(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 331 488 A1**

(12) EUROPEAN PATENT APPLICATION

(21) Application number: **89302080.0**

(51) Int. Cl.[4]: **A 47 G 1/14**

(22) Date of filing: **02.03.89**

(30) Priority: **04.03.88 GB 8805209**

(43) Date of publication of application:
06.09.89 Bulletin 89/36

(84) Designated Contracting States:
AT DE ES FR IT SE

(71) Applicant: **AUSTRAL HOLDINGS LIMITED**
1 Portland House Station Road
Ballasalla Isle of Man (GB)

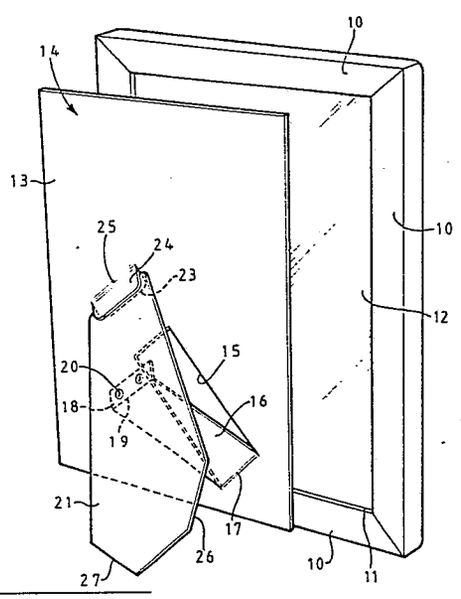
(72) Inventor: **James, Anthony Vernon**
1 Portland House Station Road
Ballasalla Isle of Man (GB)

(74) Representative: **Carter, Gerald et al**
Arthur R. Davies & Co. 27 Imperial Square
Cheltenham GL50 1RQ Gloucestershire (GB)

(54) Improvements in or relating to picture frames.

(57) A backing and support assembly for a picture frame comprises a panel (13) for closing the back of the frame, a separate elongate support leg (21), and a stay (16) pressed out of the panel so as to be hingedly connected at one end to the panel, the opposite end of the stay (16) being riveted to a location on the support leg intermediate its ends. A tab (24) is bent out of the panel (13) for detachably locating the upper end of the support leg on the panel in such a position that the leg (21) is held by the stay (16) at an angle to the surface of the panel. The upper end of the leg (21) has a reduced width portion (22) which enters the aperture left in the panel by the tab.

FIG 1



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Description

Improvements in or relating to picture frames

The invention relates to picture frames and, in particular, to picture frames of the kind where the rear of the frame is closed by a backing and support assembly comprising a flat panel to which is attached a support leg which may be extended at an angle to the panel so as to support the frame on a horizontal surface. The invention provides an improved backing and support assembly for such a picture frame.

In such a picture frame it is desirable for the support leg to be stable when extended at an angle to the rear panel of the frame and for this purpose it is common practice to provide some form of stay between the panel and the support leg. Commonly the upper end of the support leg is hingedly connected to the panel and the stay then has to be connected at one end to the panel and at the opposite end to the leg. In order to enable the leg to be folded flat against the panel for storage, or when the picture frame is to be hung flat on a wall rather than stood on a surface, the stay must either itself be foldable so that it may be collapsed as the leg is folded flat, or one end of the stay must be detachable from the panel or from the leg.

Known arrangements for providing this feature usually necessitate the use of separate fittings which must be attached to the main components of the assembly to provide the necessary connections. Also, a comparatively large number of steps in the manufacture of the assembly is often necessary. The provision of fittings and the large number of manufacturing steps leads to high unit cost for each backing assembly.

It is an object of the invention to provide a backing and support assembly for a picture frame which meets the requirements referred to above and yet which is simple and cheap to manufacture using only a few manufacturing steps and a minimum number of separate fittings or even, in some cases, no fittings at all.

According to the invention, therefore, there is provided a backing and support assembly for a picture frame comprising a panel for closing the back of the frame, an elongate support leg, a stay hingedly connected at one end to the panel and at the opposite end to a location on the support leg intermediate the ends thereof, and means for detachably locating one end of the support leg on the panel in such a position that the leg is held by the stay at an angle to the surface of the panel.

With such an arrangement the leg and stay may be folded flat against the panel by simply detaching the end of the leg from the panel. The construction allows very simple and cheap forms of hinge connection to be used between the ends of the stay and the panel and leg and it is also not necessary to provide an elaborate hinge connection between the leg itself and the panel.

