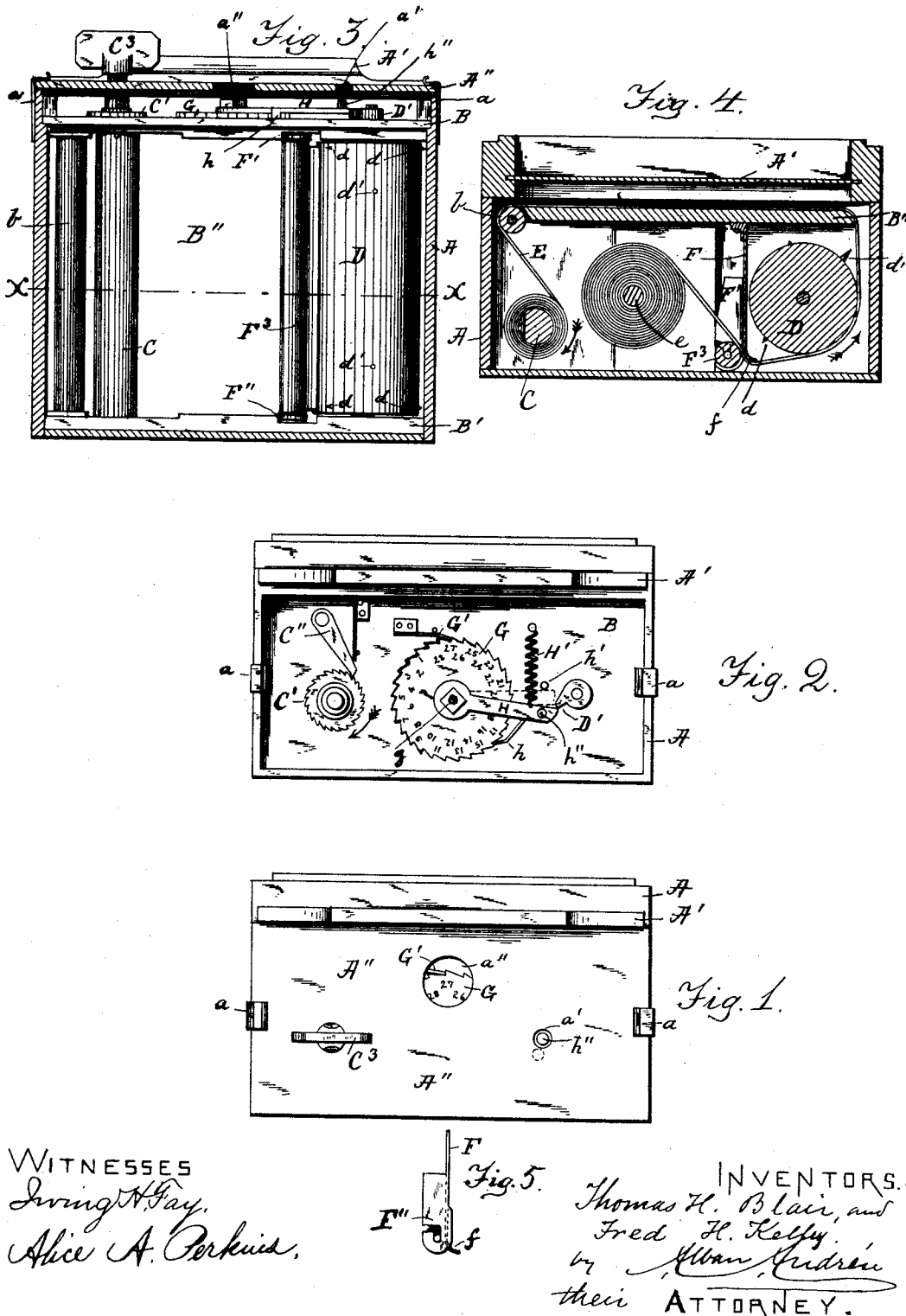


(No Model.)

T. H. BLAIR & F. H. KELLEY,
ROLL HOLDER FOR CAMERAS.

No. 461,308.

Patented Oct. 13, 1891.



UNITED STATES PATENT OFFICE.

THOMAS H. BLAIR AND FRED H. KELLEY, OF BOSTON, MASSACHUSETTS,
ASSIGNORS TO THE BLAIR CAMERA COMPANY, OF SAME PLACE.

ROLL-HOLDER FOR CAMERAS.

