J. B. GARRETT.

DAYLIGHT X-RAY FILM DEVELOPING TANK.

APPLICATION FILED AUG. 24, 1920.

1,393,108. **Patented Oct. 11, 1921.**

2 SHEETS—SHEET 1.

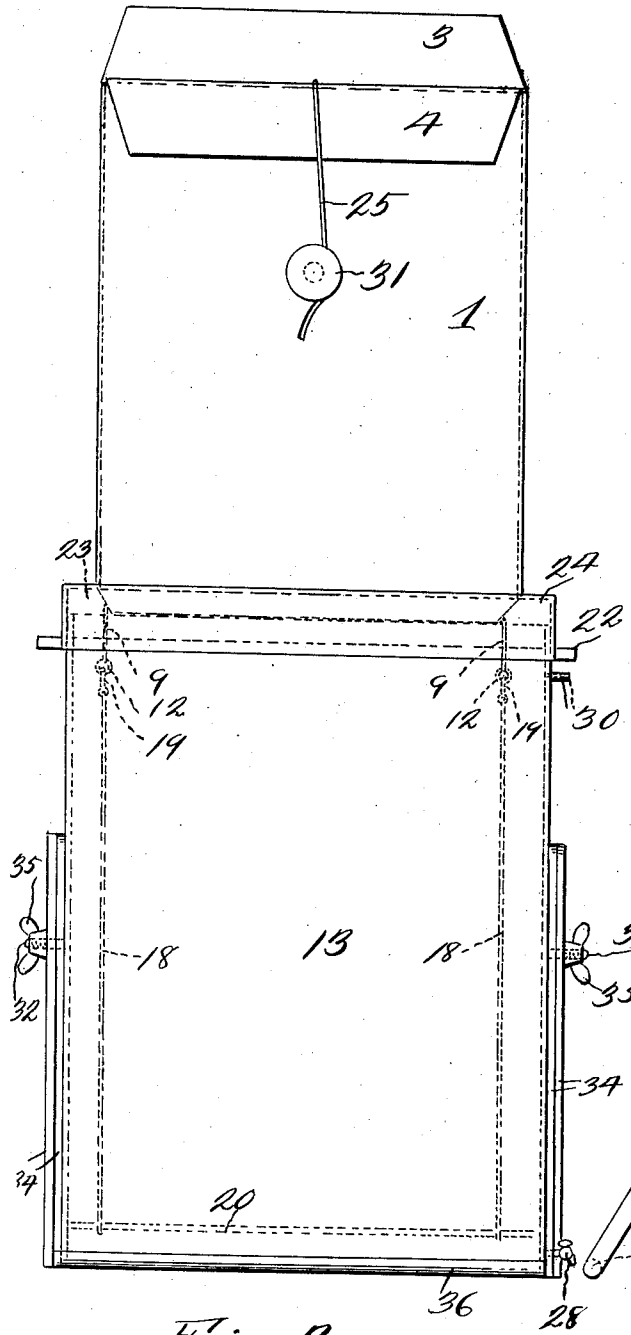


Fig. 2.

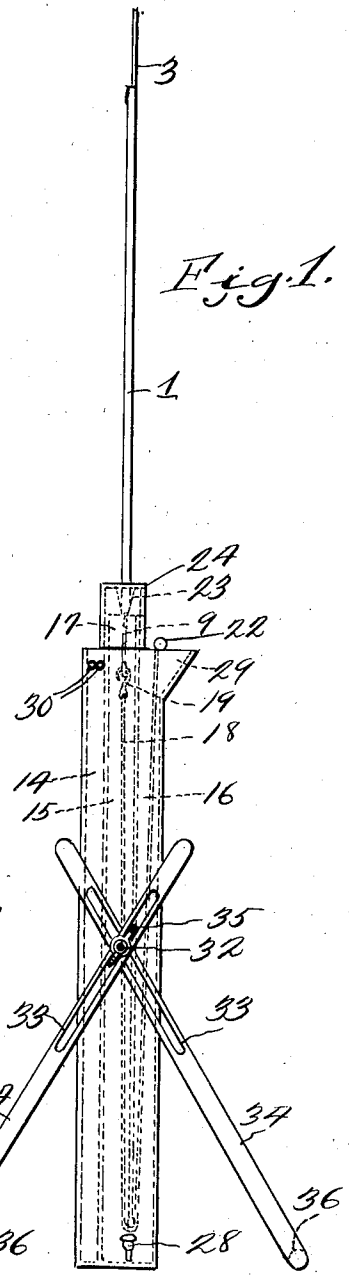


Fig. 1.

