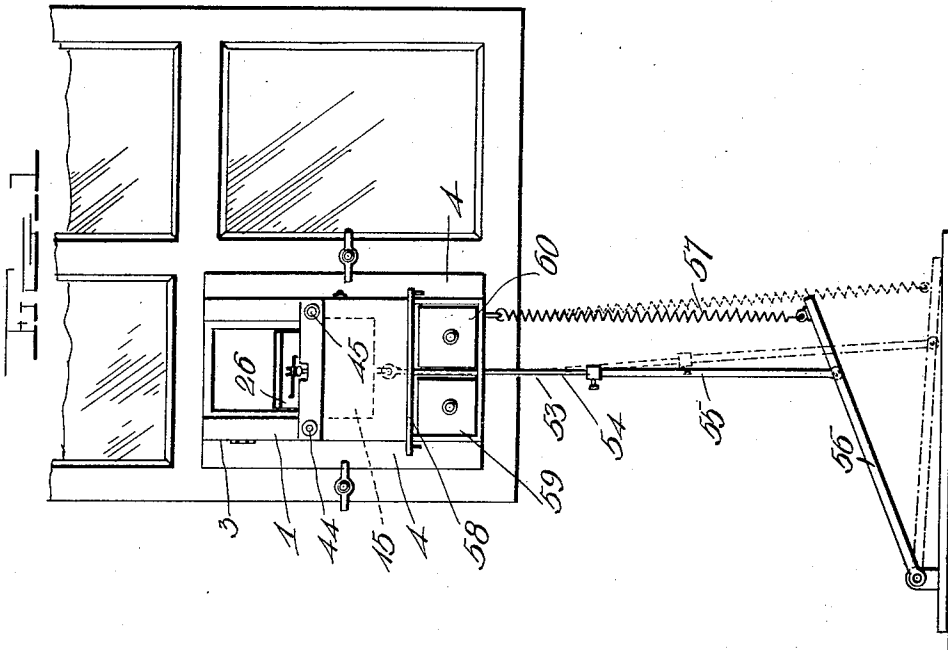
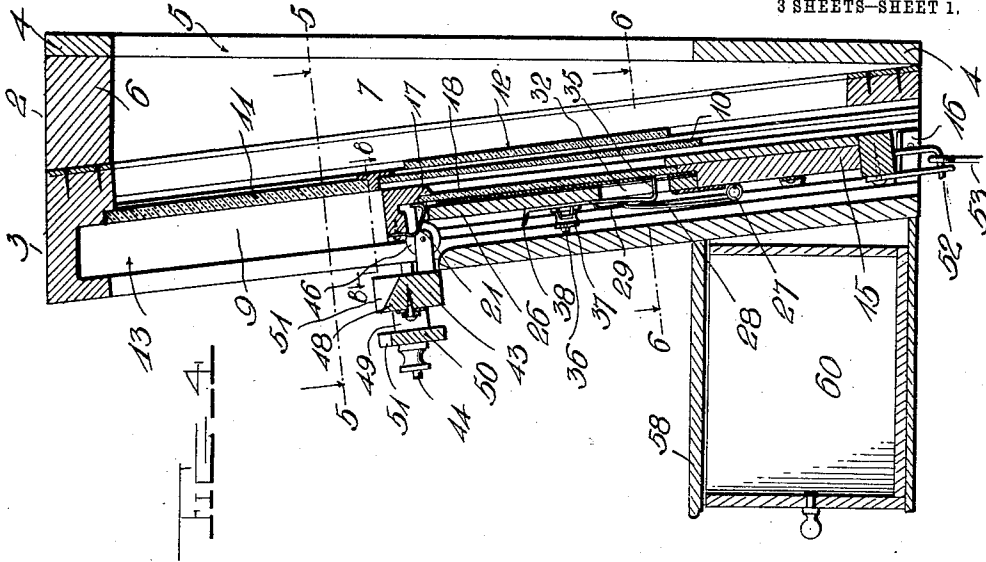


J. H. BANKS.
 PHOTOGRAPH PRINTOGRAPH.
 APPLICATION FILED JAN. 24, 1910.

1,008,105.

Patented Nov. 7, 1911.

3 SHEETS-SHEET 1.



Witnesses
E. J. G. G. G. G.
C. H. G. G. G.

