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US-A- 1 356 575
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Description

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 permanently hinged 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.

U.S. Patent Specification No. 1,840,659 describes various assemblies of this known type, where the upper end of the support leg is permanently hinged to the panel, the lower end of the stay is integral with the support leg, or permanently connected thereto, and upper end of the stay is detachably engageable with the panel. In each case the support leg can be folded flat against the panel by disengaging the upper end of the stay from the panel.

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.

US Patent Specification No. 1486652 discloses a combined photograph folder and easel in which flaps which cover the photograph when the folder is closed may be folded behind the photograph to form a support. One of the flaps, when folded behind the photograph, has a portion which forms a base and a portion which extends upwardly to engage and support the back of the photograph. Since the total length of the two portions is limited by the total length of the folder, the upstanding portion must engage the back of the photograph at a comparatively low level making the arrangement fairly unstable. The described arrangement could

not form the backing and support assembly for a picture frame and, in any case, would be insufficiently stable to support a frame of any significant size or weight.

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 connection between the upper end of the support leg and the panel, and a stay hingedly extending between the support leg and the panel to hold the support leg at an angle to the panel, in use, characterised in that the connection between the upper end of the support leg and the panel is a detachable connection, and the stay is hingedly connected at its lower end to the panel and at its upper end is hingedly connected to a location on the support leg intermediate the upper and lower ends thereof.

With such an arrangement the leg and stay may be folded flat against the panel by simply detaching the upper 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 lower end of 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 upper 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 upper 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 detachable connection between the upper end of the support leg and 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 connection (22, 23, 24) between the upper end of the support leg and the panel, and a stay (16) hingedly extending between the support leg and the panel to hold the support leg at an angle to the panel, in use, characterised in that the connection (22, 23, 24) between the upper end of the support leg

and the panel is a detachable connection, and the stay (16) is hingedly connected at its lower end to the panel (13) and at its upper end is hingedly connected to a location on the support leg (21) intermediate the upper and lower ends thereof.

2. An assembly according to Claim 1, wherein 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, wherein the stay (16) has an upper 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 upper end portion (18) of the stay and the main part thereof.
4. An assembly according to Claim 3, wherein the upper 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, wherein 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, wherein the detachable connection between the upper end of the support leg (21) and the panel (13) includes an upstanding abutment (24) with which the end of the support leg (21) engages.
7. An assembly according to Claim 6, wherein 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 said upstanding abutment (24).
8. An assembly according to any of Claims 1 to 6, wherein the detachable connection between the upper end of the support leg (21) and the panel (13) includes an aperture (23) in the panel in which an end portion (22) of the support leg can be received.
9. An assembly according to Claim 7 and Claim 8, wherein the support leg (21) has an end portion (22) which may be inserted in the aperture (23) left in the panel by bending up said abutment (24).

10. An assembly according to Claim 9, wherein 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.

Patentansprüche

1. Trag- und Stützvorrichtung für einen Bilderrahmen, mit einer Platte (13) zum Verschliessen des Rückens des Bilderrahmens, einem länglichen Stützbein (21), einer Verbindung (22,23,24) zwischen dem oberen Ende des Stützbeines und der Platte, und einer Strebe (16), welche sich schwenkbar zwischen dem Stützbein und der Platte erstreckt, um das Stützbein bei Verwendung des Bilderrahmens unter einem Winkel bezüglich der Platte zu haben, dadurch gekennzeichnet, dass die Verbindung (22,23,24) zwischen dem oberen Ende des Stützbeines und der Platte eine lösbare Verbindung ist und die Strebe (16) an ihrem unteren Ende schwenkbar mit der Platte (13) verbunden ist und an ihrem unteren Ende schwenkbar mit einer Stelle auf dem Stützbein (21) verbunden ist, welche zwischen den oberen und unteren Enden desselben liegt.
2. Vorrichtung nach Anspruch 1, bei welcher die Strebe (16) ein integraler Teil der Platte (13) ist, die Schwenkverbindung zwischen der Strebe und der Platte in Form einer biegsamen Weichlinie (17) an der Verbindungsstelle zwischen der Strebe und der Platte ausgebildet ist.
3. Vorrichtung nach Anspruch 1 oder 2, bei welcher die Strebe (16) ein oberes Endteil (18) hat, welches an dem Stützbein (21) festgemacht ist, die Schwenkverbindung zwischen der Strebe und dem Stützbein in Form einer Schwenkverbindung (19) zwischen dem oberen Endteil (18) der Strebe und dem Hauptteil derselben ausgebildet ist.
4. Vorrichtung nach Anspruch 3, bei welcher der obere Endteil (18) und der Hauptteil der Strebe (16) einen integralen Teil bilden, die Schwenkverbindung in Form einer biegsamen Weichlinie (19) zwischen den beiden ausgebildet ist.
5. Vorrichtung nach Anspruch 1, bei welcher die Strebe ein integraler Teil des Stützbeines ist und an der Platte festgemacht ist.
6. Vorrichtung nach einem der Ansprüche 1 bis 4, bei welchem die lösbare Verbindung zwi-

