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

(11) Publication number: **0 087 024**
A2

(12) # EUROPEAN PATENT APPLICATION

(21) Application number: 83101017.8

(51) Int. Cl.³: A 47 G 1/06

(22) Date of filing: 03.02.83

(30) Priority: 20.02.82 GB 8205056

(43) Date of publication of application:
31.08.83 Bulletin 83/35

(84) Designated Contracting States:
AT BE CH DE FR IT LI LU NL SE

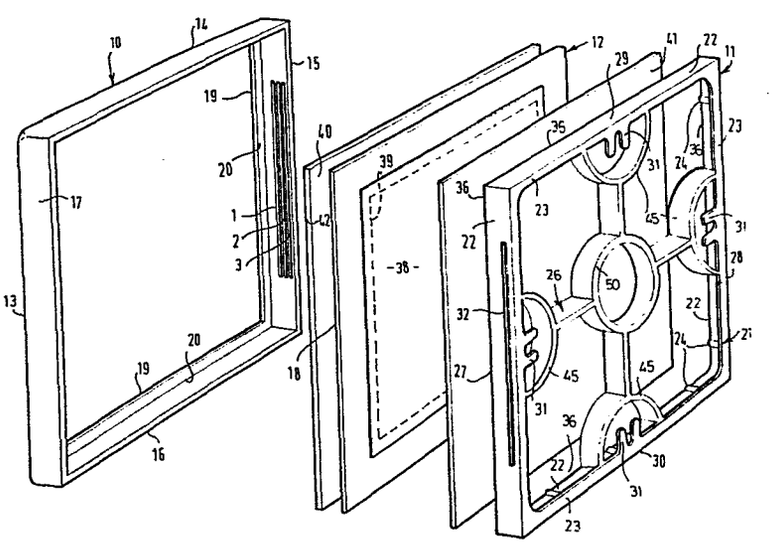
(71) Applicant: Athena Reproductions Limited
P.O. Box 13 13/14 Raynham Road
Bishops Stortford Hertfordshire CM23 5PQ(GB)

(72) Inventor: Christensen, Ole
19 The Forebury
Sawbridgeworth Hertfordshire CM21 9BD(GB)

(74) Representative: Lewis, Samuel Hewitt et al,
FORRESTER & BOEHMERT Widenmayerstrasse 4/I
D-8000 München 22(DE)

(54) **Improvements in or relating to frames.**

(57) A frame for mounting a panel such as a picture, photograph or plaque for display purposes comprises a first peripherally continuous, frame part (10) which, in use, surrounds the panel (12) and has retaining means (1,2,3), and a second frame part (11) including a peripheral element (21) which is slightly smaller overall than the inside dimensions of the first frame part (10), which peripheral element (21) is received, in use, within a space bounded by the first frame part (10), the second frame part (11) having further retaining means (32).



EP 0 087 024 A2

0087024

Title: Improvements in or relating to frames.

Description of Invention

This invention relates to a frame of the kind, hereinafter referred to as a frame of the kind specified, for mounting a panel, such as a picture, photograph, plaque or a mount for a picture, photograph, or plaque, for display purposes. A protective front sheet such as a sheet of glass or clear plastic, and/or a backing sheet such as a cardboard or thin wood sheet may also be mounted in the frame to protect the panel, and the frame may be adapted for hanging on a wall and/or may be free standing.

The object of the invention is to provide a new or improved frame.

According to one aspect of the invention we provide a frame of the kind specified comprising a first peripherally continuous, frame part which, in use, surrounds the panel and has retaining means, and a second frame part including a peripheral element which is slightly smaller overall than the inside dimensions of the first frame part, which peripheral element is received , in use, within a space bounded by the first frame part, the second frame part having further retaining means, one of said retaining means comprising a projection means and the other of said retaining means comprising a plurality of receiving formations arranged in series extending inwardly of the respective frame part, one formation of which may selectively receive the projection means of the other frame part, with a snap interfitting to releasably connect the first and second frame parts whereby panels of varying thickness can be accommodated between the first and second frame parts.