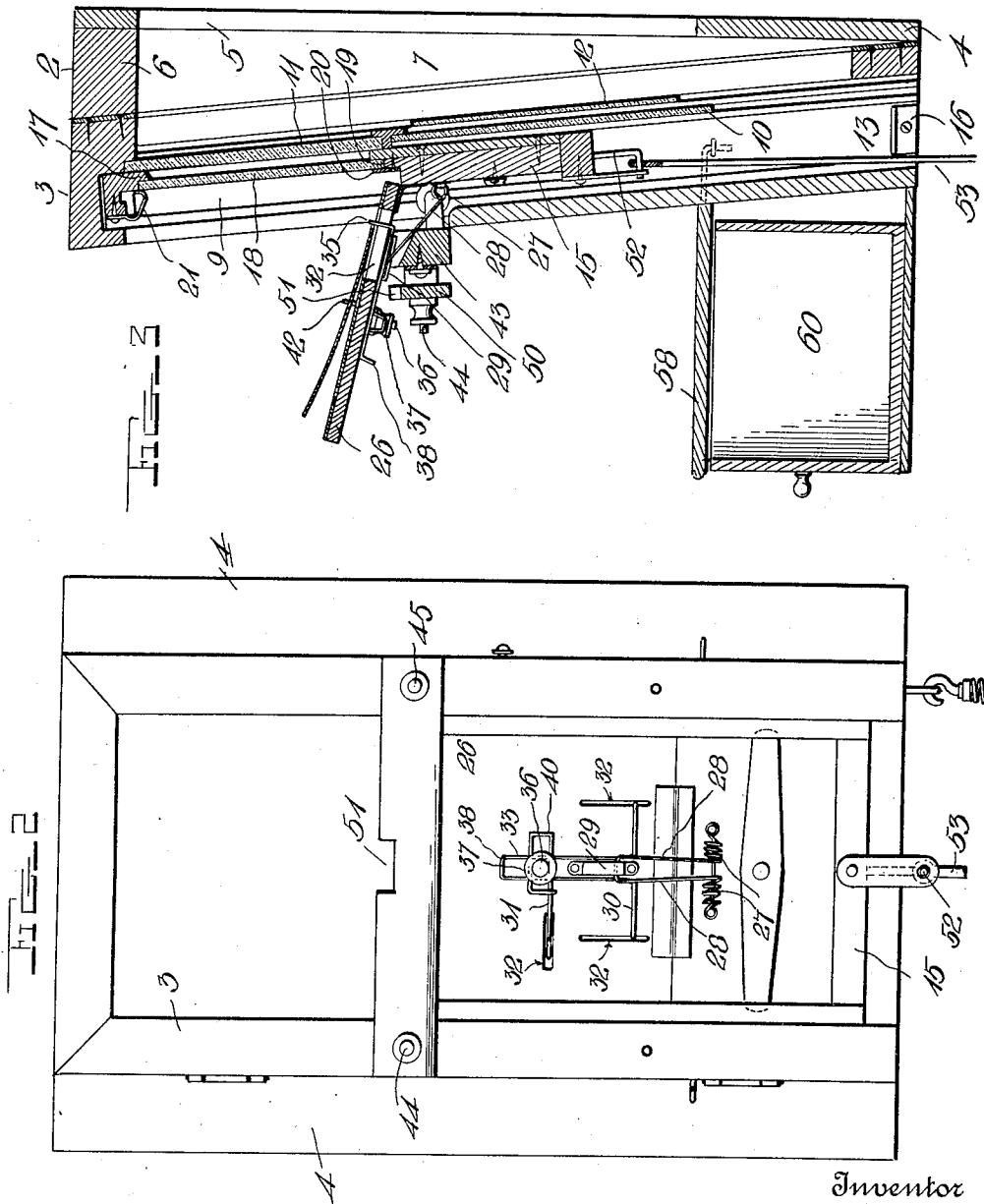
Inventor
James H. Banks

by *A. B. Wilson & Co.*
 Attorneys

J. H. BANKS.
 PHOTOGRAPH PRINTOGRAPH.
 APPLICATION FILED JAN. 24, 1910.

1,008,105.

Patented Nov. 7, 1911.
 3 SHEETS—SHEET 2.



Witnesses
 C. H. Giesbauer.

