Sept. 29, 1959 A. A. BORTNER 2,906,547

PAD MOUNTINGS

Filed Feb. 20, 1957

Fig. 1.

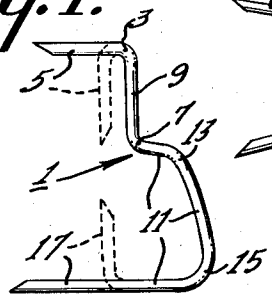


Fig. 2.

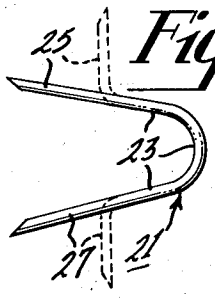


Fig. 4.

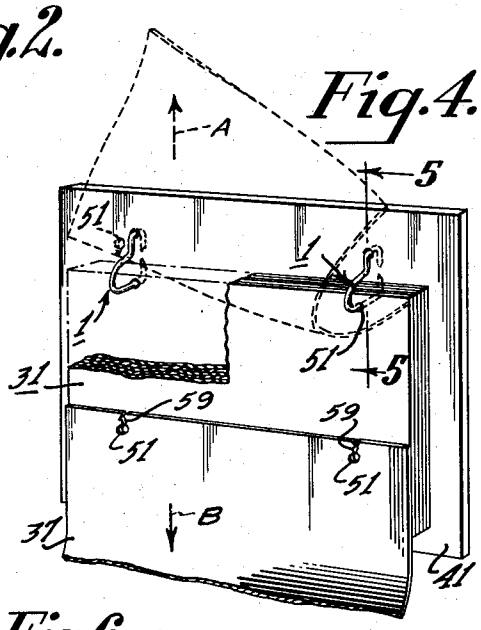


Fig. 3.

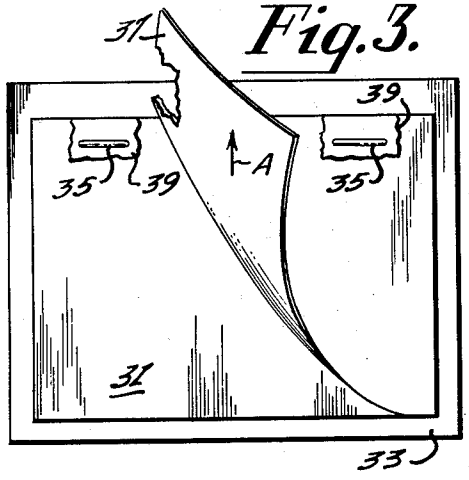


Fig. 6.

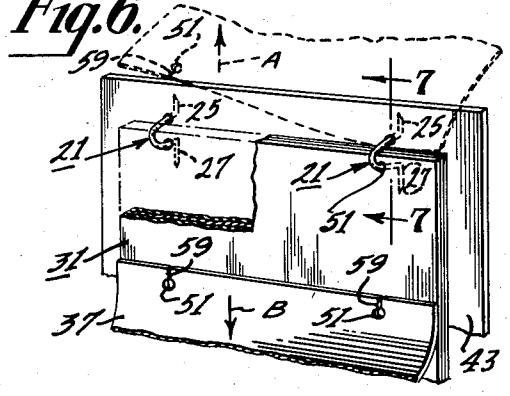


Fig. 5.

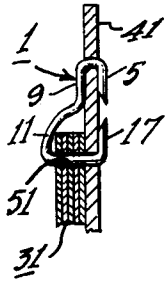


Fig. 7.

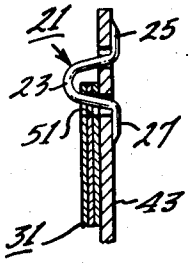


Fig. 9.

