

No. 717,104.

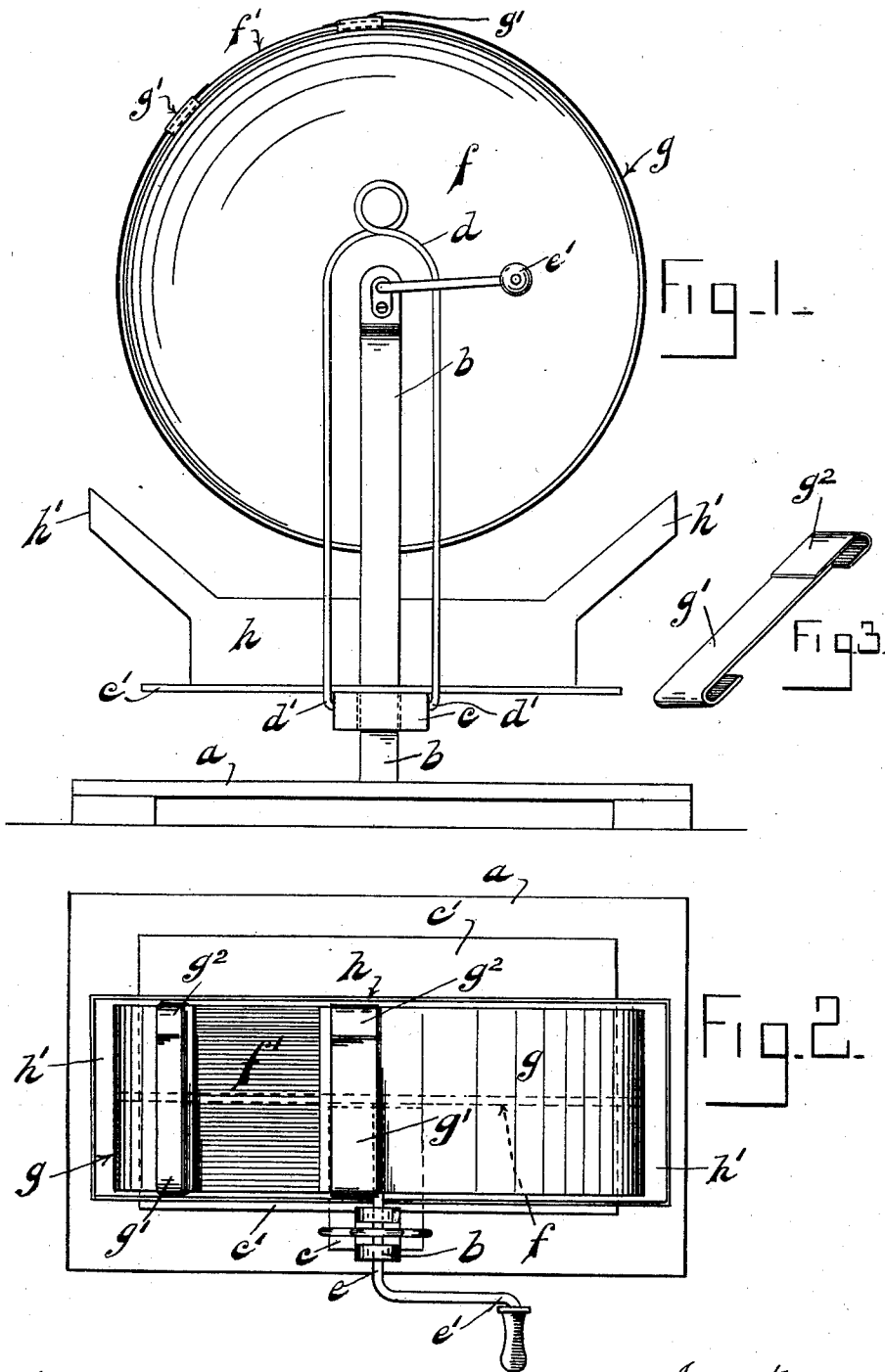
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S. G. LIVETT.

APPARATUS FOR DEVELOPING, WASHING, AND FIXING PHOTOGRAPHIC NEGATIVES.

(Application filed Feb. 15, 1902.)

(No Model.)



Witnesses.
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UNITED STATES PATENT OFFICE.

SYDNEY GEORGE LIVETT, OF BALHAM, ENGLAND.

APPARATUS FOR DEVELOPING, WASHING, AND FIXING PHOTOGRAPHIC NEGATIVES.

SPECIFICATION forming part of Letters Patent No. 717,104, dated December 30, 1902.

Application filed February 15, 1902. Serial No. 94,289. (No model.)

