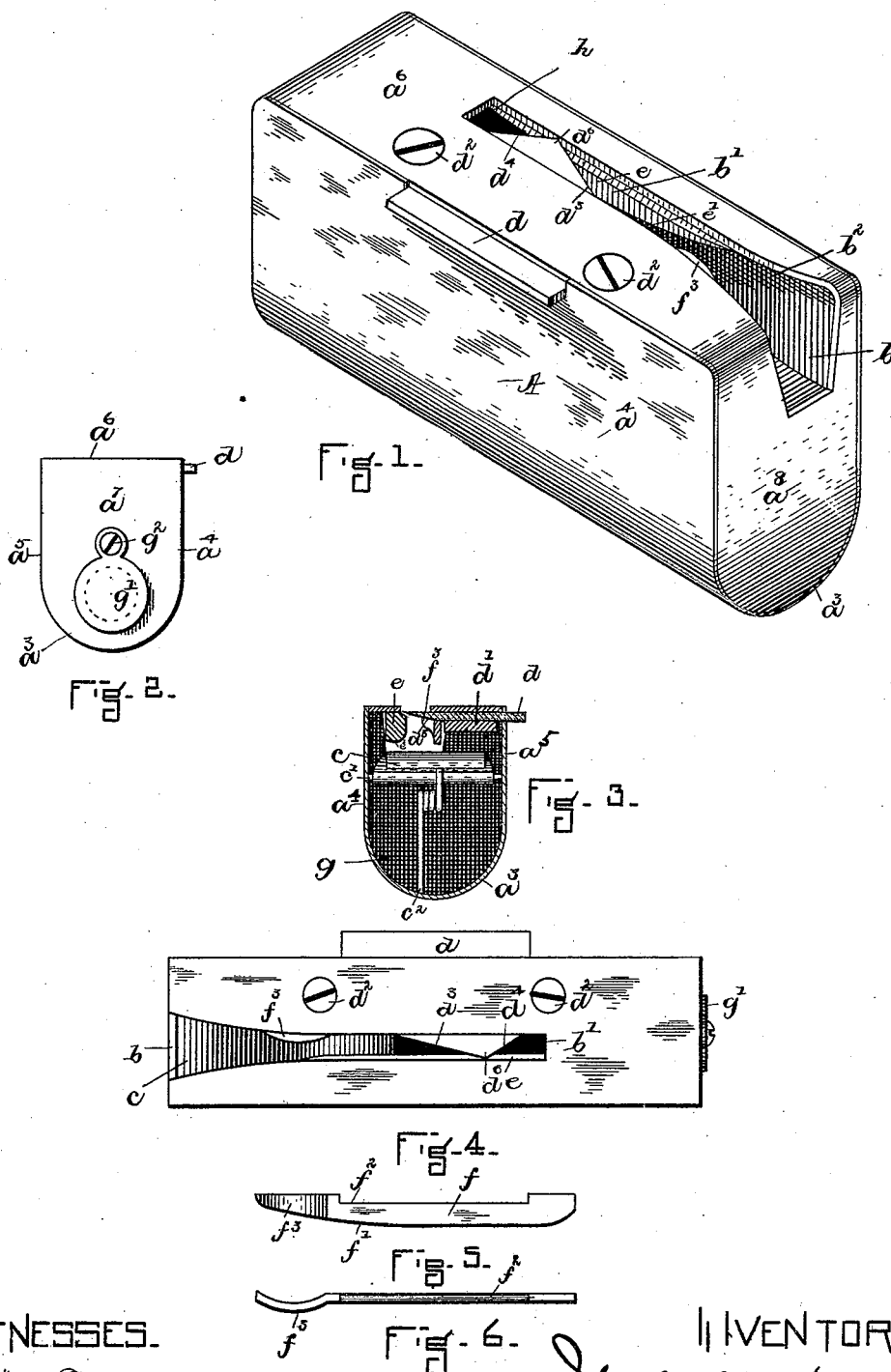
(No Model.)

2 Sheets—Sheet 1.

J. C. HUNT.  
BUTTON DETACHER.

No. 421,717.

Patented Feb. 18, 1890.



WITNESSES.

J. W. Dolan.  
A. B. Merrill.

INVENTOR.