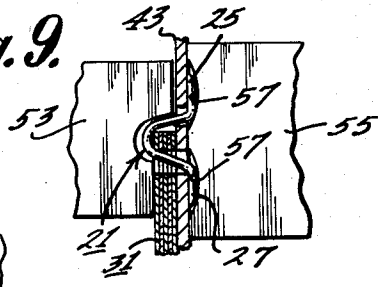
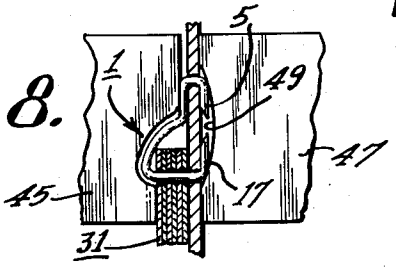


Fig. 8.



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PAD MOUNTINGS

Allen A. Bortner, Flushing, N.Y.

Application February 20, 1957, Serial No. 641,323

4 Claims. (Cl. 281—25)

This invention relates to pad mountings, and more particularly to staples for removably supporting various articles such as pads of paper, calendar pads, pictures, and the like.

In the advertising field, for example, pads of sheets with advertising matter, coupons and the like are frequently stapled to cardboard panels on which printed matter may direct attention to the subject matter on the individual sheets of the pads. In such cases, the reader is usually invited to tear off one or more of the sheets for such use as may be indicated. Multiple sheet calendar pads are similarly stapled to suitable backing panels, each sheet to be torn off, in turn, at the appropriate time. Customarily, such pads are stapled to their supporting panels by conventional, straight staples disposed parallel to the upper edges of the pads. Because of the length of such conventional staples, as the individual sheets are torn from the pads, stubs of the removed sheets are held fast by the staples and are retained on the pads and panels. Thus, after a few of the sheets have been removed, the retained stubs which are gradually built up mutilate the succeeding sheets and more often than not render them unfit for use.

The primary object of my present invention is to provide improved staples which will entirely avoid the foregoing and other disadvantages characteristic of prior art staples.

More particularly, it is an object of my present invention to provide improved staples on which pads of paper provided with small apertures can be supported for facile, substantially unmutilated removal of the individual sheets thereof, and without leaving any stubs behind.

Another object of my present invention is to provide an improved combination of supporting panel, pad receiving staples, and multi-sheet pad wherein the individual sheets of the pad are easily removable one by one without interference of one sheet by any portion of another sheet.

A further object of my invention is to provide improved staples as aforesaid which can be readily affixed to a supporting panel or other supporting member.

It is also an object of my invention to provide improved staples and an improved combination as aforesaid which are simple to produce, economical in cost, and highly efficient in use.

The foregoing and additional objects and advantages of my invention will be more readily apparent from the following description, when read in connection with the accompanying drawing in which:

Figure 1 is a side elevation of one form of staple according to my present invention, the staple being shown in partly completed form in full lines and in completed form by the dotted lines,

Figure 2 is a similar view of another form of staple according to my present invention,

Figure 3 is a front elevation showing a multi-sheet pad mounted on a panel by conventional staples and the stubs which result when a sheet is removed therefrom in customary manner, this view being shown for the sake of comparison with Figures 4 and 6,

Figure 4 is a perspective view of a supporting panel carrying a pair of staples such as shown in Figure 1 and on which a multi-sheet pad is mounted for substantially unhampered removal of the individual sheets thereof,

Figure 5 is a fragmentary, sectional view take on the line 5—5 of Figure 4,

Figure 6 is a view similar to Figure 4 but showing a supporting panel carrying a pair of staples such as shown in Figure 2,

Figure 7 is a fragmentary, sectional view taken on the line 7—7 of Figure 6,

Figure 8 is a plan view, partly in section, showing how the staple of Figure 1 is applied to a supporting panel, and

Figure 9 is a view similar to Figure 8 but showing how the staple of Figure 2 is applied to a supporting panel.

