

SPECIFICATION **Picture Storage Box and Viewer with a Change Mechanism Device**

5 The invention relates to a picture storage box and viewer device with a change mechanism for changing the picture displayed.

Picture storage boxes with viewing apertures and means for changing the picture displayed have been proposed. The principle of these known devices is relatively simple. By means of a hook
10 attached to a slider member, the picture of a pile of pictures lying uppermost in the box or housing is drawn over a separator and when the slider member is pushed back in again that picture is guided under the separator which is arranged in the housing, so that it goes under the pile. In all of these known devices a spring arrangement is provided which presses against the pile from below so as to urge the uppermost picture (or the
15 uppermost photoplate) against a viewing window or an aperture in the housing. In a device constructed as described above, it is apparent that when reinserting the picture it must be pushed between the spring arrangement and the pile disposed in the housing, with the result that the sliding of the picture against the pile occurring under spring pressure may result in the surface of the picture being scratched. In addition the spring arrangement must be carefully designed since it
20 must be able to extend sufficiently to press a single picture against the viewing window (when the "pile" consists only of one picture), and yet it must be sufficiently pliable still to permit the picture to be inserted when the pile is of maximum thickness. Moreover, when the device is not in use the pictures are nevertheless constantly under the spring pressure, which when, for example, the photos are not quite dry, can lead to sticking. In addition, the removal and
25 insertion of the pictures under spring pressure is awkward and complicated for the user.

30 An object of the present invention is to provide such a device with features the same as those of the known devices in which these difficulties described above are avoided.

According to the present invention there is provided a picture storage box and viewer device with a change mechanism for changing the picture displayed, having a housing with a
35 viewing window, and a slider member mounted in the housing so as to slide between two positions to describe a withdrawal stroke and a return stroke, there being provided during the withdrawal stroke of the slider member means effective to remove an individual picture adjacent
40 one end of an inserted pile of pictures and effective during the return stroke of the slider member to replace that picture adjacent the other end of the pile, the means including a transporter for moving the individual picture relative to the
45 pile of pictures and a separator for holding the remainder of the pile whilst the individual picture is moved, wherein there are provided adjacent the viewing window, mounted on the housing or the

65 slider member, support elements for supporting a picture to be viewed, which support elements are disabled temporarily by the withdrawal stroke of the slider member in order to convey that picture into the space beneath the supporting elements.

70 The solution according to the invention according to Patent Claim 1 is based on the following considerations:

Simply to remove the spring or make it very weak would not be satisfactory, for in that case
75 the picture to be viewed, depending on the height of the pile and the curvature of the pictures, would be separated or spaced to a greater or lesser extent from the viewing window.

Accordingly a type of support member must be
80 formed by support elements which when the device is closed support the uppermost picture right up against the viewing window.

When the picture is being changed, the support member must "disappear" so that the picture can
85 fall onto the pile. The support member is then restored and reinserted. In a preferred embodiment the picture displayed next is the one that previously was at the bottom of the pile so that, contrary to the previously proposed devices, it is not the uppermost picture which is
90 transported to the bottom but the bottom-most picture which is transported to the support member above the pile.

The support member should be tilted away,
95 spread open or pivoted away or removed in some other manner at the latest when the slider member is fully withdrawn, and must be restored again at the latest when reinsertion of the slider member begins again.

100 To change the entire pile of pictures, it is possible, as is also customary in the state of the art, to provide a removal flap on the end wall remote from the slider member, so that it is not necessary for the removal operation to make the support member "disappear", since the pictures are lying loosely. It is also possible, however, to provide a construction in which the bottom-most picture of the pile is held in the housing and the slider member takes with it the remaining
105 pictures, including that on the support member. In this case the support member is arranged on the slider member and it will in general be simpler to disable the transporter arranged in the housing in order, for removal of the entire pile, also to extract by means of the slider member the picture
110 otherwise remaining in the housing. This dispenses with the requirement for a separate lid for the removal of the entire pile. The disabling of the transporter for the removal of the pile is, however, advantageous also in the construction mentioned first. Finally, it is also possible, however, even in this reversed construction, to leave the support member in the housing and transport the picture from the bottom of the housing up to the support member. The slider
115 member must in this case too remove the picture previously disposed on the support member together with the remaining pile.

