

[72] Inventors Peter A. Simon;
Leonard M. Paletz; Benjamin Fiterman;
Marlyn D. Johnson; Carl S. Ahlberg,
Minneapolis, Minn.
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[73] Assignee Safco Products Co.
Minneapolis, Minn.
a corporation of Minnesota

[56]

References Cited

UNITED STATES PATENTS

1,800,109	4/1931	Selig.....	287/189.35
3,275,392	9/1966	Fiterman.....	312/108
3,325,135	6/1967	Clarke.....	85/5X
3,031,125	4/1962	Felton.....	312/111X

Primary Examiner—Ramon S. Britts

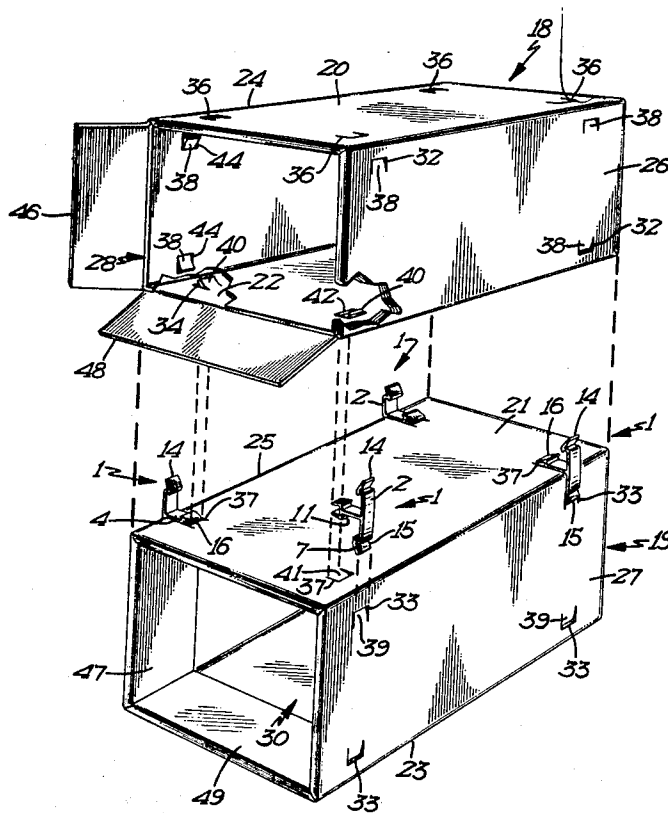
Attorney—Williamson, Palmatier & Bains

[54] TILE CASE ASSEMBLY AND STACKING CLIP THEREFOR

7 Claims, 4 Drawing Figs.

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24/73; 287/189.35; 312/108, 312/111
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F16b 12/10
[50] Field of Search..... 211/126,
177, 134, 148; 312/111, 108, 107, 257;
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73PF, 73.7, 73.8P, 73, 208.3; 85/5, 80

ABSTRACT: A flexible, T-shaped clip having retention shoulders projecting from the opposite ends of its elongated cross-member as well as from the free end of its central web section is utilized to hold a plurality of stacked fiberboard containers together by inserting the retention shoulders of the cross-member in aligned apertures of adjoining, vertical sidewalls of two containers and engaging the opposed shoulders on the horizontally extending web section in the abutting top and bottom walls of the two containers through apertures therein. Raised beads on the retention shoulders assist in holding them in locking engagement with the apertured walls of the containers.



