E. H. HOLLISTER.

PRINTING FRAME.

APPLICATION FILED OCT. 12, 1914.

1,225,957. Patented May 15, 1917.

Fig. 1.

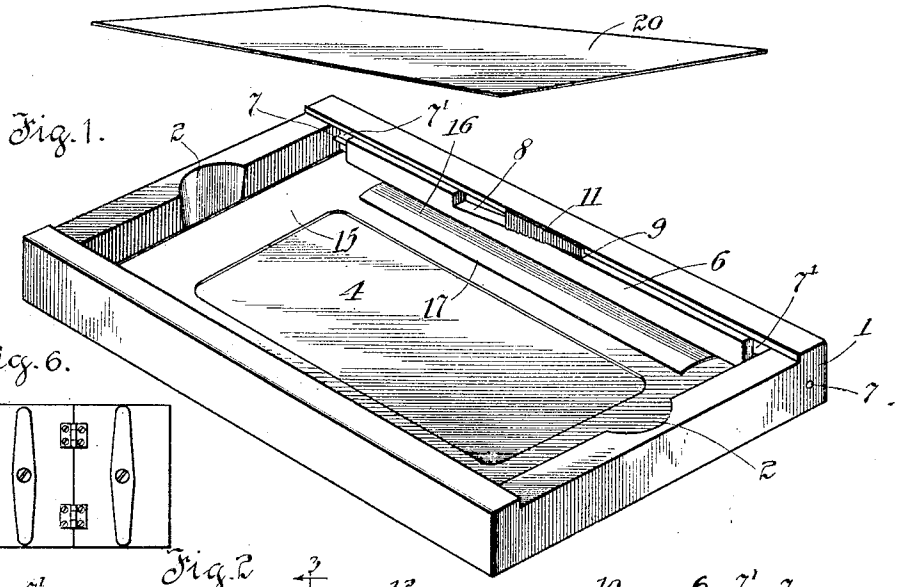


Fig. 6.

Fig. 2

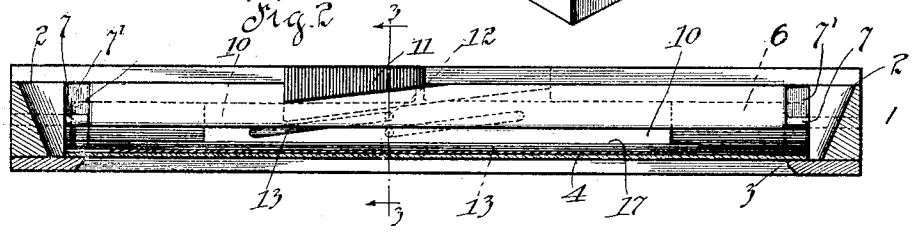


Fig. 3.

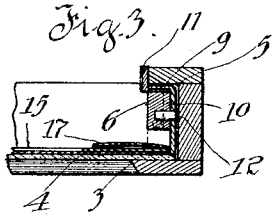


Fig. 4.

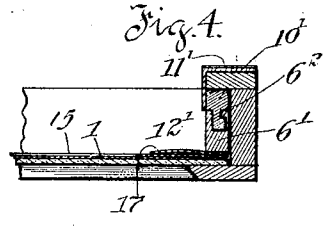
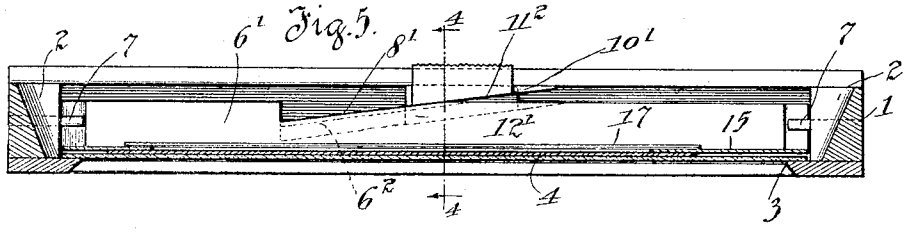


Fig. 5.



Witnesses

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PRINTING-FRAME.

1,225,957. Specification of Letters Patent. Patented May 15, 1917.

Application filed October 12, 1914. Serial No. 866,289.

