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54 Self-adjusting device for clamping the contents of a box file or other container.

57 A self-adjusting clamping device is secured to a lid 34 of a box file to clamp documents 36 against an opposite wall 38 of the box. The device comprises a mounting plate 18, two limbs 10 and 12, and a base plate 22 formed from a single piece of stiff sheet material (e.g. fluted cardboard) and articulated by means of folds in the sheet. An elastic band 26 extends between the base and mounting plates to urge the limbs 10 and 12 together, so to cause an apex 16 of the generally triangular structure to bear against the documents 36.

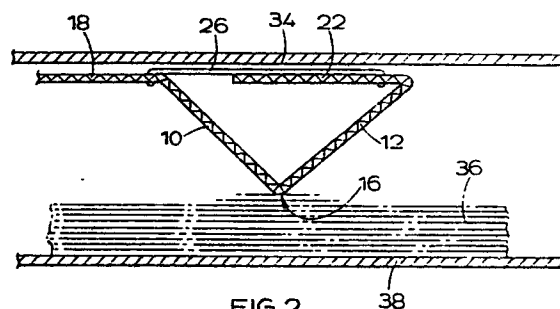


FIG. 2.

SELF-ADJUSTING DEVICE FOR CLAMPING THE CONTENTS
OF A BOX FILE OR OTHER CONTAINER

5 In a box file it is usual for there to be a
clamping device provided for maintaining at least a
light pressure on papers in the box to keep them
together. Such a device is usually self-adjusting in
character in order that different thicknesses of
document collections within the box can be
10 satisfactorily clamped without attention to the device.

For example, one well known form of clamping
device used in box files comprises a spring-loaded
pivotal wire loop mounted on a wall of the box to
15 press the box contents against what is a side wall of
the box when the box is standing.

It is an object of the present invention to
provide an improved self-adjusting clamping device
20 which can be manufactured simply and cheaply and which
is effective in operation.

In one of its aspects the invention provides a
self-adjusting device for clamping the contents of a
25 box file or other container, the device comprising two
limbs which are articulated together to form an apex of
a collapsible structure arranged to bear against a wall
of the container with the apex spaced from the wall,
the device comprising resilient tensioning means
30 arranged to urge the limbs together, in use of the
device, to urge the apex in a direction away from the
wall to clamp contents between the apex and an opposite
wall of the container.

35 As will be apparent from the detailed description
hereinafter, such a device can be formed very simply

from a single piece of stiff sheet material (for example, fluted cardboard) and an ordinary elastic band.

5 For securement of the device in the container the device may comprise a mounting portion which is articulated to the free end (i.e. remote from the apex) of one of the two limbs. The mounting portion may be provided as an integral part of a cardboard, or
10 other, blank used in construction of the container, or alternatively the device (including the mounting portion) can be formed separately and the mounting portion secured to the container by any suitable means.

15 The device may comprise also a base portion providing a distance piece which is articulated to the free end of one of the two limbs (i.e. the other limb, where the device comprises a mounting portion as hereinbefore referred to) the distance piece being
20 arranged to move towards the free end of the other of the two limbs as the apex moves away from the wall in use of the device, so to limit the possible movement of the limbs together.

25 The two limbs and, where present, the mounting portion and the distance piece may be together provided by a single piece of stiff sheet material folded at each of the articulation joints.

30 The tensioning means can most simply comprise a resiliently extensible element (for example, an ordinary stationer's elastic band) which may be anchored at opposite ends by means of anchoring
35 tongues.

Suitable fluted cardboard or sheet plastics materials, well known in packaging and box making, may be employed in manufacture of such a device. However, the precise form and nature of materials chosen for the structure of the device would, for one thing, depend upon the use intended.

In another of its aspects the invention provides self-adjusting clamping means comprising two limbs which are articulated together to form an apex of a collapsible structure arranged to bear against first supporting means, second supporting means spaced from said first supporting means, and resilient tensioning means arranged to urge the limbs together, in use of the device, to exert a clamping force at the apex in a direction away from the first supporting means and towards the second supporting means.

There now follows a detailed description, to be read with reference to the accompanying drawings, of two forms of clamping device which illustrate the invention by way of example.

In the accompanying drawings:

Figure 1 is a perspective view of a first device,

Figure 2 illustrates schematically the device of Figure 1 in use in a box file;

Figure 3 is a perspective view of a second device; and

Figure 4 is a view similar to Figure 2 but illustrating use of the second device.

A box file clamp (Figures 1 and 2) comprises portions 10 and 12 providing two limbs which are articulated together (at 14) to form an apex 16 of a collapsible generally-triangular structure. A mounting portion in the form of a mounting plate 18 is articulated (at 20) to the free end of one of the limbs 10, and a portion 22 in the form of a base plate is articulated (at 24) to the free end of the other of the limbs 12. Those four portions 10, 12, 18 and 22 are provided by a single piece of stiff sheet material (e.g. fluted cardboard) which is creased and folded to form the three flexible joints 16, 20 and 24. The base plate 22 is turned inwards from its associated limb 12 to serve as a distance piece limiting the movement of the apex 16 outwards and preventing the two limbs 10 and 12 folding flush together. The mounting plate 18, which lies in substantially the same plane as the base plate 22, is turned outwards from its associated limb 10 (so to extend in the same direction as the base plate 22).

