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F. POLZER

2,356,693

STAPLE REMOVER

Filed Oct. 7, 1943

FIG. 1.

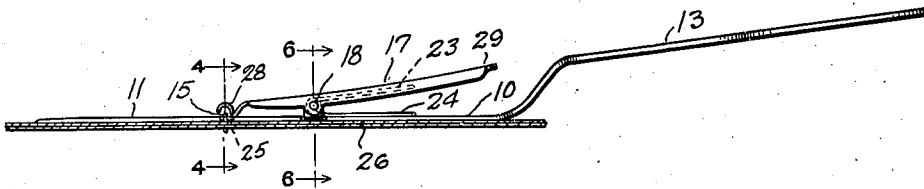


FIG. 2.

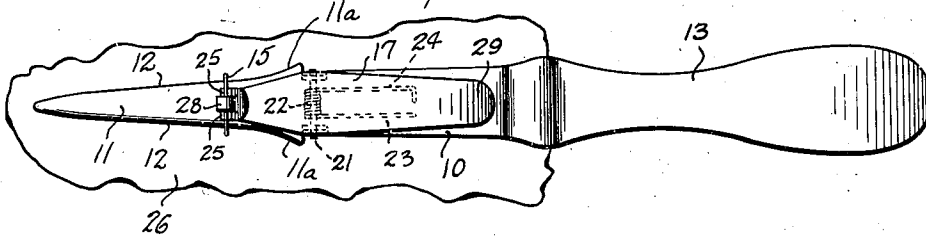


FIG. 3.

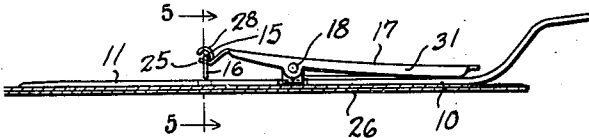


FIG. 4.

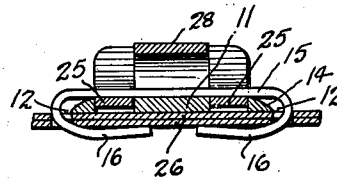


FIG. 5.

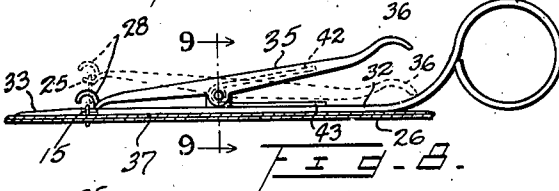


FIG. 6.

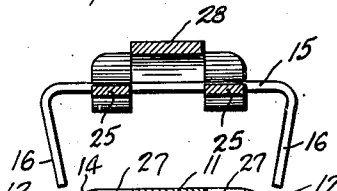


FIG. 7.

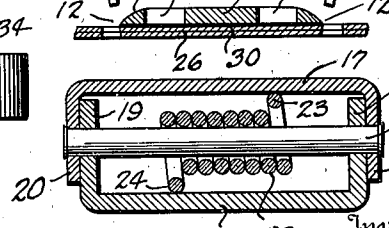
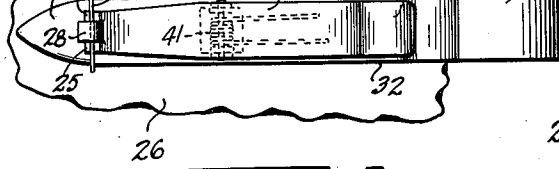


FIG. 9.

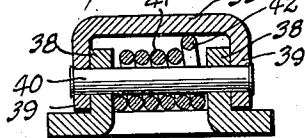


FIG. 10.

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UNITED STATES PATENT OFFICE

2,356,693

STAPLE REMOVER

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Application October 7, 1943, Serial No. 505,333

5 Claims. (Cl. 254—28)

This invention relates to a device or tool for removing staples or similar fasteners from papers, cardboard, boards or similar articles, particularly substantially U-shaped staples either with clinched prongs or when driven as tacks without clinching, and has for an object to provide an improved and simplified device which will easily and quickly remove the staples and will insure that they will not be thrown as they are withdrawn from the stapled article but will be retained for later disposal as desired.

