Jan. 9, 1951 M. J. SWATSICK 2,537,801

FASTENING DEVICE

Filed April 27, 1946

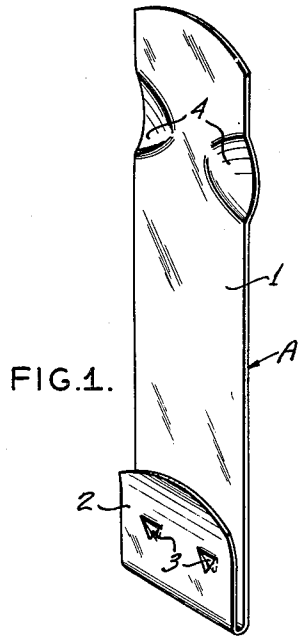

FIG. 1.

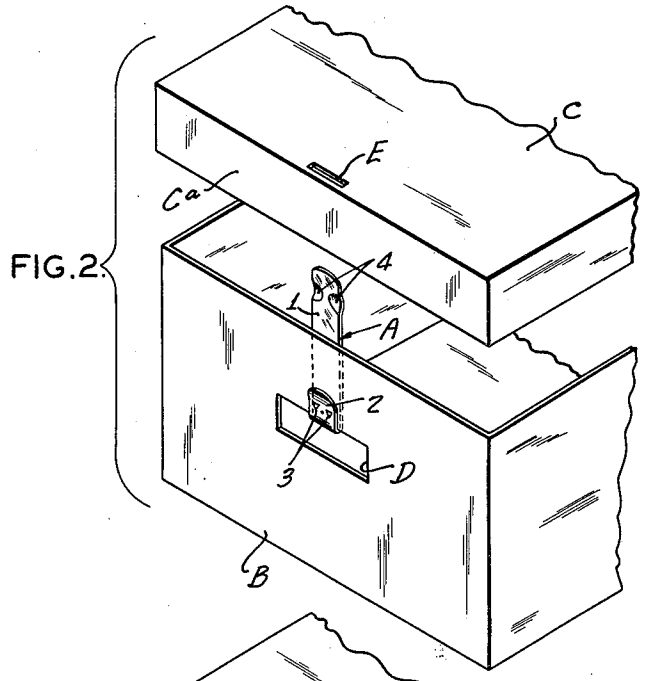

FIG. 2.

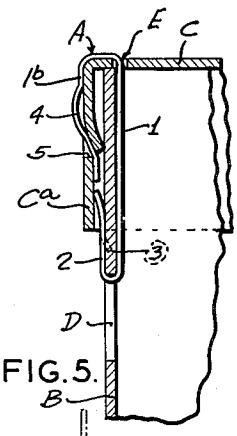

FIG. 5.

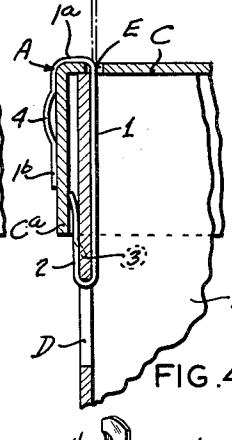

FIG. 4.

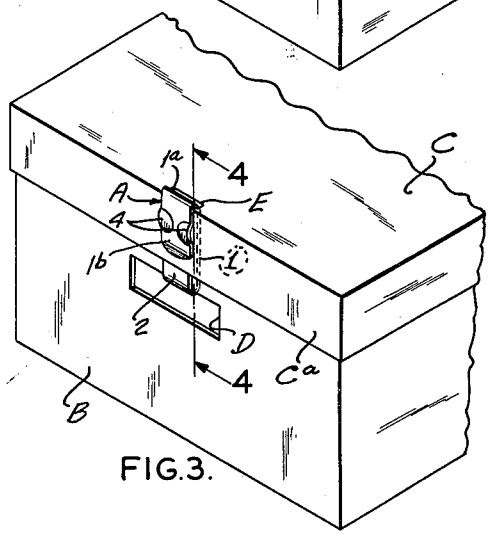

FIG. 3.

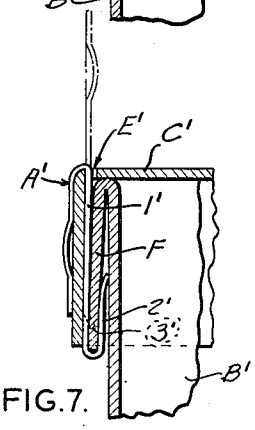

FIG. 7.