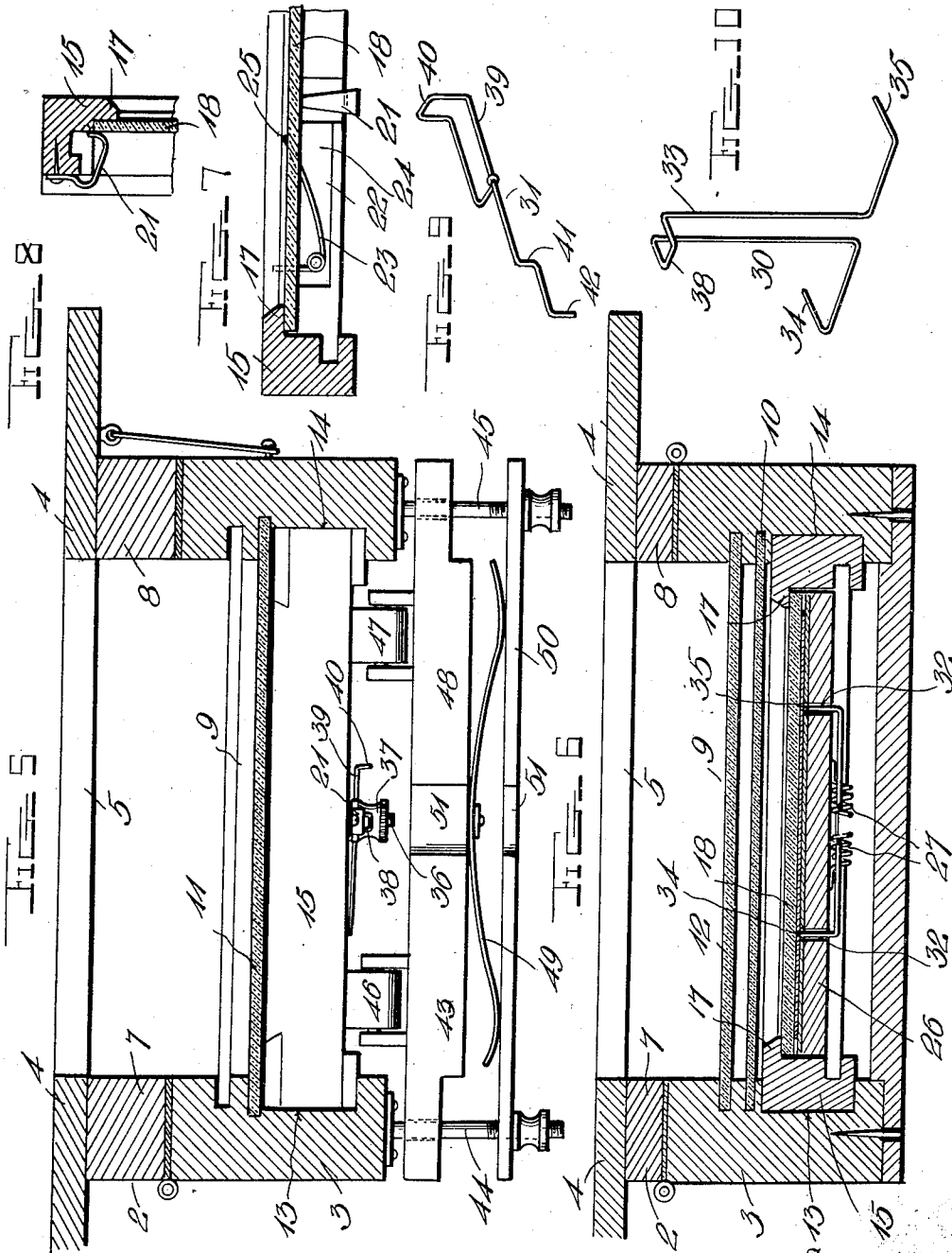
Inventor
 James H. Banks
 by A. B. Wilson & Co.
 Attorneys

J. H. BANKS.
 PHOTOGRAPH PRINTOGRAPH.
 APPLICATION FILED JAN. 24, 1910.

1,008,105.

Patented Nov. 7, 1911.

3 SHEETS—SHEET 3.



Witnesses

C. H. Griesbaum

James H. Banks

by *A. B. Wilson & Co*

Attorneys

UNITED STATES PATENT OFFICE.

JAMES H. BANKS, OF YORK, NEBRASKA.

PHOTOGRAPH-PRINTOGRAPH.

1,008,105.

Specification of Letters Patent.

Patented Nov. 7, 1911.

Application filed January 24, 1910. Serial No. 539,698.

