

W. S. KING.
PRINTING FRAME.
APPLICATION FILED AUG. 31, 1907.

1,052,152.

Patented Feb. 4, 1913.
2 SHEETS—SHEET 1.

Fig. 2.

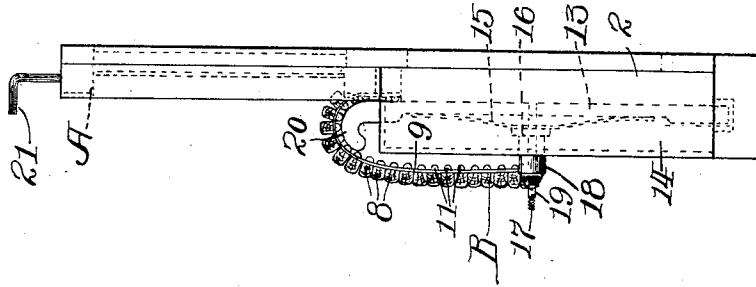
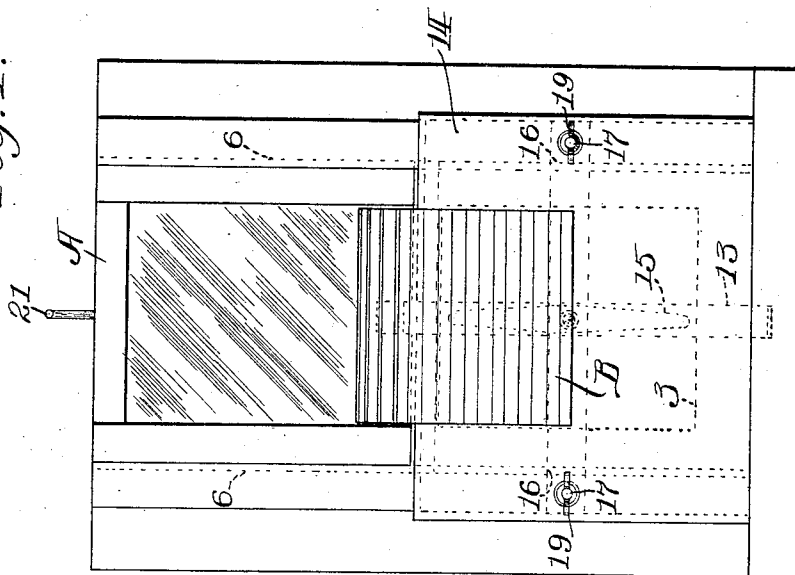


Fig. 1.



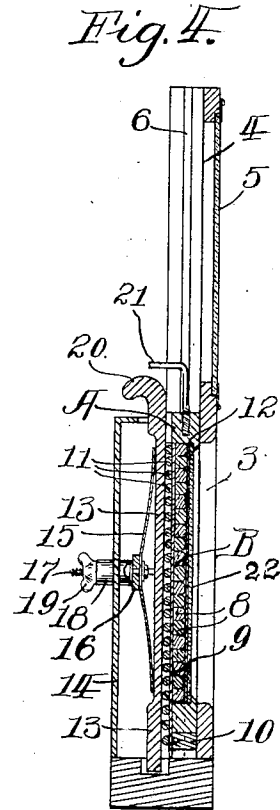
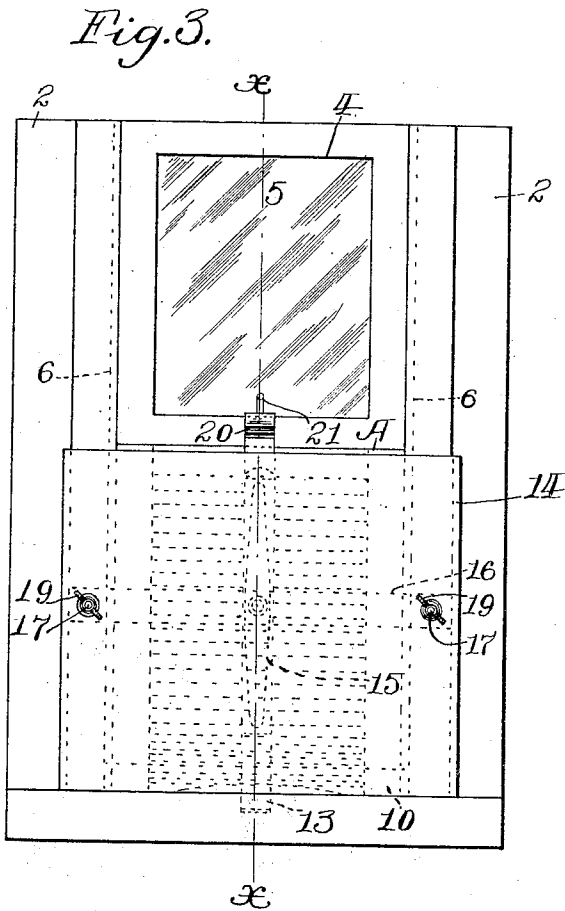
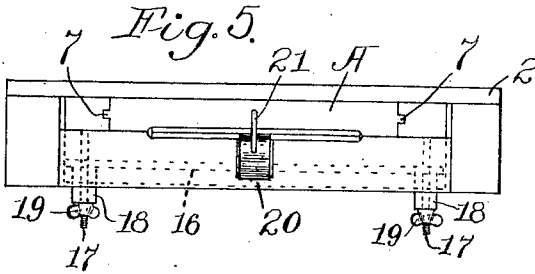
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J. M. Dahlgren.

