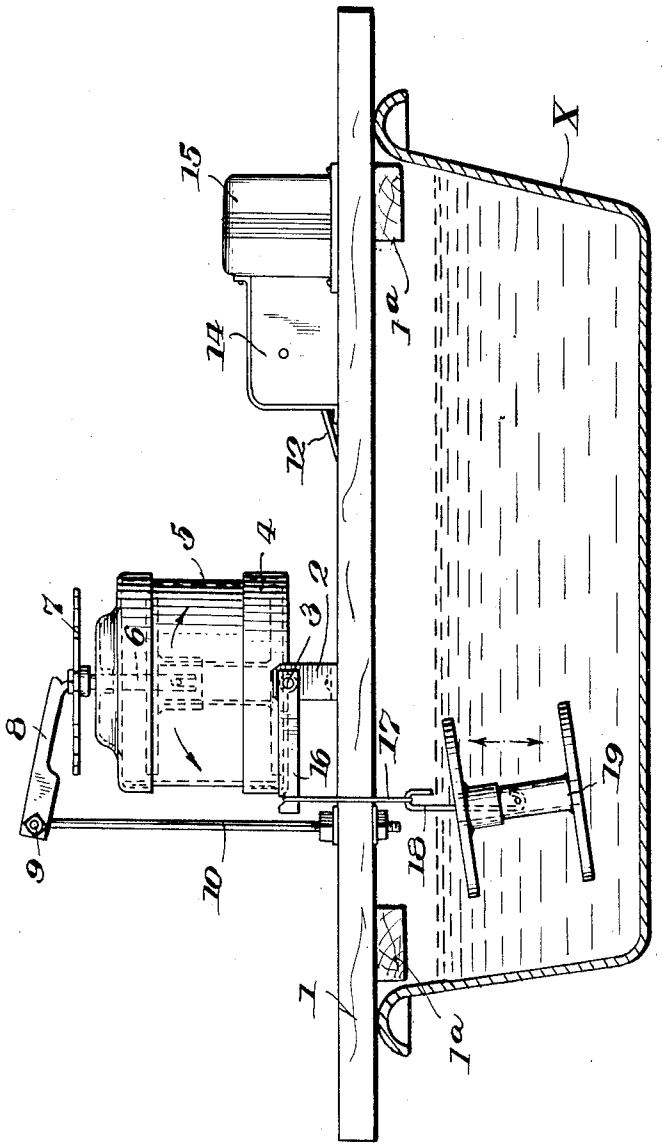
May 16, 1944. L. A. WILDMAN 2,349,026

PHOTOGRAPHIC DEVELOPING AND WASHING APPARATUS

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Fig. 1



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Fig. 2

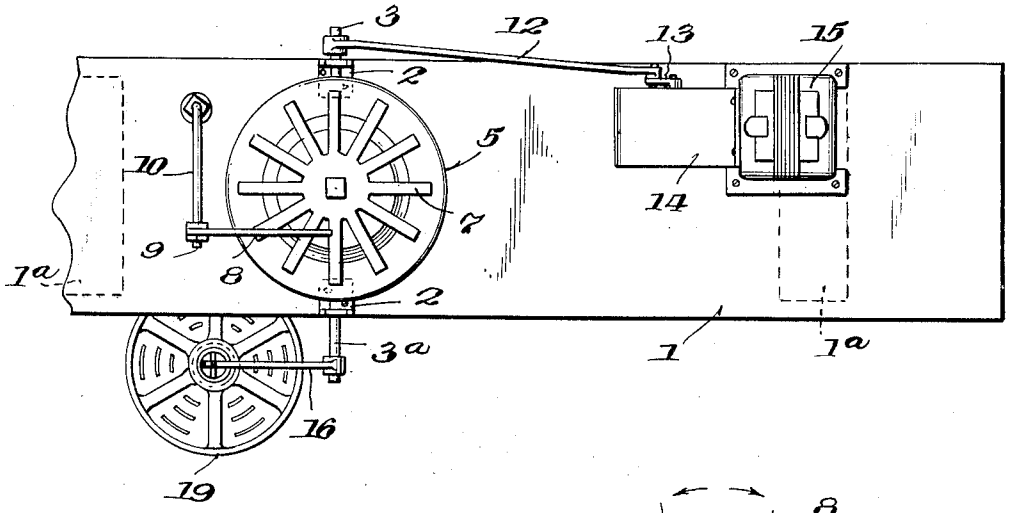


Fig. 3

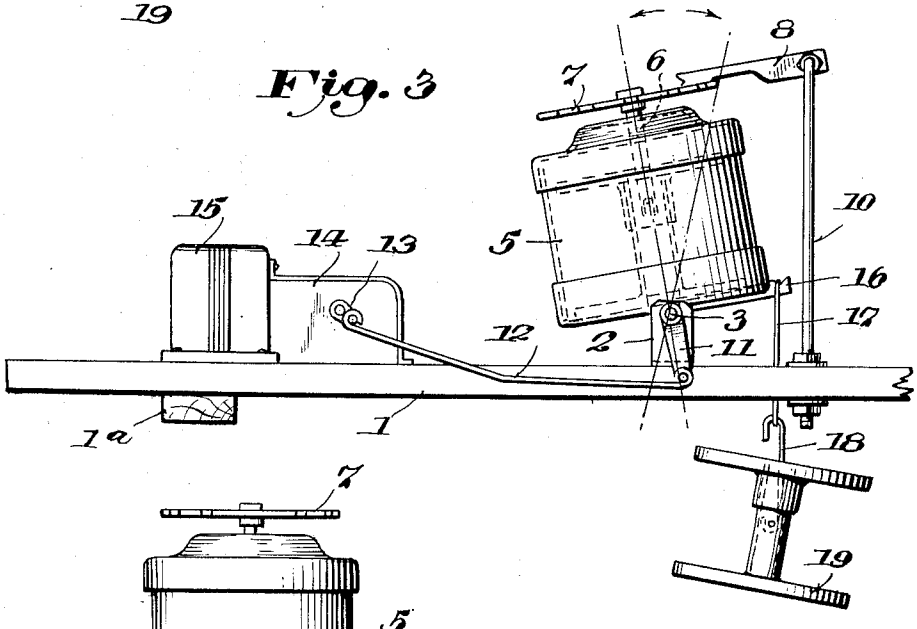
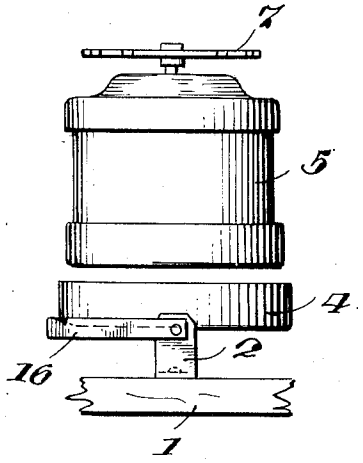


Fig. 4



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UNITED STATES PATENT OFFICE

2,349,026

PHOTOGRAPHIC DEVELOPING AND WASHING APPARATUS

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Application June 9, 1942, Serial No. 446,370

5 Claims. (Cl. 95—99)

This invention relates to photographic developing and washing apparatus, and more particularly to apparatus of this character designed for home or amateur use.

One object of the invention is to provide simple, motor-driven means for continuously rocking a developing tank of the conventional type, so as to agitate the liquid therein.

A still further object of the invention is to provide apparatus, in the form of a convenient unit, which may be placed upon and supported by any suitable receptacle, such as an ordinary sink or basin, and which is provided with means whereby a film holder may be suspended therefrom so as to be immersed in water contained in the receptacle, and whereby such film holder may be continuously reciprocated, so as to thoroughly wash the film.