SPECIFICATION forming part of Letters Patent No. 461,308, dated October 13, 1891.

Application filed March 27, 1891. Serial No. 386,596. (No model.)

To all whom it may concern:

Be it known that we, THOMAS H. BLAIR and FRED H. KELLEY, both citizens of the United States, and residents of Boston, in the county of Suffolk and State of Massachusetts, have jointly invented new and useful Improvements in Roll-Holders for Cameras, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention has for its object to provide a novel roll-holder for a camera; and it consists in the features of construction and the combination or arrangement of devices hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 represents an end view of the invention. Fig. 2 represents a similar view showing the cover removed. Fig. 3 represents a side elevation of the improved roll-holder, showing the case and cover in section. Fig. 4 represents a cross-section on the line X X, shown in Fig. 3; and Fig. 5 represents a detail side elevation of the tension or take-up device and one of its bearings.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

A is the inclosing case containing the improved roll-holder, said case being provided with the usual slide A'. (Shown in the drawings.)

A'' is the detachable cover for the case A, said cover being preferably secured to the open end of the case A by means of suitable yielding springs a a. (Shown in Figs. 1, 2, and 3.)

The improved roll-holder is adapted to be inclosed within the case A, and it consists of a frame composed of top and bottom pieces B and B', which are held at a proper distance apart by means of the front film-supporting plate B'', as is common in devices of this kind.

C is the take-up roll, upon which the film is wound after being exposed, said roll being journaled in the top and bottom pieces B B', and has attached to its upper end, above the top piece B, a ratchet-wheel C', which is in engagement with a spring-pressed pawl C'',

as shown in Fig. 2, for the purpose of preventing the take-up roll from being rotated in a direction opposite to that shown by arrow in Figs. 2 and 4.

b is a loosely-journaled guide-roller at one end of the film-supporting plate B'', over which the film is guided as it is being wound upon the roll C after exposure. D is the loosely-journaled measuring-roll, the shaft or pin of which is journaled in the top or bottom pieces B B', as shown in Figs. 2, 3, and 4, said roll having a circumference equal to the feed of the film for each successive exposure. The roll D has a series of radial pins or pointed projections d d at or near its ends, adapted to penetrate the film and thereby to cause said roller to be positively turned as the film is being fed onward.

d' d' are points or projections on the roll D, adapted to puncture the film for the purpose of indicating the division between each successive view that is being taken on the film, and thus serve as marks where to cut the film between the exposures.

C³ is a detachable knob or handle secured to the upper end of the shaft for the roller C, by means of which the latter is turned in feeding the film.

E represents the sensitive film, and e the reel for the film, which is preferably loosely arranged in the space between the rollers C and D, as shown in Fig. 4.

F is a yielding spring-tension or take-up plate secured to the inside of the film-supporting plate B'', said spring-plate having its free end turned laterally into a curved film-supporting flange or lip f, over which the film is led as it passes from the reel e to the measuring-roller D, as shown in Figs. 3, 4, and 5. To the spring-plate F are secured suitable bearings F' F'', in which is journaled the small guide-roller F³, between which and the spring-plate F the film is guided in its passage from the reel e to the measuring-roll D, as shown in Figs. 3 and 4, so that the roller presses the film against the curved flange or lip f of the spring-plate F. One or both of the bearings for the roller F³ may be open at the side, as shown in Fig. 5, to permit the said roller to be removed in adjusting the film

when the new reel is placed in the roll-holder.

On a pin or stud *g*, secured to the roll-holder frame part B, is loosely journaled a ratchet-wheel G, which is intermittently rotated by mechanism from the measuring-roll D, as follows: On the upper end of the measuring-roller D is secured a tooth or projection D', (shown in Fig. 2,) which comes in contact with and actuates a lever H during each rotation of said roller D. Said lever H is preferably pivoted on the stud *g* and carries a pawl *h*, adapted to engage in the teeth of the ratchet-wheel G. When the lever H is relieved from the projection D', it is automatically returned to its normal position (shown in dotted lines in Fig. 2) by the influence of a spring H', which brings the said lever H against a stop projection *h'*, as shown.

G' is a pawl which engages in the teeth of the ratchet-wheel G for the purpose of holding said ratchet-wheel in position after it has been intermittently turned by the lever H and its pawl *h*. The face of the wheel G is indexed or numbered from "1" upward, as shown in Fig. 2, which index can be read through a perforation *a''* in the cover A'', as shown in Fig. 1, so as to enable the operator to tell at a glance how many exposures have been made and consequently how much of the sensitive film remains unused.

