

April 23, 1940.

P. F. JACKSON

2,198,251

CONTACT PRINTING BOX

Filed April 6, 1938

2 Sheets-Sheet 1

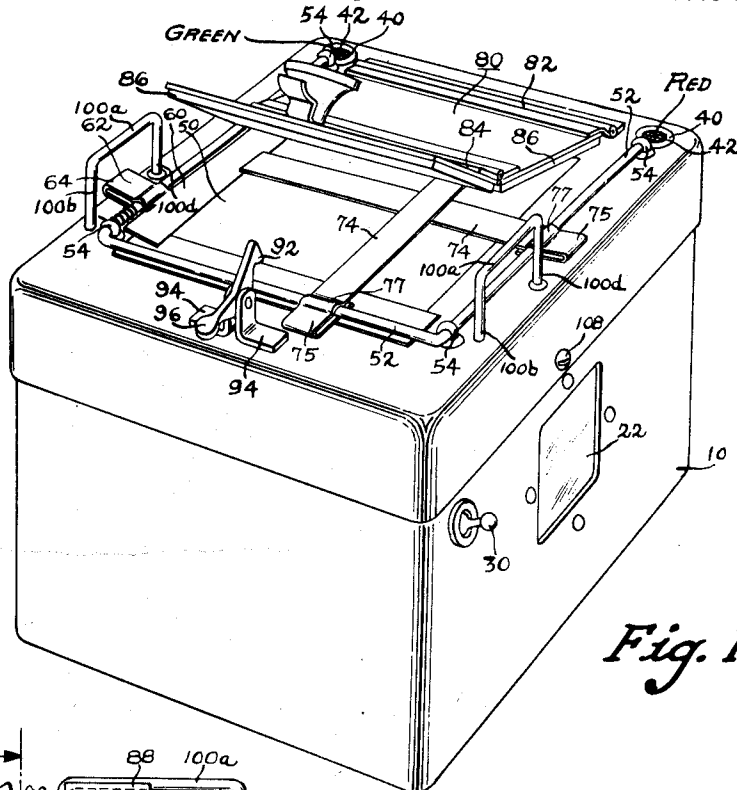


Fig. 1.

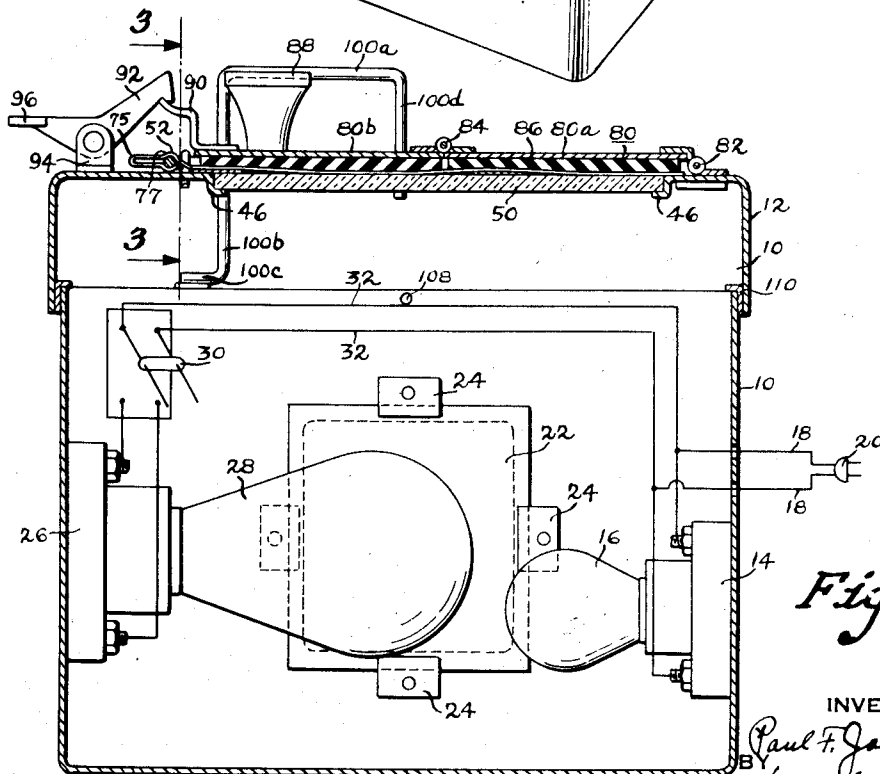


Fig. 2.

