

Description

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The invention relates to a holder for a stack of pictures, the stack being of variable thickness, having a window at which the uppermost picture in the stack is presented by means of a support arrangement in such a manner that it lies flat, and having centering means which secure the pictures in their position relative to the window. Such a holder is known from US-PS 4.242.820.

The known picture holders completely surround the stack of pictures and in order, if desired, to be able to check that the stack is complete, the picture holder must be opened. The support arrangement is rendered inoperative in the process. This produces a mechanism that is relatively expensive for the purpose for which it is intended.

The problem of the invention is to provide a picture holder of the type mentioned in the introduction in which the support arrangement is of such simple construction that the holder as a whole can be manufactured especially economically.

The solution to this problem is defined in patent claim 1; the dependent claims define expedient and advantageous developments.

Embodiments are described in detail below with reference to the attached drawings.

Figure 1 is a perspective view of a first embodiment, Figure 2 is a section along line 2-2 in Figure 1, Figure 3 corresponds to Figure 2, but shows a variant, Figure 4 is a partial plan view of the last-mentioned embodiment,

Figures 5 and 6 show, in a similar representation to that of Figures 2 and 3, embodiments in which the stops are attached to a separate component,

Figures 7 and 8 are perspective views of the stop components when they have been removed,

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Figures 9 to 11 show how the holder can be made into a standing frame using a simple additional component,

Figure 12 is a section of a solution modified with respect to the first embodiment,

Figure 13 is a section approximately at the level of the plane 13-13 in Figure 12,

Figure 14 is a partial section similar to Figure 12 and shows a variant of that embodiment,

Figure 15 shows a further embodiment with the stack of pictures held,

Figure 16 shows this holder in the position in which the stack is exchanged,

Figure 17 is a view of the holder from below,

Figure 18 is a side view of one of the springs for the holder according to Figures 15 to 17 in the unbiased position,

Figures 19 to 21 relate to a further embodiment and

Figures 22 to 25 represent a final embodiment.

Figure 1 shows a frame 100 with a window opening 102 behind which the uppermost picture 104 of a stack of pictures is visible. On the longitudinal sides of the frame are edge parts 106, bent back with respect to the window, which are capable of a resilient spring action and urge the stack lying behind the window 102 firmly against those areas of the frame that surround the window or, if a pane is inserted in the window opening, against the latter. The stack is supported in alignment under the window opening; for this purpose stops 108 are provided in the cavities surrounded by the edge parts, as well as an end stop 110 (cf. Fig. 2) extending perpendicular thereto which extends perpendicularly from the transverse edge 112 downwards (in Fig. 1). At that end of the space taken up by the stack that is opposite the end stop 110 the holder is open, with the result that the pictures can be removed here. The insertion of a stack is facilitated by the fact that the corners 114 of the edge regions 106 that are folded backwards are angled away from the window opening

and thus form a ramp along which the stack can be guided.

The resilient deflection of the edge parts 106 depends on the thickness of the stack. A large amount of movement can be provided for if, for example, the edge parts made of spring steel are attached to a plastics frame 100, as shown in Figure 2; in this case the stops 108 and 110 also form an integral part of the plastics frame.

However, even if the stop 110 were constructed in one piece with the frame and also with the resilient edge parts 106, the deflection of the latter would not be hindered as the end stop 110 is set back at both ends from the edge parts.

A variant in which the end stop 110' extends over the entire end surface of the holder is shown in Figures 3 and 4: in this case the separating slot 116 ensures that the resilient deflection of the edge parts 106 can take place unhindered. It is also indicated here that T-shaped parts 107 that spring inwards are moulded on the end stop and ensure that the stack of pictures is covered to the same extent on all sides by the frame, the aim being for the frame to cover as little of the stack as possible. Also to be seen in this variant is the window 118 inserted in the frame 100.