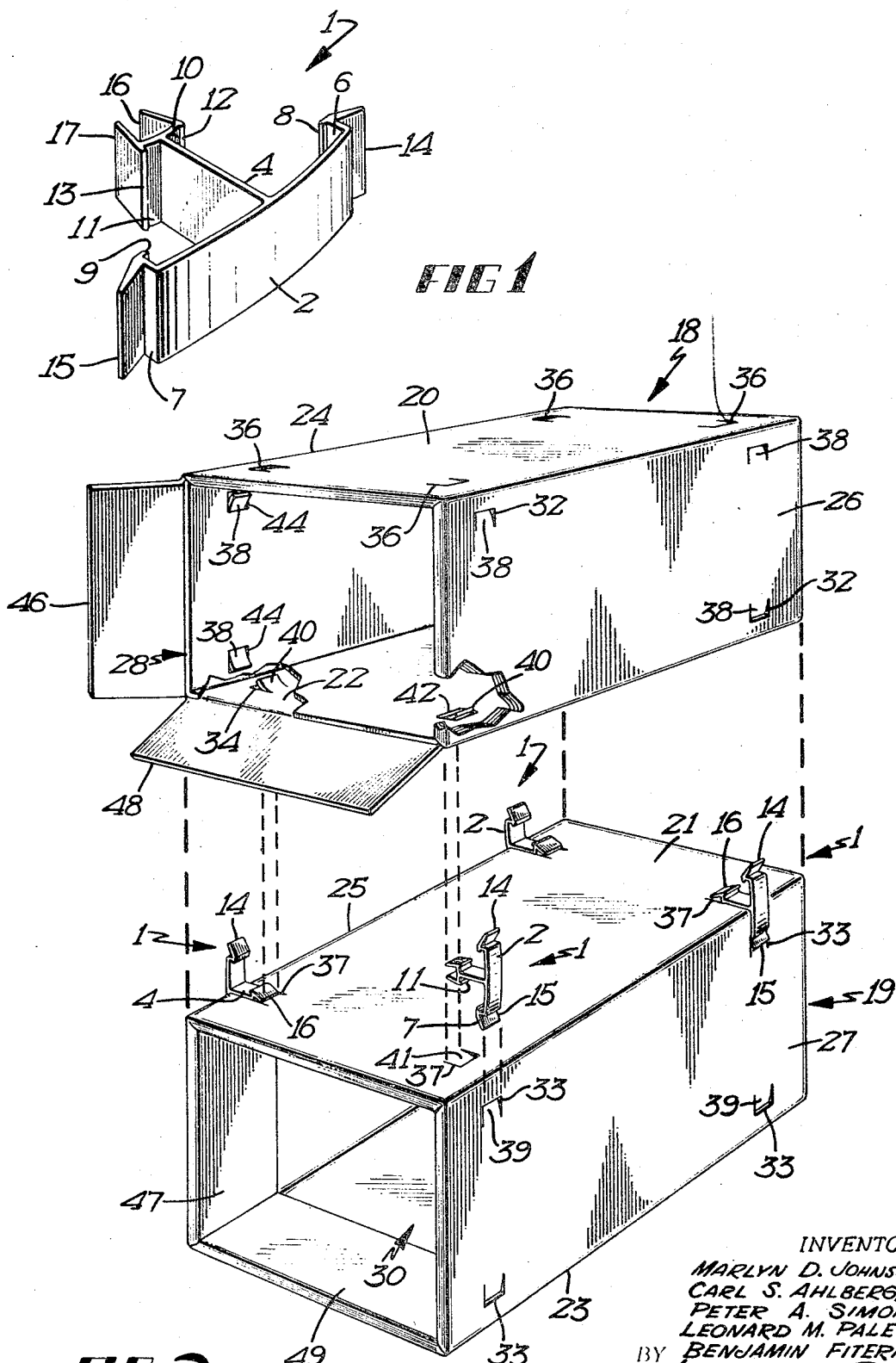


FIG 2

INVENTORS
 MARLYN D. JOHNSON,
 CARL S. AHLBERG,
 PETER A. SIMON,
 LEONARD M. PALETZ,
 BENJAMIN FITERMAN
 BY *Williamson, Palmatier*
 & Bains ATTORNEYS

