Nov. 3, 1953 D. M. KNOX 2,657,488

INVERTIBLE AND ADJUSTABLE PICTURE HOLDER

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Fig. 2

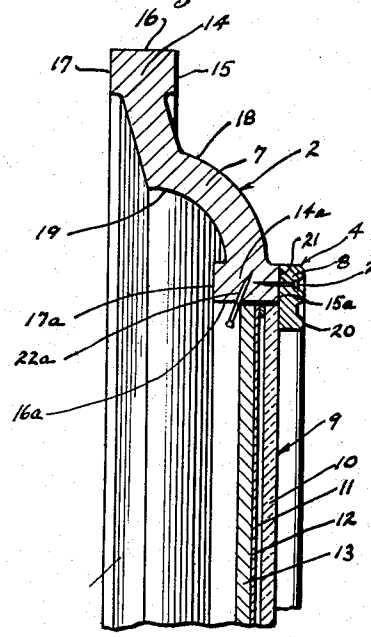


Fig. 3

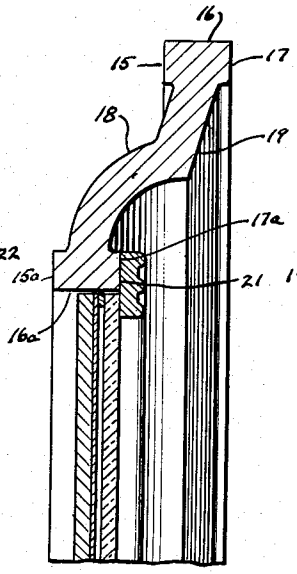
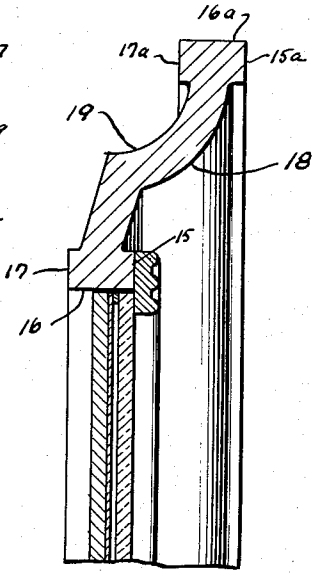


Fig. 4



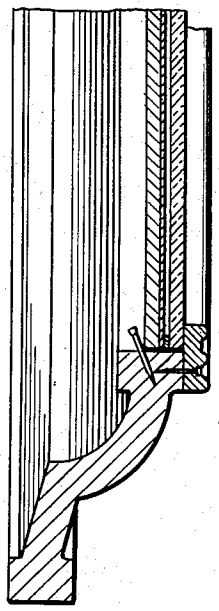


Fig. 5

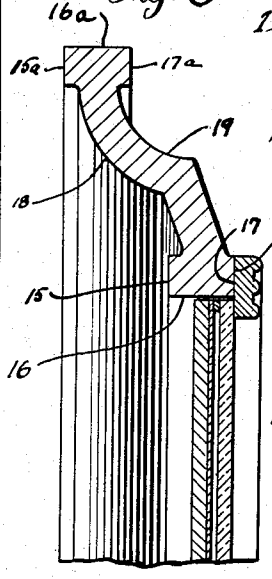
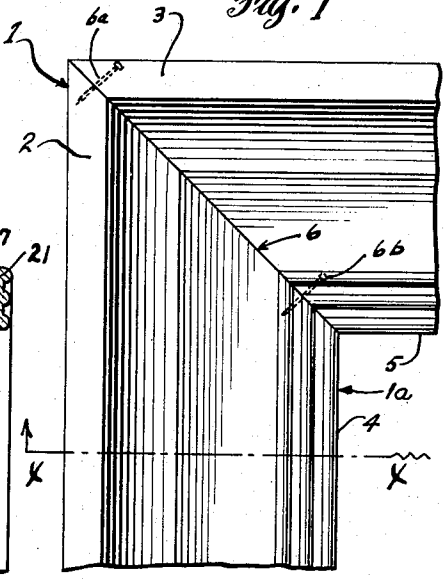