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DAYLIGHT X-RAY FILM DEVELOPING TANK.

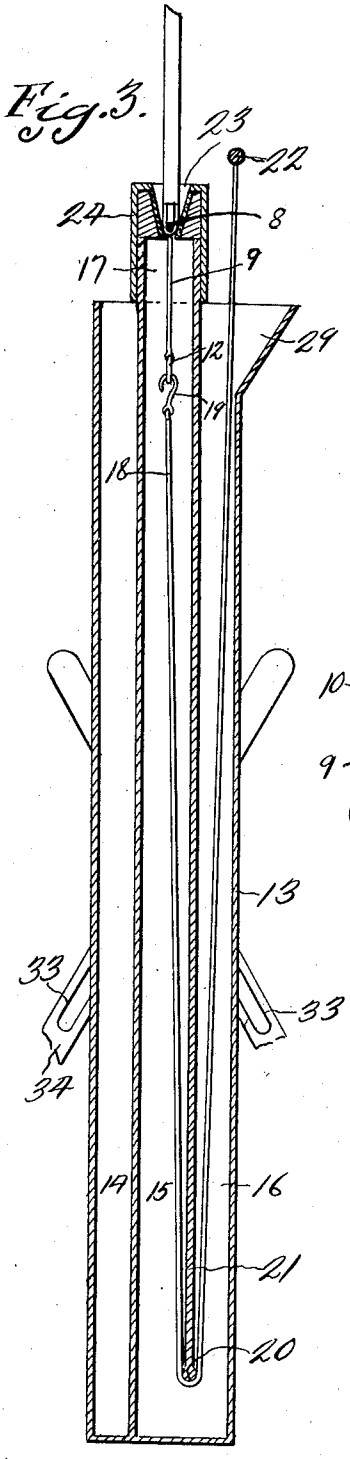
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2 SHEETS—SHEET 2.

Fig. 3.



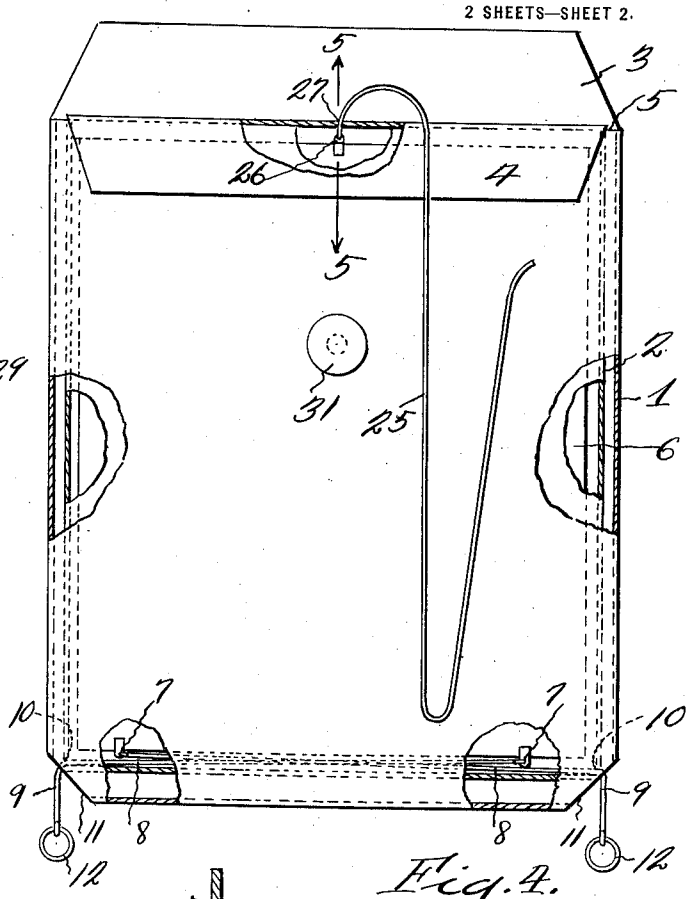


Fig. 4.