For the transporter, instead of using a hook,

which in the case of curved pictures or pictures with damaged edges is unreliable, a retentive tacky or high friction covering enabling surface engagement with the pictures can be employed which, preferably during the return stroke of the slider member, can be automatically disabled for the purpose of protecting the surfaces of the pictures, for example, by being retracted into a slot in the base or the like.

Embodiments of the invention will now be explained in detail with reference to the accompanying drawings, of which:

Figure 1 shows in schematic section a device according to one example of the invention in the closed state;

Figure 2 shows the device of Figure 1 with the slider member drawn out;

Figure 3 is a section along line 3—3 of Figure 1 (upper part of Figure 3) and of Figure 2 (bottom part of Figure 3), respectively;

Figure 4 is a cross-section through the device of Figure 1 along the line 4—4, viewed in the direction of the arrow;

Figure 5 is a representation similar to that of

Figure 4 showing a different design of separator;

Figure 6 is a detail, in schematic longitudinal section, to illustrate the disabling of the transporter;

Figure 6a is a section along the line 6a—6a of Figure 6;

Figure 7 is a partial sectional view at the lid end of the housing with the lid open;

Figure 7a shows an alternative arrangement of the join between the lid and disabling wire;

Figure 8 shows in partial longitudinal section a further possibility for disabling the transporter when opening the lid;

Figure 8a is a section along the line 8a—8a of Figure 8;

Figure 9 shows a further embodiment of the invention in the closed state;

Figure 10 shows the embodiment of Figure 9 with the slider member drawn out;

Figure 11 is a plan view of the inside of the housing of the device of Figure 9 with the slider member, half broken away, drawn out;

Figure 12 is a section along the line 12—12 of Figure 1;

Figures 13 and 14 show enlargements of the transporter in cross-section;

Figures 15 to 19 illustrate in longitudinal section a further embodiment in different positions of the slider, Figure 15a illustrating a detail; and

Figures 20 to 23 show the last embodiment, Figures 20 to 22 illustrating the apparatus in longitudinal section with different slider positions, and Figure 23 illustrating a section along line 23—23 of Figure 20.

Figures 9 to 12 correspond in their representation (position of section) to Figures 1 to 4.

Figure 1 shows a housing 1 with a base plate 20, a viewing window 22, side walls 24 (Fig. 3) and a detachable lid 2, which is shown detached

from the housing in Figure 2. A slider member 3 having a base plate 26, lateral bars 28 and a front bar 30, is slidably mounted in the housing. A separator 4 is fixed in the housing by arranging it between two lugs 12 which project downwards from the top of the housing. The cross-sectional shape of the separator is best illustrated in Figures 1 and 2.

There extends centrally along the slider member, a transporter arrangement, consisting of a leaf spring 10, on which a retentive covering 32 is arranged at least at the end closer to the lid 2. Sides 28 of the slider members run between the lugs 12 and the side walls 24 of the housing.

Two vertical members 11 are provided close to the side walls 24 and the lid 2 of the housing, and each of them receives a downwardly projecting end portion of a respective wire spring 6. Each spring 6 is curved in the shape of a bow towards the middle of the housing and has its other, likewise downwardly curved, end 7 loosely accommodated in a respective slot 34 which is provided between the lateral bar 28 of the slider member and the side wall 24 of the housing. A projection 9, projecting outwards up to the side wall 24, is formed on the rear end, that is the end facing the lid 2, of each of the slider member sides.

The lid 2 can be fixed to the housing 1, for example, by means of studs 5.