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UNITED STATES PATENT OFFICE.

WALTER S. KING, OF ST. PAUL, MINNESOTA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO
FREDERICK G. BRADBURY, OF ST. PAUL, MINNESOTA.

PRINTING-FRAME.

1,052,152.

Specification of Letters Patent.

Patented Feb. 4, 1913.

Application filed August 31, 1907. Serial No. 390,915.

To all whom it may concern:

Be it known that I, WALTER S. KING, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented a new and useful Improvement in Printing-Frames, of which the following is a specification.

My invention relates to improvements in printing frames and more particularly to that class of such devices which is adapted for use in obtaining photographic and commercial prints.

The object of my invention is to provide a device of its character which is capable of producing a large number of prints with a minimum amount of time and labor.

My invention is adapted to position the sensitized paper upon the negative during the printing operation with the greatest facility so that the prints obtained will be properly arranged and positioned without requiring the special attention of the operator.

In the accompanying drawings forming part of this specification, Figure 1 is a back view of my invention showing the frame in open position; Fig. 2 is a side view of Fig. 1; Fig. 3 is another back view showing the frame closed; Fig. 4 is a section of Fig. 3 taken on the line X—X, and Fig. 5 is a view looking down upon the upper end of Fig. 3.

My invention embodies generally a photographic printing device which is capable of producing accurate prints in the shortest possible time from negatives or tracings or other duplicating devices, and in its present embodiment it comprises generally a suitable casing 2 which may be constructed in various shapes and dimensions required and is provided in one of its faces with an aperture 3 to admit light. Above this aperture is an opening 4 in which is set a ruby glass 5 so that when desired the negative can be inspected to ascertain whether the sensitized medium is in proper position. Back of the aperture 3 is a sliding plate holder A which is free to move in vertical grooves 6 in the casing, said holder being provided with tongues 7 which play in the grooves. The holder A is provided with a flexible back B the sections of which are substantially horizontal slats 8 resting side by side and suitably secured, by glue or other means, to

the flexible strip 9 made of cloth or other suitable material, the lower end of which is secured to a horizontal bar 10. The lower side of the holder rests freely between the lower section of the flexible back and the horizontal bar 10 so that the holder can be moved out of connection with the back when raised above the casing. At the back of each horizontal slat is a narrow piece 11 of wood or other suitable material the back face of which is rounded and the front face secured by glue or other suitable means to the flexible strip 9. Immediately adjoining the aperture 3 and adapted to impinge upon the flexible back to press it, with the sensitized medium 12, against the negative in the frame is loosely disposed a pressure plate 13. This pressure plate is held in an inclosure 14 and is adapted to move horizontally. A spring 15 which is mounted upon a horizontal bar 16 has its ends impinging against the pressure plate. Bolts 17 passing through the ends of the horizontal bar and sleeves 18 thereon, and having their inner ends anchored in the casing and their outer ends provided with thumb nuts 19, are adapted to adjust the amount of force exerted upon the pressure plate.

By the construction described the pressure plate impinging upon the flexible back B holds the sensitized medium flat upon the negative without any wrinkles or unevenness. The upper end of the pressure plate is provided with a curved shoulder 20 over which the flexible back is adapted to drop when the holder A is raised into the position shown in Fig. 2. A handle 21 on the holder is for the purpose of raising and lowering the same by hand.