The stay may be integral with the panel, the hinge connection between the stay and the panel then being provided by a bendable line of weakness at the junction between the stay and panel.

The stay may have an end portion which is secured to the support leg, the hinge connection between the stay and leg being provided by a hinge connection between said end portion of the stay and the main part thereof. For example, the end portion and main part of the stay may be integral, the hinge connection being provided by a bendable line of weakness between them. The end portion of the stay may then be simply riveted, stapled or glued to the support leg.

As an alternative to the arrangements described above, the stay might be integral with the support leg and secured to the panel, the hinge connections being any of the kinds described above.

The means for detachably locating one end of the support leg on the panel may comprise an upstanding abutment with which the end of the support leg engages. Alternatively or additionally, the panel may be formed with a recess, aperture or slot in which the end of the support leg, or part thereof, may be received.

A simple combined abutment and aperture for this purpose may be provided by forming a generally U-shaped slit in the panel, the material of the panel within the slit being bent out of the plane of the panel to form an upstanding tab. This tab then forms the aforementioned abutment which the end of the support leg engages, and the aperture left in the panel by bending up the tab provides an aperture in which the end of the support leg is received.

The following is a more detailed description of an embodiment of the invention, reference being made to the accompanying drawings in which:

Figure 1 is a diagrammatic perspective view of the components of a picture frame including a backing and support assembly in accordance with the invention,

Figure 2 is a rear view of the backing and support assembly, and

Figure 3 is a further rear view of the assembly, showing the support leg and stay folded flat against the backing panel.

Referring to Figure 1, the picture frame may be of any generally conventional design and may, as shown, comprise four mitred frame members 10 secured together in a rectangular configuration to provide, at the rear of the frame, a recess 11 which receives a suitably sized sheet of glass 12 as well as the correspondingly shaped panel 13 of a backing and support assembly 14. The picture to be framed (not shown) is sandwiched between the glass and the backing panel.

Although a rectangular picture frame is shown, by way of example, the invention is equally applicable to other shapes of picture frame, such as circular and oval frames.

The backing panel 13 is formed from cardboard or similar sheet material and has punched into it a first elongate generally U-shaped slit 15, which defines a stay 16 which may be bent out of the material of the

panel 13 as shown, a line of weakness 17 being provided at the junction between the stay 16 and the panel 13 for this purpose.

The end of the stay 16 remote from the panel 13 comprises an integral end portion 18, a further bendable line of weakness 19 being provided between the end portion 18 and main part of the stay 16. The end portion 18 of the stay is secured by rivets 20 to a central part of a cardboard support leg 21.

Although rivets 20 are shown securing the stay 16 to the support leg 21, the end portion 18 may alternatively be stapled, glued or otherwise secured to the leg 21.

In order to locate the upper end of the support leg on the panel 13, the panel is formed with a second generally U-shaped slit 23, and the tab 24 defined by the slit is bent out of the plane of the panel 13 to leave an aperture. The upper end of the leg 21 has a stepped portion 22 which is received in the aperture, beneath the abutment tab 24, and is thus positively located on the panel 13.

Lines of weakness 25 are formed at the junction between the tab 24 and the panel 13 to facilitate bending the tab 24 out of the plane of the panel. Although a single line of weakness may be provided, preferably two or three closely spaced parallel lines of weakness are provided, as shown. This has the effect of causing the cardboard to be bent in a series of adjacent shallow angles rather than at a single sharp angle, and this reduces any tendency for the cardboard to break at the junction as a result of repeated bending of the tab. Similar multiple lines of weakness might also be provided instead of the single lines 17 and 19, for the same purpose.

The leg 21 is so shaped, and the tab 24 is so located, that when the upper end of the leg is engaged beneath the tab 24 the leg may support the frame in either a horizontal or vertical orientation. The lower end of the leg 21 is formed with straight inclined edges 26 and 27, one of which rests on the surface on which the frame stands, depending on the orientation of the frame.

In order to fold the leg 21 flat against the panel 13 for storage, or for when the frame is to be hung on a wall, the stepped end 22 of the leg is simply disengaged from the aperture beneath the tab 24, and the stay 16 is folded down to lie in the plane of the panel 13 with the leg 21 overlying the panel and stay, as shown in Figure 3.

