

Nov. 4, 1930.

R. F. CRANE

1,780,701

PHOTOGRAPHIC PRINTING DEVICE

Filed Nov. 10, 1928

3 Sheets-Sheet 1

Fig. 1.

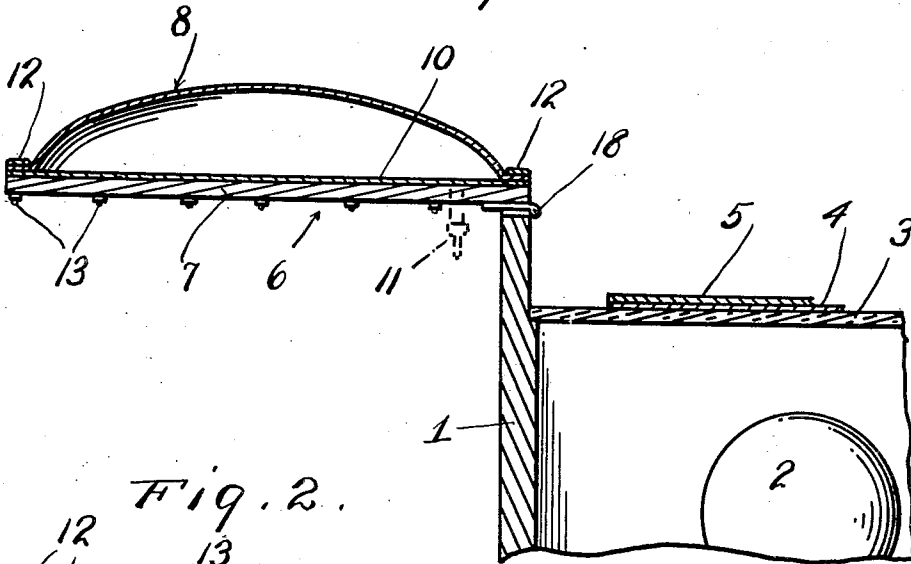
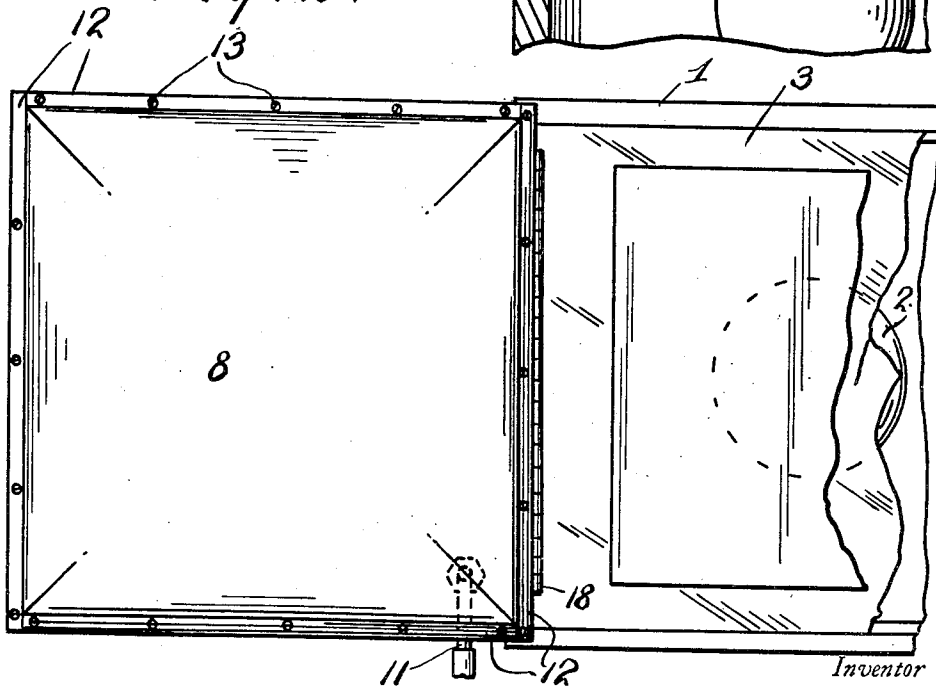


Fig. 2.



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Fig. 3.