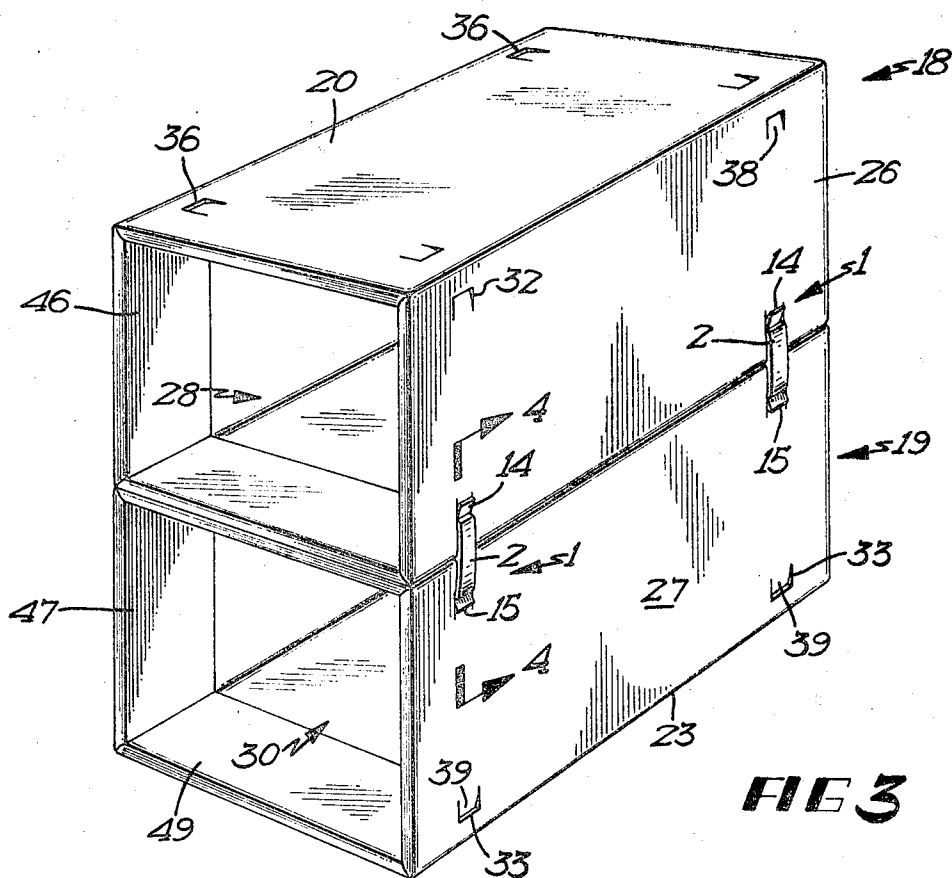


FIG 3

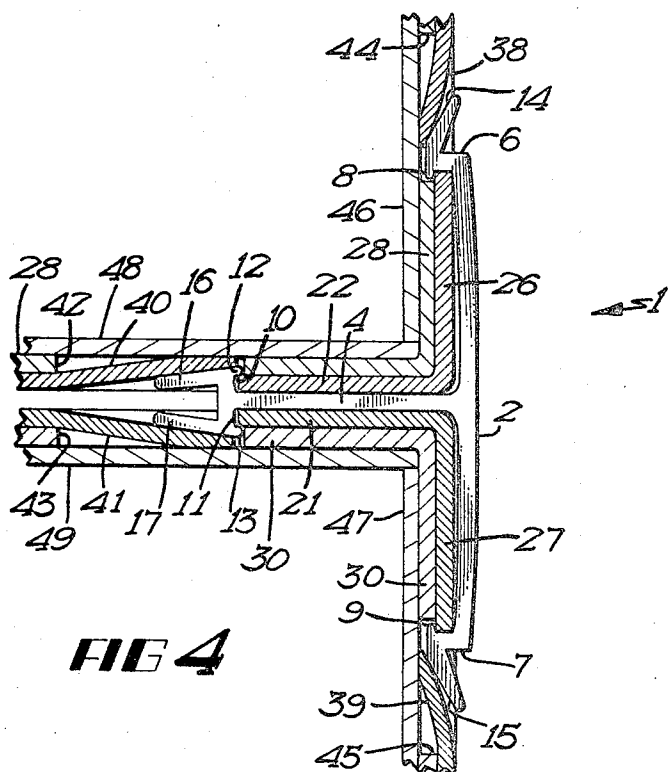


FIG 4

INVENTORS
 MARLYN D. JOHNSON,
 CARL S. AHLBERG,
 PETER A. SIMON,
 LEONARD M. PALETZ,
 BENJAMIN FITERMAN
 BY *Williamson, Ralmatie*
 & *Bains* ATTORNEYS

TILE CASE ASSEMBLY AND STACKING CLIP THEREFOR

BACKGROUND OF THE INVENTION

File and storage containers of the lightweight, fiberboard type which are now widely used in homes and offices are frequently stacked on top of each other to provide a multiple compartment storage assembly. When so stacked, some means must be employed to hold the containers together as a unitary assembly. The stacking devices now used for this purpose must often take the form of metal strips or rims which are attached to the sidewalls of the containers and are provided with locking or coupling means for joining adjacent containers together. In addition to being unsightly, stacking devices of this type are unduly expensive in comparison with the low cost of the fiberboard containers with which they are used. There is thus a need for a neat, attractive, stacking device which is relatively inexpensive and which may be selectively utilized to hold stacked, fiberboard containers securely together. The stacking clip of the invention has been designed with a view towards fulfilling that need.