Figures 5 to 8 show two further variants; according to Figures 5 and 7 a stop and retaining component - shown separately as Figure 7 - is inserted into the frame together with the stack, and this component comprises the stops which extend transversely to the resilient edge parts 106. In the embodiment according to Figures 6 and 8 on the other hand this stop and retaining component (Figure 8) has all the stops for the stack. In both cases the material is of course transparent plastics material, as the viewing-window glazing is part of the stop and retaining component.

Figure 9 is a perspective view of an injection-moulded component 120 comprising two plate-like sections. The plate-like section 122 has a width "b" equal to the width of the

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pictures that are to be accommodated and can, as shown in perspective in Figure 10, be inserted with the pictures into the holder in such a manner that the narrower plate-like section 124 can act as a foot when the holder is used as an upright frame. Figure 11 shows in side view how the component 120 is to be inserted when the holder is to be set up as a transverse-format frame. The holder itself corresponds to the embodiment according to Figures 5 to 8.

The embodiment according to Figures 12 and 13 differs from the basic design described hitherto in that in this case the clips are not resiliently biased as they rest against the stack but are pivotable and have sufficient friction in their pivot bearings that they remain in a position once set in it manually.

The holder comprises in this case a double-walled frame 130 having a window opening 132, which is optionally glazed, the inside walls 134 being the centering means for aligning the stack 136 of pictures with respect to the window opening. The inside walls 134 also have bearing apertures for two pegs 138 opposite one another which are moulded to two wings 140. These are the clips. The width of the wings between the pegs is of such a size that they rest with friction against the inside walls that extend transversely to the bearing inside walls, with the result that they also retain a position, into which they have been moved by hand, in which they hold the stack flat against the window opening. As shown in Figure 14, it is not essential to provide a peg bearing; if a suitable plastics material is used, for example polypropylene, the hinge 142 can be made in one piece with the frame on the one hand and with the wings on the other.

Figures 15 to 18 show a further embodiment. In this case the holder comprises a frame 150 having a window opening 152, optionally covered by a transparent plastics pane, and centering stops 156 moulded onto the shorter side walls 154 of the frame. Also moulded onto the frame, and extending from its front plate 158 parallel to its longer side walls, are supports 160 which, on the one hand, fulfil the function of

stops in order to support the stack 162 on its longer edges and on the other hand have notches 164 into which the leaf springs forming the support clips can be hooked. This is effected as follows; each of the springs has a pair of holes 166, but the distance between their facing end edges is greater than the distance between the notches 164 in that pair of supports into which the spring in question is hooked. The springs can accordingly be hooked in in two stable positions only; these are shown in Figures 15 and 16, respectively. In the first position, the free spring arms 168 exert* support pressure on the stack that has been inserted and when pressure is applied to the central spring bow 170 between the supports 160, the spring springs into the position according to Figure 16 in which the stack can be exchanged (so-called "frog-spring effect"). If the thickness of the stack according to Figure 15 is, for example, increased, only the spring arms on the far side of the notches in the support are subjected to bending stress while the section of the spring between the relevant pair of supports does not change shape any further. When a stack has been inserted (Figure 16), pressure is applied to the ends of the spring in order to restore it to the position according to Figure 15.

Figures 19 to 21 show a further embodiment. In principle there are two holders 180, 180', which are combined to form a unit by means of a hinge 181. As shown in Figure 21, the holder can be set up in such a manner that the two viewing windows 182 are next to one another, but also in such a manner - cf. Figure 19 - that the two holders come to rest back to back.

On that side that is remote from the viewing window, each holder, trough-shaped in section according to Figure 19, with side walls 184, a base wall 186 and inwards springing support strips 188, has leaf springs 190, which are supported on the support strips and hold the inserted stack of pictures against the viewing window in question. The stack can be exchanged through the opening opposite the base wall 186.

*Translator's note: Although "über...aus (over...out)" appears in the German text at this point, it has been assumed that "üben...aus (exert)" was intended.