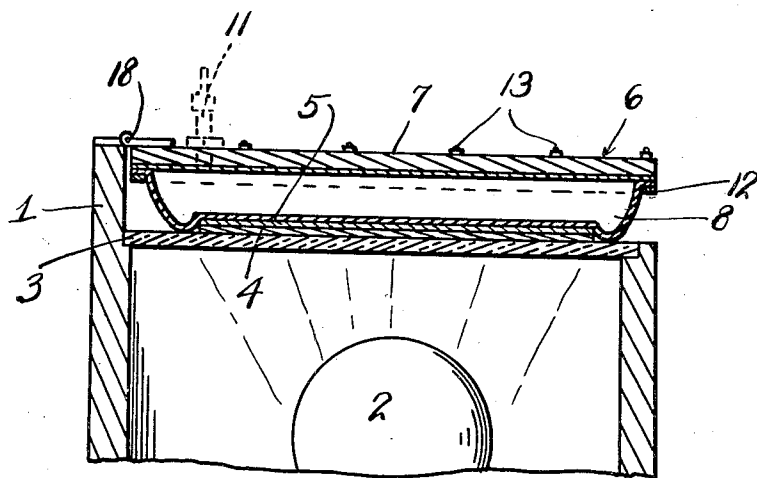
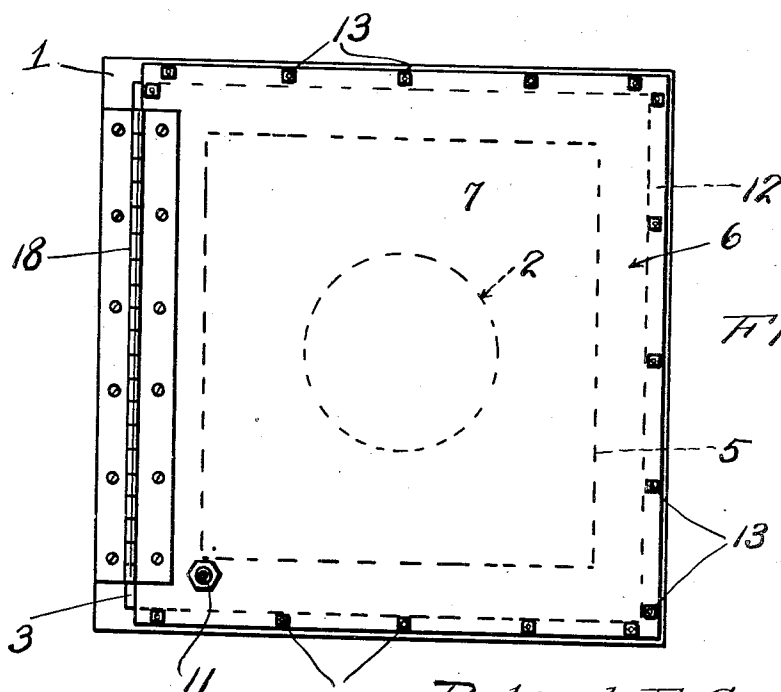


Fig. 4.

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3 Sheets-Sheet 3

Fig. 5.

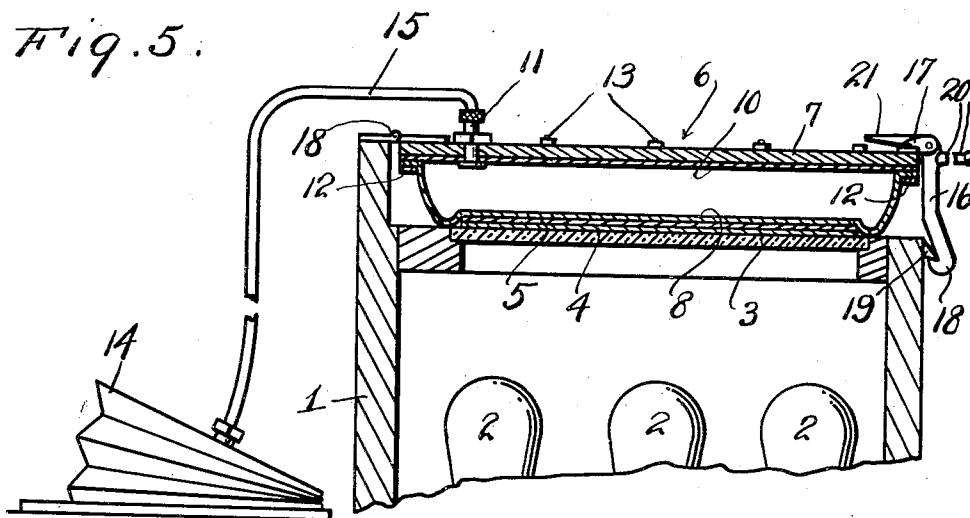


Fig. 6.