In order that the invention may be readily understood, reference is had to the accompanying drawings forming part of this specification and in which:

Fig. 1 is a side elevation of my improved apparatus as it appears when supported on an ordinary sink or the like, parts being shown in section;

Fig. 2 is a plan view of the apparatus;

Fig. 3 is a side elevation thereof looking from the side opposite to that of Fig. 1; and

Fig. 4 is a fragmentary side elevation showing the tank removed from the holder.

Referring to the drawings in detail, my improved apparatus comprises a base 1, preferably of elongated form, and which may conveniently consist of a wooden board or the like. As shown in Fig. 1, this is adapted to rest upon and be supported by a receptacle such as a tub, sink or the like, shown at X.

Secured to the base 1 are a pair of upstanding brackets 2, in which is journalled a transversely extending rock shaft 3.

Rigidly secured to this rock shaft between the supporting brackets 2 is an open pan or tray 4, best shown in Fig. 4, in which a developing tank 5 of the usual form is adapted to fit or seat, so that the tray 4 serves as a holder for the tank. It will be understood that the tank merely sits in the tray or holder, without being fastened therein, so that it is readily removable therefrom, as shown in Fig. 4.

This tank may be of the type having a central upstanding shaft 6, which is normally adapted to be rotated by hand, for the purpose of moving the film with respect to the solution contained in the tank.

