

Description

The invention relates to a container for photographic prints having the features mentioned in the pre-characterising clause of claim 1. Containers that have these features are known from DE-OS No. 2742347. They serve, in the manner of a picture frame, to present the topmost print of a stack of photographic prints flat against the viewing window, and what is more regardless of how many prints the stack comprises. The biasing effect of the spring arrangement should, however, be put out of action while the stack of pictures is being removed or inserted.

The known containers, however, still require improvement. On the one hand, manipulation must not cause any problems for the user and in particular the photographic prints should not be damaged even in the case of careless handling. This danger occurs especially when the stack comprises only a few prints and when the prints are not flat. On the other hand, as an article that is clearly to be mass-produced, it must be possible to manufacture the containers with a minimum of expense both with regard to the use of material and with regard to assembly.

The problem of the invention is so to develop containers of the type mentioned that the above requirements are met.

The solution provided according to the invention is defined in claim 1; the subsidiary claims mention preferred arrangements of the inventive idea.

The accompanying drawings show, to a large extent

diagrammatically, an embodiment of the container according to the invention.

Fig. 1 shows the outline of the container approximately according to the section line 1-1 in Fig. 2, but without an inserted stack of prints,

Fig. 2 shows a cross-section approximately according to the line 2-2 in Fig. 1, but with photographic prints inserted,

Fig.3 shows the container analogously to Fig. 2, but half open, and

Fig. 4 is also analogous to Figs. 2 and 3, but in this case the container is completely open.

The container comprises four components: the housing 10 which for its part is composed of a lower shell and an upper shell which, in the case of injection-moulded plastics parts, can be ultrasonically welded to each other; also the slider member 12 which is injection-moulded in one piece from plastics material and the two springs 14 and 16 which together form the spring arrangement.

The lower shell of the housing comprises the base 18 of the housing, the longitudinal walls 20, 22 which extend to approximately half the depth of the housing and the transverse wall 24. The upper shell comprises longitudinal walls 20', 22' and transverse wall 24' which match those of the lower shell and are moulded onto a window frame plate 26 opposed to the base of the housing and having a window opening 28. The latter may be open, sealed by means of a film of transparent material adhesively secured on the inside or, alternatively, as shown, glazed by an inserted sheet of transparent plastics material.

In principle, the slider member is an open frame having longitudinal members 30 and 32, an external cross-piece 34 having a grippable portion 36 and an internal cross-piece 38. The longitudinal members and the external cross-piece are of angled cross-section, the legs turned inwards being parallel to the viewing window. The stack of photographic prints (hereinafter abbreviated to pictures) lies on these legs 40, 42 of the longitudinal members. In plan view, the two legs 40, 42 have a step which is produced by moulding narrow runners 44 onto the legs; between the runners and the base of the housing a space 46 remains in each case.

There project from the base of the housing towards the viewing window two mounting pegs 48 and ribs 50 are also moulded onto the base of the housing, parallel to one another and to the direction of movement of the slider member, as is clear from Figs. 2-4.

There is fitted onto each peg 48 a respective leaf spring 14 and 16 each having an opening or hole which in this case is designed as a rectangular aperture, complementary to the shape of the pegs 48. The ribs 50 serve additionally to prevent any skewed positioning of the leaf springs. The springs lie against them, each with one edge thereagainst.

The two leaf springs have a quite shallow, Z-shaped contour which is so designed that the pattern of the two springs can be the same (if they are also biassed and mounted mirror-imagewise) and can be cut off from a sheet without waste, or at least with a minimum of waste.

The bias or curvature of the springs can be seen in

Fig. 2. The two free ends of the springs extend from the fastening point 48 upwards and are slightly bent round just before their ends, where they lie adjacent the rear side of the lowermost picture 60. The end portion of each spring, facing the housing opening and also the external cross-piece 34 of the slider member, is provided with a deformation so that a nose 56 is formed. When the slider member is pushed completely into the housing, its runners 44 overlies the fastening region and, in the outer edge portion of the springs, a portion of the ends of the springs projecting towards the housing opening; the runners terminate just before the portions of increased thickness 56. The ends of the springs remote from the housing opening, on the other hand, are not covered by the runners 44. In this position of the slider member, therefore, (see Fig. 2) the two ends of the springs lie against the pictures from below in accordance with their curvature and press them against the viewing window.