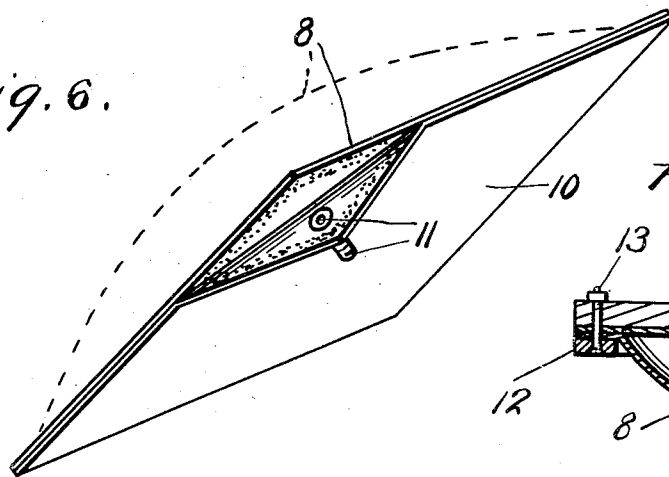
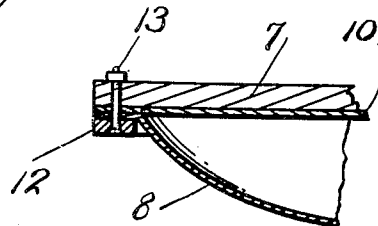


Fig. 7.



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UNITED STATES PATENT OFFICE

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PHOTOGRAPHIC-PRINTING DEVICE

Application filed November 10, 1928. Serial No. 318,465.

The present invention relates to photographic printing devices and has reference more particularly to a pneumatic platen for use in conjunction with the device whereby to secure an absolute and uniform contact between the negative and the sensitized paper over the entire surface.

One of the important objects of the present invention is to provide a photographic printing device of the above mentioned character wherein the platen unit includes a board having an inflatable pad arranged thereon, means being associated with the hollow pad for inflating the same to any desired pressure, additional means being provided for securing the platen in position on top of the sensitized paper during the making of an exposure.

Most of the photographic printing devices now on the market are equipped with a ground glass between the light and the negative. Its purpose is to diffuse the light and to distribute it uniformly over the negative. If however a perfect contact between the negative and the sensitized paper is not present, blurred spots will result due to the light coming from different directions to a particular point on the negative. If, however, the contact between the negative and the sensitized paper is perfect, blurred spots will not occur. It is therefore one of the principal aims of the present invention to provide a means for insuring a perfect contact between the negative and the sensitized paper.

Also at the present time, rigid platens are employed for covering the whole print and usually the rigid platen consists of a board covered on the under side with a thin sheet of padding, usually felt. Such an arrangement works satisfactorily for small prints up to about five to seven inches. For any larger prints, one is apt to run into difficulties. A slight warp or unevenness of the contact board which is referred to as the platen causes pressure to be applied in some places and to be totally lacking in others. Where there is no pressure there is no absolute contact, and consequently a blur is formed. Furthermore, the unevenness causes undue strain to be placed upon the glass cover of the printer, frequently resulting in breaking.

It is therefore one of the salient objects of the present invention to replace the rigid platen with a pneumatic pad or cushion that will overcome the above disadvantages, said pneumatic platen being at all times positive and efficient in carrying out the purposes for which it is designed.

Other objects and advantages of the invention will become apparent from the following description when taken in connection with the accompanying drawings.

In the accompanying drawings wherein like reference characters indicate corresponding parts throughout the several views:

Figure 1 is a fragmentary sectional view through a photographic printing device showing my improved platen unit associated therewith, the same being disclosed in an inoperative position.

Figure 2 is a top plan view of the parts illustrated in Figure 1.

Figure 3 is a view similar to Figure 1 showing the platen unit swung to an operative position, and further illustrating the manner in which the pneumatic cushion or pad engages with the print.

Figure 4 is a top plan view of the structure shown in Figure 3.

Figure 5 is a view similar to Figure 3 illustrating a modification of the platen unit that is used in conjunction with making large prints.

Figure 6 is a detail perspective view of the inflatable cushion or pad per se, one corner portion thereof being separated, and

Figure 7 is a detail view showing the manner in which the pneumatic cushion or pad is secured to the board of the platen unit.

In the drawings, the numeral 1 designates the light cabinet that is of the conventional construction, the light mounted therein being indicated at 2. Supported across the open top face of the light cabinet is the glass cover 3 on which is adapted to be placed the negative 4 and the sensitized paper 5 is placed on top of the negative in the usual manner.

