R. R. LOVING.

PHOTOGRAPHIC PRINTING MACHINE.

APPLICATION FILED MAY 19, 1910.

1,038,771.

Patented Sept. 17, 1912.

2 SHEETS—SHEET 1.

Fig. 1

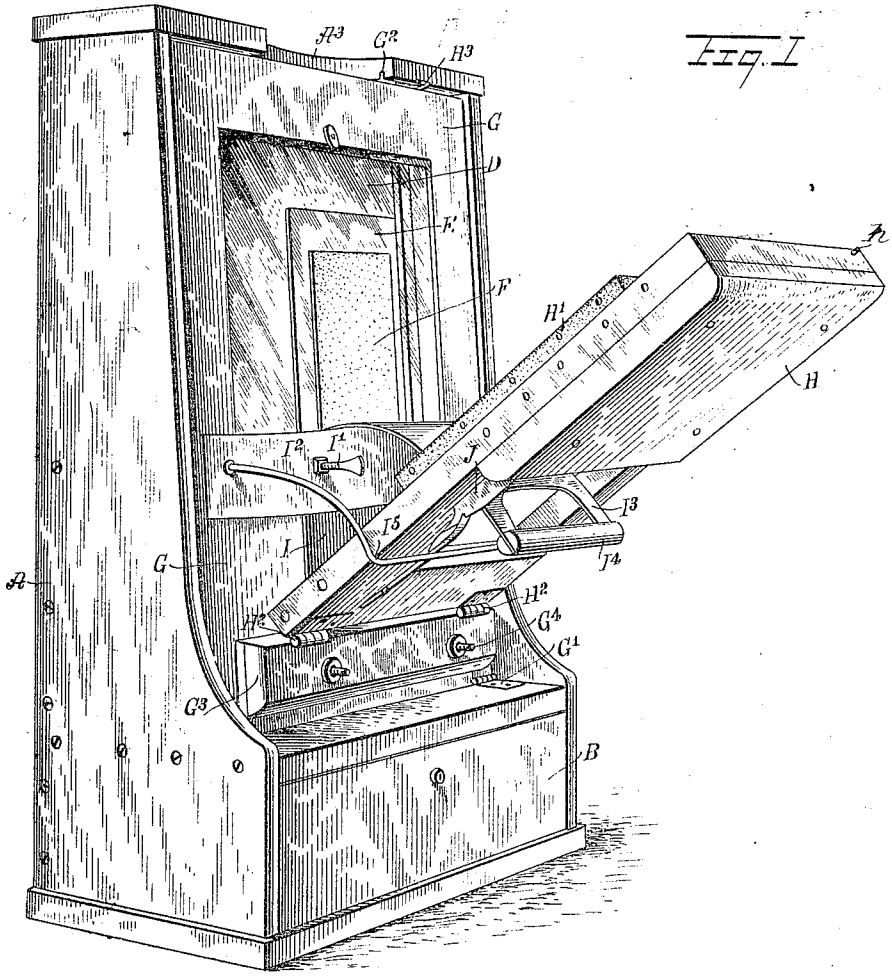
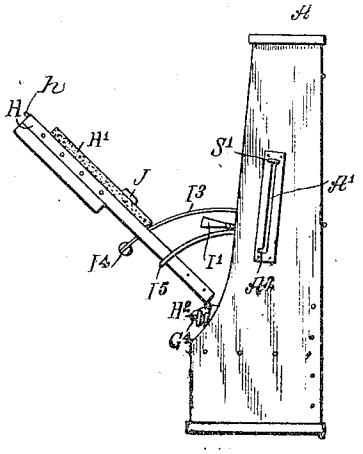


Fig. 2.



