

A. P. CENTER.
DEVELOPING APPARATUS.
APPLICATION FILED MAR. 31, 1909.

951,983.

Patented Mar. 15, 1910.

Fig. 1.

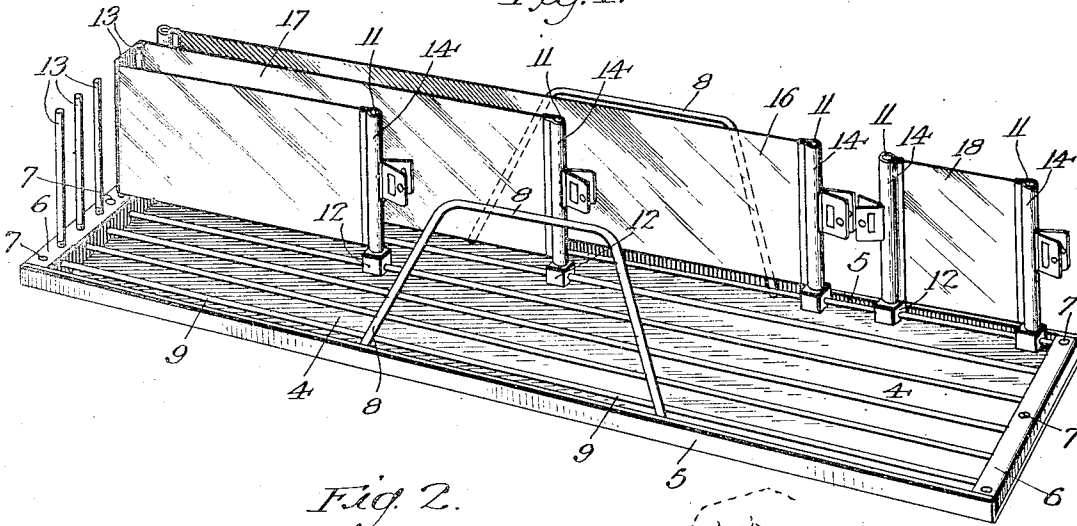


Fig. 2.

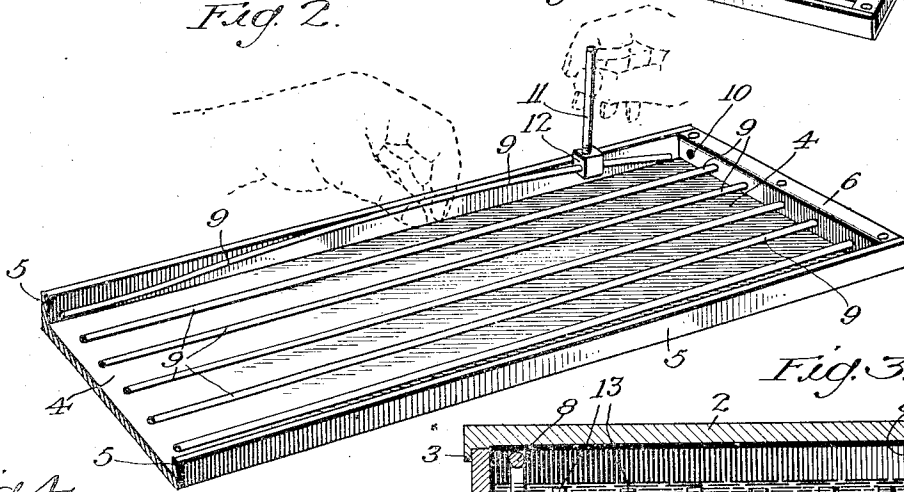


Fig. 3.

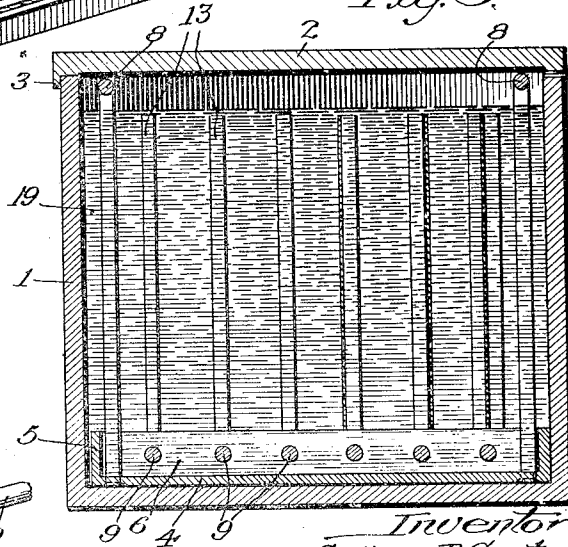


Fig. 4.