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2 Sheets-Sheet 2

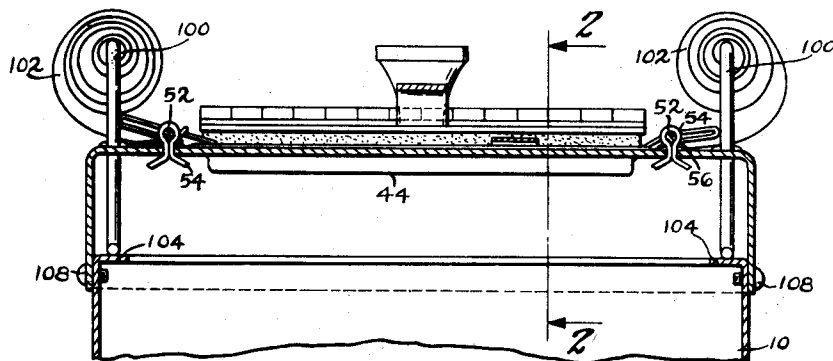


Fig. 3.

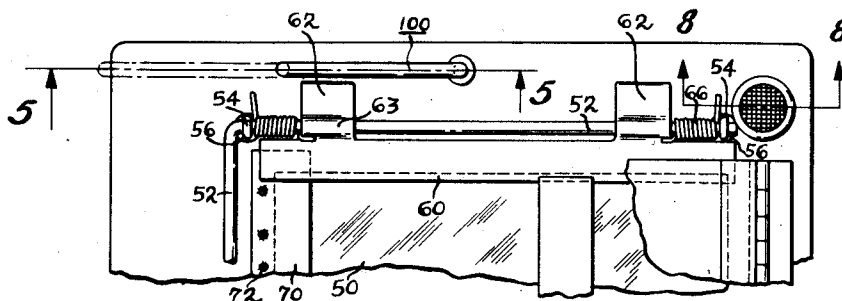


Fig. 4.



Fig. 6.

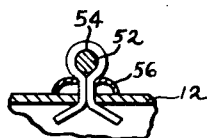


Fig. 7.

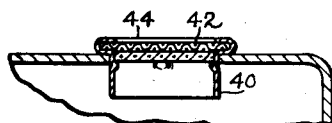


Fig. 8.

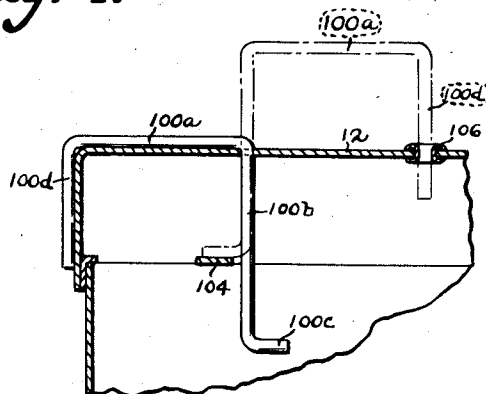


Fig. 5.

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## UNITED STATES PATENT OFFICE

2,198,251

## CONTACT PRINTING BOX

Paul F. Jackson, Dayton, Ohio

Application April 6, 1938, Serial No. 200,479

3 Claims. (Cl. 95—73)

This invention relates to photographic equipment and more particularly to a contact printing box.

5 An object of this invention is to produce a contact printing box that is cheap, easily produced, convenient, light in weight, simple; but at the same time efficient and dependable.