John C. Hunt  
by his atty  
Charles J. Dymond

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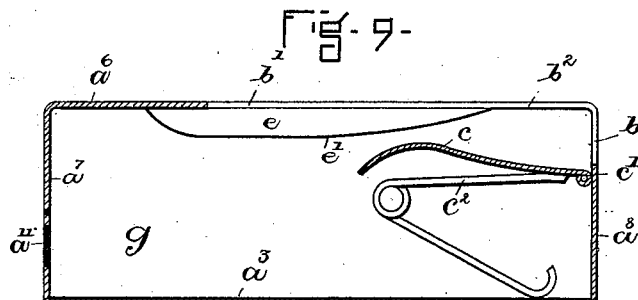
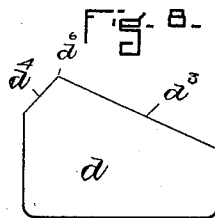
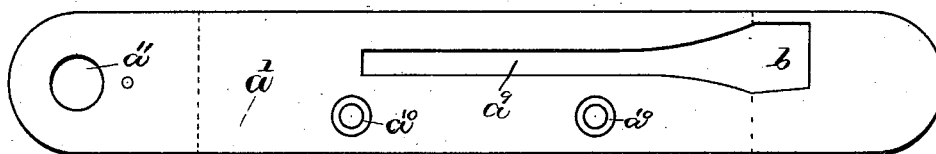


Fig. 10.

J. W. Dolan.  
O. D. Merrill.

INVENTOR\_

John C. Hunt  
by his attys  
Charles & Raymond

# UNITED STATES PATENT OFFICE.

JOHN C. HUNT, OF CONCORD, MASSACHUSETTS.

## BUTTON-DETACHER.

SPECIFICATION forming part of Letters Patent No. 421,717, dated February 18, 1890.

Application filed March 21, 1889. Serial No. 304,166. (No model.)

### *To all whom it may concern:*

Be it known that I, JOHN C. HUNT, of Concord, in the county of Middlesex and State of Massachusetts, a citizen of the United States, have invented a new and useful Improvement in Button-Detachers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

The invention is an improvement upon that described in Patent No. 367,319, dated July 26, 1887, and it relates to various improvements of the construction whereby its cost is lessened and its operation improved, all of which will hereinafter be fully described.

In the drawings, Figure 1 is a view in perspective, enlarged, of the complete detacher. Fig. 2 is a view in elevation of one end thereof. Fig. 3 is a view in vertical section. Fig. 4 is a view in plan of the detacher. Figs. 5 and 6 are detail views of pieces hereinafter referred to. Fig. 7 is a view in plan of the blank from which a portion of the detacher is made. Fig. 8 is a view in plan of another portion of the detacher. Fig. 9 is a view in plan of the knife, and Fig. 10 is a view in longitudinal vertical section.

A is the detacher-case. It is made from the two blanks  $a$ , Fig. 7, and  $a'$ , Fig. 8. The blank  $a$  has the recess  $a^2$  in one edge formed before shaping, and is bent to the form represented in Figs. 1, 3, and 10, and it makes the rounded bottom  $a^3$  and the sides  $a^4$   $a^5$  of the detacher-case. The recess  $a^2$  is for the reception of the knife, as will hereinafter appear. The blank  $a'$  forms the top  $a^6$  and the ends  $a^7$   $a^8$  of the detacher-case, the sections forming the ends being bent at a right angle to the sections forming the top or upon dotted lines of Fig. 8, and each end of the blank being rounded to fit the curved bottom  $a^3$  of the formed blank  $a$ , and the two formed sections  $a$   $a'$  being united to each other, preferably, by soldering or its equivalent, the bent section  $a'$  fitting within the edges of the bent plate  $a$ . (See Fig. 1.) The blank  $a'$  is preferably provided with the long slot  $a^9$  enlarged or widened at one end, the screw-hole  $a^{10}$ , and the large hole  $a^{11}$  before it is bent to

the required shape, and when so bent the slot  $a^9$  assumes the shape and position represented in Fig. 1—that is, it provides a large opening  $b$  in the end  $a^8$  and the long recess  $b'$  in the top  $a^6$ , which has the flaring opening  $b^2$ —and the slot is located, preferably, nearer the wall  $a^4$  than the wall  $a^5$ , in order that a knife-blade of suitable width and suitable supports for the same may be used. A spring-plate  $c$ , hinged at  $c'$  and closed by a spring  $c^2$ , serves to automatically close the button-openings  $b$   $b^2$ .