Fig. 1



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Fig. 6

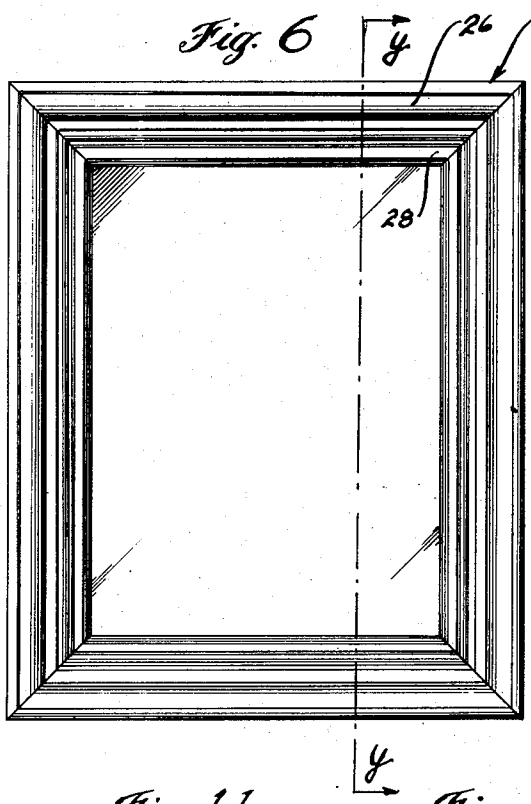


Fig. 7

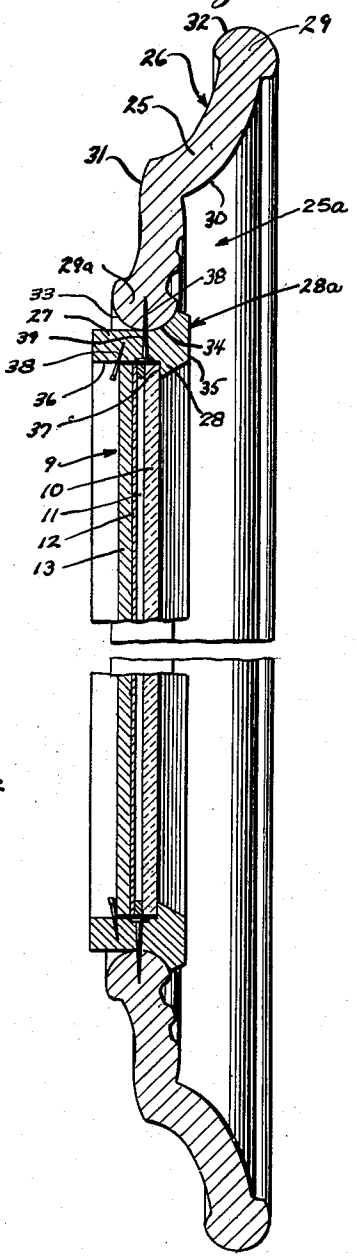


Fig. 11

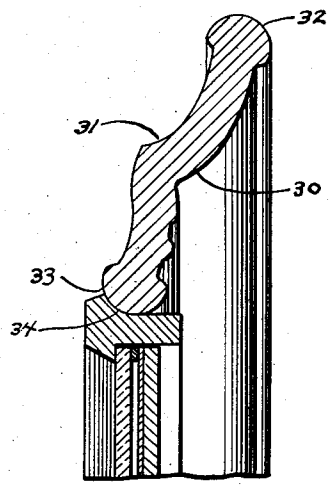
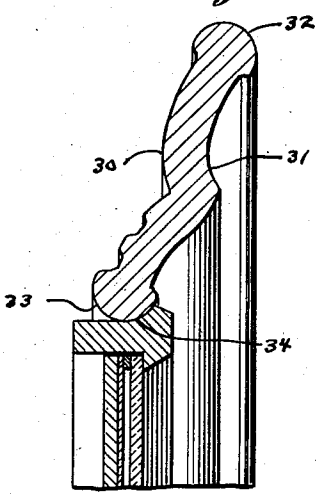