Another object is to provide a device which may be used for withdrawing staples as readily from flexible articles, such for example as sheets of paper, as from more rigid articles and without tearing the article.

A further object is to provide a staple remover which may be combined with a letter opener.

With the foregoing and other objects in view I have devised the construction illustrated in the accompanying drawing forming a part of this specification. It is, however, to be understood the invention is not limited to the specific details of construction and arrangement shown but may embody various changes and modifications within the scope of the invention.

In the drawing:

Fig. 1 is a side elevation of a combination letter opener and staple remover constructed according to my invention showing it inserted under a clinched staple in papers or similar articles preparatory to the action of withdrawing the staple, the stapled articles being shown in section;

Fig. 2 is a top plan view thereof;

Fig. 3 is a side elevation similar to Fig. 1 showing it in position with the staple withdrawn;

Figs. 4, 5 and 6 are transverse sections on an enlarged scale substantially on the lines 4—4, 5—5 and 6—6 respectively of Figs. 1 and 3;

Fig. 7 is a side elevation similar to Fig. 1 showing a somewhat modified construction;

Fig. 8 is a top plan view of the device of Fig. 7, and

Fig. 9 is a transverse section on an enlarged scale substantially on line 9—9 of Fig. 7.

Referring first to Figs. 1 to 6 inclusive, the device comprises a base member 10 provided with an elongated tapered and pointed end portion 11 which may be formed in the shape of a blade to be used as a letter-opener or paper-knife with relatively sharp edges 12 at the opposite sides thereof. This blade portion may terminate in outwardly curved or flared sides 11a. At the other end the base is provided with a handle 13. This base member may be formed from sheet metal of

a desired gauge and is preferably substantially flat on the under side and somewhat convexly curved transversely on the upper side, as indicated at 14, Figs. 4 and 5. This tapered pointed end portion 11 is adapted to be inserted under the top transverse bar 15 of a driven staple, either a clinched staple as shown where the prongs 16 are clinched by bending or folding after being driven through the articles to be stapled, or it is equally adapted for removing staples in which the prongs have been driven into an article such as a board without clinching. The tapered pointed blade facilitates insertion of the device to the staple removing position.

Mounted on the top side of the base member is a lever 17 pivoted at 18 in any suitable manner. A simple and effective means for mounting the lever is to bend up ears 19 at opposite edges of the base member and provide similar downwardly bent ears 20 on the opposite edges of the lever, as indicated in Fig. 6, overlapping the ears 19 and to which they are pivoted by the transverse hinge pin 21 passing through the overlapped ears. A wire spring 22 embraces the hinge pin and has opposite free end portions 23 and 24 engaging the lever and the base member so as to tend to swing the lever counterclockwise as viewed in Fig. 1 to hold it in the normal position preparatory to the staple removing operation. At the forward free end of the lever it is provided with one or more lugs normally adjacent the top surface of the base member 10 so that it or they pass under the bar 15 of the staple when the end portion 11 is inserted between this bar and the stapled articles, such for example as the papers 26. Preferably there are a pair of laterally spaced lugs 25, although a single lug of proper width could be used, and the preferred manner of locating them normally at or adjacent the surface of the base member is to recess them into this member. This may be done by recesses or openings 27 opening from the top of the base member, as shown more clearly in Figs. 4 and 5, a convenient way being to punch openings in the member in which the lugs 25 are normally seated and held by action of the spring 22.