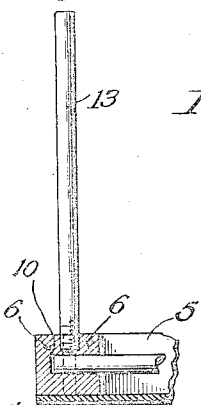
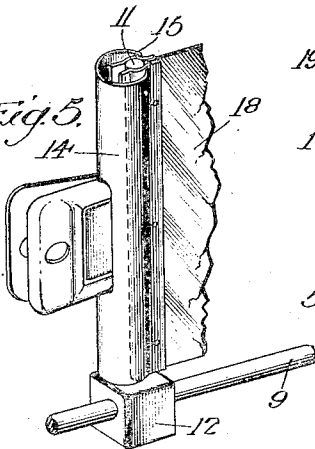


Fig. 5.



Witnesses:
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UNITED STATES PATENT OFFICE.

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DEVELOPING APPARATUS.

951,983.

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To all whom it may concern:

Be it known that I, ADDISON P. CENTER, a citizen of the United States, residing at Brawley, in the county of Imperial and State of California, have invented a new and useful Developing Apparatus, of which the following is a specification.

This invention relates to an apparatus adapted for use by photographers for developing, washing or fixing, and the main object of the invention is to provide an apparatus whereby it is possible to develop several films at the same time.

A further object is to obviate the necessity of manipulating the films during development, thus permitting the operator to devote his time to other work while the developing takes place.

The apparatus is especially designed for developing films either on the strip or separate, but may also be employed for developing glass plates, or for washing or fixing the films or plates.

A further object is to provide for adjusting the apparatus to suit any width or length of film or plate.

While designed primarily for developing, the apparatus may be used to equal advantage in fixing or in any operation requiring the immersion of the film or plate in a liquid solution.

A further object of the invention is to enable the various parts of the apparatus to be removed or replaced.

Other objects and advantages will appear from the following description.

Referring to the drawings:—Figure 1 is a perspective view of the film supporting part of the device removed from the tank. Fig. 2 is a perspective view with one end broken away to illustrate the manner in which the guide rods may be bent to detach the ends thereof from the tray. Fig. 3 is an enlarged vertical cross section through the complete device. Fig. 4 is a cross section through one end of the tray showing the manner of attaching the guide-rods and supporting posts. Fig. 5 is a perspective view showing in detail the attachment of a clip to a supporting post.

1 designates the tank which may be of any preferable construction and formed of

any desired material used for such purposes, and provided with a hinged cover 2 with an overlapping edge 3 which prevents light from entering the tank.

4 designates the tray which is preferably formed of metal with side walls 5 bent up therefrom to stiffen it, and with end pieces 6 secured in position in any desired manner, as for example by screws 7. Handles 8 are attached at each side of the tray, as clearly shown in Fig. 1, by means of which the tray may be lifted into or out of the tank. When in use the tray lies in the bottom of the tank, as indicated in Fig. 2.

A series of longitudinal guide bars 9 extend between the end pieces 6 and are supported a slight distance above the bottom of the tray, as clearly shown in Fig. 3. Each end of the guide rod is removably seated in a smooth hole or socket 10 in the end piece 6 as indicated in Fig. 4. Each guide rod 9 is sufficiently flexible to enable it to be bent as indicated in Fig. 2 to remove its free end from the hole 10 and thereby permit an adjustable film support to be placed on the guide rod or removed therefrom. Each adjustable film support comprises a post 11, the bottom end of which is screwed in a square block 12, the latter being bored transversely to enable it to be slidably mounted on a guide rod 9. The guide rods 9 while somewhat flexible, as above indicated, are sufficiently stiff to support the blocks 12 and prevent them from tilting except when the guide rod is flexed, as indicated in Fig. 2. The posts 11 are held vertically and the blocks 12 are prevented from accidentally turning around on the guide rods by reason of the space between each guide rod and the bottom of the tray being just sufficient to receive that portion of each block 12 which lies below the guide rod; thus the lower face of each block 12 is held flatly upon the bottom of the tray. The blocks 12 may be freely slipped along on the guide rods to adjust them into any desired position without flexing the guide rods, the latter action only being required when it is desired to insert or remove a supporting post with its block 12. A series of supporting posts 13 are secured in one end piece 6 and arranged in line with the respective guide rods 9.

14 designates a spring clip of well-known construction having concaved plates 15 which are adapted to be slipped over a supporting post 11 or 13.