In lieu of the usual platen, there is provided my improved platen unit denoted generally by the numeral 6 and the same comprises a board 7 that is hinged secured to the upper

edge of the rear wall of the light cabinet as at 8.

My improved platen unit further comprehends the provision of an inflatable cushion or pad 8 that consists of two substantially rectangular pieces of sheet rubber denoted by the reference characters 9 and 10 respectively.

These superposed sheets of rubber are vulcanized together along their marginal edges and an inflating valve 11 is associated with the pneumatic cushion or pad for filling the bag with air or gas to any desired pressure. Suitable clamping strips 12 are provided for securing the edge portions of the pneumatic cushion or pad 8 to the under side of the board 7 by the fastening means indicated at 13. In using the photographic printing device provided with a pneumatic cushion or pad after the negative and sensitized papers have been placed in proper position on the transparent glass cover 3, the hinged platen unit 6 is swung downwardly into position over the top of the light cabinet 1, and when the light 2 is turned on and the downward pressure is placed upon the board 7 of the platen unit 6, the inflated cushion pad 8 will exert a pressure of approximately five pounds per square inch of the surface touched by the pneumatic cushion or pad thus insuring a positive and uniform contact between the negative and sensitized papers over the entire surface, and at the same time no undue strain is placed on the transparent medium upon which the negative is placed. While in this position, the light is turned on, and the exposure is made.

For prints larger than eight by ten inches, the area becomes so great that a pressure of only a few pounds per square inch necessitates a large downward force.

Therefore, in order to properly make larger prints, a slightly modified platen unit is employed, and attention is now directed to Figure 5 of the drawings. Instead of inflating the pneumatic cushion or pad 8 through the medium of an inflating valve that is associated with the pneumatic cushion, I employ a bellows 14 that has communication with the pneumatic cushion or pad 8 through the hose 15 and suitable connections are arranged between the ends of the hose and the bellows and pneumatic cushion respectively. In this manner, the gas chamber may be inflated or deflated at will. In order that the platen unit may be properly held in position above the sensitized paper and the negative placed on the transparent medium, I provide a pivoted lever 16 that is carried by the forward edge portion of the board 7, the same being pivotally secured on a bracket 17. The lower free end of the lever terminates in a hook 18 for engagement with a lip 19 that projects outwardly from the upper forward edge of the light cabinet 1. A handle 20 is as-

sociated with the pivoted lever 4 actuating the same, and a stop 21 extends from the upper pivoted end of the lever to limit the swinging movement of the pivoted lever in an upward direction.

As is indicated in Figure 5, the hook 18 engages with the lip 19 to positively secure the hinged platen unit in position over the sensitized paper and the negative, after which the pneumatic cushion or pad is inflated, and subsequently the exposure is made.

It will thus be seen from the foregoing description, that I have provided an improved platen structure for association with a photographic printing device that will at all times insure a positive and uniform contact with the negative and sensitized papers over the entire surface, thus preventing any blurring.

Furthermore, a pneumatic cushion or pad of the above mentioned character will at all times be positive and efficient in its operation, and due to its simplicity, the same can be attached on a conventional photographic printers' device without necessitating any material alterations.

While I have shown the preferred embodiment of my invention it is to be understood that minor changes in the size, shape and arrangement of parts may be resorted to without departing from the spirit of the invention and the scope of the appended claim.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent is:—

A photographic printing device comprising a light cabinet having a horizontally disposed transparent surface at its upper end for supporting a negative and a sensitized paper in superposed relation thereupon and having its rear wall extended vertically above the said surface for an appreciable distance, a lip projecting outwardly from adjacent the upper edge of the forward wall of the cabinet, a platen hingedly connected at one end to the upper edge of said extended rear wall and adapted when swung into position over the transparent surface to be disposed at an inclination to said surface with its free end resting upon the latter, a pivotal latch depending from the said free end of the platen with its lower end terminating in a hook for engagement with the said lip, said latch being adapted in the inclined position of the platen to extend obliquely with respect to the forward edge of the surface with its hooked end disposed outwardly of and below the said lip, a flat normally deflated pneumatic cushion secured to the inner face of the platen and adapted in the inclined position of the latter to contact with the superposed negative and sensitized paper only at the forward or outer portion thereof, and means for inflating said cushion.

In testimony whereof I affix my signature.

ROLAND F. CRANE. 13c