An ordinary stationer's elastic band 26 provides a resiliently extensible element extending between the base and mounting plates. At its opposite ends (as it extends overall between the plates) the band 26 is anchored by means of oppositely-directed anchoring tongues 28 and 30 which can be pressed out of the base and mounting plates, respectively. The band is engaged over the tongues and becomes retained at their bases; as seen in Figure 1, each tongue is formed by cuts 32 in its associated plate, enabling the tongue to be pressed out for mounting of the band and then pressed back into the plane of the plate.

In use of the device (see Figure 2) it is secured to one wall 34 (in this case being the lid) of a box

file. The device is secured to the wall 34 by means of the mounting plate 18 (by adhesive or otherwise), the device so being arranged to bear against the wall 34 with the apex 16 spaced from the wall. Owing to the articulation of the structure the apex 16 can move towards and away from the wall 34 (within predetermined limits), the base plate 22 sliding generally over the wall 34 (towards and away from the free end of the limb 10 and the mounting plate 18) as such movement occurs. When stretched the elastic band 26, acting between the mounting and base plates, resiliently urges the two limbs 10 and 12 together. The band 26 so urges movement of the apex 16 away from the wall 34 and causes a clamping pressure to be exerted by the apex on a pile of documents 36 within the box, the documents being clamped against an opposite wall 38 of the box. The device is self-adjusting, in that it can accommodate a range of thicknesses of the document pile without attention, and furthermore is self-engaging upon closing the lid.

An alternative form for the device is shown in Figures 3 and 4, the same reference numerals being used for the component parts corresponding with those of the device just described with reference to Figures 1 and 2. This second embodiment of the invention is arranged to operate in fundamentally the same manner as the first device. The only difference of significance between the two devices is that in the second device the mounting plate 18 is turned inwardly from the free end of its associated limb 10, to extend in the opposite direction to the base plate 22 instead of in the same direction. The two plates overlap (with the mounting plate 18 on the outside) and the elastic band 26 extends over both plates. The arrangement is such

that the plates remain overlapping in all conditions of use of the device.

5 An important feature of both constructions is that
when compressed flat, against the lid, they occupy very
little space in the box.

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CLAIMS

1. A self-adjusting device for clamping the contents
5 of a box file or other container characterised in that
it comprises two limbs (10, 12) which are articulated
together to form an apex (16) of a collapsible
structure arranged to bear against a wall (34) of the
10 container with the apex spaced from the wall, the
device comprising resilient tensioning means (26)
arranged to urge the limbs together, in use of the
device, to urge the apex in a direction away from the
wall to clamp contents (36) between the apex and an
opposite wall (38) of the container.
- 15 2. A device according to claim 1 in which the two
limbs (10, 12) are provided by a piece of stiff sheet
material folded at the apex (16).
- 20 3. A device according to either of claims 1 and 2
comprising a mounting portion (18) which is articulated
to the free end of one of the two limbs (10) and is
arranged for securement of the device to the container.
- 25 4. A device according to claim 3 in which the two
limbs (10, 12) and the mounting portion (18) are
together provided by a piece of stiff sheet material
folded at the apex (16) and at the joint (20) between
the mounting portion and said one of the two limbs (10).
- 30 5. A device according to either of claims 1 and 2
comprising a distance piece (22) which is articulated
to the free end of one of the two limbs (12) and is
arranged to move towards the free end of the other of
35 the two limbs (10) as the apex moves away from the

wall in use of the device, so to limit the possible movement of the limbs together.

5 6. A device according to claim 5 in which the two limbs (10, 12) and the distance piece (22) are provided by a piece of stiff sheet material folded at the apex (16) and at the joint (24) between the distance piece and said one of the two limbs (12).

10 7. A device according to either of claims 1 and 2 comprising a mounting portion (18) which is articulated to the free end of one of the two limbs (10) and is arranged for securement of the device to the container and a distance piece (22) which is articulated to the
15 free end of the other of the two limbs (12) and is arranged to move towards the free end of said one of the two limbs as the apex (16) moves away from the wall in use of the device, so to limit the possible movement of the limbs together.

20 8. A device according to claim 7 in which the two limbs (10, 12), the mounting portion (18) and the distance piece (22) are together provided by a piece of stiff sheet material folded at the articulation joints
25 (16, 20, 24).

9. A device according to either of claims 7 and 8 in which the tensioning means comprises a resiliently extensible element (26) anchored at opposite ends to
30 the mounting portion (18) and to the distance piece (22) respectively.

10. A device according to claim 9 in which the resiliently extensible element comprises an elastic
35 band (26) which extends between anchoring tongues (30,

28) of the mounting portion (18) and the distance piece (22).