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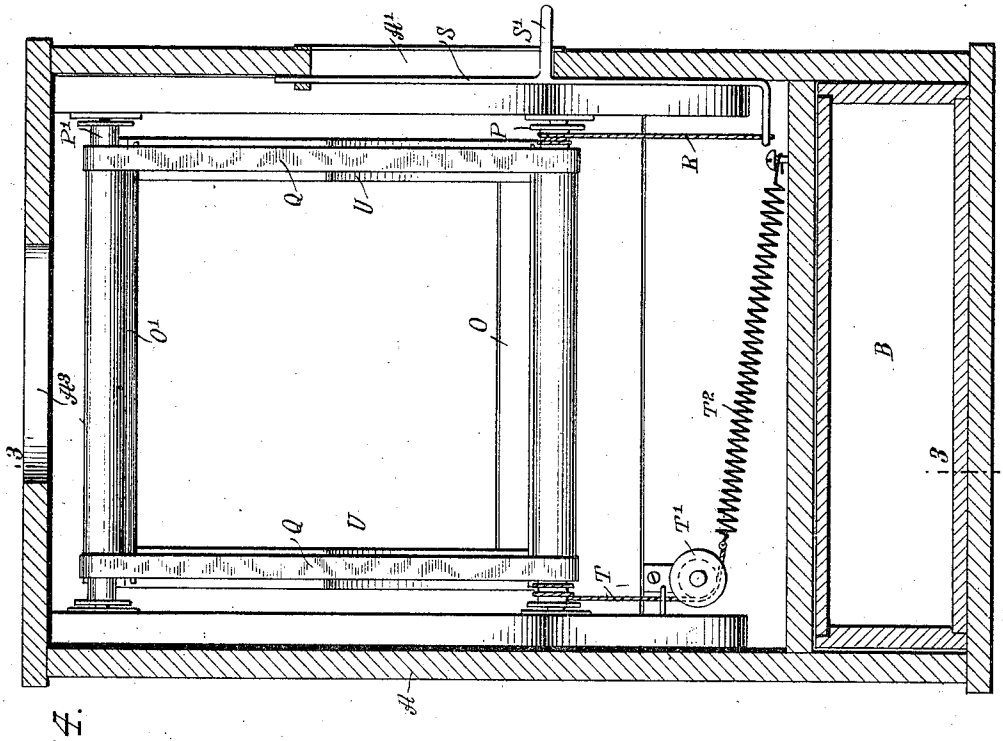

Fig. 4.

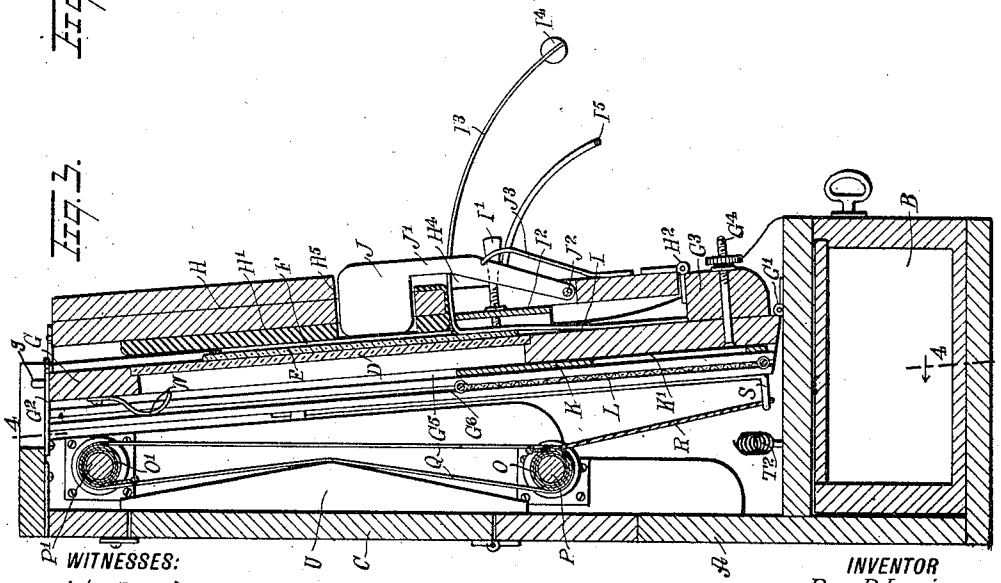

Fig. 3.