To all whom it may concern:

Be it known that I, EDWIN H. HOLLISTER, a citizen of the United States, residing at Ashland, in the county of Saunders and State of Nebraska, have invented new and useful Improvements in Printing-Frames, of which the following is a specification.

The invention relates to frames and more particularly to printing frames such as are used in photography.

The printing frames of the prior art, in so far as I am aware, comprise a rectangular frame having a seat for the reception of the glass which is loosely placed therein. The film is next placed upon the glass and the sensitive paper laid upon the film with or without the interposition of a mask to determine the region of the sensitive paper affected. A back piece is then inserted and fastened in place by the usual resilient cleats the ends of which are slipped into the grooves or channels in the sides of the frame. Unless some special provision is made the glass, film, mask and sensitive paper are all loose in the frame and must be adjusted and manipulated for every print which it is desired to make from the same film; moreover if a small film is used in connection with a mask there is considerable difficulty in accurately positioning the film with relation to the mask. This positioning must be repeated for every print.

It is an object of my invention to provide a clamping means in connection with a printing frame whereby all the elements except the sensitive paper may be first accurately positioned and then firmly clamped in position.

It is another object of my invention to provide means whereby a film much smaller than the frame may be firmly held in position at any point in the printing frame.

Other objects and advantages of the invention will appear as the description to follow proceeds.

Figure 1 is a perspective view of the printing frame according to my invention. Fig. 2 is a longitudinal cross section thereof. Fig. 3 is a partial transverse cross section thereof upon the section line 3—3 of Fig. 2. Fig. 4 is a view similar to Fig. 3 but showing a modification of the invention and taken upon line 4—4 of Fig. 5. Fig. 5 is a view similar to Fig. 2 but showing a modification of the invention. Fig. 6 is a plan view of a folding pack customarily used in printing frames, well-known in the art.

Reference character 1 represents a printing frame of usual construction provided with the customary thumb notches 2 for the manipulation of the back piece. The frame is, as customary, provided with a projecting rim 3 at its lower face upon which rests the glass 4. One side of the frame is channeled out as shown at 5. In the recess 5 is provided a rectangular rod 6 of a width sufficient to come flush with the inside of the side piece of the frame and of a height considerably less than that of the recess. Pins 7 are mounted in the ends of the frame and overlap the cut away end portions 7′ of the rod 6 serving as guides to confine this rod in the recess. The rod 6 is provided with a beveled notch 8 therein into which fits the angled extension 9 of the back plate 10 which is considerably shorter than the inside length of the frame but still long enough to evenly space the rod 6 from the back of recess 5 and prevent it from wabbling. The roughened thumb piece 11 projects upwardly from the inner head of the extension 9 fitting closely against the inside of the frame and serves as a grip whereby the back piece 10 may be shifted longitudinally. Substantially at its mid portion the rod 6 is provided with a pin 12 which cooperates with the cam slot 13 in the back piece 10.

In operation it is obvious that as the thumb piece 11 is moved backward and forward the cam slot 13 acting upon the pin 12 will cause the rod 6 to rise and fall in the recess. The pane 4 is inserted into the frame in such a fashion that one of its edges projects underneath the rod piece. The film with or without a mask is then laid upon the glass 4 in such a fashion as to also project at one edge underneath the rod 6. The mask (if one is used) is placed upon the film and also extends at one edge under the rod 6. With the parts in this position it is obvious that by shoving the thumb piece 11 to the right (see Fig. 1) the rod 6 may be made to clamp the glass, film and mask together. If the film is considerably smaller than the frame and it is desired to print only upon one part of the sensitive element a mask such as 15 is generally employed.

The resilient strip 16 curved in cross section may then be introduced with its convex side upward and one edge underneath the rod 6. The opposite edge 17 of strip 16 will then, when rod 6 is forced downward, tightly bind the mask 15 along a line spaced from the edge of the frame substantially the width of the plate 16 and will grip the film at its edge, although that edge may be removed some distance from the side of the frame. By employing a strip 16 of the right width it is obvious that a film of any size smaller than the frame may be firmly locked in any position in the frame.

