March 27, 1934. L. G. SIMJIAN 1,952,100

PROCESS OF PRODUCING PHOTOGRAPHIC PROOF PRINTS

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Fig. 1.

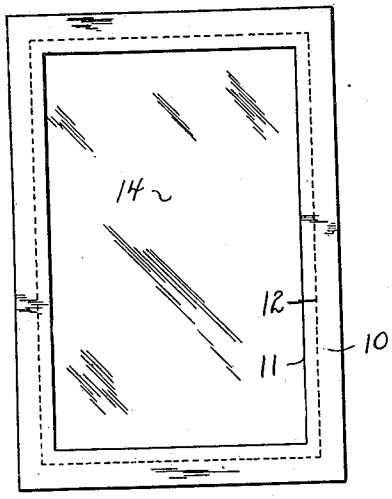


Fig. 3.

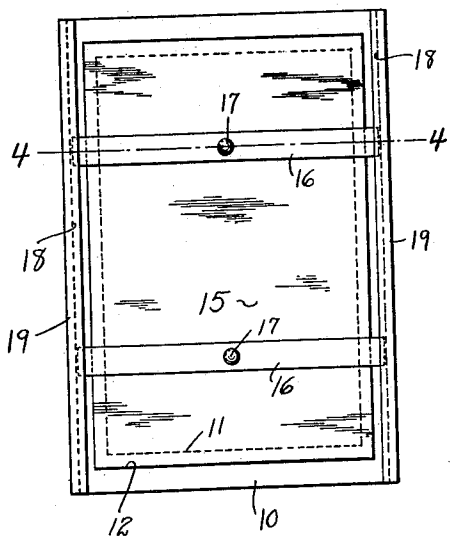


Fig. 2.

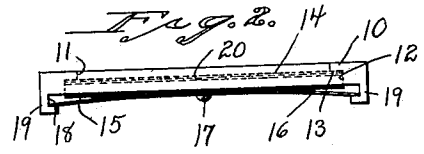


Fig. 5.

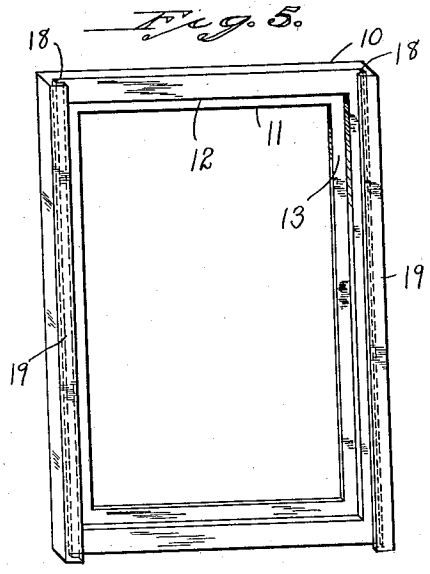


Fig. 6.

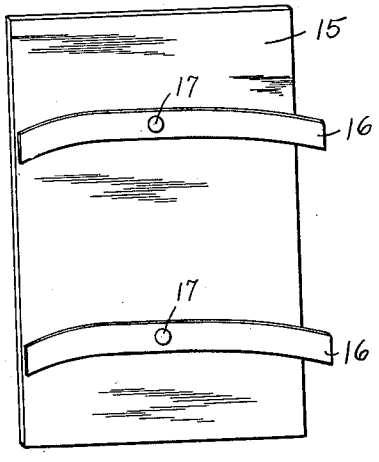
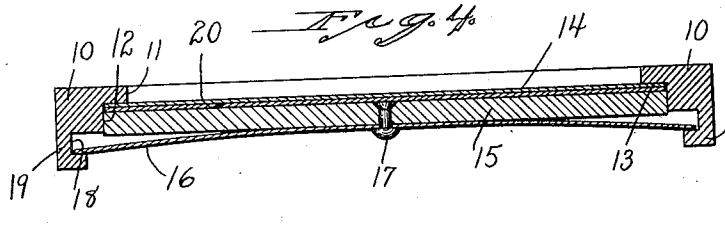


Fig. 4.