The second frame part may include strengthening formations interconnecting sides of the peripheral element to support the panel between the peripheral edges thereof, in the frame. This is particularly useful where the panel and the frame are large and the panel comprises a non-rigid material such as a photograph.

The first frame part may comprise an inwardly extending lip providing a rebate on the inside of the first frame part in which rebate the peripheral edge of the panel is, in use, received, and the peripheral element of the second frame part may extend into the rebate to entrap the peripheral edge of the panel between the lip and the peripheral element.

In a preferred embodiment, the receiving formations are provided on an inside surface of the first frame part, and the second frame part provides the projection means, on an outside surface of the peripheral element.

For example, the receiving formations on the inside surface of the first frame part may comprise a series of grooves extending side by side parallel to the panel, and the projection means of the second frame part may comprise a longitudinal outwardly resiliently biased rib on the second frame part received in any one of the grooves as desired.

Thus as the first and second frame parts are connected together, the projection means and the selected receiving formation interengage so that the second frame part can be located in the recess at a selected one of a plurality of pre-determined positions to accommodate panels of varying thickness or a desired of panel and a backing sheet and/or a facing sheet.

The grooves may be spaced apart at predetermined distances corresponding to selected panel thicknesses, or the groeves may comprise ratchet formations which extend over part or the entire width of the frame to accommodate a greater range of thicknesses of panel or panel and backing sheet and/or facing sheet.

Conveniently, the second frame part is made of a material, such as plastic, which permits some resilient deformation of the peripheral element, whereby a resilient bias to the projection is provided by the nature of the material from which the peripheral element is made. Alternatively, where the projection means is provided on the first frame part, the first frame part may be made of a material which permits some resilient deformation.

Preferably, however, both the first and second frame parts are made of a plastics material and both the first and second frame parts permit some resilience deformation.

The plastics first and/or second frame parts may be fabricated in one piece by injection moulding, or alternatively the components of the first and/or second frame parts may be extruded or fabricated in any other way and connected together by adhesive or other fastenings.

The first and/or second frame parts, or where a backing sheet is provided, the backing sheet, may be provided with means to hang or free stand the frame.

The frame may be circular to receive a round panel or preferably rectangular or square to receive panels of corresponding shape as required.

The first and second retaining means may extend around the whole of the periphery of the frame, but preferably a plurality of separate retaining means are provided at spaced positions around the frame.

In a preferred embodiment where the frame is rectangular, two retaining means and two further retaining means are provided, one on each of two opposite sides of the first and second frame parts respectively.

According to a second aspect of the invention we provide an assembly of a frame according to the first aspect of the invention and a panel mounted in the frame.

The invention will now be described with the aid of the accompanying drawing which is an exploded perspective view of a picture frame mounting a panel, in accordance with the invention.

Referring to the drawing, a picture frame comprises two parts, a first frame part designated 10, and a second frame part designated 11, the first 10 and second 11 frame parts being adapted to be releasably connected together with a panel 12 therebetween.

The first frame part 10 is of rectangular configuration and made of plastic and is fabricated in one piece in plastic by injection moulding. However, the part 10 may be fabricated in plastic or another material such as wood by any other method of fabrication as desired. For example four side components 13, 14, 15, 16 of the part 10, may be extruded, cut to length, mitred at the corners and adhered together or otherwise connected, for example by fasteners, as required.

The first frame part 10 has a peripherally continuous wall 17 which surrounds the peripheral edge 18 of the panel 12 and, to the front of the wall 17, there is provided an inwardly extending lip 19 which provides a rebate 20 in the rear thereof projecting inwardly of the wall 17 and extending around the entire wall 17, in which rebate 20 the peripheral edge 18 of the panel 12 is received.

On the inner surface of two opposite sides 13, 15, a retaining means is provided, only one of which can be seen, which retaining means comprises three receiving formations comprising grooves 1, 2, 3 which each extend parallel to the peripheral edge 18 of the panel 12 over a major part of the lengths of the sides 13, 15.