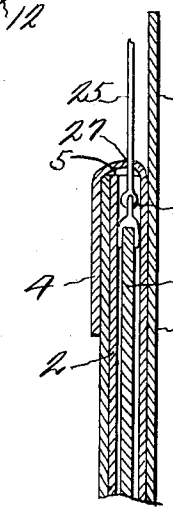


Fig. 5.

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UNITED STATES PATENT OFFICE.

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DAYLIGHT X-RAY-FILM-DEVELOPING TANK.

1,393,108. Specification of Letters Patent. Patented Oct. 11, 1921.

Application filed August 24, 1920. Serial No. 405,739.

To all whom it may concern:

Be it known that I, JOHN B. GARRETT, a citizen of the United States, residing at Troy, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Daylight X-Ray-Film-Developing Tanks, of which the following is a specification, reference being had therein to the accompanying drawing.

The invention relates to developing tanks for developing X-ray films in the daytime and has for its object to provide a device of this character comprising a plurality of compartments into which developing material or fluid may be disposed and to provide a flexible member extending downwardly through one of the compartments, thence upwardly through another compartment and provided with means for connection to flexible envelop cutting members, which envelop cutting members are connected to a film disposed in a fibrous envelop, said flexible member extending downwardly and upwardly through the tank compartments forming means whereby when a pull is imparted on the same the envelop will be severed and the film pulled into the tank compartment for developing. Also to provide a string connected to the upper end of the film whereby the film may be removed from the developing fluid after the same has been developed.

A further object is to provide a daylight X-ray-film developing tank particularly adapted for use in connection with a film envelop of the type set forth in my application for patent filed Aug. 24, 1920, Serial No. 405,740.

A further object is to provide means whereby the developing fluid may be drained from the tank and a fixing fluid may be placed in the tank.

A further object is to provide means whereby the tank may be supported by supporting legs, which legs when the tank is being transported from place to place may be utilized as a handle or bail.

A further object is to provide a detachable cover for the developing compartment, which cover is provided with an elongated aperture in which the envelop may be disposed so that the film may be removed therefrom and pulled downwardly into the developing fluid.

A further object is to provide a washing compartment in which a continuous flow of water may be maintained and into which compartment the film may be disposed after it has been subjected to the developing fluid and to a fixing fluid.

With the above and other objects in view the invention resides in the combination and arrangement of parts as hereinafter set forth, shown in the drawings, described and claimed, it being understood that changes in the precise embodiment of the invention may be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings:—

Figure 1 is a side elevation of the tank showing the envelop in position thereon.

Fig. 2 is a rear view of the tank and envelop.

Fig. 3 is a vertical sectional view through the tank.

Fig. 4 is an enlarged plan view of the film containing envelops, parts being broken away to better show the construction.

Fig. 5 is an enlarged sectional view taken on line 5—5 of Fig. 4.

Referring to the drawings, the numeral 1 designates an outer envelop and 2 an inner envelop. The inner envelop 2 is preferably formed of a black material so as to exclude light. Envelop 1 is provided with a flap 3 and envelop 2 is provided with a flap 4. The flap 4 overlies the upper edge 5 of the opening of the envelop 2 and forms means for preventing movement of the envelop 2 when the film 6 moves downwardly during a developing operation. Secured to the lower edge of the film 6 as at 7, are crossed cutting wires or strings 8, the ends 9 of which extend through the corners 10 of the envelop 2 and through the open corners 11 of the outer envelop. The ends 9 of the severing members 8 are provided with rings 12, the purpose of which will presently appear. The developing tank 13 comprises preferably three compartments, 14, 15 and 16, the compartment 15 being preferably centrally disposed and terminating in the extension portion 17, extending above compartments 14 and 16. Compartment 15 is a developing and fixing compartment and into which compartment the film is pulled by the flexible members 18, which flexible members are provided with hooks 19 which engage the rings 12. Flexible members 18 extend around the lower edge 20 of the partition 21, thence upwardly through the compartment