5 In the use of the apparatus a strip of film 16 is gripped at each end by clips 14 and one of the clips 14 slipped over a post 13, the other clip 14 being slipped over an adjustable post 13, and the latter is adjusted on the guide rod 9 so that the film is held flatly and in a vertical position, as indicated in Fig. 1. Should there be several of such films, each one may be arranged between a pair of clips 14 over other guide rods 9 in a manner clearly shown in Fig. 1. If the film, such as the film 17 shown in Fig. 1, be too long to be accommodated by the maximum distance it is possible to secure between a stationary post and an adjustable post, both ends may be supported by adjustable posts 11, as indicated in Fig. 1 and the intermediate portion of the film placed around two stationary posts 13. Should the film be a short piece of film, as the film 18 in Fig. 1, it may be supported between two adjustable posts, both of which are mounted on the same guide rod 9 or as will be evident the short piece could be secured between the stationary post 13 and an adjustable post 11, after the latter had been moved up close enough to the stationary post. Obviously, a glass plate could be supported in the same manner as the short film 18.

It will be obvious from the foregoing that with this device it is possible to support a larger number of films in a vertical position proper for developing and that films of various lengths may be properly held by suitably adjusting the posts 11. After the films to be developed have been mounted as before described on the tray, the tray may be lowered into the tank 1 by means of the handles 8 and immersed in the solution 19, as indicated in Fig. 3. It will be apparent that the clips 14 will support films of less width and that the posts 11 and 13 will support the device 14 of a greater or less length than the length shown. The device will thus accommodate a larger number of films and permit films of various lengths or widths to be simultaneously developed, washed or fixed. The amount of solution employed should of course be sufficient to cover the films and it will be apparent to those skilled in the art that the films must be placed in position on the tray and the tray placed in the tank while in a dark-room. After the cover of the tray has been closed the light cannot reach the interior and the door of the dark-room may then be opened. By turning up the side walls 5, the tray is stiffened sufficiently so that a thin metal may be employed, thereby securing the necessary lightness. All parts of

the device except the tank are preferably 65 nickel-plated, unless made of a metal or other material which is not affected by the solution.

What I claim is:—

1. A developing apparatus comprising a 70 tank, a tray adapted to be inserted in the tank, a series of supporting posts at one end of the tray, a series of guiding means above the tray extending longitudinally along the tray, a series of supporting posts slidable 75 on said guide means along the tray toward and from the first posts, and means for securing films to the posts.

2. A developing apparatus comprising a tank, a tray adapted to be placed therein, 80 supporting posts on the tray, means for adjusting the distance between the supporting posts, means for attaching the films to the posts, the side walls of the tray being bent up to stiffen the same, end pieces attached 85 to each end of the tray, and handles projecting up from the tray.

3. A developing apparatus comprising a tank, a tray adapted to be inserted in the tank, a series of guide rods extending longitudinally of the tray, supporting posts 90 slidable on the guide rods, and stationary posts on the tray.

4. A tank, a tray adapted to be placed therein, a series of flexible guide rods extending longitudinally of the tray, supporting 95 posts slidable on the guide rods, and stationary supporting posts on the tray.

5. A tank, a tray adapted to be inserted therein, end pieces on the tray, a series of 100 guide rods having their ends detachably attached to the end pieces, and supporting posts slidable along the guide rods.

6. A tank, a tray adapted to be inserted therein, end pieces for the tray, a series of 105 guide rods having their ends slidable in sockets formed in the end pieces, said guide rods being flexible, to permit the removal of their ends from said sockets, and supporting posts adjustable along the guide rods. 110

7. A tank, a cover therefor, a tray adapted to be inserted in the tank, end pieces for the tray, guide rods extending between the end pieces, adjustable film supports, each film support comprising a block bored to 115 slidably fit a guide rod, and a post extending vertically above the block.

8. A tank, a cover therefor, a tray adapted to be inserted in the tank, end pieces for the tray, guide rods extending between the 120 end pieces, adjustable film supports, each film support comprising a block bored to slidably fit a guide rod, and a post extending vertically above the block, said guide rods being located a sufficient distance above 125 the bottom of the tray to hold the bottom faces of the blocks flatly against the bottom of the tray.

9. A tank, a tray adapted to be inserted therein, handles on the tray, a series of guide rods extending longitudinally of the tray, supporting posts slidable along the guide rods, stationary posts at one end of the tray, and clips adapted to be secured to the ends of films, said clips being detachably supported on said supporting posts.

In testimony whereof, I have hereunto set my hand at Brawley Cal. this 24th day of 10 March 1909.

ADDISON P. CENTER.

In presence of—

J. H. PEARSON,
R. E. GARDNER.