Other configurations of first frame part are of course possible, although the provision of a rebate 20 and continuous wall 17 are preferred.

The second frame part 11 comprises a rectangular peripheral element 21 of L-shape in cross-section also of plastics material which is slightly smaller overall in outside dimensions than the inner dimensions of the continuous wall 17 of the first frame part 10, although of similar shape.

One limb of the L, designated 22, extends parallel to the continuous wall 17, and the other limb 23 inwardly perpendicularly.

The limb 22 has a plurality of strengthening ribs 24. These may be provided as the second frame part is fabricated by injection moulding, although where other methods of fabrication are provided, the strengthening ribs 24 may be provided by any other means as required, or omitted altogether.

Integral with the peripheral element 21 are strengthening formations 26 comprising four semi circular parts 45 at the mid-points of the four sides 27, 28, 29, 30, a strut 48 extending from each part 45 to a central circular element 50. Alternatively, a cross strut which interconnects two opposite sides 27, 28 for example of the element 21, could be provided, and further cross struts and further struts interconnecting the cross struts or any other desired pattern of strutting or other strengthening formations may be provided as required. The strengthening formations 26 provide a strengthening of the peripheral element 21 along each of the sides 27, 28, 29, 30 thereof.

Also integral with the peripheral element 21 are U-shaped hook parts 31, one being provided on each side 27, 28, 29, 30 of the peripheral element 21, substantially midway along inside the semi-circular parts 45, to enable the frame to be hung on a nail in a wall, or on another wall projection as required.

On the outside of the limb 22 on each of two opposite sides 27, 28, extending outwardly, there is provided a further retaining means comprising a projection means comprising a longitudinal rib 32 (only one of which can be seen in the drawings). The ribs 32 are each adapted to be engaged with one of the grooves 1, 2, 3, on the first frame part 10, depending on the spacing required between the rebate 20 of the first frame part 10 and the front edge 36 of the limb 22 of the peripheral element 21.

As the first and second frame parts 10, 11 are both fabricated in plastics material, they permit of some resilient deformation which enables the projecting ribs 32 to be resiliently engaged in one of the grooves 1, 2, 3 with

a snap interfitting by resiliently deforming the first and/or second frame parts 10, 11.

If required, only the first 10 or the second 11 frame part may be at all resilient, or both parts 10, 11 may be rigid and the projecting rib provided by a separate element resiliently biased outwardly by spring or other resilient means.

Although the retaining means of the first frame part 10 has been described as comprising grooves 1, 2, 3 and the further retaining means of the second frame part a projecting rib 32, if desired the grooves 1, 2, 3 may be provided on the second frame part 11 and the projecting rib 32 on the first frame part 10, and further alternatively, the retaining means of each side of the frame may be provided by any other series of receiving formation on either the first or second frame parts 10, 11 in one of which a corresponding projection on the other frame part 11, 10 may be received.

Where the receiving formations comprise grooves, the spacing of the grooves may be predetermined to correspond to selected thicknesses of panel.

In the example shown, the panel 12 comprises a mount for a picture 38, the mount having an opening 39, the picture 38 being secured to the rear of the mount so that it may be viewed through the opening 39 from the front. However, the panel may comprise a photograph, picture or a plaque or any other panel which it is desired to display.

The mount is thin, and not rigid. A protective glass or clear plastic facing sheet 40 is therefore provided at the front of panel 12 and a backing sheet 41 at the rear thereof to prevent the mount from bending. The backing sheet 41 may be made of cardboard or thin wood or any other material as required.

Thus when assembled, the peripheral edge 42 of the glass sheet 40 abuts the lip 19 of the rebate 20, and the mount 12 is sandwiched between the glass facing sheet 40 and the backing sheet 41. The backing sheet 41 is engaged by the edge 36 of the second frame part 11, the ribs 32 on each of the sides 27, 28 of the second frame part 11 engaging in the rearmost groove 3 of the first retaining means in order to provide an adequate spacing between the lip 19 and the front edge 36 of the second frame part 11 to accommodate the width of the glass sheet 40, panel 12 and backing sheet 41.