16 and terminate in a rod 22. The rod 22 is adapted to be grasped by the hand of the operator so that a quick jerk may be imparted to the flexible member 18, thereby causing the flexible members 8, which are crossed to sever and open the bottoms of the envelops 2 and 1, and the further pull causing the film 6 to be removed from the envelop 1 which is disposed in the V-shaped slot 23 of the removable cover 24. As the film 6 moves downwardly into the compartment 15, the string 25 which is attached as at 26 to the upper edge of the film 6 is pulled downwardly through the aperture 27 of the flap 4. String 25 is of sufficient length so that part of it will remain above the V-shaped aperture 23 of the cover 24 after the film 6 has been pulled into the developing compartment 15. The film having been drawn into the developing compartment, in which developing fluid has already been placed, the envelops are then discarded. After the film has remained in the developing compartment the proper length of time the developing fluid is drained from the tank through the drain cock 28, then fixing solution is poured into the compartment 16 through the funnel shaped opening 29 thereof. The film having been subjected to the action of the fixing solution, the cover 24 is removed and the film is then removed from the compartment 15 and then placed in the washing compartment 14, in which compartment a circulation of water may be maintained through flexible pipes connected to the stub pipes 30. The fixing solution may be also removed from the compartments 15 and 16 through the drain cock 28. String 25 may be wound around the disk fastener 31 for holding the envelops in telescopic engagement with each other at all times.

Extending outwardly from the sides of the tank 13 are threaded lugs 32, which lugs extend through elongated slots 33 of cross supporting legs 34, there being thumb nuts 35 for holding said legs in adjusted position. The lower ends of the legs are connected together by means of bars 36, which bars when the legs 34 are vertically positioned, form supporting means and a handle adapted to be grasped by the hand so that the tank may be easily transported from place to place.

The invention having been set forth what is claimed as new and useful is:—

1. A developing tank comprising a developing compartment, means for supporting a film container above said compartment and means extending downwardly and upwardly in said compartment and adapted to be connected with the film within the film container by means of which the film may be pulled from the film container into the developing compartment.

2. A developing tank comprising a developing compartment, means for supporting a film container adjacent the developing compartment and means extending through the developing compartment and connected to the film within the film container whereby the film container may be opened and the film drawn into the developing compartment.

3. A developing tank comprising a developing compartment, means for supporting a film container above said compartment, flexible members adapted to be connected to the opposite sides of the lower edge of the film, said flexible members being crossed within the lower end of the container, said flexible members extending downwardly through the developing compartment and a handle member adapted to be connected to the flexible members and adapted to be grasped by the hand for imparting a pull on the flexible members for severing the lower end of the film container and drawing the film into the developing compartment.

4. A developing tank comprising a developing compartment, means for supporting a film container above said developing compartment and for holding the same against downward movement, flexible members adapted to be connected to the opposite sides of the film and crossed within the film container, said flexible members extending downwardly and upwardly and terminating in a handle member disposed outside of the tank.

5. A developing tank comprising a plurality of compartments, one of said compartments being a developing compartment, said developing compartment being in communication with a filling compartment, said filling compartment being open at its upper end, a flexible member extending downwardly through the filling compartment and upwardly through the developing compartment and having means for connection to a film, a washing compartment having its upper end open, means for draining the developing compartment, means whereby a continuous circulation of water may be maintained in the washing compartment and crossed supporting legs for supporting the tank, said legs also forming means whereby they may be used as a handle for the tank.

In testimony whereof I hereunto affix my signature.

JOHN B. GARRETT.