Adjacent these lugs and associated therewith is a guard which when the device is in staple removing position is located over the top bar 15 of the staple so that when the staple is withdrawn from the stapled article it will not be thrown around the room with the danger of injuring someone, as by hitting them in the eye, but will retain the removed staple on the prongs. This could be located on the base member, but is pref-

erably mounted on the lever 17, and is shown in the drawing as an inverted curved member 23 located between the lugs 25 and spaced above them so that its free end does not interfere with the bar 15 passing under this guard and to a position over the top of the lugs 25 as the tapered end portion 11 of the base member is inserted under the bar 15. The attached inner end portion of this guard also acts as a stop means to engage the bar of the staple and limit the amount the tapered portion of the base member is inserted under the bar of the staple.

Thus in using the device the point of the tapered portion 11 is inserted under the top bar 15 of the staple between this bar and the stapled articles 26, the flat lower surface of the base resting on and sliding along the surface of the stapled articles. The device is inserted until the bar 15 of the staple is engaged by the attached base portion of the guard 28 or some other suitable stop, as shown in Figs. 1 and 2, with the prongs 25 underlying the bar 15 and the guard 23 overlying this bar. This is also the position shown in Fig. 4. If the operator now depresses the free end 29 of the lever 17 by merely pressing down on it with his or her finger the lugs 25 will be raised and carry with them the staple by withdrawing it from the stapled article, the prongs 16 yielding or more or less straightening out as shown in Fig. 5. This is the position of Figs. 3 and 5. During this operation of withdrawing the staple the flat lower surface 30 of the portion 11 of the base member rests on top of the stapled article, as shown in Figs. 4 and 5, and supports this article or holds it so that it is not drawn up by the prongs of the staple and the prongs are therefore readily and completely separated from the papers or other clinched articles and without tearing the article. The base portion 11 at this point is preferably about the width of the staple between the prongs so that its opposite side edges are adjacent the prongs. It is to be noted, however, that as the prongs 16 of the staple are somewhat resilient, when they are withdrawn they will release or be withdrawn from the stapled article by a sudden action so that at this point the free end of the lever will quickly move upwardly, and if the staple were free it would be flipped or thrown with the danger of causing injury to someone and would of course need to be later picked up. With the guard 28, however, this action is prevented as this guard prevents the staple flying off of the lugs so that it is retained and held by these lugs, as indicated in Figs. 3 and 5. It can be easily removed, however, by sliding it off with the fingers, or by merely dropping the pointed end portion 11 so that it will slide off the lugs. The side edges of the lever may be bent downwardly, as indicated at 31, to provide ribs or flanges along these edges to give a substantially channel shaped cross section, to thus stiffen and strengthen the lever so that it will not bend out of shape under the action of removing the staple.

A somewhat modified form is shown in Figs. 7, 8 and 9, although the operation is the same. In this form the base member 32 is somewhat shorter than the base member 10 in the first form with a shorter pointed free end portion 33 to be inserted under the bar 15 of the staple. Also the handle is made somewhat shorter by bending it upwardly and curving it to form a loop 34 to receive a finger of the operator. The lever 35 is substantially the same as the lever 17 of the first form except the free fingergrasp end 36 is curved somewhat upwardly and downwardly. The op-

posite end of the lever is provided with the lugs 25 recessed or seating in openings 27 in the base member, the same as in the first form, so as to pass with the base member to a position under the staple bar 15 when the pointed tapered end portion 33 is inserted under the bar, and is provided with the same guard 28 passing over the top of the staple bar when in the staple removing position, and to retain the staple on the lugs and prevent it being thrown about as the staple prongs free themselves from the stapled article during the staple removing operation. The base 32 has a flat underwall 37 to rest on the top surface of the stapled articles, the same as in the first form, and hold the article to prevent its being pulled upwardly or torn by the staple and insure complete separation of the prongs from the stapled article. As shown in Fig. 9, the lever 35 is mounted upon ears 38 cut and bent upwardly from the base member 32 and the lever has downwardly bent ears 39 at its opposite edges overlapping the ears 38 and to which they are pivoted by the pivot and hinge pin 40. A spring 41 embraces this pin and has free end portions 42 and 43 engaging the lever and the base respectively to retain the lever in the normal position with the lugs 25 seated in the recesses or openings 27 in position for insertion under the bar 15 of the staple. This device is inserted between this bar and the stapled articles the same as in the first form until the bar lies over the lugs 25 and under the guard 28 as shown in Figs. 7 and 8, and then by depressing the lever 35 by pressing on the free end portion 36 it is shifted to the dotted line position, withdrawing the staple as indicated in Fig. 5, the same as in the first form. This makes a somewhat more compact and shorter tool or device than that of the first form, but its operation and effectiveness is the same.