It is assumed that a single picture is disposed between the plate 22 and the spring bows 6. A pile of pictures (not shown) is arranged in the housing between the transporter 10 or, more accurately, its retentive covering 32 and the underside of the spring bows. If the slider member 3 is now pulled, the pile is held back in the housing by the separator 4, but not the bottom-most picture against which the retentive covering 32 presses. This picture is moved outwards by the transporter 10 and during this movement slides beneath the separator 4. As shown in Figure 4, the separator is in two parts with a gap in the centre, and consequently the transporter arrangement can pass between the two parts of the separator. When the projections 9 strike the freely movable arms 7 of the springs 6 these are drawn forwards with the slider member, the spring bows being straightened. The single picture 8 which was hitherto disposed on the spring bows is therefore no longer supported and falls downwards assisted by auxiliary springs 7'. It thus falls, as the uppermost picture, onto the pile held back by the separator.

Figure 5 shows a form of the separator which differs from that in Figure 4 in that the separator is in this case continuous, but a recess 14 is provided for the transporter arrangement 10 to pass through. Further indentations 14' permit passage of push lugs of the slider provided instead of bar 20.

The transporter 10 has a support for the retentive covering 32 a spring 36 that is lightly biased in an upward direction, the contact pressure of which is just adequate to take along a

single picture using the friction of the covering 32. In the fully withdrawn position of the slider member (Fig. 2) small auxiliary springs (not shown) provided adjacent the retentive covering only in the middle of the spring, press the edge of the transported picture that is nearer the separator slightly upwards, so that when the slider member is pushed back in this edge slides upwards along the outwardly facing inclined face of the separator, and is thus placed on the spring bows which reform when the slider member is returned on account of the inherent resilience of the spring 6.

During the return movement of the slider member the transporter must slide beneath the pile disposed in the housing. Although the bias of the spring 36 is very weak, this return movement could nevertheless be difficult if the retentive covering 32 slides along the bottom-most picture. For this reason provision is made for the spring to be pushed down during the return stroke. In Figure 6 there is shown the rear-most end 38 of the leaf spring 36, which near this end is made slightly more pliable than the rest of the spring by reducing its cross-section for example. This portion of weakened cross-section has at the front edge laterally projecting guide members 40 (see also Fig. 6a), and on the base 20 of the housing there are provided two cam bars 13 having inwardly facing guide edges 42. The base 26 of the slider member is cut away in the region of these cam bars 13.

When the slider member is drawn out, the end portion 38 passes under the separator 4 and is pressed downwards by the latter so that the guide members 40, on pushing the slider member back in, pass under the guide edges 42 and thus hold the retentive covering 32 beneath the upper side 44 of the cam bars 13. The cam bars 13 may be of such a length that the spring 36 is not released again until the guide members 40 are close to the inner end position of the slider member when the retentive covering 32 is placed against the bottom of the now bottom-most picture of the pile.

To remove the pile, the lid 2 is opened and the pile is shaken out, the picture 8 lying at the top also falling out. So that the bottom-most picture of the pile is not held in by the retentive covering 32 and does not have to be drawn out with great effort, the retentive effect of the covering can be disabled by arranging that the opening of the lid 2 causes, for example, the spring 36 to be drawn below the level of the top 44 of the cam bars. To achieve this (see Fig. 7) a drive wire 15 is provided on the lid, at the housing end of which a guide member 46 engages the spring 36 by way of a guide spring arm 16, which projects downwards, and thus pulls the spring downwards. The wire 15 can be pivotally joined to the lid 2 as shown in Figure 7a or integrally formed therewith, as shown in Figure 7.