10 Another object of this invention is to provide a contact printing box that is suitable for use with continuous length strips of films.

Another object of this invention is to provide signalling means for indicating the source of light, if any, that is illuminated within the printing box.

15 Another object of this invention is to provide a film masking and supporting mechanism that is easily adjusted to accommodate various sizes of films, that is easily constructed, cheap; but at the same time efficient and dependable.

20 Another object of this invention is to provide supports for a continuous length of film.

Other objects and advantages reside in the construction of parts, the combination thereof and the mode of operation, as will become more apparent from the following description.

25 Fig. 1 is a perspective view of a contact printing box with the lid-like pressure plate ajar.

Fig. 2 is a longitudinal cross sectional view taken substantially on the line 2—2 of Fig. 3.

30 Fig. 3 is a fragmentary transverse sectional view taken substantially on the line 3—3 of Fig. 2.

Fig. 4 is a fragmentary top plan view with parts broken away to show some of the structure in detail.

35 Fig. 5 is a fragmentary sectional view taken substantially on the line 5—5 of Fig. 4, with the reel supporting device in inoperative position.

40 Fig. 6 is a detail fragmentary view of a portion of the masking device.

Fig. 7 is a fragmentary cross sectional view to show structural details.

Fig. 8 is a fragmentary cross sectional view taken substantially on the line 8—8 of Fig. 4.

45 The embodiment shown is particularly adapted for use by amateurs and small developing establishments desiring a light, convenient printing box that may be moved from place to place, easily adjusted to accommodate various sizes of negatives and prints, easily controlled and easily produced. The printing box includes a suitable red light and a printing light underlying a translucent surface adapted to support a film in contact with the sensitized printing paper. The  
50 printing box may be used in connection with

continuous length films having the ends or rolled portions on either side of the printing surface mounted upon suitable supports.

The printing box includes a lower portion 10 housing the lights and a cover portion 12, which includes a film and printing paper supporting surface, masking devices, et cetera. The illumination device mounted in the lower portion 10 includes a socket 14 supporting a red light bulb 16 of the conventional incandescent lamp type energized through a pair of leads 18, terminating in a plug 20, that may be plugged into any suitable outlet socket. Whenever the plug 20 is plugged into position, the red light 16 is illuminated. This red light is visible on the outside of the box through a red glass or the like 22, held in position by a plurality of brackets 24 spot welded or otherwise secured to the side of the box 10 in proper relation to the window opening therein.

20 The box 10 includes another socket 26, having mounted therein a suitable incandescent light bulb 28, preferably of a larger candle power or wattage than the bulb 16, generating a clear light whenever the switch 30 is in closed position, said light being energized through a pair of leads 32 connected to the leads 18. The switch 30 may be any suitable toggle switch appearing on the market, shown conventionally in Fig. 1 and shown schematically in Fig. 2.

30 Due to the fact that the glass 22 is always illuminated when the plug 20 is connected to a suitable source of energy, whether the light 28 is illuminated or not, it is rather difficult for the operator to determine from a casual inspection of the window 22 whether or not the switch 30 is open or closed to illuminate the printing light 28. That being the case, a suitable signalling mechanism pilot light has been devised. The signalling mechanism has been located in the cover 12. It consists of a pair of tubular members 40, press fitted into suitable apertures in the cover 12, one to the right and one towards the left, as viewed in Fig. 1. The tubular members 40 are provided with reentrant flanges holding the screen 42 in position.