Fig. 9



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Fig. 8

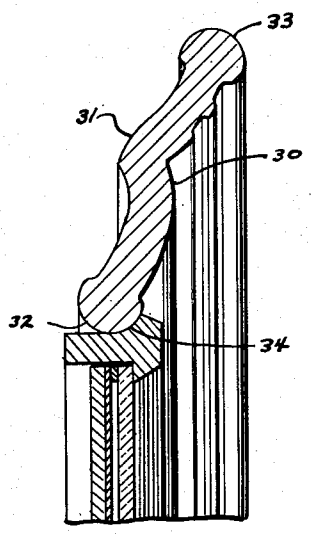


Fig. 10

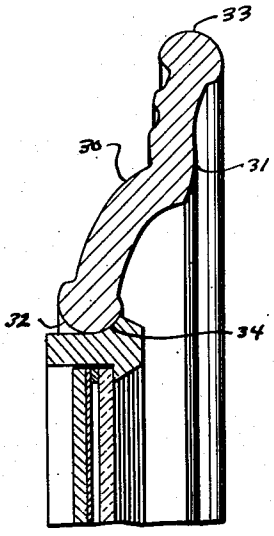


Fig. 12

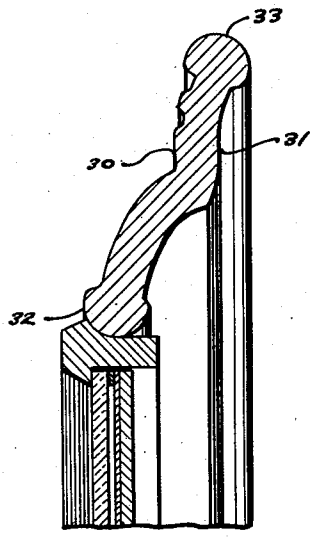


Fig. 13

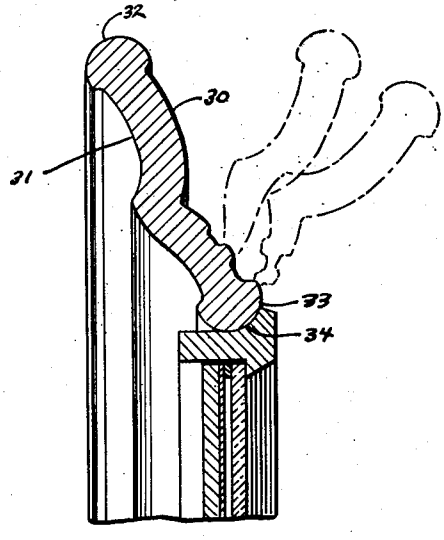


Fig. 14

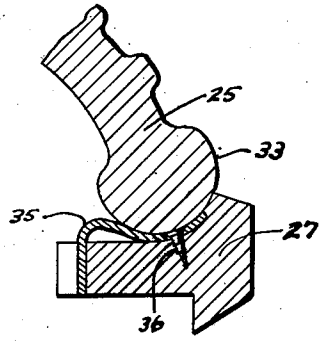
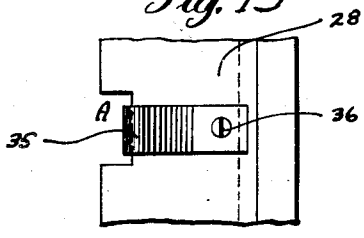


Fig. 15



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UNITED STATES PATENT OFFICE

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INVERTIBLE AND ADJUSTABLE PICTURE HOLDER

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Application March 28, 1951, Serial No. 217,954

6 Claims. (Cl. 40—152)

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This invention relates to holders for the carrying of pictures or the like and contemplates a holder adaptable in a wide variety of styles and is particularly concerned with the molding members for such.

The holders of the present invention are characterized by having inner and outer frames respectively comprising molding members of novel but differing cross sectional design; the inner and outer frames being detachable from one another and adapted to cooperate in a special manner. The inner frame is adapted to carry a picture or the like.

The invention contemplates a frame constructed with molding members of such novel cross sectional design that from a single outer molding section and a single inner molding section the holder is adaptable in a wide variety of styles or face-effects; for example, the plane of the picture may be projected or retracted from a plane through the holder at its outer edges and in either of these positions the face of the outer frame may be changed in several ways.

The holders of the present invention have particular advantages and desirable qualities from the standpoint of manufacturing. Without an extensive stock of frame components a wide diversity of holder sizes, styles, colors, finishes and planar disposition of the picture with respect to the holder is possible. According to the invention a single molding section is adaptable to secure varied artistic results without the necessity of extensive hand and machine work.

In addition, the holders of the present invention have a decided advantage for the user. Not only may the physical arrangement of the holder be changed but it may be conveniently changed in coloring or tinting. Thus the holder may be brought into harmony with the asthetic features of the picture itself and may easily be adapted to fit the decorative scheme of the surroundings.