Since the transporter 10 is pulled to the right side in Figure 7 relative to the housing, the guide member 46 could prevent this normal exchange

motion of the pictures. Therefore, in the housing bottom 20, cam grooves are provided (not illustrated) engaged by studs of the like at the bottom side of guide members 46 and serving the purpose to keep guide member 46 in the closed position of lid 2 laterally offset with respect to spring arm 16, leaving the movement of the latter unobstructed, while on the contrary upon pulling on lid 2, guide member 46 slides onto the free end of spring arm 16. Similar considerations apply to the embodiment of Figure 7a.

Figure 8 shows a further possibility of how the transporter 10 can be disabled by opening the lid. Two small wedges 18 are arranged on the lid 2 and for the spring arm 16, shaped at the bottom end as a guide, there is again provided a slidably mounted disabling member 46. By means of a rod 17, the lid, on being opened, causes the member 46 to be moved to the left (in Fig. 8), and the wedge 18, when the lid is introduced again, releases the rod so that the member 46 is returned to its starting position positively or under the force of a spring. Obviously the member 46 could alternatively be operated by, for example, a button arranged in the base 20 of the housing, although operation by means of the lid is more advantageous. Alternatively the transporter may be normally disabled and only enabled after the beginning of the withdrawal of the slider member.

In the construction described so far the changing of the displayed picture is effected by the lowermost picture of the pile first of all being taken out along with the slider member, and only towards the end of the draw-out movement the uppermost picture falling downwards out of the flat display region formed between the spring bows 6 and the housing viewing plate 22. If the device contains only one picture, the picture is returned to the display region only by operating the slider member twice: in the first cycle of movement the picture 8 falls downwards, and in the second cycle of movement it is guided out and introduced again into the region at the top. If, even in the case of a single picture, the picture change is to be effected directly, the support member must be removed at the beginning of the withdrawal of the slider member, so that the picture in question is taken along by the slider member to the outside.

It can be seen that it is arranged so that it is not possible in the embodiment according to Figure 5 for the retentive covering 32 to rub against the separator 4, since the recess 14 is sufficiently large.

From the above description it is clear how to derive modifications that fall within the scope of the invention. For example, if the separator is arranged on the slider member and the transporter on the housing, then each time the slider member is drawn out the entire pile, including the picture in the display region but less the one picture retained in the housing, is removed.

It is thus possible, for example, to form the support member from crossbars which are

laterally stationary and bend in from the housing, and to arrange between the viewing window and the support member crossbars control slider members which hold the upper picture in the rest position in the middle of the crossbars, but when the slider member is drawn out at first move so far to the side that the picture falls down on one side and then so far to the side in the other direction that it is also pressed down by the support crossbar at the other side. On the return of the slider member these control slider members are again in the neutral middle position.

A further possibility consists in arranging supporting elements designed similarly to the curved springs 6 on the slider member instead of on the housing, the springs being pushed to the side by striking against the lugs 12. This solution would have the additional advantage that the support member, when the slider member is fully drawn out, is reformed again by the spring bows which are then bending inwards again, so that the picture drawn out cannot fall out, even if the device is held in an approximately vertical position. On reintroduction, the springs are first of all deformed and then bend back inwards again.

Since the design and the operation of the first embodiment have been described in detail above, it is sufficient to outline the method of operation of the embodiment shown in Figures 9 to 14 only briefly.

In this embodiment the transporter is disposed on the housing and the separator on the slider member, so that, as already mentioned above, the support member is also to be arranged on the slider member.

Disposed in the housing 51 are the slidable slider member 52 and a resilient tongue 53 with a rotatable segment 54, pivotable about its own axis, which is provided on a part of its surface with a retentive covering 55.

Arranged on the slider member are a separator 56 which, as in the first embodiment, may be in two parts or continuous, and a curved supporting element 57, in the present case consisting of round wire.

As shown in Figure 9, the flat display region is formed on the one side by the viewing plate 60 and on the other side by the supporting element 57 consisting of resilient wire, and a single picture 58 is shown in the region. Since this intermediate space is relatively narrow, a picture, even if it is arched or curved, lies fairly well against the plate 60. The remaining pictures are piled in the space beneath the supporting element 57 and — as described above for the first embodiment — are held by the resilient tongue 53 with a slight upward pressure.