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PROCESS OF PRODUCING PHOTOGRAPHIC PROOF PRINTS

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Fig. 7.

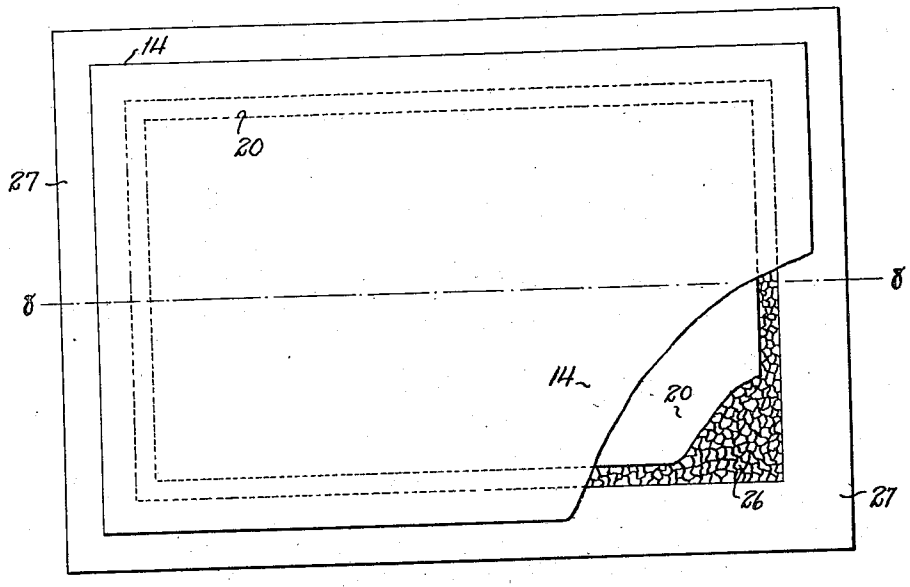
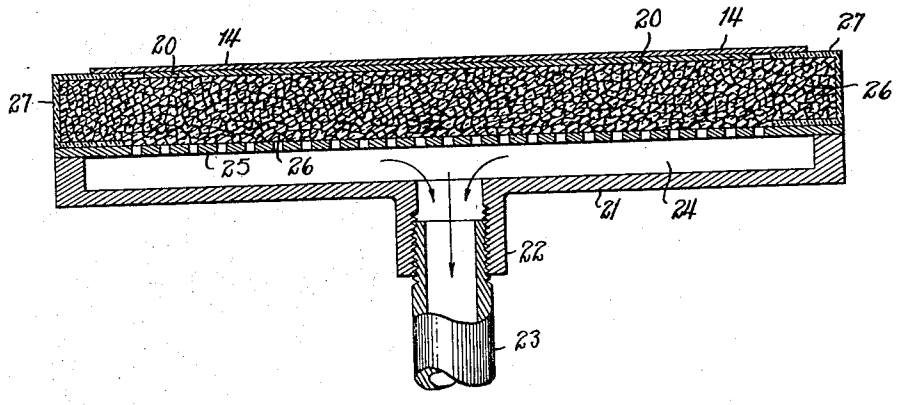


Fig. 8.



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UNITED STATES PATENT OFFICE

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PROCESS OF PRODUCING PHOTOGRAPHIC PROOF PRINTS

Luther G. Simjian, New Haven, Conn.

Application July 13, 1931, Serial No. 550,541

1 Claim. (Cl. 95—5)

This application constitutes a continuation in part of my application, Serial No. 274,901, filed May 3, 1928.

The present invention relates to an improvement in processes for producing photographic proof prints and in particular to producing proofs of photographic portraits, though not so limited.

The main object of this invention is to minimize the time-interval between the taking of a given photograph and the printing of a proof so that, among other reasons, the time of the patron, as well as the time and materials of the photographer, may be conserved, as will hereinafter appear.