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PHOTOGRAPHIC-PRINTING MACHINE.

1,038,771. Specification of Letters Patent. Patented Sept. 17, 1912.

Application filed May 19, 1910. Serial No. 562,186.

To all whom it may concern:

Be it known that I, ROY R. LOVING, a citizen of the United States, and a resident of Center, in the county of Shelby and State of Texas, have invented a new and Improved Photographic-Printing Machine, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved printing machine, arranged to permit of conveniently and accurately placing the negative (glass plate or film) in fixed position to print from, and to allow accurate positioning of the printing paper and bringing the same in printing contact with the negative.

For the purpose mentioned, use is made of a casing provided with a frame, carrying a transparent plate for the negative to rest on, a platen mounted to swing on the frame and adapted to carry the sensitized printing paper into contact with the negative, and a clamp for holding the negative in position on the said transparent plate, the clamp having a handled extension forming a rest for the printing paper while the latter is carried by the platen to and from the negative.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a rear perspective view of the photographic printing machine with the platen in open position; Fig. 2 is a reduced side elevation of the same; Fig. 3 is a sectional side elevation of the same on the line 3—3 of Fig. 4 and showing the platen in closed or printing position; and Fig. 4 is a sectional front elevation of the same on the line 4—4 of Fig. 3.

A suitably constructed casing A is provided in its lower portion with a drawer B for storing accessories and other articles, and on the front of the casing A is arranged a hinged door C which when open permits the entrance of light to the inside of the casing A and through a plate D, of glass or other transparent material, on the rear face of which plate is held the negative E contacted by the sensitized printing paper F for making the desired photographic print. The transparent plate D is mounted in a frame G, connected at its lower end by hinges G′ with the casing A, as plainly indicated in Figs. 1 and 3, and the upper free end of the said frame G is adapted to be locked in place by a suitable fastening device G^2, preferably in the form of a hook pivoted on the top of the casing A, and a pin g on the top of the frame G.

The printing paper F rests on the cushioned face H′ of a platen H, connected at its lower end by hinges H^2 with a cross bar G^3 attached to the frame G by screws G^4, as plainly indicated in Fig. 3, and the upper end of the platen H is adapted to be locked in position, when the machine is not in use, by a hook H^3 pivoted on the casing and engaging a pin h on the platen.

In order to fasten the negative E in position on the transparent plate D, use is made of a clamping plate I, arranged on the rear face of the frame G and extending a distance up onto the plate D, and the said clamping plate I is engaged by screws I′ screwing in a transverse bar I^2 secured to the sides of the frame G. Thus by screwing up the screws I′, the upper portion of the clamping plate I is moved in contact with the lower end of the negative E, to hold the same flat against the rear face of the plate D. By loosening the screws I′, the negative E can be readily shifted on the plate D, so as to bring the subject matter of the negative E in position for printing relative to the printing paper F carried by the platen H. The upper end of the clamping plate I is provided with a rearward segmental extension I^3, projecting through an opening H^4 in the lower portion of the platen H, the said extension I^3 forming a rest for the lower edge of the printing paper F to rest on when placing the printing paper in position on the open platen in contact with the negative E. The outer end of the extension I^3 is provided with a handle I^4, to permit the operator to exert a pull on the plate I when it is desired to slightly shift the negative E in position on the plate D at

the time the platen H is in an open position. A gage J is mounted to slide in a transverse slot H^5 formed in the platen H, to one side thereof, and the said gage J projects beyond the face H′ of the platen H when the latter is in open position (see Fig. 2), so that the operator can readily abut one side of the printing paper F against the gage J, thus properly positioning the printing paper F on the face H′ of the platen, it being understood that the lower edge of the printing paper F then rests on the extension I^3. The platen H is held in the open position by a U-shaped stop I^5 secured to the cross bar I^2. The gage J is mounted at its rear end on an arm J′ fulcrumed at J^2 on the platen H, and the said arm J′ is pressed on by a spring J^3, to normally project the gage J beyond the face H′ of the platen H and to allow the gage J to move rearwardly on its front edge coming in contact with the negative E on closing the platen H.