On withdrawing the slider member 52, the retentive covering 55 arranged on the segment 54 holds back the lowermost picture, whereas the rest of the pile, including the picture disposed on the display region, are moved outwards with the slider member.

The supporting element 57 is bent to form triangular projections 61, which when the slider

member is in the housing are held in and when the slider member is withdrawn move outwards, for which purpose the slider member has lateral slots in its upper lateral crossbars 62. When the slider member is fully drawn out (Fig. 11) all the triangular projections can pass outwardly through the slots, and the picture 58 hitherto lying in the display region falls downwards. If the device is not being used in the horizontal position, an auxiliary spring or the like can ensure that the picture 58 is pre-stressed in the direction of the pile.

Whilst pushing back or during the return stroke of the slider member, the picture remaining in the housing, hitherto held fast by the transporter 54, slides up the inclined face of the separator 56 facing it, the upper edge of which separator is higher than the upper side of the supporting element 57, so that when the display region is reformed during the return stroke of the slider member the picture is slid into the display region and does not, for example, fall back onto the pile. Since the rotatable segment 54, which forms the transporter, projects slightly above the resilient tongue 53, the picture hitherto held fast is moved upwards on the separator 56, which in turn, as shown in Figure 12, has an aperture extending over the entire height or even only an aperture in the lowermost area, to allow the transporter 54 to pass.

During the return stroke of the slider member, the returning pile will slide over the transporter 54, but it will not contact the retentive covering 55, since the segment 54 will be rotated so far that the covering does not contact the lowermost picture of the pile which can easily slide over the now exposed smooth face of the element 54.

As a result of the static friction, which is naturally present even on the smooth face of the segment, the segment is automatically turned during the next withdrawal of the slider member so that the retentive covering 55 is once again at the top.

Figure 13 shows a slightly different embodiment of the transporter, which in this case is in the form of a segment of a cylinder which can slide back and forth in an arcuate movement on a corresponding cylindrically curved protuberance 59 on the resilient tongue 53, and has axially parallel end stops. Similar end stops 49 are shown also in Figure 14, which again shows the transporter of Figures 9 to 12 on a larger scale.

The means for disabling the transporting function when the slider member is drawn out which has been described above with reference to Figures 1 to 8a, may be similarly or analogously employed in this embodiment too, but obviously in this case an additional lid, like the lid 2, is not necessary, because the slider member brings out the entire pile including the lowermost picture. For example, the resilient tongue 53 can be pressed under support ribs, by means of a slider member, or the segment 54 can be held fast in the disabled position by a knob accessible from the outside, or the like.

Obviously, instead of the rotatable segment 54 coated with a retentive covering, a simple catch can also be used, provided that the pictures to be stacked are adequately thick and flat. It is obvious also that the separator, instead of the support at the end face, can hold fast the pile at the side by means of friction.

A further embodiment is illustrated only schematically with reference to the Figures 15 to 19.

Figure 15 shows the housing 70, the slider member 72, the pile 74, the separator 76 and supporting elements 78, here indicated only as bars.

It is assumed that a picture 80 rests on the bars 78. When the slider member 72 (Figure 16) is drawn out, the support elements 78 arranged in the slider member transport the uppermost picture 80 out and by means of a transporter (not shown) the uppermost picture 82 of the pile, lying under the support elements 80, is taken along a small distance.

When the slider member 72 is completely drawn out, the support elements 78 are disabled, indicated in Figure 17 by simply being omitted. Then, when the slider member is pushed in again very slightly (Figure 18), the support arrangement is brought back into the starting position and runs under the raised edge 84 of the picture 82, so that the picture is moved into the display region, formed between the support elements 78 and the viewing aperture 86.