To all whom it may concern:

Be it known that I, SYDNEY GEORGE LIVETT, a subject of the King of Great Britain, residing at Balham, in the county of Middlesex, England, have invented certain new and useful Improvements in Apparatus for Developing, Washing, and Fixing Photographic Negatives, of which the following is a specification.

This invention relates to improved means of developing, washing, and fixing photographic-roll films or negatives, and has for its object to provide a simple and inexpensive apparatus whereby roll-films may be more conveniently developed than was heretofore possible.

In order that this my said invention may be the more readily understood and carried into practical effect, reference is hereby made to the accompanying sheet of illustrative drawings, wherein—

Figure 1 is a front elevational view of the apparatus I employ. Fig. 2 is a plan view thereof, while Figs. 3 and 4 are perspective views of details of my invention.

Referring to Figs. 1 to 4 of these drawings, wherein like letters of reference indicate corresponding parts wherever occurring throughout all the figures, *a* designates a base of wood, metal, or other convenient material. Attached to this said base *a* in a convenient position I provide an upright standard *b*, which standard is preferably square in cross-section. Arranged to be capable of sliding upon this standard *b* I provide a collar *c*, a rearward extension of which supports a shelf *c'*. This collar *c* aforesaid is mounted sufficiently loosely on the standard *b* to enable it to move readily up and down such standard when the wire or other handle *d*, hinged at *d'* to such collar, is drawn up or let down by the operator. When, however, the said handle *d* is released, the weight of the shelf *c'* will cause the said collar *c* to adjust itself firmly upon the standard *b* aforesaid at any desirable point thereon.

Rotatably mounted in bearings in the upper end of the standard *b* aforesaid I arrange a spindle *e*, carrying at its forward end a crank-handle *e'* and at its rear end a circular disk *f* of suitable material—such as celluloid, xylonite, or the like—around the periphery of

which disk *f* I arrange a drum *f'*, such drum being constructed of any convenient material not affected in any way by photographic developing solutions.

In operation I take the photographic-roll film *g* required to be developed, for instance, and arrange it around the outer periphery of the drum *f'*, such drum being of a convenient width to take such film. The film *g* aforesaid is secured to the drum *f'* by means of suitable celluloid or other clips *g'*, such clips being preferably constructed in two parts, as shown particularly by Fig. 3, the larger part *g'¹* being first used to hold the film on to the periphery of the drum and the smaller one *g'²* being utilized to hold the free end of the clip *g'* in position, and to secure the film from the opposite side I adjust the shelf *c'*, which is designed to carry the tray *h*, containing the developing solution—for instance, in such position that the periphery of the drum *f'* will be immersed in the developing solution within the tray as such drum is revolved by the turning of the handle *e'*. The tray *h* aforesaid is preferably shaped to the periphery of the drum by the provision of side extensions or wings *h'*.

It will be readily understood that if one part of a film on which there are several photographs should be more readily developed than others such developed parts can be removed and additional clips of the kind illustrated by Fig. 3 utilized to retain the remaining portion or portions in position upon the drum, whereas if a length of film equal to the circumference of the drum is being developed one of such clips will be sufficient to hold the film in position.

For holding portions of the film during fixing or at other times I employ the gripping device *i*, (illustrated in Fig. 4,) such device being constructed of celluloid or other suitable resilient material. By pressing the end between the thumb and finger the grip *i²* is caused to open, and the film being inserted therein will be securely held by the resiliency of the material.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In apparatus for developing photographic-roll films wherein is employed a rotating drum the combination with a central disk carried

by a spindle, said spindle being held to revolve in bearings in the upper end of a vertical standard carried upon a base; of a strip of celluloid wrapped around the periphery of
5 said disk and attached thereto, substantially as and for the purpose hereinbefore described and shown.

2. In apparatus for developing photographic-roll films the combination with a rotating disk
10 having peripheral flanges on either side; of the means for attaching the films around the flanged periphery of the said rotating disk, said means comprising large and small resilient clips substantially as hereinbefore specified.
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3. In apparatus for developing photographic-roll films; the combination with a rotating disk having a flanged periphery, and means

for attaching a film around the said periphery; of means for adjusting the height of the
20 developing-disk with relation to the rotating disk; said means comprising a shelf carried upon a forward extension of a collar, said collar being arranged to slide upon the vertical standard, in bearings in the upper end of
25 which, the spindle of the rotating disk is held to revolve, said collar being operated by means of a wire handle, and adjusting itself in any position upon the standard, substantially as specified.

In witness whereof I have hereunto set my
30 hand in the presence of two witnesses.

SYDNEY GEORGE LIVETT.

Witnesses:

DAVID WISEMAN,
ROGELIO PLAZA.