45 The tubular member 40 shown to the left of Fig. 1 is provided with a green window or filter 44 that will obstruct the passage of all but the green rays. This has been designated as green in Fig. 1. Instead of green, any other colored glass or filter may be used, as for example, a yellow glass. The tubular member 40 or pilot seen towards the right of Fig. 1 is provided with a red window. Whenever the plug 20 is con-  
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nected to a suitable source of current, the switch 39 being open, the red light 16 is illuminated and a red background is seen in the top of the pilot member 40, shown to the right of Fig. 1; but the green pilot to the left of Fig. 1 remains dark, as the green filter glass obstructs the passage of all the red rays. Whenever the switch 39 is closed, so as to energize the light 28, the red pilot, seen to the right of Fig. 1, continues red. The green pilot 44, to the left of Fig. 1, permits green rays to pass therethrough and shows up green. This permits the operator to observe the type of light within the box without opening the box. This is a precaution against opening the box when the light 28 is illuminated, so as to expose or ruin the sensitized paper that may be exposed on the exterior of the box.

The top of the box 12 is provided with an opening bounded by an offset flanged portion 46 that supports a ground window glass 50, or any other suitable transparent or translucent member constituting a support for the film and the sensitized paper during the printing operation. The film and the sensitized paper may be held in position by masking strips, which will now be described.

A U-shaped rod 52 bounds three sides of the window glass 50, that is, the legs straddle the glass 50. The U-shaped member is held in position by extending through the eyes of four cotter pins 54, one near each corner of the glass 50. As may best be seen by referring to Fig. 7, the rod 52 is supported upon grommet-like washers 56 seated on top of the cover 12. The cotter pins 54 have their ends deflected below the surface of the cover 12, so as to rigidly hold the U-shaped rod 52 in position.

One leg of the U-shaped member 52 supports a masking strip 60. This masking strip 60 extending along one side of the glass 50 is provided with a pair of ears 62 projecting from a transverse rib 63, as best seen by referring to Fig. 4. The ears 62 are folded at 64, so as to embrace the rod 52 seated in the bight on the side opposite the rib 63. This masking strip 60 is held in position and biased against the glass 50 by a pair of coil springs 66, having one end resting on top of the cover and the other end arranged in hooked relation with respect to the ears 62.

Along the front of the contact printing box, a masking strip 70 overlies the edge of the glass 50 and may be spot welded at frequent intervals to the cover 12 at 72. This provides masking strips on two sides of the glass 50.

In order to hold the various sizes of films in position a pair of masking strips 74 is adjustably mounted upon one leg opposite the masking strip 60 and the connecting portion between the legs. These masking strips 74 are provided with ear-like extensions 75 embracing the rod 52, so as to hold the masking strips in position at right angles to the portions of the rod engaged and adjustably mounted, so as to accommodate various sizes of films and sensitized paper. Each of the masking strips 74 is provided with a transverse rib 77 from which the ear-like extensions 75 extend. The rod 52 is seated in the bight or groove opposite the rib 77. In order to adjust the masking strips 74, it is merely necessary to grasp the ears 75 to move the masking strips 74 along the rod 52, so as to secure the proper size. The ears 75 are looped, so as to grip the rod 52, as clearly shown in Fig. 6.

When inserting the film, the film may be placed underneath the masking strips and the sensitized paper placed in position after the masking strips

and the film have been properly positioned. After the film and the sensitized paper have been positioned, a lid-like pressure plate 86, pivotally mounted at 82, jointed at 84 and lined with a suitable cushioning pad 85 of suitable material such as sponge rubber, is then pressed down over the film and the sensitized paper into the position shown in Fig. 2, at which time the switch 39 may be closed to energize the light 28 for a period sufficiently long to properly expose or print the picture.

The hinge 82 is of the piano type hinge structure, that is, it is continuous along the entire end of the pressure plate 86 and is spot welded or otherwise secured to the cover 12 and the pressure plate 86. Likewise, the hinge 84 is continuous throughout the entire length. The hinge 84 is preferably welded in position when the plate portions 86a and 86b are held in a suitable jig with the adjacent edges abutting, so that whenever the knob 88 is used to actuate the cover into the "down" position shown in Fig. 2, the parts 86a and 86b are coplanar, thereby eliminating the use of a spring extending along the top or contacting the separate sections of the plate 86. The pressure plate 86 is held in closed position by a suitable spring latch 90 engaging a pawl 92 suitably biased by a spring not shown and pivotally mounted to the bracket 94, attached to the forward portion of the cover 12. The pawl 92 is released by depressing the handle portion 96.