In Figures 15 to 19 it has not been illustrated, for sake of clarity, how the uppermost picture 80 has been shifted a small distance by means of the transporter. In addition to this possibility to shift the uppermost picture a small distance, the picture may be turned, bulged, or simply lifted from the pile at least at its edge adjacent the slider opening. The purpose is to facilitate the reinsertion of the support element between this picture and the remaining pile. Lifting, turning, bulging or shifting of the picture, preferably occurs by means of a separating element which engages the picture side facing away from the pile. The separating element may act by means of suction, of electrostatic or magnetic attraction, by means of a bonding compound or a gluing compound or finally by means of a so-called "burdock" system. Eventually, the picture is pretreated at its side facing the separating element to facilitate or even permit the movement of the picture by means of said separating element.

A simple system elected from the possibilities mentioned above, is illustrated in Figure 15a. In the lateral wall of the housing a cam groove 500 extends parallel to the slider movement, and has a widened portion 501 extending in direction to the pile. The drawer side bar 505 adjacent this side wall has an elongated hole 502 extending perpendicularly with respect to said cam groove 500. A shaft 503 having preferably a non-circular section shape, extends transversely over the slider and through its symmetrically disposed elongated

holes 502 and into the grooves 500. Upon pulling of the slider, thus, shaft 503 moves together with the slider in outward direction, guided along the groove 500. Along the free portion of shaft 503, a bonding coating 504 as a transporting medium is provided. Adjacent the outermost end position the shaft is within the widened portion 501 and is pushed downwardly by means of a compression spring disposed, e.g. in elongated hole 502, the bonding coating 504 engaging the uppermost picture of the pile, lifting it, and transporting it over the separator disposed in the housing. In this way, the separating motion of said one picture from the remaining pile simply indicated in Figures 15 to 19 may be obtained.

The last embodiment is shown in Figures 20 to 23. The support elements 401 are a pair of L-shaped curved yokes, which are mounted at one end in the slider member and can pivot, urged downwards by means of spring 410, as soon as their lateral projections 402 have passed the end edges of the housing as the slider member is pulled out. The picture disposed above the support elements then falls down onto the pile taken along the slider member. The bottom-most picture of the pile is retained below in the housing when the slider member is pulled out by a retentive element or other transporter not shown. On reinserting the slider member, the separator 403 engages beneath the edge of the picture 405 which is lifted onto the yokes 401 again pivoted inwards. In this embodiment the distance from the viewing window can be minimal. Figure 23 shows the shape of window 408 in drawer 409 through which the projections 402 extend.

The device may be provided with further modifications alternatively or in combination, in order to improve its use.

These modifications include pliable support at the back face, means to hang the device as a frame, interchangeable additional frames to be fastened by some means at the front face and having different shapes and surface treatments, the biasing of the slider by means of a spring into its fully opened or fully closed position, the division of the housing wall comprising the window into a multiplicity of windows each one related to a pile of pictures, and another one to a pile of text cards, picture and text eventually being disposed on a common information carrier. Further, the window wall of the housing may be provided with spaces to permit a user to make notes thereon.

Further, there is a possibility to provide a space within the device, preferably stationary within the housing, to store, e.g. the negative belonging to the photo negative disposed in the slider. Finally, the device may be provided at its front and on its rear face with a window each in which case, of course, two different sliders are mounted in parallel.

Reference is made to six co-pending British patent applications filed concurrently with this application by the same applicant, which disclose arrangements which may be within one or more

of the claims of this application and which have claims which may be infringed by the embodiments described herein. The co-pending applications are 78.37449, 78.37451, 78.37452, 78.37454, 78.37455 and 78.37536.

