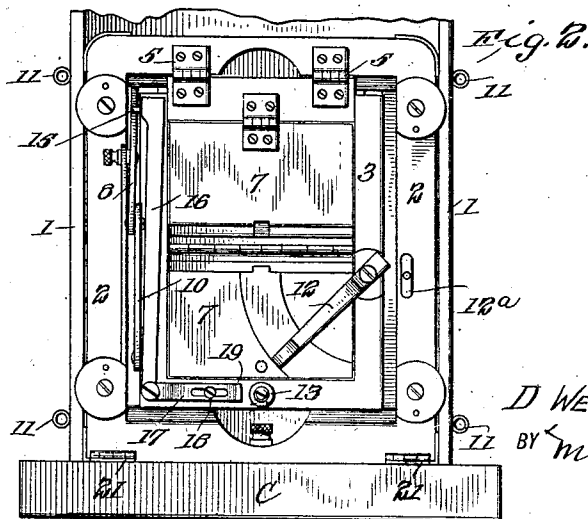
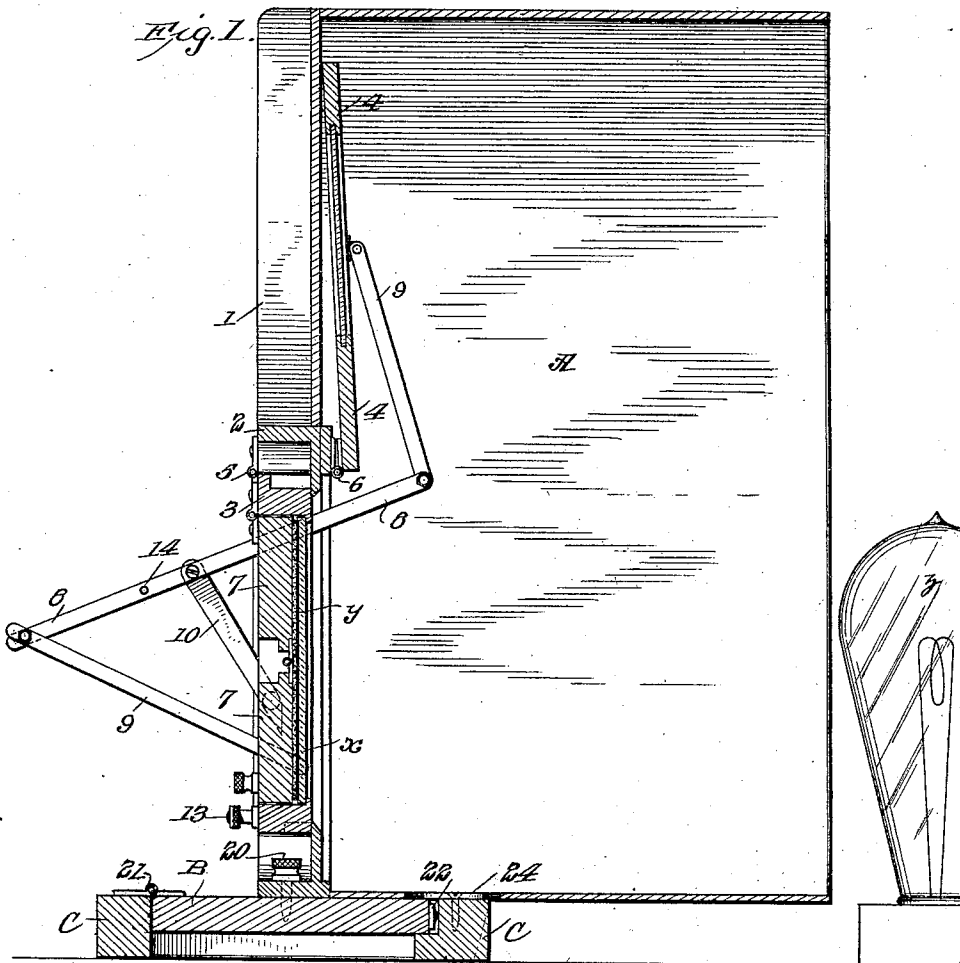


D. W. GRAY,
PHOTOGRAPHIC PRINTING APPARATUS.
APPLICATION FILED JUNE 2, 1910.

989,502.

Patented Apr. 11, 1911.