To all whom it may concern:

Be it known that I, JAMES H. BANKS, a citizen of the United States, residing at York, in the county of York and State of Nebraska, have invented certain new and useful Improvements in Photograph-Printographs; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an improved photographic contact printing machine for use with either artificial or daylight.

The object of the invention is to provide a simply constructed rapidly operable photo printing machine which is especially applicable for printing photographic post-cards which necessitate a rapid method of producing them to render them profitable.

With the foregoing and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts, as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings: Figure 1 is a rear elevation of this improved machine with the parts in operative position ready for printing a sensitized paper or card. Fig. 2 is a similar view of the exposure frame. Fig. 3 is a central longitudinal vertical section of the machine with the parts shown in inoperative position. Fig. 4 is a similar view with the parts in operative position. Fig. 5 is a horizontal section taken on the line 5—5 of Fig. 4. Fig. 6 is a similar view taken on the line 6—6 of Fig. 4. Fig. 7 is a detail horizontal sectional view through the exposure frame. Fig. 8 is an enlarged detail horizontal sectional view through the exposure frame taken on the line 8—8 of Fig. 4. Fig. 9 is a detail perspective view of one of the automobile reseating gages. Fig. 10 is a similar view of the other gage.

In the embodiment illustrated a main printing frame 1 is shown, preferably composed of two hinged connected sections 2 and 3, the member 2 constituting a fixed frame adapted to be mounted within a window in a room which has been darkened or the windows covered with orange or ruby colored paper. This member 2 preferably comprises a plate 4 of any suitable material having an opening 5 of any desired shape

and size, the walls of which are spaced at suitable distances from the edges of the plate to permit the plate to be secured by any suitable fastening means to the window frame or other support. A frame 6 extends around the top and sides of the opening 5 and the inner faces of the side members 7 and 8 of said frame 6 are inclined downwardly and forwardly toward their lower ends whereby the upper portion of the frame is rendered much thicker than the lower portion for a purpose to be described.

The member 3, which is hinged at one side to the outside edge of one of the side members of the frame 6, will by reason of the inclined faces of the frame members 7 and 8 against which the inner face of the member 3 contacts when in operative position be caused to tilt rearwardly at the top to permit the paper or card containing the exposed print to drop backward on the platen when said platen is opened without necessitating removal of said card by hand as will be hereinafter described. This member 3 has a large opening 9 therein in the lower portion of which is mounted a ground glass light diffuser 10 and a ruby or orange colored transparent pane 11 is arranged in said opening 9 above the light diffuser 10 to afford sufficient light to enable the operator to see to manipulate the cards without injuriously affecting them. The side walls of the opening 9 are grooved longitudinally in front of the plates 10 and 11 to receive a plain glass vignetting plate 12, which is slidable in said grooves in front of the ground glass plate 11. The hinged frame member 3 is provided at opposite sides at the rear of said glass plates with longitudinally disposed guides here shown in the form of grooves or recesses 13 and 14 in which an exposure frame 15 is mounted to slide. This frame 15 is limited in its upward movement by the upper end of the member 3 which extends laterally in the path of the frame 15 and the downward movement of said frame 15 is limited by detachable stops as 16 arranged at the lower ends of the grooves 13 and 14. These stops as 16 may be removed to permit the insertion and removal of the exposure frame. This exposure frame 15 may be made in any suitable or desired size to receive negatives of varying sizes and as shown is provided at the front thereof with an inwardly extending flange 17 arranged around the open-

ing in the frame and against which the edges of the negative as 18 are designed to contact when in operative position. The lower edge of the opening in the frame 15 is preferably provided with a seat 19 to receive the lower edge of the negative, said seat being preferably formed by a strip 20 spaced from the flange 17 at the bottom of the opening a sufficient distance to receive the negative and to hold it against lateral movement.