Figures 22 to 25 show a final embodiment. Similarly to those in Figures 12 to 14, the holder has a double-walled structure, with outer walls 202, inner walls 204 and frame sections 206, surrounding the viewing window 200. On one of the inner walls, in this case one of the longer inner walls to the right in Figure 23, there are secured two strips 208 of bulk-compressible material; for example strips of foam material are glued to the wall. Opposite them the inner wall is interrupted by cut-outs 210, and recesses 212 in the frame sections in this region allow the part 214 of the relevant inside wall between the cut-outs 210 to be deflected resiliently. Attached to this resiliently deflectable inner-wall part 214, opposite the strips 208, are corresponding strips 216. The distance between the two opposing inner walls is in each case matched precisely to the corresponding dimension of a stack of pictures that is to be inserted. In order for this stack to be inserted, the inner-wall part 214 is therefore bent outwards (cf. Figure 25) and, as can be seen especially in Figure 24, the relevant strip 216 is tapered in the direction towards the window, with the result that in fact the picture nearest to the window can rest flush without being buckled. The remainder of the stack in each case compresses the strips, as can be seen, for example, in Figure 22.



Claims

1. Holder for a stack of pictures, the stack being of variable thickness, having a window at which the uppermost picture in the stack is presented by means of a support arrangement in such a manner that it lies flat, and having centering means which secure the pictures in their position relative to the window, characterised in that the holder has clips which, embracing the stack irrespective of its thickness, urge the stack against the window and that the holder has centering stops in respect of at least two edges of the stack that are perpendicular with respect to one another.
2. Holder according to claim 1, characterised in that the clips hold the stack by means of resilient bias.
3. Holder according to claim 1, characterised in that the clips hold the stack by means of friction locking.
4. Holder according to claim 1, characterised in that the holder has centering stops in respect of three edges of the stack and the stack can be removed in the direction of its unsupported edge.
5. Holder according to claim 1, characterised in that the holder has centering stops in respect of all four edges of the stack and the stack can be removed in a direction perpendicular to the main plane of the pictures forming it.
6. Holder according to any one of claims 1 to 5, characterised in that the window is glazed.
7. Holder according to claim 6, characterised in that the centering stops present at least substantially the whole of the uppermost picture in the stack behind the glazing of the window, and that the glazing of the window is surrounded by frame surfaces.
8. Holder according to claim 7, characterised in that the



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centering stops are made in one piece with the frame surfaces.

9. Holder according to claim 8, characterised by a double-wall structure around the window.

10. Holder according to claim 9, characterised in that the inside walls form at least part of the clips.

11. Holder according to claim 9, characterised in that the clips form part of the frame surfaces.

12. Holder according to claim 7 or 8, characterised in that the clips are secured to centering stops.

13. Holder according to claim 1, characterised in that the holder comprises a first component consisting of a frame surrounding a window opening and clips moulded onto the frame and a second component that can be pushed into the first component and comprises a window pane and centering stops moulded onto the pane.

14. Holder according to claim 1, characterised by a mounting foot for the holder that can be fixed in position together with the stack by the clips.

15. Holder according to claims 3 and 9, characterised in that wing-like clips are rotatably connected to two opposing inside walls of the holder, the end edges of which wing-like clips lie with friction against at least one inside wall that extends perpendicular to these inside walls.

16. Holder according to claim 15, characterised by a hinge formed in one piece with the inside walls and the wing-like clips.

17. Holder according to claims 2 and 8 and 12, characterised in that the clips are "frog" springs hooked into pairs of centering stops.

18. Holder according to any one of the preceding claims,



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characterised in that the holder can be connected to further holders of the same type to form a common structural unit.

19. Holder according to claim 18, characterised by an articulated connection.

20. Holder according to claims 2 and 9, characterised in that the clips comprise strips of bulk-compressible material secured to the inside walls.