BRIEF SUMMARY OF THE INVENTION

Our unique stacking device is particularly characterized by its small size, attractive appearance, inexpensive construction and its ability to be quickly and easily snapped into firm, locking engagement with adjacent portions of two file or storage containers.

These basic objectives have been realized by making an elongated clip member from flexible plastic molded or extruded to provide retention shoulders on the opposite ends thereof, and bowed along its length to impart a spring action to the container-engaging retention shoulders.

Our stacking device is preferably of T-shaped configuration with a central, web section extending from the aforesaid elongated clip member at right angles thereto, the web section being positioned horizontally between two containers and having oppositely directed retention shoulders which are secured to the abutting top and bottom container walls through apertures therein.

As a particularly advantageous feature of our invention, we slit the walls of the fiberboard containers at predetermined points to provide small, flap-covered apertures; and angled extension tabs on the ends of the aforesaid clip member and web section serve to displace the flaps inwardly so that the retention shoulders may engage the container walls. Raised beads on the retention shoulders hold the stacking clip firmly in place.

These and other objects and advantages of our invention will become readily apparent as the following description is read in conjunction with the accompanying drawings wherein like reference numerals have been used to refer to like elements throughout the several views.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of the improved stacking clip of this invention;

FIG. 2 is an exploded, perspective view showing two file cases and the manner in which a plurality of our clips may be positioned to fasten the cases together;

FIG. 3 is a perspective view showing the two cases of FIG. 2 secured together with our stacking clips; and

FIG. 4 is a vertical cross section view taken along lines 4-4 of FIG. 3.

The fastening device of this invention has been particularly designed with a view towards joining together a plurality of fiberboard file or storage cases to provide a unitary, multiple compartment assembly. The fastening device is referred to hereinafter as a stacking clip since it will most frequently be used to hold together two or more file boxes which are stacked on top of each other in a file cabinet type of assembly. However, as will hereinafter appear, our unique fastening clip is equally effective in joining together several file cases in a horizontal arrangement.

Referring now to FIG. 1, it will be seen that our fastening device preferably takes the form of a T-shaped clip generally indicated by reference numeral 1. Clip 1 is comprised of an elongated crossmember 2, and a central, web section 4 extending substantially perpendicular thereto. Crossmember 2 is bowed to give it the arcuate shape shown for a purpose hereinafter explained. On the opposite ends of crossmember 2 are lock portions in the form of inwardly extending shoulders 6 and 7 which engage the walls of adjacent cases or file boxes through apertures therein. Lips or raised beads 8 and 9 on the inside edge of shoulders 6 and 7 assist in holding crossmember 2 to the walls of adjacent cases to be joined together. The free end of web section 4 is also provided with opposed shoulders 10 and 11 on the opposite sides thereof, beads or lips 12 and 13 being formed on the edges of shoulders 10 and 11 respectively. For the purpose of displacing the fiberboard covering precut apertures in the walls of the casings to be assembled together, we provide extension tabs 14 and 15 on the opposite ends of crossmember 2. Tab elements 16 and 17 on the opposite sides of web section 4 serve a similar purpose. All of the extension elements or tabs 14, 15, 16 and 17 are angled outwardly so that they may function in a particular manner clearly set forth below.

