No. 880,345. PATENTED FEB. 25, 1908.

E. R. WILLIAMS.

PRINTING FRAME.

APPLICATION FILED APR. 6, 1907.

2 SHEETS—SHEET 1.

FIG. 1.

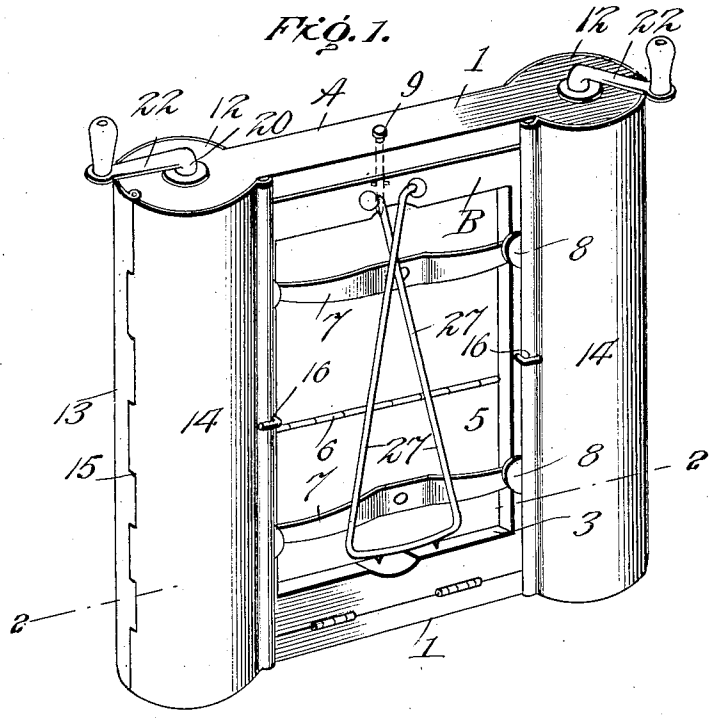
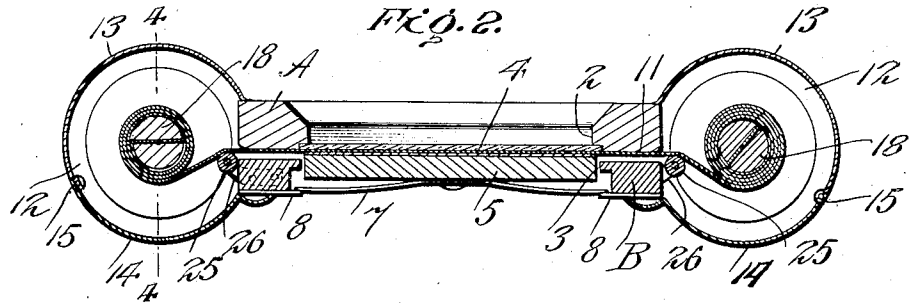


FIG. 2.



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2 SHEETS—SHEET 2.

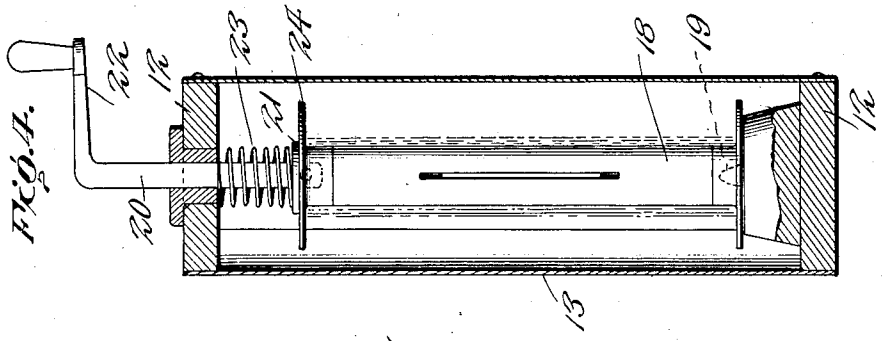


Fig. 4.