If the grippable portion of the slider member is now pulled, the internal cross-piece 38 runs with its inclined control face 62 onto the rounded internal end of the spring and presses it downwards away from the viewing window of the housing. Approximately simultaneously, inclined control faces 64 at the ends of the runners 44 run onto the nose 56 of the other free ends of the springs and likewise press these away from the viewing window. In this manner, the stack of pictures is free almost immediately after the beginning of travel of the slider member and is easily carried along by the slider member. The internal ends of the springs are gradually released again

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from the cross-piece 38 during the further travel of the slider member, while the external ends of the springs acting as brakes continue to be pressed down. The latter circumstance is of considerable importance. If, in fact, this end of the spring were also gradually released, for example during re-insertion of the slider member, then a picture could, especially if it were curved upwards as indicated by a broken line in Fig. 3, be held on the one hand by the spring against the housing while the slider member with its grippable portion is still trying to push the picture into the housing. This danger would be limited in the case of a thick stack of pictures, but is considerable if only a few or only a single picture is being pushed in.

There is also moulded onto the housing in the region of its lower edge opposite the opening a locking element 70 over the inclined guide face 72 of which the lower edge 74 of the internal cross-piece 38 of the slider member glides (resilient deformation occurring) before it snaps downwards again behind a step 76 as soon as the slider member is completely pushed in.



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Patent claims

1. Container for storing photographic prints (60) of like format comprising a housing (10) that has a substantially rectangular outline and is provided with a viewing window, a slider member (12) that is substantially in the form of a frame and is displaceable parallel to the plane of the viewing window through an opening provided in a narrow side of the housing, and a spring arrangement (14,16) secured in the housing by means of which photographic prints (60) lying on the slider member (12) can be pressed towards the viewing window of the housing but are released when the slider member is pulled out of the housing, characterised in that the spring arrangement comprises leaf springs (14,16) that are supported approximately centrally on the base of the housing, are biased by their free ends towards the viewing window and extend parallel to the direction of movement of the slider member (12), and the slider member (12) has control edges (44) which, after the beginning of removal of the slider member, run substantially simultaneously onto the two spring ends at the side of the housing having the opening, push the ends away from the viewing window and maintain them pressed away over the whole of the remaining travel of the slider member.
2. Container according to claim 1, characterised in that the spring arrangement comprises two leaf springs (14,16).
3. Container according to one of claims 1 or 2, characterised in that the control edge (44) for the spring ends remote from the housing opening is provided on a cross-piece (38) of the slider member (12), which cross-piece runs parallel to the



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housing opening.

4. Container according to one of claims 1, 2 or 3, characterised in that running parallel to its travel the slider member (12) has longitudinal members (30,32) on which there are formed control runners (44) provided with the control edges for the spring ends facing the housing opening.

5. Container according to claim 4, characterised in that, adjacent the fastening place on the side facing the housing opening, the leaf springs (14,16) have a portion of increased thickness (56) entering into effective connection with the control runners.

6. Container according to claim 5, characterised in that the portion of increased thickness is constructed as a deformation (56) of the leaf spring material.

7. Container according to claim 3, characterised in that the cross-piece (38) is constructed as the one element of a locking arrangement for holding the slider member (12) in the housing (10), while the other element (70) is moulded onto the housing.

8. Container according to one of the preceding claims, characterised in that the slider member (12) is a one-piece injection-moulded plastics piece.

9. Container according to one of the preceding claims, characterised in that the housing comprises injection-moulded plastics parts.

10. Container according to claim 2, characterised in that the two leaf springs (14,16) are identically formed.

11. Container according to one of the preceding claims, characterised in that the base of the housing has pegs (48)



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onto which the leaf springs (14,16), which have a complementary opening, are fitted.

12. Container according to claim 11, characterised in that the base of the housing has ribs (50) on which the leaf springs (14,16) are supported laterally.

13. Container according to one of the preceding claims, characterised in that the edges of the leaf springs (14,16) adjacent to the housing window are bent away from the latter towards the base (18) of the housing.

14. Container according to claim 1, characterised in that there is provided a single leaf spring arranged approximately centrally in the housing.

15. Container according to claim 2, characterised in that the two springs are divided into sections in the direction of removal of the slider member.