The frame G is provided in front of the plate D with two vertically-disposed guideways G^5 and G^6, in which are mounted to slide up and down a vignetting plate K and a screen L, the vignetting plate K having an opening K′ adapted to be moved in register with the subject matter of the negative E whenever it is desired to make use of the vignetting plate K. The screen L is of a light fabric material, so as to subdue the light passing through the plate D, and the negative E to the printing paper F whenever it is desired to make use of the screen. Normally the plate K and the screen L are in a lowermost position out of the way of the rays of light passing through the open door C to the plate D, negative E and printing paper F. A spring catch N on the upper end of the frame G serves to hold either the plate K or the screen L in an uppermost position when it is desired to use the said plate or screen.

In the front portion of the casing A is arranged a shutter, preferably formed of two sheets of fabric material O, O′, winding and unwinding on rollers P, P′, journaled in the sides of the casing A, and the said rollers are connected with each other by belts Q having their rear runs connected with the lower shutter O and the front runs with the upper shutter O′, so that when the rollers P and P′ are rotated, the shutters O and O′ move toward or from each other with the ends overlapping when in closed position, to screen the plate D.

Normally the shutter is closed, and in order to permit of closing the same for any desired length of time, the following arrangement is made: A belt or cord R winds on the lower roller P and is connected with a slide S, mounted to slide up and down on one side of the casing A, and on the slide S is arranged a handle S′ extending through a vertical slot A′ to the outside of the casing A, so that the operator can take hold of the handle S′ to move the same from its normal uppermost position into a lowermost position, and to lock it therein by slightly turning the handle S′ to one side, to engage the said handle with an angular offset A^2 in the slot A′, as indicated in Fig. 2.

The shutter is normally held in a closed position with the handle S′ at the top of the slot A′, and for this purpose use is made of a rope T, wound on one end of the roller P and passing over a pulley T′ to connect with a spring T^2 attached to the casing A, as plainly indicated in Fig. 4. Now when the operator presses the handle S′ in a downward direction, the roller P is turned, and by the belts Q, a corresponding movement is given to the roller P′ and both the shutters O, O′ are moved from each other into an open position and thus admit light to the plate D, in case the door C is open. The shutter may be locked in this open position by turning the handle S′ into the offset A^2, as previously mentioned, and when it is desired to close the shutter the handle S′ is returned into the slot A′, and on releasing pressure on the handle S′, the spring T^2 turns the roller P in an opposite direction and with it the roller P′, to return the shutters O and O′ to closed position.

From the foregoing, it will be seen that by the arrangement described, the operator is enabled to conveniently place the negative in proper position on the plate D, and is also enabled to properly position the printing paper F on the platen H when the latter is open, so that on closing the platen H the printing paper F is carried forward in printing contact with the negative E and held thereon during the exposure.

It is understood that after the printing paper F is pressed into engagement with the negative by the platen H, the operator, by pressing the handle S′, opens the shutter so that the rays of light can pass through the open door C to the plate D, negative E and printing paper F, for making the exposure for the desired length of time, after which the operator again closes the shutter, and then swings the platen H backward for removal of the exposed printing paper F, and replacing the same by a fresh piece of printing paper.

The top of the casing A is provided with a suitable hand hold A^3, to permit the operator to conveniently pass the hand between the platen H and the frame G, to assist in making a good, smooth contact between the paper and the negative.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A photographic printing machine, pro-

vided with a transparent plate for the negative to rest against, a platen mounted to swing toward and from the said plate and adapted to carry the printing paper into contact with the negative, and a clamping device for clamping the negative in place on the said plate, the clamping device having a handled extension for controlling the clamping device and for forming a bottom rest for the lower edge of the printing paper to rest on while being carried to the negative.