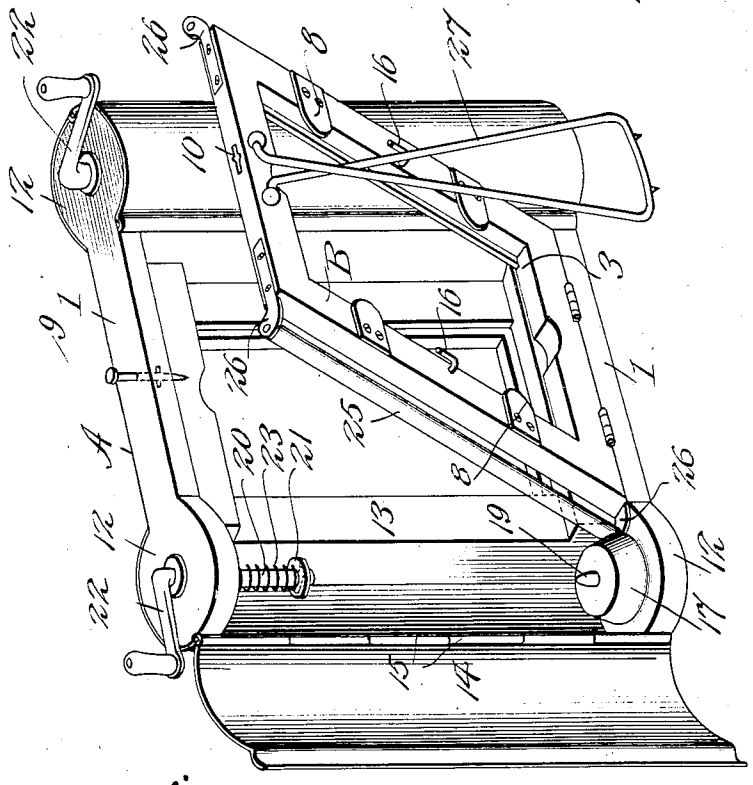


Fig. 3.

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PRINTING-FRAME.

No. 880,345. Specification of Letters Patent. Patented Feb. 25, 1908.

Application filed April 6, 1907. Serial No. 366,799.

To all whom it may concern:

Be it known that I, ELMER R. WILLIAMS, a citizen of the United States, residing at Downers Grove, in the county of Dupage and State of Illinois, have invented new and useful Improvements in Printing-Frames, of which the following is a specification.

This invention relates to a photographic printing frame of that type having pockets or casings at opposite sides for receiving the spools for the negative film, whereby the film can be wound on one spool while unwinding from the other and thus passed across the printing frame to permit of the printing of the negatives in a successive order and with great facility.

The invention has for one of its objects to improve and simplify the construction and operation of devices of this character so as to be comparatively easy and inexpensive to manufacture, convenient to manipulate, and efficient and reliable in use.

A further object of the invention is the provision of a printing frame having hingedly connected sections between which the film is passed from one casing to the other, the casings being located at opposite ends of the frame and provided with doors for facilitating the removal and insertion of the film-carrying spools.

With these objects in view and others, as will appear as the description proceeds, the invention comprises the novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawings, which illustrate one of the embodiments of the invention, Figure 1 is a perspective view of the printing device with its parts in closed position. Fig. 2 is a horizontal section on line 2—2, Fig. 1. Fig. 3 is a perspective view of the device showing the hinged section of the frame open. Fig. 4 is a vertical section on line 4—4, Fig. 2.

Similar reference characters are employed to designate similar parts throughout the figures.

Referring to the drawing, A designates the main frame of the device and B, the back frame that is hingedly connected at its lower end with the main frame to fit between the top and bottom members of the latter. These frames or sections of the device are preferably constructed of wood and are each provided with central rectangular openings 2 and 3 for receiving respectively, the glass plate 4 and back 5, which latter is composed of two parts connected by a hinge 6, as shown in Fig. 1, and each part being provided with a leaf spring 7 whose extremities engage under projections 8 or plates on the frame section B in the usual manner. The section B is held in closed position by a suitable fastening such as a pin 9, extending through the top member 1 of the section A and entering an opening 10 in the top of the section B, and when in closed position, the latter section is held spaced apart from the main section A, as clearly shown in Fig. 2 for accommodating between the sections the film 11.

