

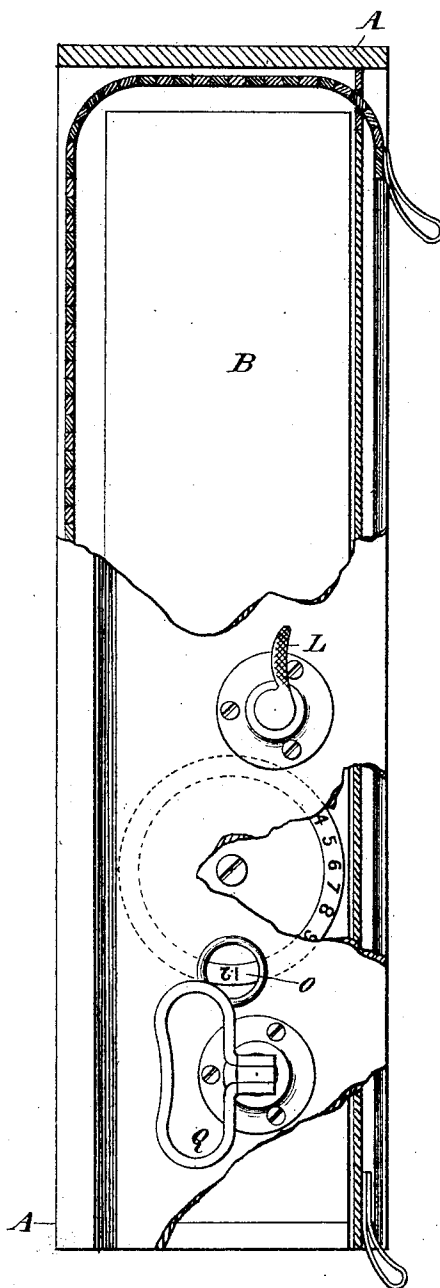
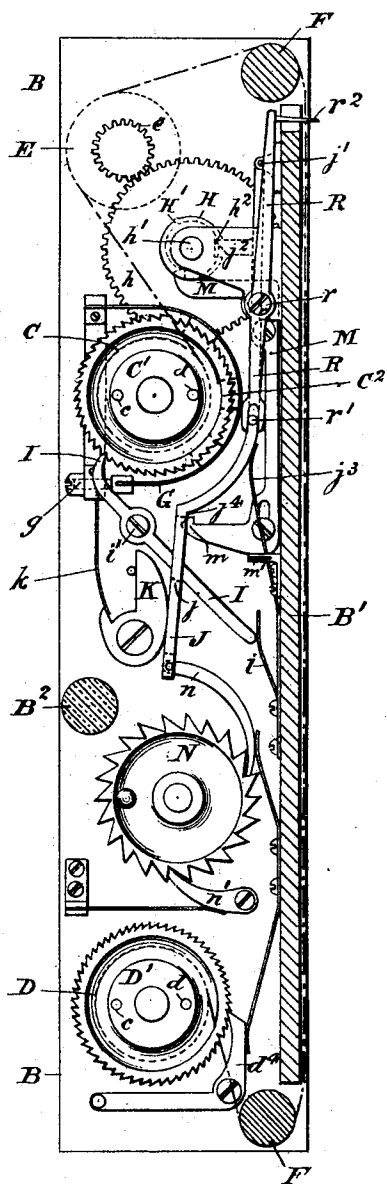
3 Sheets—Sheet 1.

No. 500,875.

Patented July 4, 1893.