Referring more particularly to the drawing, wherein like numerals indicate corresponding parts throughout, there is shown, in Figure 1, a staple **1** made of a length of wire or other suitable, relatively stiff, deformable material of any suitable shape in cross section and preferably, but not necessarily, pointed or chamfered at its ends. The staple is preformed prior to application to a suitable supporting member, as will be described hereinafter, with a first bend **3** to provide a first end portion **5** adapted to penetrate and extend either merely into or entirely through the supporting member depending upon the thickness of the supporting member. Below the bend **3** and spaced therefrom is a second bend **7** to provide a portion **9** which is adapted to engage and lie against the front surface of the supporting member. Beyond the bend **7** is a generally arcuate loop portion **11** formed as a result of a pair of spaced bends **13** and **15**. The loop portion **11**, which is closed at its outer end and open at its inner end, merges into and terminates in a second end portion **17** also capable of penetrating and extending into or through the supporting member, as the case may be. The end portions **5** and **17** are generally parallel and will remain so if the staple is driven into a supporting member of greater thickness than the lengths of the end portions **5** and **17**. On the other hand, if the supporting member is of lesser thickness than the lengths of the end portions **5** and **17**, they can be bent into the dotted line positions shown in Figure 1 and be clinched against the rear surface of the supporting member to lock the staple thereto. In either case, the portion **9** engages and lies against the front surface of the supporting member, the open end of the loop portion **11** being contiguous to the supporting member front surface and the closed end thereof being spaced from said surface. Thus, the loop **11**, when extended through an aperture of an apertured article to be mounted on the supporting member, affords a means of suspending the article from the staple.

The staple **21** of Figure 2 comprises a length of wire or the like which is bent intermediate its ends to provide a somewhat V-shaped loop portion **23** which is preferably rounded or arcuate at its apex end, and a pair of diverging end portions **25**, **27** capable of penetrating a suitable supporting member. When this staple is applied to a panel or the like of lesser thickness than the lengths of the end portions **25** and **27**, the end portions can be bent to the dotted line positions shown in Fig. 2 and clinched against the rear surface of the panel. Here, again, the loop portion **23** has a closed, outer end and an open, inner end contiguous to the panel. When received in the aperture of an apertured article, the loop portion **23** serves to suspend the article on the panel.

Staples of the type described above are admirably suited for supporting multi-sheet pads of paper for facile, substantially unhampered removal of successive sheets with-

out appreciable mutilation of the respective sheets. This is in marked contrast to the difficulty and sheet mutilation encountered with conventional staple mounted pads, such as illustrated in Figure 3. Here, a multi-sheet pad of paper **31** is shown mounted on a panel **33** by a pair of conventional, straight staples **35** which extend parallel to the upper edge of the pad, each for about a half inch or so. The individual sheets **37** of the pad are customarily removed by flipping or tearing them upwardly, as shown by the arrow A. When this is done, each of the staples **35** retains a stub **39** which is torn out of the successive sheets, thus mutilating the various sheets, so that they cannot be used to maximum advantage. As the stubs accumulate, it becomes more and more difficult to remove succeeding sheets, and each succeeding sheet becomes mutilated to a greater degree than previously removed sheets.

In accordance with my present invention, the panel **41** of Figure 4 is provided with a pair of staples **1** such as shown in Figure 1, and the panel **43** of Figure 6 is provided with a pair of staples **21** such as shown in Figure 2. The staples **1** may be secured to the panel **41** in any suitable manner, as with the aid of a driving tool **45** (Figure 8) in front of the panel and a cooperating anvil **47** behind the panel. The anvil **47** has a concave seat **49** into which the advancing, pointed ends of the staple portions **5** and **17** are forced after they have passed through the panel **41** in response to the force applied by the tool **45**. The seat **49** is shaped to bend the end portions **5** and **17** toward each other and clinch them against the rear surface of the panel, thereby to secure the staple to the panel. The lower end portion **17**, which also forms the lower end of the loop **11**, passes through aligned apertures **51** in the sheets of the pad **31**. These apertures may be either preformed in the pad, or they may be produced therein by the advancing end portion **17** as the staple is applied to the panel with the pad **31** interposed between the panel **41** and the tool **45**. In either case, it will be seen that the lowermost part of the open-ended loop is received in the apertures **51** whereby to suspend the pad **31** from the staple.