An outer frame is constructed with a plurality of similar molding members each having two opposite edge portions and two opposite face surfaces and is, in cross section, generally elongated along an axis through the edge portions. The molding is asymmetric in cross section, that is to say, the faces are constructed with differing contours. The edge sections of the molding may be identical in shape and are adapted to abut the molding of the inner frame in a plurality of relative angular positions of engagement providing for projection or retraction of the picture with respect to a plane through the holder at its outer edges.

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An inner frame is constructed with a plurality of similar molding members each having a section for engagement with the corresponding molding of the outer frame and is further adapted as a mounting means for the picture ensemble, i. e., backing, picture, mat and glass. The inner frame is secured to the outer frame either by conventional means such as brads or by a novel locking arrangement which will be described more fully below. The ends of the molding parts, abut at the corners by means of miter joints.

An important feature of the invention is the variety of face-effects which is made possible by the unsymmetrical double faced outer molding member, the variable interrelation of the cut for the miter joint with respect to the structure of the outer frame and the variable interrelation of one or the other of the two edges of the outer frame member with respect to the inner frame. The novel result of this feature is brought out more fully in the description of the two embodiments following.

For instance, in one embodiment of my invention where the face of the picture is, for example, retracted from a plane through the holder at its outer edges, the face may be projected by merely inverting the outer frame with respect to the inner frame. Since the contours of the faces are different, one face-effect is provided in projection and a different face-effect in retraction. However, if the cut for the miter joint is made at an angle 90° from that made for the frame described above, a similar frame is provided which permits projection and retraction of the picture except that the face-effects in projection and retraction are different from the above face-effects. Thus four different styles of picture holders are provided from one molding section, i. e., two face-effects in projection and two face-effects in retraction. In this particular embodiment of my invention the depth or extent of the projection or retraction of the picture with respect to the holder is fixed.

In the preferred embodiment of the present invention special cooperation between the engagement of the inner and outer frames is secured by means of a ball or an adjustable angle joint. The molding members are thus adapted to permit a selection of the depth or extent of the projection or retraction of the picture with respect to the holder. This is of particular importance because with each different selection of depth—a different face-effect is produced. Thus, between the angular limits of the joint the selection of face-effect is, within practical reason, limitless. And in

addition, for any one selected depth of projection or retraction of the picture, four different changes in the face surface presented to the viewing side may be made. Still further, in this embodiment of the invention I have provided a novel arrangement for locking the inner and outer moldings in position.

How the holders of the present invention are constructed and how the advantages are achieved will be brought out more fully in the following description of the invention. Referring to the accompanying drawings:

Figure 1 is a fragmentary face view of a picture holder constructed according to my invention, illustrating the inner and outer frames, each formed of molding members abutting by means of a miter joint;

Figure 2 is a view taken on section line X—X of Figure 1 and illustrates the cross section of the inner and outer frames of one embodiment of my invention together with the cross section of the picture ensemble. As illustrated, the plane of the picture is projected forwardly from a plane through the holder at its outer edge;

Figure 3 is a fragmentary view similar to Figure 2 except that the outer frame has been inverted face for face with respect to the inner frame, so that the plane of the picture is retracted from a plane through the holder at its outer edge, and thus a different face surface appears on the viewing side;

Figure 4 is a view similar to Figure 3, except that the molding members of the outer frame have been turned edge for edge and inverted face for face with respect to the inner frame, so as to present a third face appearance on the viewing side. In cutting the moldings of the outer frame for this arrangement, the angle of the cut for the miter joint with respect to the longitudinal axis of a molding member must be at 90° to that selected for the assembly shown in Figure 3;

Figure 5 is a view similar to Figure 2 except that the molding members of the outer frame have been turned edge for edge and inverted face for face with respect to the inner frame, so that a fourth face appearance is presented on the viewing side. Again, the angle of the cut for the miter joint with respect to the longitudinal axis of a molding member must be 90° from that selected for the assembly shown in Figure 2;

Figure 6 is a full face view of a picture holder constructed in accordance with a second embodiment of my invention, this view being to a smaller scale than the others;

Figure 7 is a view taken on the section line Y—Y of Figure 6 and illustrates the cross-section of the inner and outer molding frames of this embodiment of my invention, together with the cross-section of the picture ensemble. As illustrated, the plane of the picture is retracted from a plane through the holder at its outer edge;