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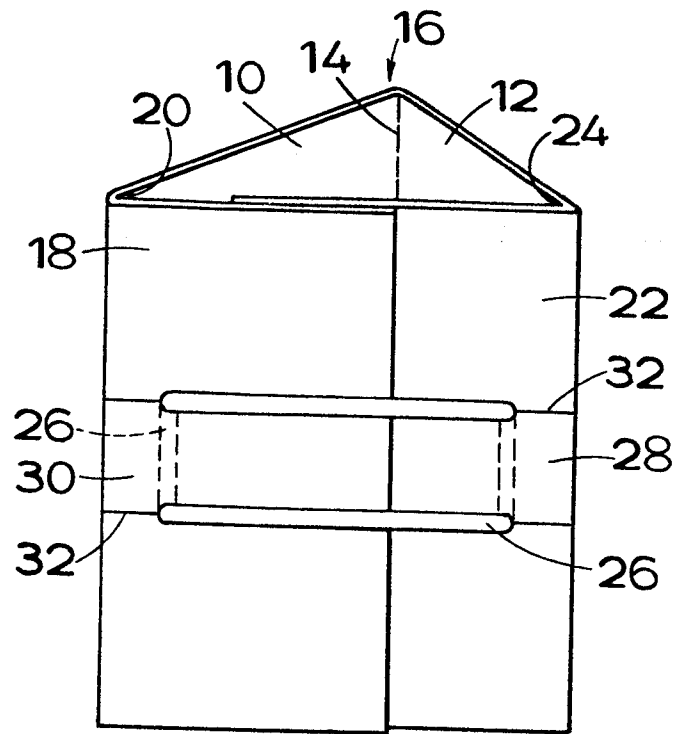
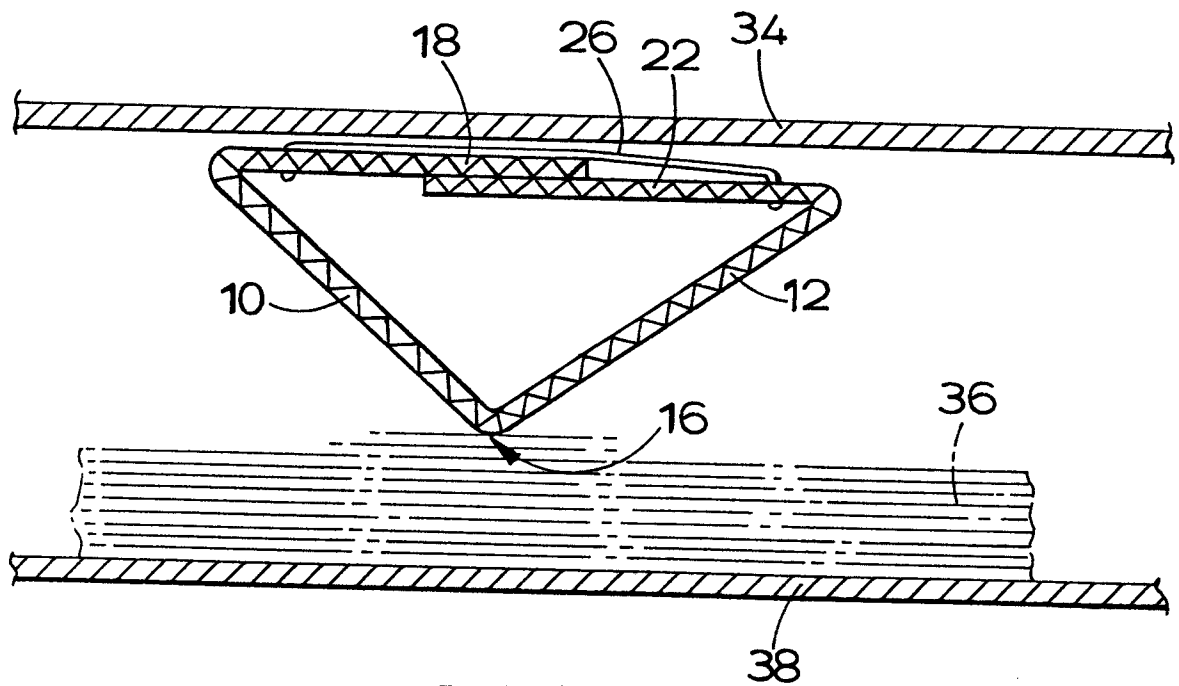
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FIG. 3.FIG. 4.



European Patent
Office

EUROPEAN SEARCH REPORT

0225014

Application number

EP 86 30 7587

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 4)
X	DE-B-1 208 728 (STOLZENBERG BÜROMÖBELFABRIK LUDWIG MANG) * Whole document *	1-8	B 42 F 7/14
A	DE-U-6 905 355 (MAPPEI-ORGANISATIONSMITTEL GmbH)		
			TECHNICAL FIELDS SEARCHED (Int. Cl. 4)
			B 42 F
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 27-01-1987	Examiner RECHLER W.
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	