According to the present invention, I replace the usual hand operating means at the upper end of the shaft 6 by a spider 7 having radial arms, as shown in Fig. 2, which spider is rigidly secured to the shaft 6.

A pawl 8 pivoted at 9 to a supporting post 10, secured to the base 1, is arranged to ride upon and engage the arms of the spider 7, as shown in Fig. 2.

Fixed to one end of the shaft 3 is a crank arm 11 (see Fig. 3) and this is connected by means of a pitman or link 12, with a crank 13, secured to the end of a shaft projecting from a gear box 14. The gearing in this box is operatively connected to a small electric motor 15, so as to be driven thereby.

From the foregoing, it will be understood that as the motor 15 runs, the gearing in the box 14 will be driven and the crank 13 caused to turn, thus, by means of the link 12 and crank arm 11, oscillating the rock shaft 3 and with it the developing tank 5, thus effectively agitating the liquid in the tank. As the tank oscillates from one side to the other, as indicated by broken lines in Fig. 3, the pawl 8, which extends in a direction generally parallel with the plane of oscillation successively engages the spokes or arms of the spider 7, thus causing the spider to turn, step by step. It will be understood that the frictional resistance of the shaft is sufficient to hold it from turning backward as the pawl rides idly over the spider arms during movement of the tank in one direction. Thus the shaft 6 is caused to rotate, carrying the film with it, and in this way uniform contact of the liquid with all parts of the film is assured.

Referring now more particularly to Fig. 2, it will be seen that one end of the shaft 3, designated 3a, projects laterally beyond the edge of the base 1, and to such projecting end is rigidly secured a horizontally extending arm 16, from the end of which depends a link or rod 17, which, by means of a double ended hook 18, engages and supports a film spool 19. It will be understood that the film spool is thus suspended from the arm 16 in such position that it is immersed in water in the sink or receptacle X. Thus as the developing tank 5 is oscillated, to develop one roll of film, the spool 19 is reciprocated in the water in order to thoroughly wash another roll of film which may have just been developed.

While I have described both the developing and washing operations as taking place simultaneously, it will of course be understood that if there is only one film to be treated, it may first

be placed in the tank 5 and developed, and then the spool containing it may be attached to the arm 16 for the washing operation. In this case, of course, the developing tank may be removed from the holder while the film is being washed.

From the foregoing, it will be apparent that my improved apparatus is extremely simple in construction and operation, and is designed for handling standard developing tanks and standard film spools. It will also be clear that the base, on which the driving mechanism is mounted, constitutes a convenient unit which may be readily placed upon and supported by any ordinary household receptacle capable of containing water, such, for example, as a tub, basin, or kitchen sink, and that the cleats 1a on the under surface of the base are provided to prevent accidental dislodgment of the base from a supporting receptacle.

What I claim is:

1. Photographic developing and washing apparatus comprising a base adapted to rest on and be supported by a receptacle, a horizontal rock shaft journalled on said base and extending beyond the same, a developing tank rigidly mounted on said shaft, a crank arm on that part of said shaft extending beyond said base, a film holder suspended from said crank arm in such a position as to be immersed in a liquid in the receptacle on which said base rests, and means to continuously oscillate said shaft.

2. Photographic developing and washing apparatus comprising a base adapted to rest on and be supported by a receptacle, a developing tank, means for pivotally supporting the same on said base, means for suspending a film holder from said supporting means below said base in such position as to be immersed in a liquid in the receptacle on which said base rests, and means for continuously rocking said tank supporting means, whereby said film holder is simultaneously reciprocated in the liquid.

3. Photographic developing and washing apparatus comprising a base adapted to rest on and be supported by a receptacle, a developing tank mounted on said base, a film holder suspended below said base in such position as to be immersed in a liquid in said receptacle, a shaft journalled on said base, means for oscillating said shaft, and means operated by the oscillation of said shaft for simultaneously rocking said tank and reciprocating said film holder in the liquid.

4. Photographic developing and washing apparatus comprising a base adapted to rest on and be supported by a receptacle, a developing tank, means for mounting said tank on said base for rocking movement with respect thereto, means for continuously rocking said tank, and means movable with said tank from which a film holder may be suspended below said base in such position as to be immersed in a liquid in said receptacle.

5. Photographic developing and washing apparatus comprising a base adapted to rest on and be supported by a receptacle, a horizontal rock shaft journaled on said base, a developing tank rigidly mounted on said shaft, means to continuously oscillate said shaft, and an arm on said shaft from which a film holder may be suspended below said base in such position as to be immersed in a liquid in the receptacle on which said base rests.

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