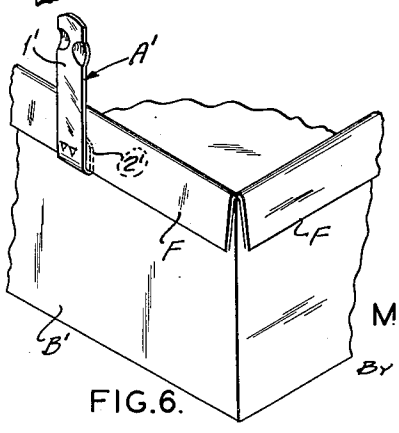

FIG. 6.

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FASTENING DEVICE

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2 Claims. (Cl. 229—47)

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This invention relates generally to fastening devices for securing covers, and other closures, in place with respect to boxes formed from corrugated or solid fiber board, or other materials, the predominant object of the invention being to provide a securing device of the type mentioned which is of extremely simple construction, and which may be applied to a box and adjusted to its closure-securing position in a very convenient and expeditious manner.

Prior to this invention attempts have been made to provide fastening devices for securing in place closures of boxes which were in the form of strips of metal adapted to be attached to body portions of boxes and which were bendable to positions where they secured covers of the boxes in place. However, these earlier fastening devices did not come into general use because strips of material of considerable length were required to produce them, and because they were deficient in that they were frequently displaced from their proper positions with respect to the body portions of the boxes during the operations of applying the covers to the body portions of the boxes. The fastening device of the present invention differs from the earlier fastening devices referred to above because of the fact that very much less material is required to produce it than was required to produce said earlier fastening devices. Also, an important difference between the fastening device of the present invention and said earlier fastening devices is that the fastening device of this invention is provided with means forming parts thereof which securely anchor said fastening device to the body portion of a box so that it may not be accidently displaced during the operation of applying a cover to said box body portion.

Fig. 1 is a perspective view of the improved fastening device of the present invention.

Fig. 2 is a bracketed, fragmentary perspective view showing a body portion of a box and a cover therefor, the body portion of the box having a fastening device of the present invention applied thereto, and the box cover being shown in an elevated position with respect to the box body portion.

Fig. 3 is a fragmentary perspective view similar to Fig. 2 but showing the box cover secured by a fastening device of the present invention in a position where it closes the top of the body portion of the box.

Fig. 4 is an enlarged vertical section taken on line 4—4 of Fig. 3.

Fig. 5 is a vertical section similar to Fig. 4

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but showing an end portion of the fastening device inserted through a slit formed through a portion of the cover of a box.

Fig. 6 is a fragmentary perspective showing a slightly modified form of the fastening device of the present invention applied to a different form of box.

Fig. 7 is a fragmentary vertical section showing the form of box illustrated in Fig. 6 as it appears when its cover is secured in place with the aid of the fastening device illustrated in Fig. 6.

In the drawing, wherein are shown for purposes of illustration, merely, two embodiments of the invention, A designates in Figs. 1 to 5, inclusive, the improved fastening device generally. The fastening device A comprises a strip of readily bendable, non-resilient metal, or other suitable material, which is shaped so that it is provided with a main portion 1 of considerable length. At the lower end of the main portion 1 of the fastening device A, the strip of material of which said fastening device is formed is bent outwardly and upwardly to provide the fastening device with a relatively short leg 2 which is disposed parallel with, and in close proximity to, the lower portion of the main portion 1 of the fastening device. The short leg 2 of the fastening device A is provided with a pair of inwardly and downwardly extended, tapered tangs 3, said tangs being displaced portions of said short leg 2 and the side edges of said tangs converging to a point at the lower ends of said tangs. The tangs are preferably formed by forming V-shaped slits in the short leg 2 of the fastening device A and displacing the material within said V-shaped slits inwardly, the tangs being integrally connected to said short leg at their upper ends. The main portion 1 of the fastening device A is provided with a pair of opposed depressions 4, each of which is open at a side edge of said main portion 1, said depressions providing finger grips which are useful in disengaging the fastening device when it is desired to remove a cover secured thereby.

In Figs. 2, 3, 4, and 5 the improved fastening device is illustrated in association with a box which includes a body portion B and a cover C that is adapted to close the top of said box body portion. The body portion B of the box illustrated in the views mentioned has formed in a wall thereof a hand hole D, and the top wall of the box cover C has formed therethrough a narrow, elongated opening E. In applying the fastening device A to the box shown in Figs. 2, 3, 4, and 5, the fastening device is passed downwardly into

the body portion of the box at the location of the wall thereof in which the hand hole D is formed, and the short leg 2 of the fastening device is passed through said hand hole, the fastening device then being drawn upwardly so as to position a portion of the box wall that is located immediately above the hand hole, between the short leg 2 and a lower part of the main portion 1 of the fastening device A, as is shown to good advantage in Fig. 4. When the fastening device A is in its effective position, as illustrated in Fig. 4, the tangs 3 will be embedded in the material of the wall of the box against the outer face of which the short leg 2 bears. Thus, the fastening device is very securely anchored in place with respect to the body portion of the box, and any downward force to which it may be subjected will cause the downwardly and inwardly inclined tangs 3 to be more deeply embedded in the box wall.