In operation, the negative 22 is placed in the holder, the frame being held in superior position as shown in Figs. 1 and 2. The sensitized medium is then placed against the back of the negative and the holder dropped in the casing. As it descends the flexible back closes automatically upon the sensitive medium and the pressure plate braces the back firmly toward, and holds said sensitive medium flat upon, the negative. To remove the print, the holder is raised into superior position.

Where the terms negative and negative holder are used in the above specification and the claims following, it is intended to

include any and all devices which are commonly employed in an equivalent sense such as a film and transparent or semi transparent plate or flexible strip for assisting in holding said film while it is being exposed to light.

In accordance with the patent statutes I have described the principle of operation of my invention, together with the apparatus which I now consider to represent the best embodiment thereof, but I desire to have it understood that the apparatus shown is only illustrative and that the invention can be carried out by other means and applied to uses other than those above set forth, within the scope of the following claims.

Having described my invention, what I claim as new and desire to protect by Letters Patent, is:—

1. A printing frame comprising a suitable casing having an aperture, a negative holder in said casing, a flexible back co-acting with said holder, means for bracing said back against the negative, said back being adapted to be turned back from said holder when the latter is moved away from said aperture.

2. A printing frame comprising a suitable casing having an aperture, a holder adapted to slide in said casing and to register with said aperture, a flexible back carried by said holder and adapted to be turned back when the latter is moved away from said aperture, and a pressure element adapted to impinge against said back when said holder registers with said aperture.

3. A printing frame comprising a suitable casing having an aperture, a holder adapted to slide in said casing and to register with said aperture, a flexible back carried by said holder and adapted to be turned back when said holder is moved away from said aperture and to close automatically upon said holder when the latter is moved to register with said aperture, and a pressure element adapted to impinge against said back when said holder registers with said aperture.

4. A printing frame comprising a suitable casing having an aperture, and an opening above at one side of said aperture, a ruby plate in said opening, a holder in said casing adapted to be shifted back and forth to register with said aperture or opening, a flexible back carried by said holder and adapted to be turned back when the latter is moved away from said aperture, and a pressure element adapted to impinge against said back when said holder registers with said aperture.

5. A printing frame comprising a suitable casing having an aperture, a holder adapted to slide in said casing and to register with said aperture, a flexible back carried by said holder and adapted to be turned

back when said holder is moved away from said aperture, and to close automatically upon said holder when the latter is moved to register with said aperture, a pressure element adapted to impinge against said back when said holder registers with said aperture, and means for adjusting the pressure exerted by said pressure element, for the purposes specified.

6. In an apparatus of the class described, a body frame having an exposure opening; a printing frame mounted to travel in the body frame into and out of register with said exposure opening; and a pressure platen overlying the exposure opening and secured by one end to the inner end of said frame, said platen being disposed to receive the printing frame under it and to press upon its contents while said frame is registered with the exposure opening.

7. In apparatus of the class set forth, a body having an exposure opening and a sight opening adapted to transmit only non-actinic light, a printing frame mounted to travel in said body into and out of register successively with said exposure and sight openings and a flexible back disposed to receive the printing frame under it and to press upon its contents while said frame is registered with said exposure opening, said back being adapted to turn back from said printing frame when the latter is moved from register with said exposure opening.

8. A printing frame, comprising, in combination, a suitable casing having an aperture, a negative holder movable in said casing across said aperture, a movable back co-operating with said holder and adapted to close the same and hold a negative therein when said holder registers with said aperture, and means for bracing said back against the negative in said holder, said back being adapted to be turned back from said holder when the latter is moved away from said aperture.

9. A printing frame, comprising three co-operating elements, one an apertured casing, another a holder having a back adapted to bend back from said holder when the latter is moved away from the aperture in said casing and another an element adapted to impinge against and hold said back flat in said holder when the latter registers with said aperture.

10. In a printing frame, comprising three co-operating elements, one an apertured casing, another a printing frame mounted to travel in said casing into and out of register with the aperture and having a flexible back adapted to bend back from said frame when the latter is moved away from said aperture and the other a pressure element adapted to hold said back flat in said holder when the latter registers with said aperture and forming a guide over which said back

bends as the frame is moved away from said aperture and straightens as said frame travels into register with the aperture.

11. A printing frame, comprising four co-
5 operating elements, one a casing having an aperture, another a holder adapted to move in said casing into and out of register with said aperture, another a platen back of said
10 aperture and the other a flexible back below said platen and in said holder when the lat-

ter registers with said aperture, said back being movable out of coöperation with said holder when the latter moves out of register with said aperture.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

WALTER S. KING.

Witnesses:

J. W. DAHLGREN,
F. G. BRADBURY.

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