2 SHEETS—SHEET 1.



WITNESSES:
E. P. Callaghan
Amos N. Park

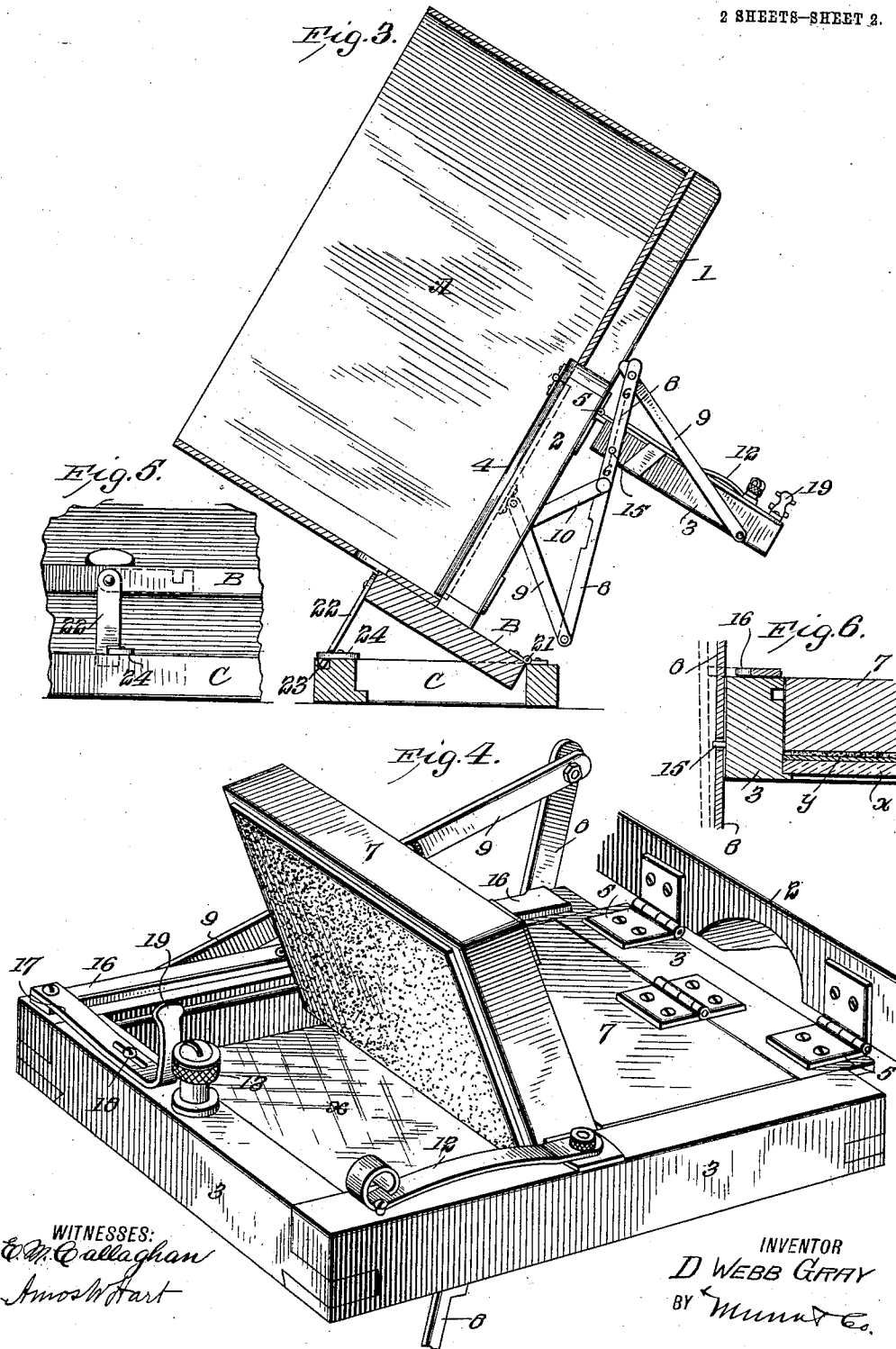
INVENTOR
D. WEBB GRAY
BY *Munn & Co.*
ATTORNEYS

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UNITED STATES PATENT OFFICE.