The top and bottom members 1 of the section A have circular enlargements 12 at their extremities to form the heads of the cylindrical casings or pockets 13 extending vertically at the opposite ends of the printing frame. These casings or pockets are preferably constructed of sheet metal and each has a door 14 hinged at 15 for permitting the doors to swing backwardly, and when the doors are closed, as shown in Figs. 1 and 2, their free edges overlap and bear against the back of the section B and are locked in place by the turnable fastenings 16. On the inner surface of each lower head or enlargement 12, as shown in Figs. 3 and 4, is a boss 17 forming a bearing for the lower end of one of the film spools 18, the boss 17 having a pivot 19 engaging in the bottom end of the spool for rotatably holding the latter in place. Extending vertically into each top head 12 is a central crank shaft 20 having a washer 21 on its inner end and an operating crank 22 on its outer end there being interposed between the washer 21 and the under side of the head 12 a helical compression spring 23 that maintains the washer 21 in frictional engagement with the top flange 24 of the spool 18, as clearly shown in Fig. 4. By turning one of the cranks 22, the film 11 can be wound on the adjacent spool and unwound from the other spool, thus moving the film across the printing frame. In order to hold the film from rubbing on the back section B, the latter is provided with vertically extending rollers 25 at each end on which the film travels, the rollers being journaled in bearings 26 carried on the top and bottom surfaces of the hinged frame B. Attached to the upper portion of the frame B is a hinged prop for wire struc-

ture 27 which serves to support the printing frame in an inclined position like an easel during the printing of a picture.

In practice, the printing frame is filled by first taking out the back 5 and then opening the doors 14 and swinging the back section B open. The film of the two spools are then placed in the device, one roller being mounted in one pocket or casing and the other roller in the opposite pocket or casing. In order to place the rollers or spools, each crank shaft 20 is pulled outwardly against the tension of the spring 23 so that the spool can be engaged over the pintle 19 and extremity of the crank shaft. After the film is thus placed in position, the back section B is locked closed as are also the doors 14. The printing paper is then applied to the film through the opening of the frame B and the back 5 is clamped in position. After the exposure has been made, the back 5 is taken out and the printing paper removed for developing or washing. The film is then moved by winding on one of the spools so as to present another negative and a print of the same is made in the manner just described. From this, it will be seen that the placing of the film and its spool and the feeding of the film for making the successive prints is accomplished in a simple and easy manner.

From the foregoing description, taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the apparatus which I now consider to be the best embodiment thereof, I desire to have it understood that the device shown is merely illustrative, and that such changes may be made when desired as are within the scope of the claims.

Having thus described the invention, what I claim is:—

1. In a photographic printing frame, the combination of a main section comprising a rectangular frame open at its center and provided with lateral extensions at the top and bottom, means for holding a light-admitting medium in the opening, a back section hinged at its bottom to the main section and provided with a central opening, means for locking the sections together, hingedly connected members removably clamped in the back section to form a back to bear against the film, a light-excluding casing attached to corresponding extensions, each casing being provided with a door, film-carrying spools in the casings, and means for turning the spools independently.

2. In a photographic printing frame, the combination of a main section including a light-admitting medium, casings fixed to the ends thereof and provided with doors, spools mounted in the casings for winding and unwinding a negative film and holding a portion of the film stretched across the said medium, and a back for holding the printing paper against the film and arranged to extend under the doors of the casings.

3. In a photographic printing frame, the combination of a main section comprising an open rectangular frame provided with top and bottom lateral extensions, an open rectangular back section hinged to the main section, a removable back in the back section, rollers mounted on and movable with the back section and arranged to bear on the film, sheet metal pieces secured to the extensions to form casings, a door for each casing adapted to overlap the adjacent edge of the back section, means on the back section for locking the doors closed, film-carrying spools in the casings, and means for winding and unwinding a negative film on the spools.

4. In a photographic printing frame, the combination of a front section including a light-admitting medium, film-carrying spools mounted on the ends of the section for exposing an intermediate portion of the film through the said medium, a hingedly mounted back frame on the said section and having an opening, a back adapted to be clamped in the said opening, and a device mounted on the hinged section for supporting the latter or printing frame in an inclined position.

5. In a photographic printing frame, the combination of a main section having lateral top and bottom extensions, a sheet metal casing secured to each pair of corresponding extensions, an outwardly swinging door at the rear of each casings, spools mounted in the casing, a crank shaft extending into each casing for rotating the spool therein, means for holding the crank shaft in engagement with its respective spool, a hinged back section, rollers carried thereby and arranged parallel with the spools, means for locking the back sections in closed position, and a hinged supporting leg attached to the back section.

In testimony whereof, I affix my signature in presence of two witnesses.

ELMER R. WILLIAMS.

Witnesses:
GEO. BATEMAN,
JOHN H. WILLIAMS.