The screw-holes  $a^{10}$  provide means of fastening the knife-blade  $d$  in position. This is accomplished by means of a clamping-plate  $d'$ , of a length longer than the blade of the knife, arranged upon the under surface of the knife, and into each end of which a screw  $d^2$  extends from the holes  $a^{10}$ . The knife-blade extends or is placed through the slot  $a^3$  (see Fig. 3) immediately under the top plate  $a^6$ , and is clamped against the under surface of the top plate by said clamp-plate  $d'$  and the screws  $d^2$ . The knife  $d$  has the long inclined cutting-edge  $d^3$  and the comparatively short cutting-edge  $d^4$ . (See Fig. 9.) This cutting-edge is preferably formed by the long bevel  $d^5$  on the under surface and the straight upper surface. (See Fig. 3.) The knife is preferably so placed as to present the long edge  $d^3$  to the button-opening  $b^2$ , (see Fig. 4.) so that its point  $d^6$  extends across said opening or to the position represented in Figs. 3 and 4. There is secured to the under surface of the top plate  $a^6$ , upon one side of the slot, the button-guiding piece or plate  $e$ , which projects downward therefrom, and has the inclined lower edge  $e'$ , (see Fig. 1,) and which, preferably, is set out a little into the slot  $b'$ , (see Figs. 1, 3, and 4,) and the point of the knife projects slightly from this edge. (See Figs. 1 and 3.) There is also secured to extend downward from the under surface of the top plate  $a^6$  upon the opposite side of the slot  $b'$  another guide-plate  $f$ . This, preferably, is shaped as represented in Figs. 1, 3, 4, 5, and 6—that is, it has the rounded or inclined lower edge  $f'$ , the knife-recess  $f^2$ , and the outwardly-curved end  $f^3$ , which extends into its button-way below the button-slot near its mouth, as represented in Fig. 4. The object

of this rounded outwardly-extending section is to cause the eye of the button, which button it is desired to detach or remove, to be turned if broad or if presented flatwise to the slot in its passage through the slot, or to a position which shall be lengthwise the slot, so that after passing the turning projection  $f^3$  it is caused to be moved to the knife with the eye lengthwise the slot instead of crosswise. This brings the threads securing the button in a better position to be cut by the knife, and also prevents the button-eye from coming in contact with the cutting-edge of the knife. The plates or guides  $e f$  having inclined or rounded edges  $e' f'$  serve to draw the buttons into the detach-er, thus stretching the button-securing thread taut, so that it will be easily severed as the knife is forced against it. The hole  $a^{11}$  in the end  $a'$  provides the outlet by which the detached buttons are removed from the cavity  $g$  of the detach-er-case, and this opening is closed by a swinging plate  $g'$ , which, instead of being pivoted to the end, as in previous constructions, is attached to the end by a screw  $g^2$ , which screws into a screw-hole in the end plate, and may be set against the same with any desired friction necessary to hold the cover-plate  $g'$  in place.

The advantages of the invention arise, first, from the cheapness of the construction of the case from the two plates  $a a'$ ; second, from the shape of the cutting-edge of the knife and its relation to the button-slot; third, from the device for turning the buttons to present their eyes longitudinally to the button-slot; fourth, from the shape of the knife and manner of holding it in place, and, fifth, from the outlet-covering plate and method of attaching it to the end of the detach-er.

It will be seen that the knife-blade is set so that the point  $d^6$  is nearer the rear end of the case than the front. It will also be seen that the cutting-edge of the knife is so set and shaped in relation to the slot  $b'$  that while the cutting-edge is long and extends across the slot to very nearly the top wall upon the opposite side the portion of the blade beyond the point  $d^6$  is cut away quite abruptly, leaving a space  $h$  at the end of the slot beyond the incline  $d^4$  of the cutting-blade. This construction is quite essential in order to permit the threads after they have been cut to free themselves from the cutter

and drop into the cavity of the holder, or at any rate not to clog the operation of the knife.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. A button-detacher consisting of a case composed of the plate  $A$  of  $U$  form in cross-section, as shown, and the single top or face plate  $a^6$ , having the downwardly-bent ends  $a^7$   $a^8$ , and a button-receiving slot or opening open at one end only, combined with a severing knife or blade extending across said slot or opening.

2. A button-detacher having a button-receiving slot, and a knife or blade extending across said slot, combined with inclined plates or guides  $e f$  for stretching the button-securing thread taut, and with a button-eye turner arranged between said knife and that end of the detach-er at which the buttons are to be entered, said turner extending within said slot to form a narrowed portion, and thus serving to turn the eyes of the buttons lengthwise of the said slot.

3. The combination, in a button-detacher, of the top or face plate having a button-receiving slot, the knife extending into said slot, the guiding and stretching plates  $e$  and  $f$ , and the button-eye turner  $f^3$  between said knife and the open end of the slot and extending into the said slot to form a narrowed portion.

4. The combination, in a button-detacher, of the face-plate having the slot  $b'$ , the knife  $d$ , and the clamp-plate  $d'$  and screws  $d^2$ , substantially as described.

5. The combination, with the face-plate of a button-detacher having the slot  $b'$ , of a knife or cutter consisting of a flat plate having a long diagonal cutting-edge  $d^3$  extending to the point  $d^6$  in the slot and having the short cutting-edge  $d^4$ , substantially as described.

6. The button-detacher having the slot  $b'$  open at one end only, the knife having a cutting-edge extending across the slot, as specified, and also having the quick or sharp incline or release  $d^4$ , and the section  $h$  of the slot extending beyond said point  $d^6$ , as and for the purposes specified.

JOHN C. HUNT.

Witnesses:

F. F. RAYMOND, 2d,  
J. M. DOLAN.