It is desirable that the frame should be inclined at about 75° to the horizontal when the leg is erected and the frame is standing on a surface, and this is achieved by suitable selection of the length of the leg 21. It will be appreciated that the required length of the leg 21 will depend on the depth of the frame members 10. Thus, if a deep frame member 10 is used, the leg 21 will require to be longer, to maintain the frame at an angle of 75°, than if a narrower frame member were to be used. For a given size of backing panel 13, the flap 24 and stay 16 are of constant location and dimensions, and the stay 16 is riveted in the same position on the leg 21 with respect to its upper end. The overall length of the leg 21 is defined by the positions of the straight edges 26 and 27 with respect to the adjacent sides of the panel 13. It is therefore possible, for a given size of back panel, to provide a table or graph correlating the depth of the frame members used to the distance between the edges 26 and 27 and the adjacent sides of the back panel, when the leg 21 is folded flat as shown in Figure 3.

It will be appreciated that the backing and support assembly illustrated may be simple and cheap to manufacture since the slits 15 and 23 may be punched out in a single punching operation. The only subsequent assembly step required is then to rivet or otherwise secure the end of the stay 16 to the leg 21.

Although the stay 16 is preferably integral with the panel 13 as shown, it will be appreciated that it might equally well be integral with the leg 21 and riveted or otherwise attached to the panel 13, or it might be a completely separate element which is hingedly attached to both the panel 13 and the leg 21.

Although for simplicity, and ease of manufacture, the means for locating the upper end of the leg 21 on the panel 13 is shown as a simple tab bent out of the material of the panel 13, other locating means might be employed without departing from the scope of the invention. For example, a separate locating element may be riveted or otherwise secured to the panel 13, or the panel 13 and leg 21 might be both provided with separate and inter-engageable locating elements.

Alternatively, in a modification of the arrangement illustrated, the two sides of the U-shaped slit 15 may be extended right up to the tab 24, the tab in this case being of the same width as the stay 16. The tab is then at the upper end edge of the elongate aperture defined by the slit 15 when the stay 16 is pressed out of the panel 13. In this embodiment, however, it may be necessary to cut off an upper end portion of the stay 16 before it is connected to the leg 21, so as to make it an appropriate length.

For cheapness the components of the backing assembly may be formed from cardboard and such cardboard may have a decorative surface layer applied to it by spraying or otherwise to enhance its appearance. However, the invention includes within its scope the use of other materials for the components of the backing assembly, such as metal or plastics.

Claims

1. A backing and support assembly for a picture frame comprising a panel (13) for closing the back of the frame, an elongate support leg (21), a stay (16) hingedly connected at one end to the panel and at the opposite end to a location on the support leg intermediate the ends thereof, and means (23, 24) for detachably locating one end of the support leg (21) on the panel in such a position that the leg is held by the stay at an angle to the surface of the panel.

2. An assembly according to Claim 1, characterised in that the stay (16) is integral with the panel (13), the hinge connection between the

stay and the panel being provided by a bendable line of weakness (17) at the junction between the stay and panel.

3. An assembly according to Claim 1 or Claim 2, characterised in that the stay (16) has an end portion (18) which is secured to the support leg (21), the hinge connection between the stay and leg being provided by a hinge connection (19) between said end portion (18) of the stay and the main part thereof.

4. An assembly according to Claim 3, characterised in that the end portion (18) and main part of the stay (16) are integral, the hinge connection being provided by a bendable line of weakness (19) between them.

5. An assembly according to Claim 1, characterised in that the stay is integral with the support leg and is secured to the panel.

6. An assembly according to any of Claims 1 to 4, characterised in that the means for detachably locating one end of the support leg on the panel comprise an upstanding abutment (24) with which the end of the support leg (21) engages.