An automatic negative lock is shown arranged at the upper end of the frame 15 and comprises a spring catch 21 which is secured to the upper end of the frame 15 and the free resilient end thereof projects into the path of the upper edge of the negative and is designed to spring backward against the rear face thereof to hold said negative firmly in operative position. To release the negative the free end of this lock is pressed upward thereby disengaging it from the negative which is moved rearwardly by an ejector 22 of any suitable or desired construction, the form here shown comprising a wire member 23 having one end coiled and secured to the lower face of the upper portion of the frame 15 in a recess 24 formed in the said frame. The free end of this wire 23 has a depending tongue 25 which normally engages the outer face of the upper edge of the negative, the spring tension of the coil of said member 23 being exerted to force the negative outward when disengaged from the lock 21. A platen 26 is hinged at its lower edge to the bottom wall of the opening in the frame 15 to open downwardly and is preferably provided on its outer face with automatic opening means. The means here shown for opening the platen comprise a coiled spring 27 secured to the lower part of the frame 15 and having a loop 28 engaged with a keeper 29 secured to the rear face of the platen, said loop being slidably connected with said keeper to permit the ready closing of the platen. This spring tension loop operates normally to pull the platen backward into open position.

An automatically receding card or paper gage is mounted on the platen and as here shown comprises two members 30 and 31 mounted on the rear face of the platen with the arms thereof projecting through slots as 32 arranged near the lower end of the platen and at both sides thereof, the slots at the lower end being spaced laterally. The member 30 is preferably constructed as shown in detail in Fig. 10 from a piece of spring wire bent intermediately of its ends to form a loop 33, the free ends of which are bent laterally in opposite directions to each other with their terminals bent out at right angles to form card engaging members 34 and 35 which project through the slots at the lower end of the platen and extend beyond the

inner face of said platen in position to receive the sensitized card or paper on which the print is to be made. A screw-threaded stud 36 extends laterally from the rear face of the platen preferably at a point about the center thereof and the loop 33 of the member 30 extends over this stud and is held in adjusted position thereon by a milled nut 37, said loop being adjustable on the stud to move the card engaging arms or fingers 34 and 35 into any desired position to receive cards of different widths or sizes. The bent or doubled end of the loop 33 is preferably bent outwardly at right angles to form a finger grip 38 for adjusting the gage fingers 34 and 35. The other gage member 31 is preferably constructed as shown in detail in Fig. 9 from a piece of spring wire having one end thereof bent to form a loop 39, the doubled end of said loop being bent at right angles to form a finger grip 40 for operating said gage to move it into the desired position, the loop being designed to fit over the stud 36 and held in position thereon by the nut 37. This wire member 31 has an offset 41 formed intermediately of its ends which operates in the slot 32 at the side of the platen and the free end thereof is bent at right angles to form a card engaging finger 42, which projects through the side slot of the platen and is adjustable laterally to hold the card to be printed against side movement. These gage members being constructed of spring wire are resilient and when coming in contact with the negative move inwardly in the slots in which they are mounted and permit the card or paper carried by the platen to come in close contact with the negative whereby a perfect print is produced.

An impression bar 43 is adjustably secured at its opposite ends to the side members of the frame member 3 preferably by means of screw-threaded studs 44 and 45 which extend laterally from said frame member 3 through apertures formed in the ends thereof to provide for the lateral adjustment of said bar to adapt the frame to fit negatives of different thickness. Mounted on the lower face of this bar 43 are two longitudinally spaced rollers 46 and 47 which are fastened to bear against the rear face of the platen when the exposure frame 15 is moved downwardly thereby automatically closing the platen. This pressure bar 43 is preferably constructed as shown in detail in Fig. 10 comprising a roller carrying member 48 through which the studs 44 and 45 pass.

A curved plate spring 49 is secured to the upper face of the member 48 preferably midway the ends thereof, the free ends thereof being designed to bear against a plate or bar 50 which is also mounted on the studs 44 and 45 and is held in adjusted

position by the nuts on said studs. This spring 49 provides for the lateral yielding of the roller carrying member 48 to permit the exposure frame to pass rapidly thereunder. The upper edges of the bar 48 and plate 50 are preferably recessed as shown at 51 to receive the keeper on the platen when the platen is opened downwardly to permit said platen to open to its full extent.

10 A hook member 52 is secured to the lower edge of the exposure frame 15 with which an adjustable telescoping pedal rod 53 is detachably connected preferably by passing said hook 52 through an aperture in one end
15 of said rod. This rod is preferably composed of two telescoping sections 54 and 55 adjustably connected by any suitable means. The other end of the rod 53 is connected with a pedal 56 preferably at a point inter-
20 mediately of its ends, one end of said pedal being pivotally mounted on a suitable support and the free end thereof being connected with one end of a coil spring 57. The other end of this coil spring 57 is con-
25 nected with the lower end of the main frame 1 as is shown clearly in Figs. 1 and 2, and when the pedal is depressed the exposure frame is moved downwardly against the tension of the spring 57 which exerts its ten-
30 sion to return the frame into inoperative position when the pedal is released. The telescoping pedal rod it will readily be seen is easily adjusted to adapt the machine for use on windows of varying heights or for
35 use by operators of different heights.