Where the glass sheet 40 or backing sheet 41 are omitted, the ribs 32 may be received in the second grooves 2 as less spacing is required. Furthermore, where the panel 12 is sufficiently rigid and neither the glass

panel 40 or backing sheet 41 are required, the rib 32 may be received in the first groove 1.

In each case, the spacing provided is sufficient to accommodate the width of the panel 12 or panel 12 and glass panel 40 and/or backing sheet 41 as necessary, whilst rigidly and adequately mounting the panel 12.

The strengthening formations 26 support the sides 27, 28, 29, 20 of the panel 12 and prevent any tendency of the mount 12 and/or backing sheet 41 to bow outwardly. In addition they prevent backwards movement of the panel, or backing sheet where provided. This is particularly useful where for example, the picture to be displayed is of smaller size than the frame, and thus requires to be retained in position relative to an aperture formed in a mount since the formations 26 hold the picture in position relative to the mount.

The formations 26 are particularly important where the frame and panel 12 are of large dimension and thus the tendency to bow outwardly is greater.

It will be appreciated that although the frame and panel described are rectangular in configuration, any other configuration may be accommodated. For example, the panel may be round and the frame correspondingly round or of any other desired shape.

CLAIMS:

1. A frame of the kind specified comprising a first peripherally continuous, frame part (10) which in use, surrounds the panel (12) and has retaining means (1,2,3), and a second frame part (11) including a peripheral element (21) which is slightly smaller overall than the inside dimensions of the first frame part (10), which peripheral element (21) is received , in use, within a space bounded by the first frame part (10), the second frame part (11) having further retaining means (32), one of said retaining means (32) comprising a projection means and the other of said retaining means comprising a plurality of receiving formations (1,2,3) arranged in series extending inwardly of the respective frame part (10), one formation of which may selectively receive the projection means (32) of the other frame part (11), with a snap interfitting to releasably connect the first (10) and second (11) frame parts, whereby panels (12) of varying thickness can be accommodated between the first (10) and second (11) frame parts.

2. A frame according to Claim 1 characterised in that the second frame part includes strengthening formations (26) interconnecting sides (27,28,29,30) of the peripheral element (21), to support the panel (12) between the peripheral edges (18) thereof, in the frame.

3. A frame according to Claim 1 or Claim 2 characterised in that the first frame part (10) comprises an inwardly extending lip (19) providing a rebate (20) on the inside of the first frame part (10) in which rebate (20) the peripheral edge (18) of the panel (12) is, in use, received.

4. A frame according to any one of the preceding claims characterised in that the receiving formations (1,2,3) are provided on an inside surface of the first frame part (10), and the second frame part (11) provides the projection means (32) on an outside surface of the peripheral element (21).

5. A frame according to Claim 4 characterised in that the receiving formations (1,2,3) on the inside surface of the first frame part (10) comprise a series of grooves extending side by side parallel to the panel (12) and the projection means (32) of the second frame part (11) comprises a longitudinal outwardly resiliently biased rib on the second frame part (11) received in a selected one of the grooves (1,2,3).