Figure 8 is a view similar to that shown in Figure 7 except that the molding members of the outer frames are turned edge for edge with respect to the inner frame, illustrating the fact that although the same face surface is on the viewing side a different face-effect is provided. The angle of cut of the outer molding for the miter joint must here be 90° from that selected for the assembly shown in Figure 7;

Figure 9 is a view similar to Figure 7 except that the outer molding members are inverted face for face, thus illustrating a different face surface on the viewing side;

Figure 10 is a view similar to that shown in Figure 7 except that the molding members of the outer frame are turned edge for edge and inverted face for face with respect to the inner frame and illustrating a different face surface on the viewing side. Again, the angle of the cut for the miter joint must be 90° from that selected for the assembly shown in Figure 7;

Figure 11 is a view similar to that shown in Figure 9 except that the outer frame has been inverted face for face with respect to the inner frame so that the plane of the picture is projected from a plane through the holder at its outer edges, thus showing a different face surface on the viewing side;

Figure 12 is a view similar to that in Figure 11 except that the molding members of the outer frame are inverted face for face and turned edge for edge with respect to the inner frame, thus showing a different face surface on the viewing side. The angle of the cut for the miter joint must be 90° from that selected for the assembly shown in Figure 11;

Figure 13 illustrates the novel pivotal joint arrangement employed in the second embodiment of my invention;

Figures 14 and 15 illustrate, to a larger scale, a spring latch by means of which the inner and outer frames may be detachably locked in position.

By reference now to Figures 1 and 2, it will be seen that outer frame 1 of my invention, comprises molding members generally indicated by the reference numerals 2 and 3 and that the inner frame 1*a* comprises molding members indicated by the reference numerals 4 and 5. The ends of the molding members abut by means of miter joint 6 being secured together at the miter joint, for example, by means of brads 6*a* and 6*b* to form the respective frames.

In Figure 2 the cross-sectional area of the outer molding member 2 is indicated by the reference numeral 7. The cross-sectional area of the inner molding member 4 is indicated by the reference numeral 8; also illustrated is the cross-section of the picture ensemble 9 comprising glass 10, mat 11, picture 12 and backing 13.

The cross-sectional area 7 is defined by the outer boundaries of the two opposite edge portions 14 and 14*a* and the two interconnecting dissimilar face surfaces 18 and 19. The cross-sectional area is generally elongated along an axis through the opposite edge portions, and is asymmetric about a plane transverse the axis of elongation. The edge portions 14 and 14*a* may be, and in this case are, defined by plane surfaces 15, 16, 17, and 15*a*, 16*a*, 17*a* respectively. The cross-sectional area 8 of the inner molding member 4 is defined by a line representing a configured surface 20 and another line representing plane surface 21. The configured surface 20 represents the front side of the inner frame, that is to say, the side from which the picture is viewed.

Engagement of the outer and inner frames is made by the abutment of plane surface 15*a* and part of plane surface 21. The inner frame may be secured to the outer molding, for example by a brad 22 through surface 20 engaging the end portion 14*a*. As will be brought out more fully hereinafter, surfaces 15, 17 and 17*a* are also adapted as means for engagement of the inner and outer frames. Plane surface 21 of the inner molding member and plane surface 16*a* are adapted to serve as means for holding the picture ensemble in the inner frame. The picture ensemble is

secured in the inner frame by means of brads 22a.

An important feature of the present invention is the location of the picture with respect to the outer edges of the holder. The novel design of the cross-section of the outer molding member permits either projection or retraction of the plane of the picture from a plane through the holder at its outer edges. For example, in Figure 2 the plane of the face of the picture is projected from a plane through the holder at its outer edges (i. e. adjacent the face 17). On Figure 3 the plane of the face of the picture is retracted from a plane through the holder at its outer edges. How this feature is accomplished will be readily seen by an inspection of the cross-sectional area of a molding member for the outer frame.

Abutment surfaces 15, 15a, 17 and 17a are preferably parallel to one another. Surfaces 16 and 16a are preferably parallel to one another and normal to the abutment surfaces. It is noted that a plane through the mid point of 16a parallel to surfaces 15 and 17 and a plane through the mid point of 16a parallel to surfaces 15a and 17a are parallel to each other. Thus it is seen that the edge portion 14 and 14a are offset from one another. When an abutment surface of one edge portion is engaged with the inner picture carrying molding, the plane of the picture will be projected or retracted from a plane through an abutment surface at the opposite edge portion. In this embodiment the depth or extent of the projection or retraction is fixed and depends upon the amount of offset between edge portions 14 and 14a.