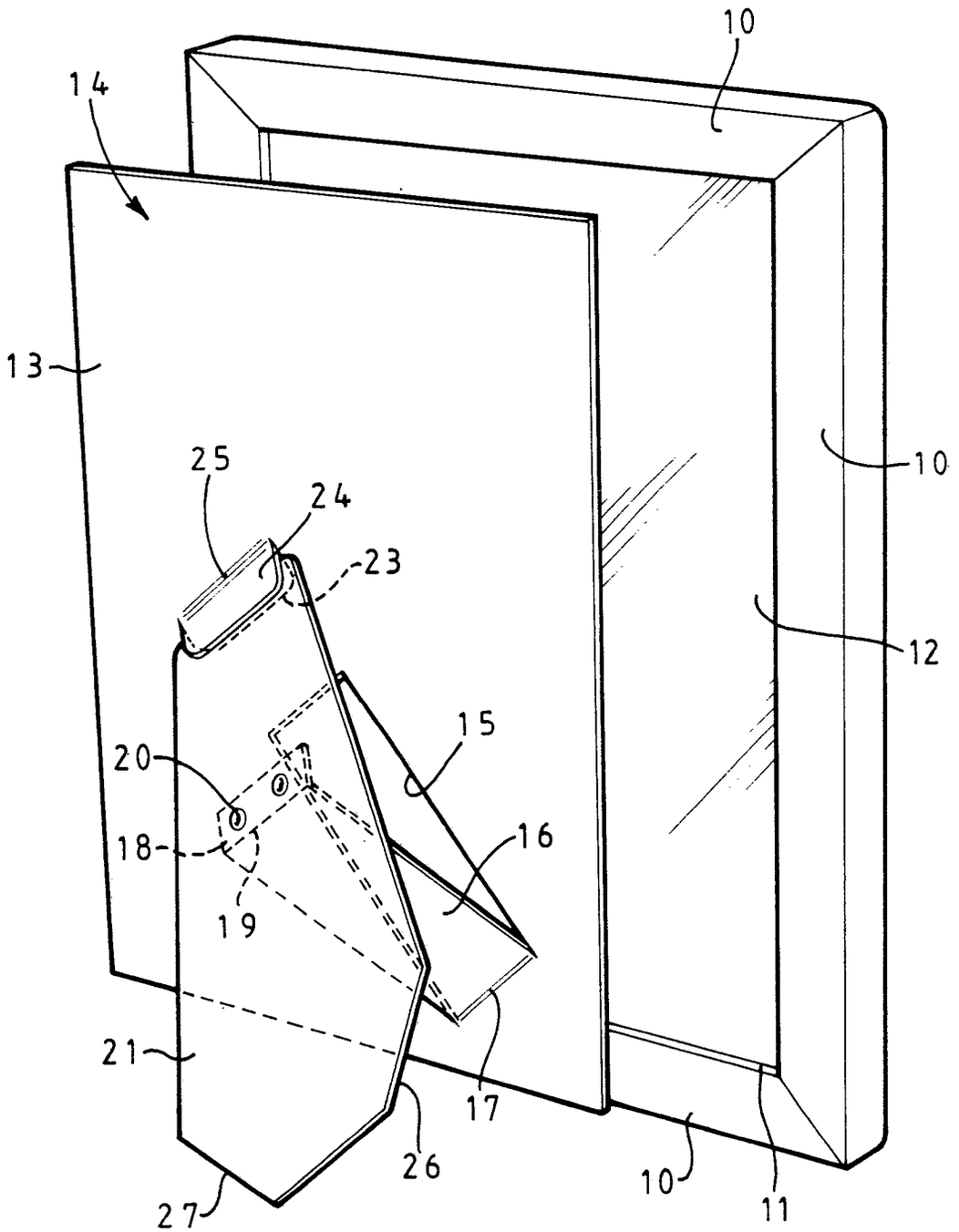
7. An assembly according to any of Claims 1 to 6, characterised in that the panel (13) is formed with an aperture (23) in which an end portion (22) of the support leg can be received.

8. An assembly according to Claim 6 or Claim 7, characterised in that the panel (13) is formed with a generally U-shaped slit, the material of the panel within the slit being bent out of the plane of the panel to form an upstanding abutment tab (24).

9. An assembly according to Claim 8, characterised in that the support leg (21) has an end portion (22) which may be inserted in the aperture (23) left in the panel by bending up the abutment tab (24).

10. An assembly according to Claim 9, characterised in that said end portion (22) is of smaller width than the portion of the leg adjacent thereto, the aperture (23) being of a size to receive the end portion (22), but not said adjacent portion of the leg.