Claims

1. A picture storage box and viewer device with a change mechanism for changing the picture displayed, having a housing with a viewing window, and a slider member mounted in the housing so as to slide between two positions to describe a withdrawal stroke and a return stroke, there being provided means effective during the withdrawal stroke of the slider member to remove an individual picture adjacent one end of an inserted pile of pictures and effective during the return stroke of the slider member to replace that picture adjacent the other end of the pile, the means including a transporter for moving the individual picture relative to the pile of pictures and a separator for holding the remainder of the pile whilst the individual picture is moved, wherein there are provided adjacent the viewing window, mounted on the housing or the slider member, support elements for supporting a picture to be viewed, which support elements are disabled temporarily by the withdrawal stroke of the slider member in order to convey that picture into the space beneath the supporting elements.
2. A device according to claim 1, wherein the support elements are disabled by bending or moving them apart, tilting them away from each other or pivoting them away from each other.
3. A device according to claim 1 or 2, wherein the transporter is arranged so as to engage the end of said pile of pictures remote from the viewing window.
4. A device according to any one of the claims 1 to 3, wherein the transporter comprises a resilient means with a retentive, tacky or high friction covering.
5. A device according to claim 4, including a means for preventing the retentive, tacky or high friction covering from pressing against a pile of pictures during the return stroke of the slider member.
6. A device according to any one of the claims 1 to 5, in which the transporter is mounted on the housing and the separator is mounted on the slider member.
7. A device according to any one of claims 1 to 5, in which the transporter is mounted on the slider member and the separator is mounted on the housing.
8. A device according to claim 1, wherein the support elements are mounted on the slider member and also mounted on the slider member is a first transporter for a picture lying on the support elements and a second transporter for transporting a picture lying directly beneath the support elements along part of the length of the slider path to a position in which on the return stroke of the slider member the last-mentioned picture lies above the separator and the support elements engage beneath the edge of the said last-mentioned picture.
9. A device according to one of the claims 1 to 8, including auxiliary elements for assisting the conveyance of a picture into the space beneath the support elements.
10. A device according to claim 1, wherein the support elements are springs deformable upon pulling out of the slider.
11. A device according to claim 2, wherein the support elements are resiliently biased into their inactive position.
12. A device according to claim 10, wherein the support elements are bent of an integral elastic steel bar.
13. A device according to any of the preceding claims, wherein the housing is provided with a lid permitting removal of a picture pile.
14. A device according to claims 4 and 6, wherein the housing is provided with a lid permitting removal of a pile of pictures and the retentive, tacky or high friction covering is inactivated upon removal of the lid.
15. A device according to claim 6, wherein the housing is provided with a separating element by means of which the uppermost picture of the pile may be shifted, turned, bulged, or lifted with respect to the remaining pile into a position facilitating the reinsertion of the support element between said one picture and the remaining pile.
16. A device according to claim 15, wherein said separating element engages the picture side facing away from the pile by means of suction, adhesion, burdock system, static or magnetic attraction.
17. A device according to claim 16, wherein the separating element is designed to co-operate with a picture pretreated for this purpose.
18. A device according to any of the preceding claims, wherein the slider is biased by means of a spring into its closed or open position.
19. A device according to any of the preceding claims, wherein the device has two or more viewers windows, each provided with its own slider.
20. A device according to any of the preceding claims, wherein the or each window is divided into at least two individual windows for separate or common pictures.
21. A device according to any of the preceding claims, including a storing space, preferably disposed stationarily in the housing to receive negative strips belonging to photo positives disposed in the slider.
22. A picture storage box and viewer device with a change mechanism for changing the picture displayed substantially as herein described with reference to Figures 1 to 4, 6, 6a and 7 or modified as described with reference to Figure 5,



of the claims of this application and which have claims which may be infringed by the embodiments described herein. The co-pending applications are 78.37449, 78.37451,
5 78.37452, 78.37454, 78.37455 and 78.37536.