The picture may either be projected or retracted by merely inverting the outer frame with respect to the inner frame. This will be clear from an inspection of Figures 2 and 3 or Figures 4 and 5; in both cases the outer frame has been inverted. In either case it is noted that there is a change in face effect; for example, in Figure 2 surface 18 serves as the front face while in Figure 3 surface 19 serves as the front face.

In addition to permitting projection or retraction of the picture (with change in face-effect) the present invention permits a selection in holder face-effect either in projection or retraction. How this is accomplished will be seen by inspection of Figures 2 and 5. In both of these views the plane of the picture is projected from a plane through the holder at its outer edges. In Figure 2, surface 18 provides the front face while in Figure 5 surface 19 provides the front face. The face surface for the viewing side is determined by the direction of the cut for the miter joint with respect to the longitudinal axis of the outer molding member. For example, the direction of the cut as illustrated in Figure 1 provides for the assembly as shown in Figure 2. If the cut for the miter joint were made at 90° to that just mentioned, this would provide for an assembly as illustrated in Figure 5 with surface 17 abutting surface 21. In both of these views the plane of the picture is projected yet different face-effects are provided. It is preferable that the cut for the miter joint be made so that when the molding members are assembled into a frame, planes through the miter joints are perpendicular to the plane of the picture.

Where the plane of the picture is retracted, a selection of face effects may also be made. This is illustrated in Figures 3 and 4. In Figure 3 surface 19 provides the front face while in Figure 4 surface 18 provides the front face. The difference in face-effect is made as explained above, i. e., determined by the direction of the cut for the miter joint.

Thus from one molding section four different holder face-effects are provided.

Another embodiment of the present invention is illustrated in Figures 6 through 13.

Figure 6 is a full face view of a holder 23 constructed in accordance with the present invention. Figure 7 is a view taken through a section Y—Y of Figure 6 and illustrates the cross-sectional area 25 of molding member 26 of the outer frame 25a and the cross-sectional area 27 of molding member 28 of the inner frame 28a. Also illustrated in Figure 7 is the cross-section of the picture ensemble 9 comprising glass 10, mat 11, picture 12 and backing 13.

The cross-sectional area 25 of the outer molding member 26 is, in this embodiment, defined by the outer convex boundaries 32 and 33 of the two opposite edge portions 29 and 29a and by the two opposite, interconnecting, dissimilar face surfaces 30 and 31. The cross-sectional area 25 is generally elongated along an axis through the opposite edge portions 29 and 29a and is asymmetric about a plane transverse the axis of elongation.

The cross-sectional area 27 of the inner molding member 28 is partly defined by a line representing surface 34 which is generally concave in shape corresponding to the convex surfaces 32 and 33 of the outer molding member. It is also partly defined by lines representing surfaces 35 and 36. Surface 35 corresponds to the front side of the frame, that is to say the side from which the picture is viewed. Surfaces 36 and 37 are adapted to serve as means for holding the picture ensemble in the frame. The picture ensemble is secured in the frame by means of brad 38.

As illustrated in Fig. 7 the engagement of the outer and inner frames is made by the abutment of convex surface 33 and concave surface 34. As will be brought out more fully hereinafter convex surface 32 is also (alternatively) adapted to abut the inner molding member. The inner and outer frames are secured together as by brad 39.

As has been pointed out heretofore, one of the important features of the present invention is the provision for projection and retraction of the plane of the picture with respect to a plane through the holder at its outer edges and for change in face-effects in projection and retraction. These features are made possible by the novel design of the cross-sectional area of the molding members of the outer frame, the variable interrelation of the cut for the miter joint with respect to the outer molding and the variable interengagement between the inner and outer frames. This embodiment of the invention (which is the preferred embodiment) permits not only projection or retraction but also provides for a wide selection of the depth or extent of the projection or retraction. In addition the design permits, for any one selected depth or extent of projection or retraction at least four different changes in the face surface presented to the viewing side. How these features are brought about is described more fully below.

How the four different changes in face-effect are accomplished in retraction is illustrated in Figures 7, 8, 9 and 10. This is described in the three paragraphs following.