*Fig. 2.*

*Fig. 1.*



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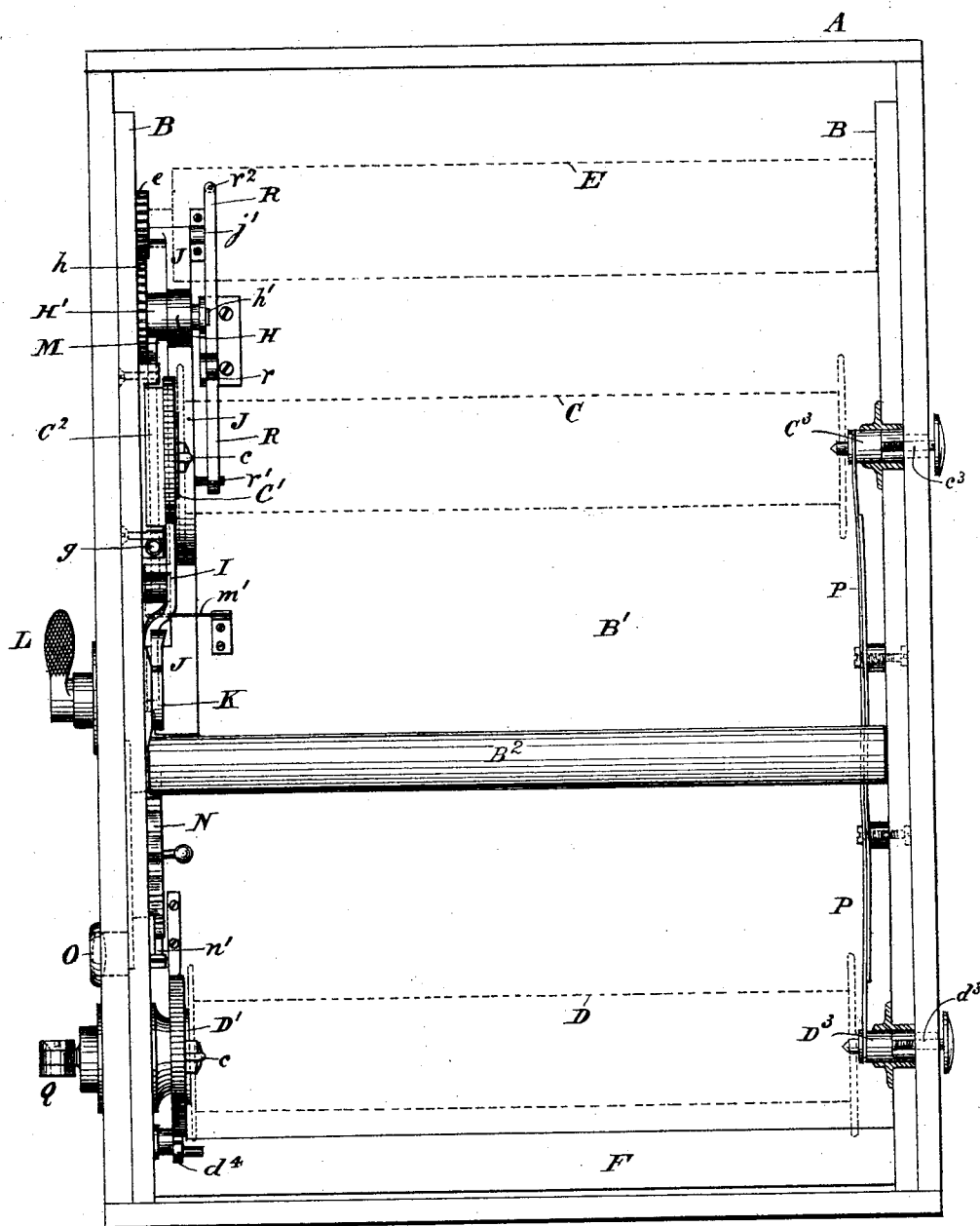
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*Fig. 3.*



A

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(No Model.)

3 Sheets—Sheet 3.

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PHOTOGRAPHIC ROLL HOLDER.

No. 500,875.

Patented July 4, 1893.

Fig. 5.

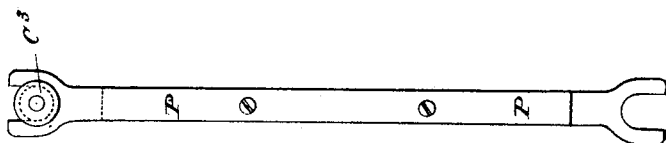
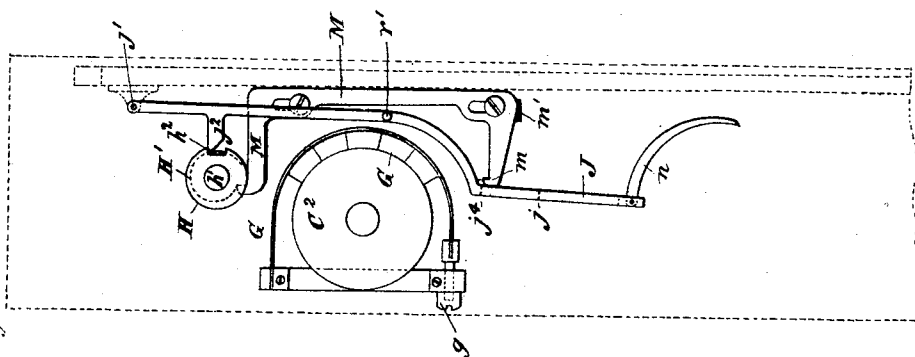


Fig. 4.



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# UNITED STATES PATENT OFFICE.

XAVIER GUSTAVE EDOUARD DE FAUCOMPRÉ, OF PARIS, FRANCE.

## PHOTOGRAPHIC ROLL-HOLDER.

SPECIFICATION forming part of Letters Patent No. 500,875, dated July 4, 1893.