Claims

1. A picture storage box and viewer device with a change mechanism for changing the picture displayed, having a housing with a viewing
10 window, and a slider member mounted in the housing so as to slide between two positions to describe a withdrawal stroke and a return stroke, there being provided means effective during the withdrawal stroke of the slider member to remove
15 an individual picture adjacent one end of an inserted pile of pictures and effective during the return stroke of the slider member to replace that picture adjacent the other end of the pile, the means including a transporter for moving the
20 individual picture relative to the pile of pictures and a separator for holding the remainder of the pile whilst the individual picture is moved, wherein there are provided adjacent the viewing window, mounted on the housing or the slider
25 member, support elements for supporting a picture to be viewed, which support elements are disabled temporarily by the withdrawal stroke of the slider member in order to convey that picture into the space beneath the supporting elements.
30 2. A device according to claim 1, wherein the support elements are disabled by bending or moving them apart, tilting them away from each other or pivoting them away from each other.
35 3. A device according to claim 1 or 2, wherein the transporter is arranged so as to engage the end of said pile of pictures remote from the viewing window.
4. A device according to any one of the claims 1 to 3, wherein the transporter comprises a
40 resilient means with a retentive, tacky or high friction covering.
5. A device according to claim 4, including a means for preventing the retentive, tacky or high friction covering from pressing against a pile of
45 pictures during the return stroke of the slider member.
6. A device according to any one of the claims 1 to 5, in which the transporter is mounted on the housing and the separator is mounted on the
50 slider member.
7. A device according to any one of claims 1 to 5, in which the transporter is mounted on the slider member and the separator is mounted on the housing.
55 8. A device according to claim 1, wherein the support elements are mounted on the slider member and also mounted on the slider member is a first transporter for a picture lying on the support elements and a second transporter for
60 transporting a picture lying directly beneath the support elements along part of the length of the slider path to a position in which on the return stroke of the slider member the last-mentioned picture lies above the separator and the support
65 elements engage beneath the edge of the said last-mentioned picture.
9. A device according to one of the claims 1 to 8, including auxiliary elements for assisting the conveyance of a picture into the space beneath the support elements.
70 10. A device according to claim 1, wherein the support elements are springs deformable upon pulling out of the slider.
11. A device according to claim 2, wherein the support elements are resiliently biased into their inactive position.
75 12. A device according to claim 10, wherein the support elements are bent of an integral elastic steel bar.
80 13. A device according to any of the preceding claims, wherein the housing is provided with a lid permitting removal of a picture pile.
14. A device according to claims 4 and 6, wherein the housing is provided with a lid
85 permitting removal of a pile of pictures and the retentive, tacky or high friction covering is inactivated upon removal of the lid.
15. A device according to claim 6, wherein the housing is provided with a separating element by means of which the uppermost picture of the pile
90 may be shifted, turned, bulged, or lifted with respect to the remaining pile into a position facilitating the reinsertion of the support element between said one picture and the remaining pile.
95 16. A device according to claim 15, wherein said separating element engages the picture side facing away from the pile by means of suction, adhesion, burdock system, static or magnetic attraction.
100 17. A device according to claim 16, wherein the separating element is designed to co-operate with a picture pretreated for this purpose.
18. A device according to any of the preceding claims, wherein the slider is biased by means of a
105 spring into its closed or open position.
19. A device according to any of the preceding claims, wherein the device has two or more viewers windows, each provided with its own slider.
110 20. A device according to any of the preceding claims, wherein the or each window is divided into at least two individual windows for separate or common pictures.
21. A device according to any of the preceding
115 claims, including a storing space, preferably disposed stationarily in the housing to receive negative strips belonging to photo positives disposed in the slider.
22. A picture storage box and viewer device
120 with a change mechanism for changing the picture displayed substantially as herein described with reference to Figures 1 to 4, 6, 6a and 7 or modified as described with reference to Figure 5,



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7a and/or 8; as described with reference to
Figures 9 to 12 and Figure 13 or 14; as described

with reference to Figures 15 to 19; or as
described with reference to Figures 20 to 23.

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