FIG 1



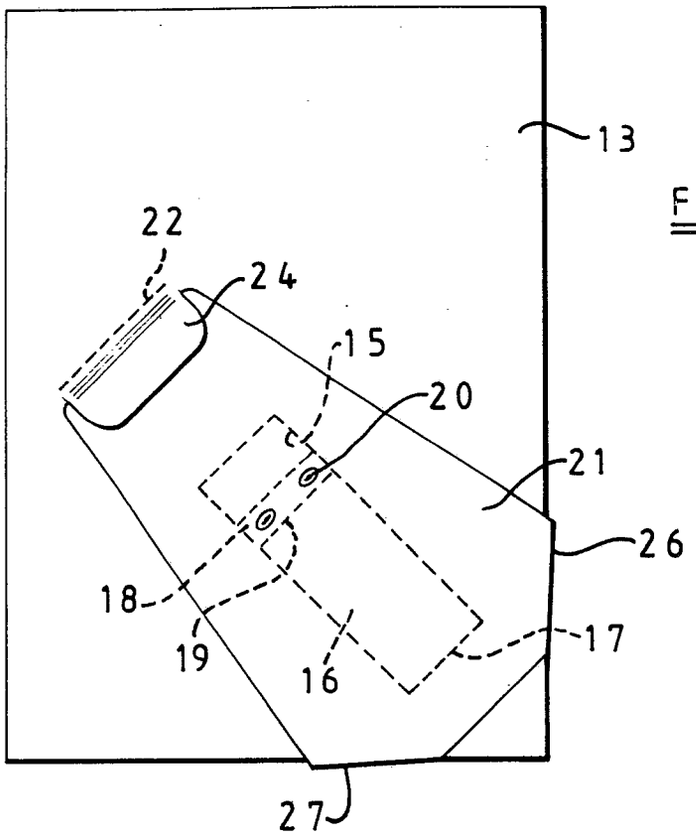

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FIG 2

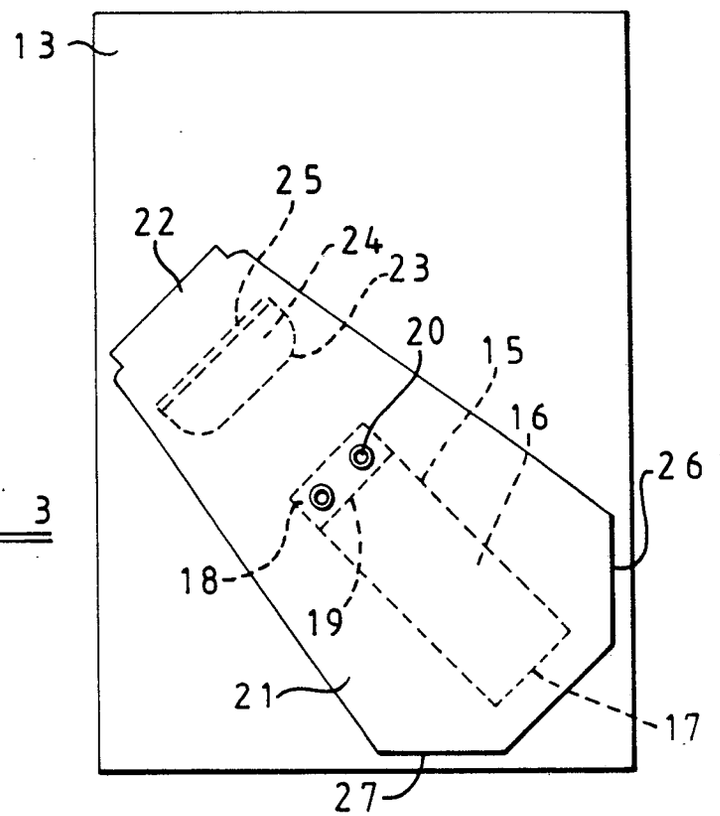
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FIG 3

European Patent Office

EUROPEAN SEARCH REPORT

Application Number

EP 89 30 2080

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	US-A-1840659 (EBURNE) * page 1, line 65 - page 2, line 10; figure 1 *	1	A47G1/14
A	---	2-7	
A	US-A-1486652 (FROELICH) * page 1, line 75 - line 80; figure 2 *	1, 8-10	
A	---		
A	US-A-3707791 (LEVY)		
A	---		
A	US-A-1356575 (WEISS)		

			TECHNICAL FIELDS SEARCHED (Int. Cl.4)
			A47G

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	07 JUNE 1989	VON ARX V.U.

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
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E : earlier patent document, but published on, or after the filing date
D : document cited in the application
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