It will be seen from the above that in either form the device may be quickly and easily inserted under the staple bar and the staple quickly and easily removed by merely depressing the free end of the lever. The flattened base member rests on the top of the stapled article and supports it during the staple removing operation so that the device is just as effective and as easily manipulated to remove staples from flexible articles such as sheets of paper as from more rigid articles and will not tear these articles. A particular advantage is that the staples are not thrown as they are withdrawn from the article. The form of Figs. 1, 2 and 3 may also be used as a letter opener and paper cutter.

Having thus set forth the nature of my invention what I claim is:

1. A staple remover comprising a base member adapted to be inserted under the top bar of a clinched staple, a member mounted on the base member including a portion to move under the bar with said base member and a second portion to at the same time move to a position over said bar, said second portion extending forwardly over and downwardly in front of the bar in position to retain the staple on the first portion and prevent its flying therefrom as it is removed, and means for raising the said second member from the base member to remove the staple.

2. A staple remover comprising a base member provided with a free end portion adapted to be inserted under the top bar of a clinched staple, a lever pivoted to said member provided with a lug so located as to move to a position under said bar with the base member, a guard on said lever adjacent the lug to at the same time move to a

position over the bar, said guard extending forwardly over and downwardly in front of the bar in position to retain the staple on the lug and prevent its flying therefrom as it is removed, and means for operating the lever to raise the lug and guard from the base member to remove the staple.

3. A staple remover comprising an elongated tapered and pointed blade provided with relatively thin sharp edges and adapted to be inserted under the top bar of a clinched staple between said bar and the stapled article, said blade being substantially flat and extending backwardly from the staple to rest on the surface of the article and then offset upwardly to form a handle for said blade spaced above the article, a lever pivotally mounted on top of the blade provided with a lug at one end adjacent the top of the blade and movable with the blade into a position under the bar, and a finger grip on the lever above the blade terminating adjacent the forward end of the handle for lifting the lug to withdraw the staple from the article.

4. A staple remover comprising an elongated tapered and pointed blade provided with relatively thin sharp edges and adapted to be inserted under the top bar of a clinched staple between said bar and the stapled article, a handle for said blade, a lever pivotally mounted on top of the blade provided with a lug at one end nor-

5 mally recessed into the top of the blade so as to move with the blade into a position under the bar, a guard adjacent the lug extending forwardly and downwardly over the bar to a position to retain the withdrawn staple on the lug, and a finger grip on the lever for lifting the lug to withdraw the staple from the article.

10 5. A staple remover comprising a base member provided with a free end portion adapted to be inserted under the top bar of a driven staple between said bar and the stapled article, said base member being substantially flat and elongated to rest on the top of the article and at some distance from the free end being offset upwardly to provide a handle spaced above the surface of the article, a lever pivotally mounted on said member provided with a lug normally located adjacent the top surface of the base member to move to a position under the bar with said member, said lever including a finger grip extending to a position adjacent the forward end of the handle by which the lever may be operated by depressing this grip while the handle remains stationary to raise the lug to withdraw the prongs of the staple from the article, and said base member being of a width somewhat less than the distance between the prongs but of a sufficient width so as to support the article adjacent the prongs during the withdrawing operation.

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