With the above and other objects in view as will appear from the following, my invention consists in a method or process for producing photographic proof prints, characterized by securing transparent negative-material (film or plate not as yet converted into a negative by developing) to a holder of such character as will permit the access of light and fluid to the sensitized surface thereof and exclude the said fluid from the inner surface of the same; subjecting the sensitized surface of the said negative-material to the action of developing and fixing fluid; and then subjecting the sensitized surface of the now developed negative-material to light to print an image therefrom upon physically-distinct photosensitive positive-material located adjacent its opposite surface.

At present it is the general custom to start the production of a so-called "proof" after the negative has been completed, that is to say, after the same has been exposed, developed, fixed, washed and dried. This procedure requires so much time that a patron cannot usually be prevailed upon to remain in the studio until the proof is ready for examination and approval, consequently, in order to be reasonably sure of securing a pose which will please the patron when submitted to him at some later time, the photographer is compelled to take numerous photographs in order to be reasonably sure that among the group one or more poses will be found which will receive the approval of the patron.

By means of my improved method I am enabled not only to facilitate shop practices, but also to produce a proof for the examination of the patron in such a relatively short time after the taking of the portrait that the patron is usually willing to await the result of one picture before requiring the photographer to proceed with the taking of additional photographs. Thus, as soon as a pose satisfactory to the patron is secured, no extra photographs need be taken, with the result that a great saving of both time and material is effected.

In the accompanying drawings:

Fig. 1 is a front view of one form of holder which may be employed to hold the negative and proof paper during the various steps of my improved process;

Fig. 2 is an end view thereof;

Fig. 3 is a rear view thereof;

Fig. 4 is a transverse sectional view on the line 4—4 of Fig. 3;

Fig. 5 is a detached perspective view of the frame-member of the holder;

Fig. 6 is a corresponding view of the backplate-member;

Fig. 7 is a top or plan view of another form of holder which may be employed in practicing my improved method; and

Fig. 8 is a sectional view thereof taken on the line 8—8 of Fig. 7.

In carrying out my invention as shown in Figs. 1 to 6 inclusive, I employ a holder comprising a rectangular frame 10 formed in its forward face with a rectangular opening 11 and in its rear face with a rectangular recess 12 larger in size than the said opening 11 and, therefore, resulting in the formation of a rectangular stop-shoulder 13 against which the edges of the front or sensitized surface of a sensitized film or glass-plate 14, hereinafter referred to as "negative-material," is pressed by a backplate 15 which substantially corresponds in size and shape to the recess 12 aforesaid. The said backplate is pressed forward in the recess 11 by a pair of spring-clips 16 pivoted by means of studs 17 to the rear face of the backplate and having their respective oppositely-extending yielding arms engaged with undercut grooves 18 respectively formed in the two rearwardly-extending side-bars 19 of the frame 10 so as to hold the negative-material 14 firmly against the shoulder 13, and also to hold the front or sensitized surface of a sheet of proof paper 20 or equivalent photo-sensitive positive-material, firmly against the rear or unsensitized surface of the negative-material 14.

As thus mounted in the holder, the forward or sensitized face of the negative-material 14, with the exception of its marginal edges, is exposed through the opening 11 in the frame to the action of developing, fixing and rinsing fluids, while the forward or sensitized surface of the proof paper 20 is exposed through the transparent negative-material only to the action of light. The pressure of the backplate 15 in pressing the neg-

ative-material against the shoulder 13 will serve to exclude fluids from reaching the proof paper.

With the negative-material and proof paper mounted in the frame as above described, the frame, together with its contents, may be positioned in a camera for exposing the negative-material if the same has not been previously exposed. After the exposure of the negative-material a developing fluid is applied to the front or sensitized surface of the same through the opening 11 in the frame 10, preferably by spraying the developer thereon, or, if desired, by flooding the outer sensitized surface thereof with developer.

After the negative-material has been properly developed a fixing fluid is applied to the outer sensitized face thereof to fix the same, though a mixture of both developing fluid and fixing fluid may be applied to act concurrently, as is common practice.

Within a very short time after the initial application of the fixing fluid to the now developed negative-material, as above described, the same may be subjected to light for causing the image recorded on the negative to print upon the proof paper 20, and this printing light may continue to play upon the negative and through it upon the proof paper 20 until the completion of the fixing operation and through the subsequent rinsing and drying operations if required, so that the time required to finish the negative subsequent to its development and at least partial fixing may be utilized also to print the proof.