The staple **21** of Figure 6 may be similarly secured to the panel **43** with the aid of a driving tool **53** (Figure 9) and an anvil **55**. The anvil **55** has a pair of spaced, concave seats **57** into which the advancing, pointed ends **25, 27** of the staple are forced and which turn the ends **25, 27** outwardly away from each other and into clinching relation with the rear surface of the panel **43**. Here, again, the lower part of the loop **23** is received in the apertures **51** to suspend the pad from the staple.

It will be noted that the panels **41** and **43** and their respective pads **31** are arranged with their upper edges horizontal and substantially parallel to each other. However, the staples **1** and **21** are mounted on their respective panels **41, 43** to be disposed in generally vertical planes at substantially right angles to the upper edges of the panels and the pads and also substantially at a right angle to the plane of the panel in each case. The pads are, of course, confined merely by the lower parts of the loops **11** and **23**, the wire being of such small cross-sectional dimension at these loops as to provide practically no impediment to removal of the individual sheets. Thus, when the successive sheets are subjected to a tearing force applied thereto in a direction substantially athwart or crosswise thereof (for example, either by being flipped upwardly in customary manner to the dotted line positions of Figures 4 and 6, as shown by the dotted arrows A, or by being pulled downwardly, as shown by the solid arrows B), they are removed easily, substantially unhampered, to produce merely small tears **59** leading from each aperture **51** to the adjacent, horizontal edge of the sheet, and without leaving any troublesome stubs behind. This is made possible by reason of the comparatively widely spaced, thin, relatively loose contact areas between the staples and the sheets at the apertures **51**.

From the foregoing description, it will be apparent that I have provided improved staples and an improved combination of supporting member, staple and article mounted thereon, these being free from the disadvantages inherent in prior art staples and similar combinations heretofore known and offering advantages not found in the prior art. Moreover, the staples of the present invention offer certain simplicities in structure and cost over the staple disclosed in my copending application, Ser. No. 598,699, filed July 18, 1956 (now abandoned) wherein a hook type of staple is involved. Furthermore, although I have described the present invention in connection with the mounting of apertured paper pads, it will be apparent that the improved staples of the present invention lend themselves to similar mounting of other articles having mounting apertures therein. Also, although two forms of staples according to the present invention have been disclosed herein, it will undoubtedly be apparent to those skilled in the art that other forms thereof are possible. Hence, I desire that the foregoing shall be taken merely as illustrative and not in a limiting sense.

I claim:

1. In combination, a supporting panel, a staple on said panel, said staple comprising a length of wire having spaced first and second portions, a third portion and a loop portion, said spaced first and second portions extending through said panel from the front surface thereof to beyond the rear surface thereof, said third portion being a continuation of said first portion and lying against the front surface of said panel, said first and second portions being clinched against said panel rear surface whereby to lock said staple to said panel, said loop portion connecting said third and second portions and having a part merging into said second portion, said loop portion having closed and open ends, said open end being contiguous to said panel and said closed end being spaced therefrom, and an article comprising relatively thin sheet material having an aperture therein carried by said staple, said loop portion part extending through said aperture whereby to suspend said article from said staple, and said wire being of a cross sectional dimension such that its width and thickness are of the same order and such that it will permit substantially free removal of said article therefrom by tearing in response to a force applied to said article in a direction substantially athwart thereof.

2. The invention set forth in claim 1 characterized in that said panel has an upper edge and characterized further in that said staple is disposed in a plane substantially at right angles to said upper edge and also to the plane of said panel.

3. The invention set forth in claim 1 characterized in that said panel has an upper edge and said article has an upper edge parallel to said panel upper edge, and characterized further in that said staple is disposed in a plane substantially at right angles to both said upper edges and also to the plane of said panel.

4. The invention set forth in claim 1 wherein said article comprises a multi-sheet pad the individual sheets of which can be removed readily by pulling them from said loop portion, said wire having such cross-sectional dimension at said loop portion as to permit removal of said sheets from said loop portion without leaving behind an appreciable stub ruptured from said sheets.

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