A removable table or cabinet 58 is preferably mounted on the main frame 1 by means of hooks which are detachably connected with eyes at opposite sides of the frame 1 to
40 provide for the removal of said table or cabinet when desired. This table or cabinet is preferably provided below the top thereof with two drawers 59 and 60 for containing exposed and unexposed cards or paper which
45 are thus held in convenient position for the use of the operator.

In the operation of this improved machine the negative is first placed in the exposure frame 15 with the film side toward the opera-
50 tor and pressed therein until the automatic locking device 21 snaps over the upper end of the negative. The sensitized card or paper is then placed on the platen resting against the receding gages which have been
55 previously adjusted to the desired position. These receding gages when coming in contact with the negative move backwardly and allow the card or paper to make a complete contact and they render it possible to dis-
60 pose the negative and the card or paper in vertical position. The pedal is then depressed which causes the exposure frame to move downwardly and the rollers 46 and 47 bearing on the platen to close it and the
65 further descent of the frame 15 exposes the

negative to the white light which is diffused through the ground glass light diffuser. The density of the negative, the volume of light and the number of tissues in the vignetting plate govern the length of time necessary to make the exposure. When the
70 pedal is released, the exposure frame automatically rises under the action of the spring 57 and at the instant the ruby colored plate 10 is reached the platen opens automatically
75 allowing a volume of ruby light to fall upon the table and platen affording sufficient light to enable the operator to manipulate the cards which he is printing. When the platen opens the operator removes the printed
80 card with his left hand at the same time placing an unexposed card into position with the right hand whereby the printing of the cards may be rapidly accomplished, a hun-
85 dred or more exposures being made in about five minutes depending upon the skill of the operator, the volume of light and the density of the negatives or vignetting. When the required number of prints have been made from one negative the operator releases the
90 negative by pressing upward on the automatic locking device 21 which holds the negative in place and the automatic ejector will then press the negative outward and cause it to fall back into the hand of the
95 operator ready for removal.

The formation of the main frame of hinged members provides for the opening of the machine to permit the adjusting of the vignetting plate into position.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention, as defined in the ap-
110 pended claims.

I claim as my invention:

1. A photographic printing machine comprising a main frame having a vignetting and a colored plate, a negative frame slid-
115 ably mounted behind said plates, a downwardly opening platen carried by said sliding frame, means carried by said main frame for automatically closing said platen on the movement of said sliding frame in
120 one direction and means carried by said sliding frame for automatically opening said platen when moved in the opposite direction.

2. A photographic printing machine comprising two hingedly connected sections the inner face of one section being inclined forwardly toward its lower end, registering openings formed in said sections, one of said
125 hinged sections having a diffusing plate 130

mounted in the lower portion of the opening thereof and a colored plate mounted in its upper end, a sliding frame operable in said hinged section at the rear of said plates, said
5 sliding frame having an opening provided with means for supporting a negative, a downwardly opening platen connected to the lower edge of said opening and means carried by said hinged section for automatically
10 closing said platen when moved in one direction.

3. A photographic printing machine comprising two hingedly connected sections the inner face of one section being inclined forwardly toward its lower end, registering
15 openings formed in said sections, one of said hinged sections having a diffusing plate mounted in the lower portion of the opening thereof and a colored plate mounted in its
20 upper end, a sliding frame operable in said hinged section at the rear of said plates, said sliding frame having an opening provided with means for supporting a negative, a downwardly opening platen connect-
25 ed to the lower edge of said opening, a pres-

sure bar mounted on said hinged section and operable to close said platen when moved in one direction and spring-pressed means carried by said sliding frame for opening said platen automatically when moved in the opposite direction.

4. An exposure frame for a photographic printing machine comprising negative supporting means, a downwardly opening platen arranged at the rear of said negative
35 supporting means and provided with laterally spaced longitudinally extending slots, a loop-shaped resilient member mounted on the rear of said platen and having arms extending through the slots therein, said arms
40 being provided at their free ends with paper engaging fingers.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JAMES H. BANKS.

Witnesses:

C. H. KOLLING,
H. M. CHILDS.

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