schen dem oberen Ende des Stützbeines (21) und der Platte (13) ein aufstrebendes Widerlager (24) umfasst, in welches das Ende des Stützbeines (21) hineingreift.

7. Vorrichtung nach Anspruch 6, bei welcher die Platte (13) einen im wesentlichen U-förmigen Schlitz aufweist, wobei das Material der Platte im Schlitz aus der Ebene der Platte herausgebogen ist, um das aufstrebende Widerlager (24) zu bilden.
8. Vorrichtung nach einem der Ansprüche 1 bis 6, bei welcher die lösbare Verbindung zwischen dem oberen Ende des Stützbeines (21) und der Platte (13) ein Loch (23) in der Platte aufweist, in welchem der Endteil (22) des Stützbeines aufgenommen werden kann.
9. Vorrichtung nach einem der Ansprüche 7 und 8, bei welcher das Stützbein (21) ein Endteil (22) hat, welcher in die Öffnung (23) eingeführt werden kann, welche durch Aufbiegen des Widerlagers (24) in der Platte zurückbleibt.
10. Vorrichtung nach Anspruch 9, bei welcher der Endteil (22) in der Breite kleiner ist als der anschliessende Teil des Stützbeines, wobei die Öffnung (23) von einer Grösse ist, um das Endteil (22) aufzunehmen, jedoch nicht den anschliessenden Teil des Stützbeines.

Revendications

1. Dispositif de renforcement et de support pour un cadre de photographie, comprenant une plaque (13) pour fermer l'arrière du cadre, un pied de support (21) allongé, une connexion (22,23,24) entre l'extrémité supérieure du pied de support et la plaque, et une contrefiche (16) s'étendant de façon pivotante entre le pied de support et la plaque pour maintenir le pied de support sous un angle par rapport à la plaque lors de l'utilisation du cadre, caractérisé en ce que la connexion (22,23,24) entre l'extrémité supérieure du pied de support et la plaque est une connexion séparable, et que la contrefiche (16) est connectée de façon à pouvoir pivoter à son extrémité inférieure à la plaque (13) et à son extrémité supérieure en un endroit sur le pied de support (21) intermédiaire à ses extrémités supérieure et inférieure.
2. Dispositif selon la revendication 1, dans lequel la contrefiche (16) est une partie intégrale de la plaque (13), la connexion pivotante entre la contrefiche et la plaque étant réalisée sous forme d'une ligne de flexion (17) de mollesse

à la jonction entre la contrefiche et la plaque.