In Figure 7 face surface 30 is presented to the viewing side of the frame. In Figure 8 surface 30

is also presented to the front of the frame; however, the contours are changed in position relative to the inner molding member, hence, a change in face-effect. To secure this change, the outer molding members are turned edge for edge with respect to the inner molding so that convex surface **32** (instead of the surface **33**) abuts concave surface **34**. This is accomplished by making the cut for the miter joint at 90° relative to the direction of cut selected for the assembly illustrated in Figure 7.

Comparing Figures 7 and 9, it is seen in Figure 9 that face surface **31** is presented to the front instead of face surface **30**. This is accomplished by merely inverting the outer molding members face for face with respect to the inner molding. Note in both instances convex surface **33** engages concave surface **34**.

A comparison of Figure 7 and Figure 10 shows that in Figure 10 surface **31** is exposed to the picture front. The difference in face-effect between Figures 7 and 10 is accomplished by making the cut for the miter joint for the assembly shown in Figure 10 90° from that selected for the assembly as shown in Figure 7, and selecting surface **31** as the front surface with concave surface **32** engaging surface **34**. It might be pointed out that in Figure 9 surface **31** is also exposed to the picture front, but the face-effects are different because the relative positions of the contours have been changed.

When the picture is retracted from the frame it may be projected by merely inverting the outer frame with respect to inner frame. (The assembled molding as a whole is inverted not merely the molding members individually.) This may be done with each of the four assemblies illustrated in Figures 7, 8, 9 and 10. For example an inspection of Figures 7 and 11 shows that the outer frame has been inverted, thus projecting the plane of the picture with respect to a plane through the frame at its outer edges. In Figure 11, surface **31** is exposed to the viewing side and convex surface **33** engages concave surface **34**.

When the plane of the picture is projected from the frame, four different face-effects may also be selected. This is accomplished as explained above, i. e., by inverting the molding members face for face or turning edge for edge with respect to the inner molding with appropriate selection of the direction of cut for the miter joint. By way of example a comparison of Figures 11 and 12 shows that the molding member has been inverted face for face and turned edge for edge with respect to the inner molding. The direction for the cut of the miter joint for the assembly illustrated in Figure 12 is 90° from that of Figure 11.

Another important feature of the present embodiment of my invention is the provision for selection of the depth or extent of the projection or retraction of the picture with respect to the frame. How this is accomplished will be readily apparent from inspection of Figure 13 where it is clear that by means of the novel engagement of surfaces **33** and **34** the outer molding member may be moved relative to the inner molding. Thus in constructing a picture holder the depth or extent of the projection or retraction is determined, the cut for miter joint is made accordingly and the components of the frame secured together. This feature is particularly advantageous because it permits of nice discrimination with respect to the angle between the frame and the picture. Also it will be readily apparent that between the angular limits of the ball or variable angle joint the selection of differing face-effects is, within practical reason, limitless.

From the above description, together with the figures shown in the drawings, it is readily apparent that either in projection or retraction of the picture with respect to the frame, four different face-effects may be selected from one molding section together with wide diversity in the extent of the projection or retraction.

Another feature of the preferred embodiment of the invention is a novel arrangement for locking the inner and outer frames in position. This is clearly illustrated in Figures 14 and 15. The lock **35** is comprised essentially of a small piece of resilient material such as steel or brass which is rectangular in shape and at least one portion of which is formed generally with the contour of surface **34**. A plurality of these springs are attached to the inner frame say for example one on each side of the four molding members. The spring is attached to the concave surface of the molding member by means of small screw **36**. In assembling the inner and outer frames the inner frame is pushed through the opening of the outer frame and the spring is forced back through the recess A and snaps to locking position after the ball end of the outer molding passes the locking bulge of the spring.

I claim:

1. A holder for pictures or the like having an outer frame engaging an inner frame: the inner frame comprising molding members which are respectively counterparts in cross section and abutting by means of a mitered joint to form the inner frame, each said molding member having a first shoulder paralleling the longitudinal axis thereof for supporting a picture and further having a second shoulder paralleling the longitudinal axis thereof for engaging a molding member of the outer frame; and the outer frame comprising molding members which are respectively counterparts in cross section and abutting by means of a mitered joint to form the outer frame, each of the molding members of the outer frame having two opposing dissimilarly configured face surfaces and two similarly configured edge portions paralleling the longitudinal axis thereof, each of said edge portions having a pair of seating surface areas for engagement of the outer frame with the inner frame, either pair being usable according to the choice of the miter cut, the configuration of each of said seating surface areas being similar to the configuration of said second shoulder so that when the inner and outer frames are assembled in accordance with the miter cut, the said surface areas of the selected pair are alternatively engageable with the second shoulder whereby the plane of the first shoulder may be projected or retracted with respect to the general plane of the holder.