In FIG. 2 there are shown two storage boxes or cases 18 and 19 of the corrugated fiberboard type with which clip 1 is expected to find its widest use. Storage box or case 18 has top and bottom walls 20 and 22 and sidewalls 24 and 26; and case 19 is similarly constructed with top and bottom walls 21 and 23 and sidewalls 25 and 27. Casings 18 and 19 are preferably strengthened by U-shaped liners or inserts 28 and 30 which cover the side and bottom walls thereof. In order to prepare cases 18 and 19 for the attachment of clips 1 thereto, they are provided with a plurality of precut apertures in their side, bottom and top walls, these apertures being shown at 32, 34, and 36 in case 18 and at 33 and 37 on lower case or box 19. The front edge of the bottom panel of liner 28 for case 18 has been cut away to show aperture 34 in its bottom wall 22. It is to be noted that the aforesaid apertures 32, 34, 36, 33 and 37 have been formed in the walls of cases 18 and 19 by cutting U-shaped slits therein; thereby providing hinged cover flaps for the apertures, several of these flaps being designated by reference numerals 38 and 40 on case 18 and by numerals 39 and 41 on case 19. Liners 28 and 30 have been provided with notched openings 42 and 44 in their bottom and side panels within which hinged aperture flaps 38, 39, 40 and 41 may be received when pushed or displaced inwardly.

The side, top and bottom walls of storage case 18 terminate at their forward edges in hingedly connected flaps 46 and 48 which fold inwardly over the side and bottom panels of insert 28, two of these flaps being shown turned outwardly in FIG. 1. Corresponding flaps 47 and 49 on case 19 are shown in their inwardly turned, fully assembled position in overlying relation to insert 30.

In order to join cases 18 and 19 together, a plurality of stacking clips 1 are first attached to lower case 19 in the manner shown in FIG. 2. Clips 1 are positioned with elongated crossmember 2 extending vertically and web section 4 lying horizontally on top wall 21 of case 19. Retention shoulders 7 at the lower end of crossmembers 2 are inserted in upper apertures 33 of sidewalls 25 and 27 of case 19. Lock or retention shoulders 11 on web section 4 are engaged within apertures 37 in top wall 21 of case 19. Upper case 18 is then lowered from the exploded position shown in FIG. 2 to a position of rest directly on top of case 19 in alignment therewith. Because of the arcuate or bowed shape of crossmembers 2 of clips 1, upper shoulder portions 6 will project inwardly over top wall 21 of case 19. As case 18 is lowered into position, its sidewalls 24 and 26 will engage retention shoulders 6 and bias the upper ends of crossmembers 2 outwardly. As lower apertures 32 in sidewalls 24 and 26 of case 18 come into alignment with shoulders 6, the upper ends of crossmembers 2 will spring inwardly thereby snapping shoulders 6 into place in apertures 32. Also, as case 18 is lowered into place on top of case 19, upper shoulders 10 on web sections 4 will be forced into apertures 34 in bottom wall 22 of case 18.

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FIG. 3 shows clips 1 holding cases 18 and 19 together as a unitary, multiple compartment assembly. The manner in which clips 1 engage the apertures in the walls of cases 18 and 19 and is held in place therein appears most clearly in FIG. 4. As clips 1 are attached to sidewalls 24, 26, 25 and 27 of cases 18 and 19, outwardly angling end tabs 14 and 15 push cover flaps 38 and 39 inwardly to the position shown in FIG. 4. The displacing of flaps 38 and 39 by extension elements or tabs 14 and 15 permits shoulders 6 and 7 of clips 1 to engage casing sidewalls 26 and 27 along the edges of apertures 32 and 33 in the manner shown in FIG. 4. Lips or beads 8 and 9 on the inside edges of shoulders 6 and 7 grip the inside surface of the casing sidewalls and assist in retaining clips 1 firmly in place. In a like manner, angled extension elements 16 and 17 on web section 4 displace hinged flaps 40 and 41 upwardly and downwardly respectively to thereby permit locking shoulders 10 and 11 to be inserted through apertures 34 and 37 in abutting bottom and top walls 22 and 21. Lips 12 and 13 on shoulders 10 and 11 bear against the inside surface of walls 22 and 21 to hold web section 4 securely in place.

As may be clearly noted with respect to FIGS. 3 and 4, web section 4 of clips 1 is sandwiched between abutting walls 21 and 22 of cases 18 and 19, and thus will be out of sight when the cases are assembled in the manner shown in FIG. 3. It is possible that web sections 4 could be eliminated with clips 1 being comprised only of elongated members 2 having wall engaging lock means at the opposite ends thereof. Such a clip would hold stacked cases 18 and 19 against relative vertical movement. However, the adjoining cases would be more susceptible to lateral and lengthwise separation without web section 4 locked into the casing top and bottom walls in restraining engagement therewith.