3. Dispositif selon la revendication 1 ou 2, dans lequel la contrefiche (16) a une partie extrême supérieure (18) qui est fixée au pied de support (21), la connexion pivotante entre la contrefiche et le pied de support étant réalisée par une connexion pivotante (16) entre la partie extrême supérieure (18) de la contrefiche et sa partie principale. 5
10
4. Dispositif selon la revendication 3, dans lequel la partie extrême supérieure (18) et la partie principale de la contrefiche (16) sont des parties intégrales, la connexion pivotante étant réalisée par une ligne de flexion (19) de mollesse entre elles. 15
5. Dispositif selon la revendication 1, dans lequel la contrefiche est une partie intégrale du pied de support et est fixée à la plaque. 20
6. Dispositif selon une des revendications 1 à 4, dans lequel la connexion séparable entre l'extrémité supérieure du pied de support (21) et le panneau (13) comprend une butée relevée (24) dans laquelle s'engage l'extrémité du pied de support (21). 25
7. Dispositif selon la revendication 6, dans lequel la plaque (13) est formée avec une fente généralement en U, la matière de la plaque dans la fente étant pliée hors du plan de la plaque pour former ladite butée relevée (24). 30
35
8. Dispositif selon une des revendications 1 à 6, dans lequel la connexion séparable entre l'extrémité supérieure du pied de support (21) et le panneau (13) comprend un trou (23) dans la plaque dans lequel peut être reçue une partie extrême (22) du pied de support. 40
9. Dispositif selon la revendication 7 ou 8, dans lequel le pied de support (21) a une partie extrême (22) qui peut être insérée dans le trou (23) laissé dans la plaque en relevant ladite butée (24). 45
10. Dispositif selon la revendication 9, dans lequel ladite partie extrême (22) a une largeur plus petite que la partie du pied de support adjacente à celle-ci, le trou (23) ayant une dimension permettant de recevoir la partie extrême (22), mais non ladite partie adjacente du pied de support. 50
55