When the fastening device has been applied to the body portion of the box, as described above, the main portion 1 thereof extends vertically, as is shown in Fig. 2 and by dotted lines in Fig. 4, the outer face of the lower portion of said main portion of the fastening device contacting with the inner face of the box wall through which the hand hole D is formed. The cover C of the box is then moved downwardly with respect to the body portion of said box in such manner that the upper portion of the main portion 1 of the fastening device A will be extended through the narrow, elongated opening E of said cover when the cover has been properly seated with respect to the upper portion of the body portion of the box. The upper portion of the main portion 1 of the fastening device A is then bent outwardly, as shown at 1*a* in Fig. 4, so that it contacts closely with portions of the top wall of the cover C located outwardly of the narrow, elongated opening E, and said main portion is then bent downwardly against the outer face of the flange C*a* of the cover C, as is shown at 1*b* in Fig. 4. If desired, the flange C*a* of the cover of the box may be provided with a horizontal slit 5 and the end portion of the part 1*b* of the main portion of the fastening device may be inserted through said slit, as is shown in Fig. 5.

In Figs. 6 and 7 a slightly different form of fastening device A' is illustrated which is intended for use with a box whose body portion B' is provided with flanges F that extend downwardly from the tops of the upstanding walls of said box body portion. The fastening device A' is provided with a relatively short leg 2' similar to the short leg 2, shown in Figs. 1 to 5, inclusive, but the short leg 2' is bent rearwardly and upwardly instead of outwardly and upwardly, as is the short leg 2 of Figs. 1 to 5, inclusive. In securing a cover C' to the body portion B' of the box illustrated by Figs. 6 and 7 with the aid of the fastening device A', the fastening device is applied to a flange F of the body portion of the box as is shown to good advantage in Fig. 7, a portion of said flange being interposed between a lower part of the main portion 1' of the fastening device and the short leg 2' thereof. The fastening device A' is provided with downwardly and inwardly inclined tangs 3' which are displaced from the lower portion of the main portion 1' of the fastening device, and these tangs are embedded in the material of the flange F of the body portion of the box so as to securely anchor the fastening device in place. The cover

C' of the box is moved downwardly to its seated position with respect to the upper portion of the body portion of said box in such manner that the main portion 1' of the fastening device extends through an opening E' formed through the top wall of said cover, after which the main portion 1' of the fastening device is bent outwardly and downwardly, as shown in Fig. 7, to secure the cover to the body portion of the box.

I claim:

1. A package comprising a box having an open top and provided with a hand hole formed in a wall thereof which is adapted to receive a hand to facilitate lifting the box, and a cover telescoping over the open top of said box, said cover having a slot formed therethrough, a fastening device for securing said cover to said box, said fastening device being formed of readily bendable material and comprising a leg which contacts with a face of the box wall in which said hand hole is formed and which is extended through said slot of said cover and is bent downwardly against the outer face of a portion of said cover, and a portion at the lower end of said fastening device which is extended from said leg through said hand hole and is extended upwardly in contact with the opposite face of the box wall in which said hand hole is formed, the lower part of said downwardly bent portion of said fastening device being extended through a slit formed in a portion of said cover.

2. A package comprising a box having an open top and provided with a hand hole formed in a wall thereof which is adapted to receive a hand to facilitate lifting the box, and a cover telescoping over the open top of said box, said cover having a slot formed therethrough, a fastening device for securing said cover to said box, said fastening device being formed of readily bendable material and comprising a leg which contacts with a face of the box wall in which said hand hole is formed and which is extended through said slot of said cover and is bent downwardly against the outer face of a portion of said cover, and a portion at the lower end of said fastening device which is extended from said leg through said hand hole and is extended upwardly in contact with the opposite face of the box wall in which said hand hole is formed, the lower part of said downwardly bent portion of said fastening device being extended through a slit formed in a portion of said cover, and the slitted portion of said cover covering the lower portion of said downwardly bent portion of said fastening device and the upper portion of said upwardly extended portion thereof.

MICHAEL J. SWATSICK.

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