When printing continuous length film, such as films used in "Candid" cameras and the like, it is very desirable to support the film. A pair of reel members 100, one on either side of the glass 50, is adapted when in operative position to support the ends of the continuous length film 102. Each reel member 100 consists of a horizontal portion 100a mounted upon a vertical leg portion 100b, having its lower end deflected at 100c adapted when in operative position to rest upon an ear 104 integral with the top of the lower box portion 10, the leg 100b extending through a suitable aperture in the top of the cover 12. The reel member 100 includes a leg 100d seated in a suitable aperture in the top of the cover in proper spaced relation from the aperture seating the leg 100b. The aperture receiving the leg 100d is preferably provided with a grommet 106 snugly fitting the leg 100d.

Whenever the reel assembly is not required, the leg 100d may be removed from the grommet 106 and the assembly rotated about the leg 100b through an angle of 180°, when the reel assembly may be dropped into inoperative position as shown in Fig. 5, the leg 100d then being positioned in juxtaposed relation with respect to the end of the cover 12.

If it should be necessary to change the lights, or for any other reason open the printing box, the cover 12 may be removed by unscrewing a pair of screws 108, one on either side of the box assembly. This permits the removal of the cover and the box carried thereby, in which event the bulbs 16 and 28 are accessible or removable. The cover may be put into position again by placing on top of the box 10. The downward movement of the cover 12 is limited by a pair of angle irons 110, spot welded to the ends of the cover 12, providing stops.

Although the preferred modification of the device has been described, it will be understood that within the purview of this invention various changes may be made in the form, details, proportion and arrangement of parts which gener-

ally stated consist in a device capable of carrying out the objects set forth, in the novel parts, combination of parts and mode of operation, as disclosed and defined in the appended claims.

5 Having thus described my invention, I claim:

1. In a contact printing box having a window overlying a printing light, a negative masking assembly including a U-shaped supporting rod having its legs straddling the window, a masking strip pivotally mounted on one of the legs, a pair of adjustably mounted masking strips normally disposed to each other and adjustably mounted upon said supporting rod, one of the adjustable strips being slidably mounted upon the leg opposite the pivotally mounted masking strip, the other adjustable strip being slidably mounted upon the portion of the rod connecting the legs thereof, each of said adjustable strips being provided with a hand engaging ear extending beyond the U-shaped member to facilitate manipulation thereof.

2. The combination of a reel assembly with a contact printing box, said contact printing box including a box-like portion having a pair of inwardly directed ears and a cover for the box-like portion, said cover and box-like portion cooperating to enclose a red light and a printing light, said cover having a translucent area forming a surface for supporting the film and the sensitized paper during the printing operation, said reel assembly including a pair of members disposed upon opposite sides of the printing sur-

face, each of said members including a film supporting portion extending parallel to the plane of the printing surface and supported upon a pair of legs extending through suitable apertures in the cover, one of said legs being aligned with and supported upon the inwardly projecting ears so as to hold the reel members in proper position with respect to the printing surface to support the ends of the continuous length film having a portion in printing position.

3. The combination of a reel assembly with a contact printing box, said contact printing box including a box-like portion having a pair of inwardly directed ears and a cover for the box-like portion, said cover and box-like portion cooperating to enclose a red light and a printing light, said cover having a translucent area forming a surface for supporting the film and the sensitized paper during the printing operation, said reel assembly including a pair of U-shaped members having the legs extending in a direction normal to the printing surface, one of the legs being provided with a perpendicular projection extending over the inwardly directed ear and supported thereon, the other leg being shorter, said reel assembly when in inoperative position being rotated through an angle of 180° so as to permit the projection to clear the ear so as to hold the reel assembly contiguous to a portion of the box when in inoperative position.

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