The walls of cases 18 and 19 have been cut in the U-shaped manner shown in order to provide cover flaps 38, 39, 40 and 41 which substantially conceal the apertures when the file or storage cases are being used as single units without clips 1. It would, of course, be possible to simply punch or cut out open slots in the walls of the casings; however, such apertures would be readily visible when not engaged by stacking clips and would detract from the appearance of the file cases. Cases 18 and 19 have been shown stacked one on top of the other as this is the type of assembly in which they will most frequently be used. However, a plurality of casings could also be assembled in horizontal, side-by-side relationship with web portion 4 of each clip 1 extending vertically between the casing sidewalls and crossmember 2 lying horizontally with its retention shoulders 6 and 7 engaging apertures in the casing top walls.

Fastening clips 1 may be constructed from various metals and plastic materials. It is necessary that the material of clips 1 be relatively rigid but flexible enough to permit crossmember 2 to be bent at its ends when attaching shoulder portions 6 and 7 to apertures in casing walls. Clips 1 could be injection molded from polypropylene or medium impact styrene. We have found it particularly desirable to manufacture clips 1 from strips of vinyl extruded to the proper shape and then cut to the desired clip widths. Crossmember 2 and web section 4 are preferably on the order of one inch in width.

We claim:

1. A fastening device for securing a plurality of file cases together in a multiple compartment assembly comprising:
an elongated crossmember with inwardly extending lock

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shoulders on the opposite ends thereof;
and a central web section of flat, planar configuration projecting from said elongated crossmember substantially perpendicular thereto, and defining therewith a T-shaped clip, said web section having lock shoulders projecting from the opposite sides thereof, said lock shoulders on said crossmember and on said web section being adapted to firmly engage the walls of abutting cases through apertures therein.

2. A fastening device as defined in claim 1 wherein:
said clip is manufactured as an integral unit from vinyl resin.

3. A fastening device as defined in claim 1 wherein:
each of said lock shoulders on the opposite ends of said crossmember comprises an inwardly extending portion projecting at an angle from said crossmember and a lip depending from the inner edge of each of said inwardly extending portions on the side thereof facing said web section, whereby said lock shoulders may extend inwardly over the walls of said cases through said apertures therein and be held in firm engagement therewith by the gripping of said shoulder lips against the inside surface of said casing walls.

4. In an assembly of file cases positioned adjacent each other, a plurality of improved fastening devices holding said cases together to provide a multiple compartment unit wherein each of said fastening devices comprises:

a T-shaped clip having a crossmember overlying aligned, coplanar walls of two of said cases, and a web section lying between two abutting walls of said cases extending at right angles and adjacent to said coplanar walls, said web section comprising a single, planar member; and
lock portions on the opposite ends of said crossmember and on the opposite sides of said web section, said lock portions being secured in engagement with said casing walls through apertures formed therein.

5. The structure of claim 4 wherein:

said casings are slit to form hinged flaps in said walls which may be displaced to provide said apertures; and
said clips include outwardly angling elements on said ends of said crossmember and on the opposite sides of said web, said elements serving to push said flaps inwardly to thereby open said apertures within which said lock portions are engaged.

6. A clip for securing a plurality of file cases together to form a multiple compartment assembly comprising:

an elongated, flexible member having retention shoulders extending angularly from the opposite ends thereof, said shoulders being adapted to engage apertures in adjoining, coplanar walls of two file cases positioned in abutting engagement with each other;

an inwardly turned lip on each of said shoulders; said lips being adapted to hold said shoulders in locking engagement with said apertured walls; and

outwardly sloping tabs on the opposite ends of said flexible member depending from said retention shoulders, said tabs being adapted to inwardly displace hinged flaps covering said apertures in said walls of said cases.

7. A clip as defined in claim 6, wherein said flexible member is bowed outwardly away from said shoulders to thereby impart an inwardly directed spring action to said outer ends thereof to assist in maintaining said shoulders in gripping contact with said casing walls.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,552,579 Dated February 2, 1971

Inventor(s) Safco Products, Co.

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

On the front cover page, as well as on the 1st page of the printed patent, correct the title by changing "Tile" to --File--.

Signed and sealed this 6th day of April 1971.

(SEAL)
Attest:

EDWARD M. FLETCHER, JR.
Attesting Officer

WILLIAM E. SCHUYLER, JR.
Commissioner of Patents