2. A construction in accordance with claim 1 wherein the face surfaces of the outer molding members are also unsymmetrically configured.

3. A holder for pictures or the like having an outer frame engaging an inner frame: the inner frame comprising molding members which are respectively counterparts in cross section and abutting by means of a mitered joint to form the inner frame, each said molding member having a first shoulder paralleling the longitudinal axis thereof for supporting a picture and further having a second generally flat shoulder paralleling the longitudinal axis thereof for engaging a molding member of the outer frame; and the outer

frame comprising molding members which are respectively counterparts in cross section and abutting by means of a mitered joint to form the outer frame, each of the molding members of the outer frame having two opposing dissimilarly configured face surfaces and two similarly configured edge portions paralleling the longitudinal axis thereof, each of said edge portions being defined in part by first plane edge surfaces parallel to one another, the midplane normal to each such edge surface being parallel to the other, said edge portions also being defined by second plane edge surfaces parallel to each other disposed adjacent and normal to said first edge surfaces and adjacent the face surfaces, said second edge surfaces forming at each edge a pair of seating surfaces for engaging the outer frame with the inner frame, either pair being usable according to the miter cut, the selected pair being alternatively engageable with said second shoulder whereby the plane of the first shoulder may be projected or retracted with respect to the general plane of the holder.

4. A holder for pictures or the like having an outer frame engaging an inner frame: the inner frame comprising molding members which are respectively counterparts in cross section and abutting by means of a mitered joint to form the inner frame, each said molding member having a first shoulder paralleling the longitudinal axis thereof for supporting a picture and further having a second shoulder generally concave in shape paralleling the longitudinal axis thereof for engaging a molding member of the outer frame; and the outer frame comprising molding members which are respectively counterparts in cross section and abutting by means of a mitered joint to form the outer frame, each of the molding members of the outer frame having two opposing dissimilarly configured face surfaces and two similarly configured edge portions paralleling the longitudinal axis thereof, each said edge portion being defined by a convex surface corresponding to the concave surface of the said second shoulder, said convex surfaces forming a plurality of seating surface areas for engaging the outer frame with the inner frame, either edge and any of said seating surfaces thereof being usable according to the miter cut, the selected seating surface areas being alternatively engageable with said second shoulder whereby the plane of the first shoulder may be projected or retracted with respect to the general plane of the holder.

5. A holder for pictures or the like having an outer frame engaging an inner frame: the inner frame comprising molding members which are respectively counterparts in cross section and abutting by means of a mitered joint to form the inner frame, each said molding member having a first shoulder paralleling the longitudinal axis thereof for supporting a picture and further having a second shoulder generally concave in shape paralleling the longitudinal axis thereof for engaging a molding member of the outer frame; and the outer frame comprising molding members which are respectively counterparts in cross section and abutting by means of a mitered joint to form the outer frame, each of the molding members of the outer frame having two opposing dissimilarly configured face surfaces and an edge portion paralleling the longitudinal axis thereof being defined by a convex surface corresponding to the concave surface of said second shoulder forming a plurality of seating surfaces for engaging the outer frame with the inner frame, any of said seating surfaces being usable according to the miter cut, the selected seating surfaces being alternatively engageable with said second shoulder whereby the plane of the first shoulder may be projected or retracted with respect to the general plane of the holder.

6. A holder for pictures or the like having an outer frame engaging an inner frame: the inner frame comprising molding members which are respectively counterparts in cross section and abutting by means of a mitered joint to form the inner frame, each said molding member having a first shoulder paralleling the longitudinal axis thereof for supporting a picture and further having a second shoulder paralleling the longitudinal axis thereof for engaging a molding member of the outer frame; and the outer frame comprising molding members which are respectively counterparts in cross section and abutting by means of a mitered joint to form the outer frame, each of the molding members of the outer frame having two opposing dissimilarly configured face surfaces and an edge portion paralleling the longitudinal axis thereof and being defined by a convex surface forming a plurality of seating surfaces for engaging the outer frame with the inner frame, any of said seating surfaces being usable according to the miter cut, the selected seating surfaces being alternatively engageable with said second shoulder whereby the plane of the first shoulder may be projected or retracted with respect to the general plane of the holder.

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