D WEBB GRAY, OF LITTLE FALLS, NEW YORK, ASSIGNOR OF ONE-HALF TO JOHN D. LANDES, OF DEXTER, MISSOURI.

PHOTOGRAPHIC-PRINTING APPARATUS.

989,502.

Specification of Letters Patent. Patented Apr. 11, 1911.

Application filed June 2, 1910. Serial No. 564,626.

To all whom it may concern:

Be it known that I, D WEBB GRAY, a citizen of the United States, and a resident of Little Falls, in the county of Herkimer and State of New York, have invented an Improved Photographic-Printing Apparatus, of which the following is a specification.

My invention is a photo-printing apparatus adapted for use either with natural or artificial light, and for adjustment at different inclinations, in order to facilitate admission of light from either source.

A special feature of the invention is the provision of a printing-frame proper and a ruby-glass holder, with means for operatively connecting them in such manner that, when one closes the opening through which light is received, the other is raised and uncovers the same.

The invention further includes means for supporting the printing frame in position to facilitate the insertion and removal of negative and positive when the ruby-glass holder is closed.

The details of construction, arrangement, and combination of parts embodying the invention are as hereinafter described, and illustrated in the accompanying drawings, in which—

Figure 1 is a central vertical section of the apparatus when the main frame is adjusted in a vertical position, the printing frame proper being shown closed and the ruby-glass holder elevated. Fig. 2 is an elevation of the printing frame proper in the closed position, together with the portion of the main frame with which it is directly connected. Fig. 3 is a central vertical section showing the main frame set at an inclination instead of being vertical as in Fig. 1, and the printing frame being raised while the ruby-glass holder is closed. Fig. 4 is an enlarged perspective of the printing frame proper with a portion of its sectional back raised. Fig. 5 is an elevation of the lower portion of the main frame and base frame with the pivoted support in operative position as in Fig. 3. Fig. 6 is a section on line 6—6 of Fig. 3, illustrating the means for locking the printing frame in a raised position.

A indicates a box-like hood which is open at its rear end, and closed at the front end, save an opening in the lower portion in which my attachment is arranged. The front of the hood may be said to constitute a frame, having parallel side flanges 1, as shown in Figs. 1, 2 and 3. The printing attachment comprises a rectangular frame 2, a printing frame proper 3, and a ruby-glass holder 4. The printing frame proper 3 is hinged to the front side of the frame 2, as indicated at 5—Figs. 1 and 2—and the ruby-glass holder 4 is hinged, at 6, to the rear side of the supplemental frame 2.

The hinged printing frame 3 and the ruby-glass holder 4 are operatively connected by means of a lever 8 and links or bars 9 which are pivoted to the opposite ends of the lever. The latter is pivoted near the middle of its length on a rigid arm 10 that projects forward and upward from the frame 2. All these parts, to wit, the printing frame proper, the ruby-glass holder, the lever, and connected devices, are all attachments of the frame 2, and the latter is held detachably between the flanges 1 of the hood frame by means of screws 11—see Fig. 2.

In Fig. 1, x indicates a glass plate which may be the negative, and y indicates a film or printing paper interposed between the negative x and the cushioned surface of the sectional back 7 usually employed in printing frames. As shown in Fig. 2, a pivoted latch 12 is employed to hold the sectional back tightly in a closed position, for printing; and at 12^a, I provide a pivoted button which may be used to lock the printing frame 3 in the closed position. It will now be understood that, if light be admitted to the hood A, either from a natural source or from an artificial incandescent light, indicated at z , and the printing frame be in the lowered or vertical position indicated in Fig. 1, printing will be effected, since the light rays will pass through the negative and into contact with the sensitive film y lying thereon. When due time for printing has elapsed, the operator seizes the knob 13, attached to the hinged printing frame 3, and raises the latter to a horizontal position, by which operation, through the me-

dium of the lever and connecting bars 9, the ruby-glass holder is brought down to the vertical position and closes the rear side of the opening in the frame 2, as indicated in Fig. 3. It will thus be seen that the opening of the printing frame closes the ruby-glass holder, and, contrariwise, the opening of the ruby-glass holder is accompanied by the closing of the printing frame, in the opening through the main or hood frame.