FIG. 1

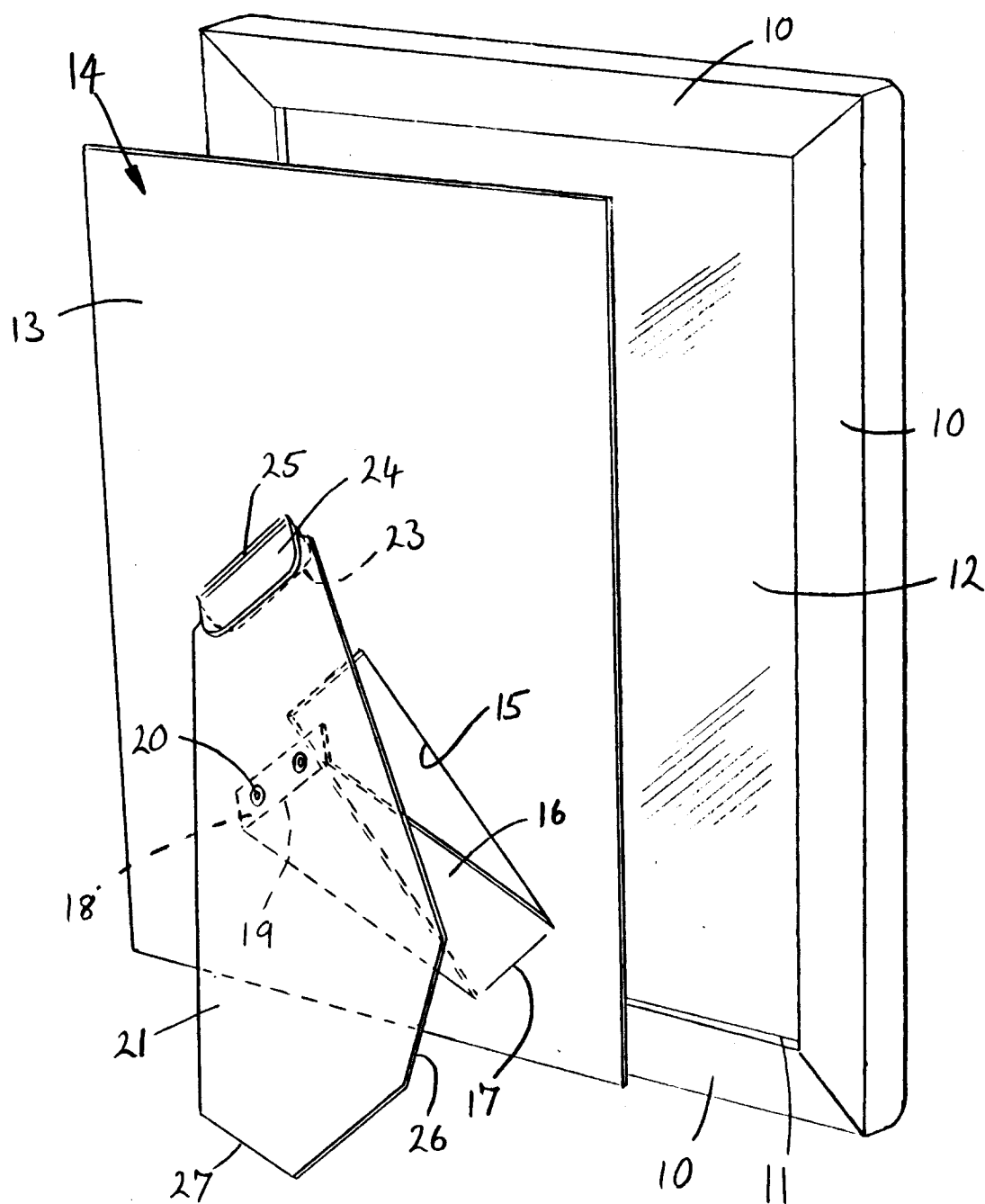


Fig. 2

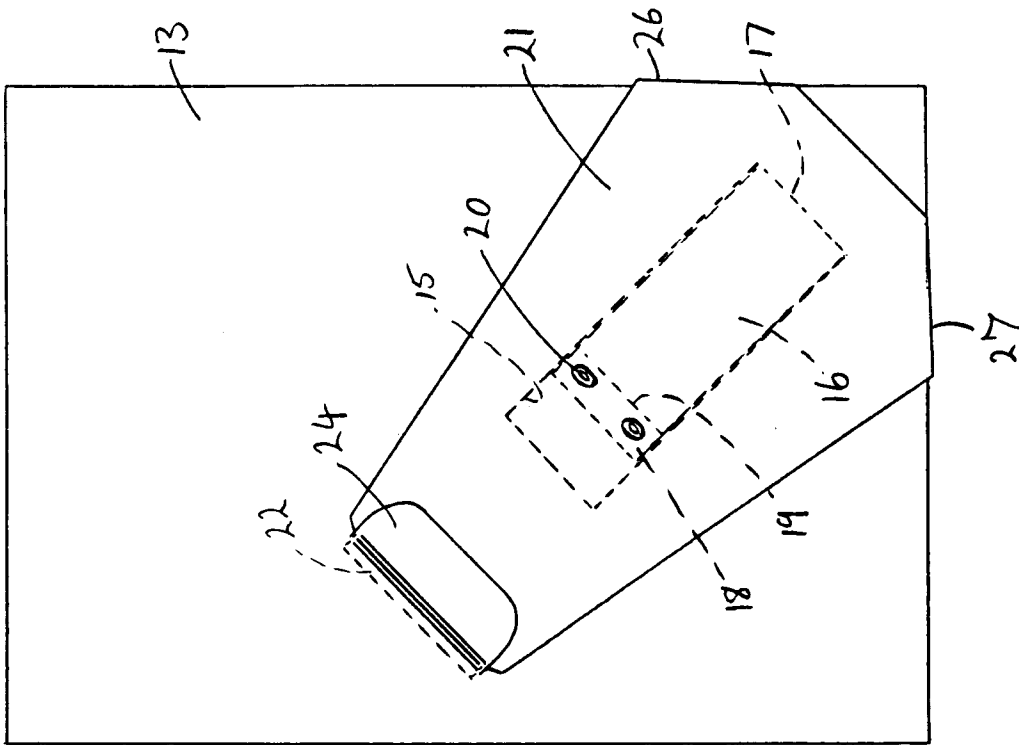


Fig. 3