In carrying out my improved process, instead of using a holder of the character shown in Figs. 1 to 6 inclusive, I may employ a suction-operated holder such as shown in Figs. 7 and 8. This holder consists, as shown, of a cup-shaped body-member 21 having an internally-threaded boss 22 projecting therefrom, into which is threaded a pipe 23 leading to any convenient source of suction, such as a vacuum-pump. Over the top of the chamber 24 created by the cup-shaped form of the body-member 21 I secure by solder, or in any other convenient manner, a perforated plate 25, upon the upper surface of which is cemented a pad of sponge rubber 26 having its side edges and the marginal areas of its top and bottom faces covered by an impervious coating 27 of rubber.

The central area of the pad 26 is thus left uncovered, as shown, so that air under the action of suction created in the chamber 24 may pass through the said pad. Immediately upon the upper surface of the central exposed area of the said pad 26 I place a section of proof paper or other photo-sensitive positive-material 20, preferably slightly smaller in area than the exposed upper area of the sponge rubber constituting the pad 26.

Over the top of the proof paper 20 is placed the transparent negative-material 14 which, in this instance, is preferably larger in area than the proof paper, so as to lap over upon the upper surface of the coating 27 around the marginal area of the said pad, to thus prevent fluid from being drawn inward by the suction into the porous body of the pad.

From the foregoing, it will be seen that when suction is created from any suitable source in the chamber 24, the proof paper 20 and the negative-material 14 will be drawn snugly into engagement with the upper surface of the pad 26 and that the overhanging margins of the negative-material will be drawn into fluid-tight engagement with the coating 27 surrounding the marginal area of the said pad.

Developing and fixing fluids, either separately or mixed, may be applied to the outer sensitized surface of the negative material 14 as positioned in the holder of Figs. 7 and 8 in any approved manner, such as by spraying the fluid thereon or partly or wholly immersing the holder in a suitable bath.

Preferably, in carrying out my improved process, the outer sensitized surface of the negative-material 14 will be kept covered by a film of fluid during the printing operation, so as to avoid the warpage or spotting of the negative-material as a result of the heat directed thereat during the printing operation. Such a film of moisture as just referred to may be maintained in any approved manner such as by spraying fluid on the negative-material during the printing operation or by flooding the entire surface thereof.

Various other types of holders are suitable in carrying out my invention and I do not wish to be understood as limiting myself to those chosen herein for illustration. Any holder having the characteristics set forth in the appended claim will serve in practicing my invention.

It is not essential to the successful practicing of my improved process, that the proof paper be already in position behind the negative-material during the development of the latter, since obviously the said proof paper may be placed in position at any time before printing.

While I have found it feasible to subject the negative-material to the action of light, in order to print the proof very shortly after the starting of the fixing operation and before the completion thereof, it is obvious that the printing may be caused to take place after the completion of the fixing operation and during any one of the subsequent operations required to finish the negative.

I have found my improved process especially useful in studios employing automatic and semi-automatic photographic apparatus, since a single attendant is often required to care for a number of machines and hence a saving of time is of vital importance.

I claim:

A process for producing photographic proof-prints without requiring the destruction of the negative, comprising: selecting photo-sensitive positive material and transparent photo-sensitive negative material, each of which constitutes a separate and physically-distinct entity and relatively positioning the said materials so that the sensitized surface of the said negative material is accessible to fluid and faces away from the said positive material for being later fluid-treated; subjecting the sensitized surface of the said negative material while thus positioned to the action of developing and fixing fluids and at the same time excluding the said fluid from the sensitized surface of the said positive material; subjecting the exposed sensitized surface of the now-developed negative material to the action of light to print an image therefrom upon the said separate and physically-distinct photo-sensitive positive material; and separating the now-developed negative material and the said positive material whilst maintaining their individual integrity, whereby a proof-print is obtained and a negative is preserved for the further production of positive prints.

LUTHER G. SIMJIAN.