As indicated in Figs. 2 and 4, the lever 8 and its connections are at one side of the printing frame proper or between it and the adjacent side of the detachable supplemental frame 2. I provide for locking the printing frame in the raised position, and in this I utilize the lever attachment. Thus the lever is provided at 14 with a small hole and the side of the printing frame 3 is provided at 15 with a lateral pin adapted to enter such hole—see especially Fig. 6. The lever is made of thin brass, or other resilient metal, and, when the printing-frame is raised, the lever slides over the pin until the latter enters the hole 14 formed therein, and thus locks the printing-frame in the raised position. The operation is indicated by full and dotted lines—Fig. 6. The printing frame is thus supported practically horizontally, so that negatives and printing paper, or other printing medium, may be easily laid therein or removed therefrom. When ready for printing, the operator releases the lock formed by the hole 14 and pin 15, by means of a pivoted lever 16 and a sliding bar 17 which are arranged on the outer side of the printing frame 3. The lever is pivoted centrally and the bar 17 is provided with a slot that receives a guide screw 18 and it is also provided with an upturned end 19 constituting a thumb-piece—see especially Fig. 4. Thus, when the operator presses the thumb-piece 19 toward the knob 13 of the printing-frame 3, the lever 16 is turned on its pivot and its inner end presses against the lever 8, so that it is forced off the pin, as indicated by dotted lines in Fig. 6, which leaves the printing-frame free to descend to the vertical position, that is to say, to the position it must occupy for printing.

It will be understood that, in practice the entire apparatus is used in a dark-room, or in any room from which white light is excluded, the hood A being in such case directed to an exterior source of light either natural or artificial. In some cases, it is desirable to work the apparatus at an inclination, or rather that the hood A should be directed upward to a certain degree in order to receive the light to the best advantage; and, for this purpose, the base-piece B, to which the main hood frame is secured by a screw 20, is hinged to a rectangular base

frame C—see especially Fig. 1. This adapts the entire printing apparatus proper to be turned up on the hinge 21 to the position indicated in Fig. 3; and, for supporting it in such position, I provide a bar 22 which is pivoted to the base-piece B and provided near its outer end with a notch that, when the apparatus is set at an inclination as in Fig. 3, enters a notch or recess 23 provided in the base frame C and is secured therein by means of a pivoted button 24—see also Fig. 5.

When the apparatus is to be used in the vertical position indicated in Fig. 1, the button 24 is turned parallel to the base bar on which it is pivoted and the notched bar 22 is turned up into the position indicated by dotted lines in Fig. 5, and full lines in Fig. 1, and then, the base-piece 2 being lowered into the base-frame C, the same button 24 serves to confine or hold it securely therein, as shown in Fig. 1. Thus, the button 24 serves two purposes, namely, to lock the supporting bar 22 and to secure the hinged attachment to the base frame C.

It is to be understood that while the hood A is useful for excluding side light and for projection through a window or other aperture, it may be dispensed with in many cases and its frame or front portion 1 alone retained.

What I claim is:—

1. In a photographic-printing apparatus, the combination with a main frame having an opening therein, of an attachment comprising a printing frame proper and a ruby-glass holder, both hinged to said frame and adapted to swing in opposite directions to cover or uncover said opening, and means for operatively connecting said printing frame and holder, the same consisting of a lever pivoted to a fixed support, and bars pivotally connecting the ends of the lever with the printing frame and holder respectively, substantially as described.

2. The combination with a standing frame having an opening, and a printing frame proper hinged thereto and adapted to close said opening when in the lowered position, of means for locking and supporting the printing frame in the raised or horizontal position, the same consisting of a spring lever pivoted on the standing or fixed frame and a projection on the printing frame for engaging said lever, and means for effecting disengagement of the lever, the same consisting of a lever pivoted to the printing frame and a bar having a thumb-piece for operating said lever whereby the aforesaid bar may be sprung out of engagement, substantially as described.

3. The combination, with a standing frame having an opening and a printing frame proper hinged thereto and adapted to close

said opening when in the lowered position, said frame being provided with a lateral projection, a spring lever pivoted to a fixed support and adapted to engage said projection when the frame is elevated, and a device attached to the frame and adapted to press laterally against the lever, when manually operated, for the purpose of disengaging the lever from the frame and allowing the latter to fall, substantially as described. 10

D WEBB GRAY.

Witnesses:

HENRY CAIN,
C. A. CRANE.

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