2. A photographic printing machine, provided with a transparent plate for the negative to rest against, a platen mounted to swing toward and from the said plate, and adapted to carry the printing paper into contact with the negative, a clamping device for clamping the negative in place on the said plate, the clamping device having a handled extension for controlling the clamping device and for forming a bottom rest for the lower edge of the printing paper to rest on while being carried to the negative, and manually-controlled means for adjusting the tension of the said clamping device.

3. A photographic printing machine, comprising a casing having a door at its front, a frame hinged in the rear of the casing and carrying a transparent plate for the negative to rest on, a platen hinged on the said frame and adapted to carry the printing paper into printing contact with the negative, a clamping device for removably holding the negative in position on the said platen, and a spring-pressed gage mounted on the said platen at one side thereof for one side of the printing paper to abut against.

4. A photographic printing machine, comprising a casing having a door at its front, a frame hinged in the rear of the casing and carrying a transparent plate for the negative to rest on, a platen hinged on the said frame and adapted to carry the printing paper into contact with the negative, and a clamping device for removably holding the negative in position on the said plate, the said clamping device having a handled extension passing through the platen and forming a rest for the lower edge of the printing paper.

5. A photographic printing machine, comprising a casing having a door at its front, a frame hinged in the rear of the casing and carrying a transparent plate for the negative to rest on, a platen hinged on the said frame and adapted to carry the printing paper into printing contact with the negative, a clamping device for removably holding the negative in position on the said plate, a mat vertically slidable on the said frame in front of the said transparent plate and normally in a lowermost position, and means for holding the mat in an uppermost position.

6. A photographic printing machine, comprising a casing having a door at its front, a frame hinged in the rear of the casing and carrying a transparent plate for the negative to rest on, an apertured platen hinged on the said frame and adapted to carry the printing paper into printing contact with the negative, a clamping device for removably holding the negative in position on the said plate, said clamping device being provided with a member projecting through the aperture of the platen, and a bail-shaped stop on the said frame for the said platen to rest on in open position.

7. A photographic printing machine, comprising a casing having a door at its front, a frame hinged in the rear of the casing and carrying a transparent plate for the negative to rest on, a platen hinged on the said frame and adapted to carry the printing paper into printing contact with the negative, a clamping device for removably holding the negative in position on the said plate, shutter rollers journaled in the upper and lower portions of the casing intermediate the said door and frame, belts connecting the rollers with each other, shutters winding and unwinding on the said rollers and attached to the said belts, a manually-controlled slide mounted on the casing, a flexible connection between the said slide and one of the rollers for turning the same, and a spring device connected with one of the rollers for normally holding the shutters in closed position.

8. In a photographic printing machine, a casing, a support carrying a transparent plate for the negative to rest on, an apertured platen for carrying the printing paper, and a combined rest and clamping plate for supporting the printing paper and clamping the negative on the transparent plate, said rest and clamping plate having a member projecting through the aperture of the platen and forming a handle.

9. In a photographic printing machine, a casing, a frame carrying a transparent plate for the negative to rest on, a hinged platen carrying the printing paper, and provided with an aperture, a clamping plate having its upper end curved outwardly and extending through the aperture of the platen, and screws carried by the frame and engaging the said plate for adjusting the same.

10. In a photographic printing machine, a casing, a hinged frame carrying a transparent plate for the negative to rest on, a platen hinged to the frame for carrying the printing paper, a clamping device for clamping the negative on the transparent plate, and a loop-shaped member carried by the frame and forming a stop for the platen.

11. In a photographic printing machine, a casing, a frame hinged in the rear of the casing for carrying a transparent plate for

the negative to rest on, a platen hinged on the frame and adapted to carry the printing paper, said platen having an aperture in one side, a clamping device for holding the negative in position on the transparent plate, and a pivoted and spring pressed gage projecting into the aperture of the platen.

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

ROY R. LOVING.

Witnesses:
J. H. LEWIS,
J. D. ILES.