On the lever H is a mark or projection *h''*, which may be seen through a perforation *a'* in the cover A'' to indicate when the lever is in its normal position and properly set for its subsequent depression to advance the wheel G one step.

The operation of the invention is as follows: In feeding the film the roll C is turned in the direction of the arrow shown in Figs. 2 and 4, and during such feed the sensitive film is drawn from the reel *e*, between the spring-plate F and its roller F³ and around a portion of the measuring-roll D, causing the latter to turn with the motion of the film. From the roller D the film is carried in front of the frame portion B'', over the roller *b*, and finally wound upon the roll C, all as shown in Fig. 4. During such feed of the film the spring-plate F is bent slightly toward the roller D by the pull of the film, and when the latter has been fed the required distance the spring F returns toward its original position, taking the slack of the film with it, and thus stretches and holds the film smoothly in close contact with the front of the plate B'', as shown in Fig. 4. Supposing the lever H to be in its normal position at the commencement of the feed, as shown in dotted lines in Fig. 2, it is only necessary to turn the roll C until the lever projection or mark *h''* passes entirely out of sight of the cover-projection *a'*, when the projection D' and lever H will be held in their respective positions, as fully shown in Fig. 2, or, if so desired, the roll C may be turned just a little more, sufficient to allow the tooth D'

to be released from the lever H, which will then be automatically returned to its normal position. (Shown in dotted lines in Fig. 2.) During such feed a complete rotation has been imparted to the measuring-roll, and the ratchet G has been moved by the lever H and its pawl *h* a portion of a rotation, so as to show through the cover perforation *a''* a corresponding number of the next exposure to be made.

Having thus fully described the nature, construction, and operation of our invention, we wish to secure by Letters Patent and claim—

1. In a roll-holder, a tension device for taking up the slack of the sensitive film and stretching it smoothly, consisting of a yielding spring-plate having its free edge turned laterally to form a curved flange or lip *f*, against which the film moves, substantially as and for the purpose set forth.

2. In a roll-holder, a tension device for taking up the slack of the sensitive film and stretching it smoothly, consisting of a yielding spring-plate, against the free edge of which the film moves, and a guide-roller journaled in supports on the spring-plate and acting to press the film against the free edge of said plate, substantially as described.

3. In a roll-holder, the combination, with a film-reel, a take-up roll, and a measuring-roll over which the film passes in transit from the film-reel to the take-up roll, of a tension device arranged between the film-reel and the measuring-roll, and consisting of a spring-plate, against the free edge of which the film moves, and a guide-roller journaled in supports on the spring-plate and acting to press the film against the free edge of said plate, substantially as described.

4. In a roll-holder, the combination, with a film-reel, a take-up roll, and a measuring-roll, of a film-supporting platform provided with an attached spring-plate having its free edge turned laterally into a curved flange or lip, against which the film moves, and a guide-roller journaled in supports on the spring-plate and acting to press the film against the curved flange or lip of said plate, substantially as described.

5. In a roll-holder, the combination of a case, a film-reel, a take-up roll, a measuring-roll having its shaft provided at one extremity with a tooth D', a registering ratchet-wheel G, journaled to the case, and a spring-pressed lever H, journaled on the axle of the ratchet-wheel projecting into the path of the tooth on the measuring-roll shaft and having a pawl *h* to engage the tooth of the ratchet-wheel, substantially as described.

6. In a roll-holder, the combination, with a case having a slight orifice *a'*, a film-reel, a take-up roll, and a measuring-roll having its shaft provided at one end with a tooth D', of a registering ratchet-wheel journaled to the case, a spring-pressed lever H, hung on the axle of the ratchet-wheel projecting into the

path of the tooth on the measuring-roll shaft
and having a projecting indicator-pin h'' , and
a spring h for restoring the lever to its nor-
mal position, so that the indicator-pin is visi-
5 ble at the sight-orifice, substantially as de-
scribed.

In testimony whereof we have signed our
names to this specification, in the presence of

two subscribing witnesses, on this 14th day
of March, A. D. 1891.

THOMAS H. BLAIR.
FRED H. KELLEY.

Witnesses:

ALBAN ANDRÉN,
ALICE A. PERKINS.