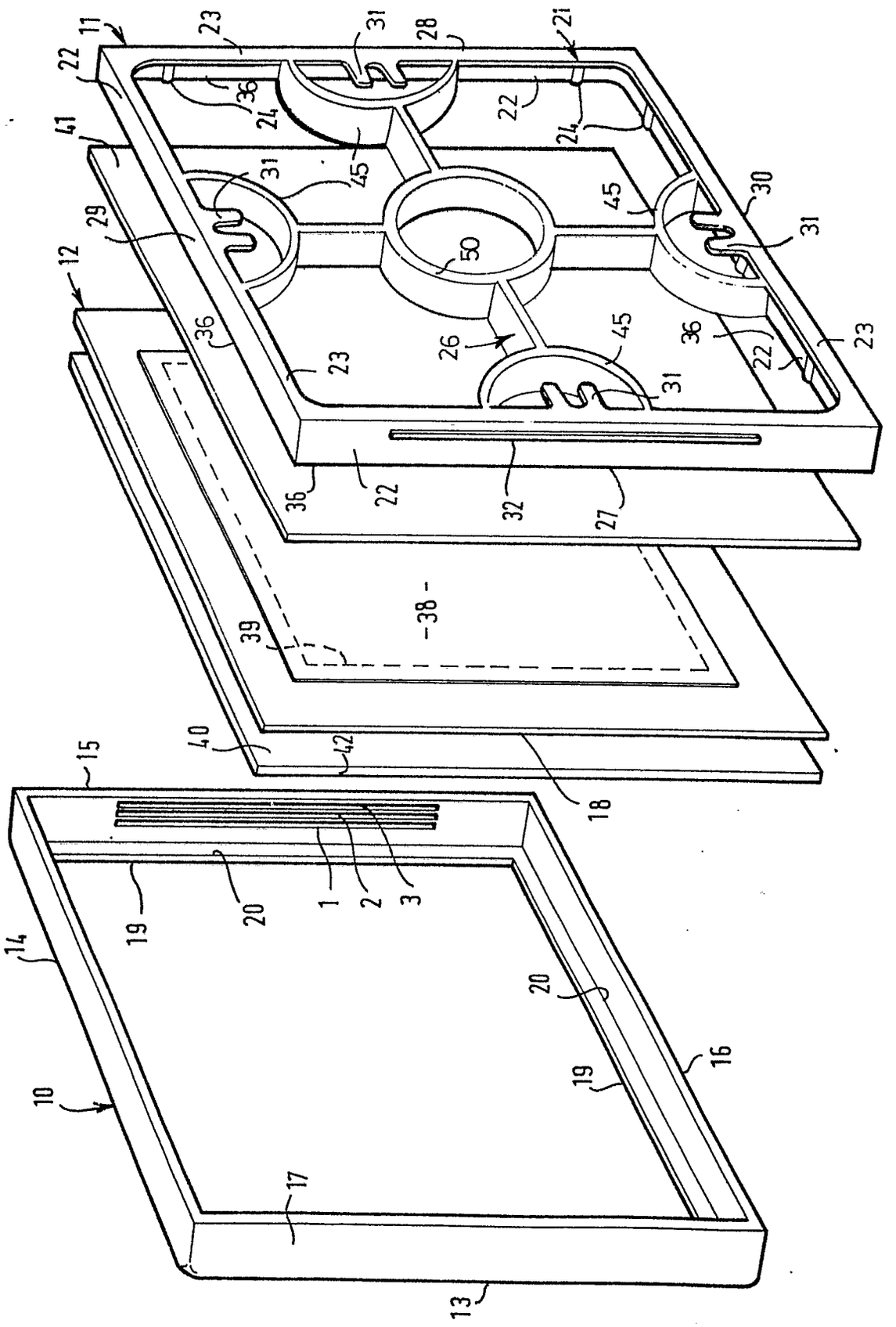
6. A frame according to Claim 5 characterised in that the grooves (1,2,3) are spaced apart at predetermined distances corresponding to selected panel thicknesses.

7. A frame according to any one of Claims 4 to 6 characterised in that the first and/or second frame part (10,11) is made of a material which permits some resilient deformation of the first frame part (10) and/or peripheral element (21) whereby a resilient bias to the projection (32) is provided by the nature of the material from which the peripheral element (21) is made.

8. A frame according to any one of the preceding claims characterised in that a plurality of separate retaining means (32; 1,2,3) are provided at spaced positions around the frame.

9. A frame according to Claim 8 characterised in that the frame is rectangular and two retaining means (1,2,3) and two further retaining means (32) are provided, one on each of two opposite sides of the first and second frame parts (10,11) respectively.

10. An assembly of a frame according to any one of the preceding claims and a panel mounted in the frame.


11
23
31
28
21
22
36
24
22
24
41
31
45
45
30
29
50
31
12
36
26
45
36
23
23
22
31
36
22
32
27
-38-
39
40
42
18
15
1
2
3
19
20
14
20
19
16
10
17
13