Figs. 4 and 5 disclose a modification of my invention in which the rod 6′ is channeled as shown at 6^2. The operating member in this instance comprises a sliding block 10′ provided with an angled extension 11′ overlying the top of the frame and roughened to afford a grip. The block 10′ is inclined at its lower face, as at 11^2, to fit the beveled notch 8′ in rod 6′ and has depending from it a grooved flange 12′ and fitting the channel 6^2 to operate the rod 6′ in an obvious manner.

At 20 Fig. 1 is shown a sensitized post card such as are ordinarily used for picture postals. In printing cards of this character it is possible by my invention to first arrange the glass, film and mask in any desired relation in the frame and to then lock these parts together by means of the clamping rod 6, either with or without the strip 16, according to the size of the film; after which the card may be seated in one corner of the frame, the back piece put in and a card printed. The seating of the card in the corner of the frame makes it possible to print in exactly the same place upon every card. To remove the print it is only necessary to remove the back piece and then turn the frame upside down whereupon the print will drop out, the remaining parts being firmly held in place. In this way any number of prints may be made from the same film, all in exactly the same place upon the card, without the necessity of rearranging the film and mask, each time, these parts being firmly locked in place from the beginning to the end of the printing from a single film.

It is to be understood, of course, that what is true for post cards is true for any other form of sensitized paper, post cards being merely chosen for illustration.

It is also obvious that the invention would be useful in printing from plates instead of from films, in which event it would be an advantage to lock the plate and mask in the frame just as in the instance described, the pane, film and mask are so locked.

I am well aware that many departures and modifications from the precise construction illustrated in the drawing could be made without departing from the scope of the invention.

I claim:—

1. A frame having a seat therein for a transparent pane, a clamping device in said frame adapted to bear against said pane whereby a film or the like may be clamped with the glass against said seat, and a resilient strip adapted to be interposed along one of its long edges between said clamping device and said seat.

2. A printing frame having a seat for the reception of a transparent pane and means lying within one side of said frame for clamping a film or the like against said pane, said means acting along one edge of said film.

3. In apparatus of the class described a support for a pane, means including pressure elements adapted to bear along one edge of said pane and a removable resilient strip inserted sidewise under said means for clamping a film to the pane at a point removed from the edge of said means.

4. In combination with a printing frame and clamping means therein, a resilient strip substantially curved in cross section and adapted to be engaged with said clamping means along one of its longer edges.

5. A printing frame having a manually operable locking means including pressure means in one side in combination with a resilient strip curved in cross section and adapted to be engaged with said clamping means along one of its longer edges.

6. A printing device comprising a rectangular frame, a rod having a limited movement upon one side thereof, a plate adjacent to said rod and having a cam slot, and connecting means between said rod and said plate engaging said cam slot, and manually operable means for shifting said plate whereby said rod may be raised and lowered.

7. In apparatus of the class described a frame, a clamping member having a limited movement upon one side thereof, a manually operable controlling device for operating said clamping member and a cam connection between said controlling device and said clamping member.

8. In a printing device, a frame having a seat for a pane of glass, a back piece adapted to fit snugly in said frame and be completely removable therefrom, said frame having a recess therein, a clamping device mounted in said recess and adapted to clamp the edge of a film, or the like, against the glass.

9. In a printing device, a frame having a recess in one side thereof, a clamping rod removably mounted in said recess, a slidable thumb piece for operating said rod and a cam connection between said thumb piece and said rod.

10. In a printing device, a frame having a seat for a transparent pane, said frame having a recess therein, a manually operable clamping device in said recess and a resilient curved strip adapted to be engaged by the clamping device to transpose the bite of said clamping device outwardly away from the side of said frame.

11. In apparatus of the class described, a frame having a seat for a transparent pane, a clamping device lying within one side of said frame and adapted to clamp a film or the like along one edge only, and means for operating said clamping device.

12. In apparatus of the class described, a printing frame having a seat therein for a transparent pane, a clamping device adapted to positively squeeze one edge only of a film or the like against said pane, and removable resilient means for transferring the bite of said clamping means outwardly away from the side of said frame.

In witness whereof, I hereunto subscribe my name to this specification in the presence of two witnesses.

EDWIN H. HOLLISTER.

Witnesses:
I. V. CURRAN,
SEBASTIAN HINTON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."