Application filed August 3, 1892. Serial No. 442,073. (No model.) Patented in France July 2, 1891, No. 214,607, and in England November 18, 1891, No. 20,007.

### *To all whom it may concern:*

Be it known that I, XAVIER GUSTAVE EDOUARD DE FAUCOMPRÉ, engineer, a citizen of the French Republic, residing at 33 Boulevard Haussmann, Paris, have invented new and useful Improvements in Roll-Holders for Photographic Cameras, (which have not been patented in any country except France, by Letters Patent dated the 2d day of July, 1891, No. 214,607, and Great Britain, by Letters Patent dated the 18th day of November, 1891, No. 20,007;) and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art or manufacture to which it relates to make and use the same.

This invention relates to roll-holders of the kind employed in photographic cameras for carrying a web of sensitive film which is wound from one roller on to another the negatives being taken on successive lengths of the web stretched between the rollers.

The improvements consist of arrangements and combinations of parts of the mechanism for operating the rollers and insuring accuracy in bringing successive lengths into position for exposure in which position the film is held taut as hereinafter described and claimed.

In the accompanying drawings Figure 1 is a longitudinal vertical section. Fig. 2 is a sectional elevation of a roll-holder embodying my improvements and Fig. 3 is a plan with the slide cover removed. Figs. 4 and 5 are views showing details hereinafter referred to.

The roll-holder comprises a box A which may be of the ordinary form and adapted to slide into the camera back. Within this box the roller operating mechanism is carried by a frame of wood, aluminium or other material composed of vertical side boards or frames B, B connected to a base board B' and secured together by a rod B<sup>2</sup> which also serves as means for lifting the roller frame out of the box A.

In the framing are mounted the rollers C and D the one C carrying the web of sensitive film and the other D for winding on the portion of the web constituting the negative

after each exposure. The web passes from the supply roller or spool C over a measuring roll E and thence over guide rollers F, F to the receiving roller D and the portion stretched between the guide rollers F, F and extending over the face of the base board B' constitutes the negative length.

The supply and receiving rollers are alike and are interchangeable. These rollers may be made entirely of wood or of wood and metal. They are preferably formed with disk like ends and are carried at one end by pins c, d formed on disks or wheels C' and D' secured upon spindles in the side frames B, B. At the opposite ends the rollers are held by removable center pins C<sup>3</sup>, D<sup>3</sup> having a conical, round, square or other point to suit the rollers used with any make of sensitive film. These center pins are each held in place in bushes by means of a spring P as shown at Fig. 5 having forked ends embracing a neck formed on each pin. This arrangement has for its object to facilitate the removal and replacing of the rollers and it further permits of changing the center pins to suit the length and make of rollers used.

The external casing or box A has two orifices in its side opposite the axes of the center pins, and in them are fitted screws c<sup>3</sup>, d<sup>3</sup> which serve both to secure the rollers in the frame and the frame in the outer casing or box A thus preventing any displacement of the film carried by the rollers relatively to the camera to which the roll-holder is fitted.

The receiving roller is wound in one direction by means of a key Q entered through the external box into a recess in the disk D' which carries the roller, rotation in the opposite direction being prevented by a spring pressed pawl d<sup>4</sup> engaging ratchet teeth formed on the disk D'.

The winding action, when the parts of the apparatus are in the operative position, effects the unwinding of the web from the roller C and the consequent rotation of the disk C' which has formed on it a brake wheel C<sup>2</sup> having a brake strap G, regulation of the pressure of which is effected by a screw g. The passage of the web over the measuring roller E causes it to rotate and by means of a pinion

*e* on its end in gear with a toothed wheel *h* on a spindle *h'* causes the latter to rotate. On this spindle is a notched disk *H* and a cam *H'*.

On the disk *C'* are formed ratchet teeth  
 5 with which a pawl *I* is adapted to engage, a spring *i* being fitted to act on the tail or end of the pawl which is centered at *i'*. On preparing to draw off a negative length this pawl *I* is lifted out of engagement with the  
 10 ratchet disk *C'* by means of a shoulder formed at *j* on a lever *J* centered at *j'* and acted on by a cam *K* against the power of a spring *k* by means of a lever handle *L* the center pin of which enters a recess in the spindle carrying the cam. The lever *J* has on it an upwardly projecting finger *j<sup>2</sup>* which bears on the disk *H* and which is pressed by a spring *j<sup>3</sup>* acting on the lever *J* into the notch *h<sup>2</sup>* in  
 20 the notch comes in line with the finger *j<sup>2</sup>* the apparatus being thereby locked and the movement of the film carrying roller *C* sharply stopped by the pawl *I* entering a notch in the disk *C'* by the pressure of the spring *i*. The  
 25 finger *j<sup>2</sup>* has a beveled end or is otherwise formed to permit of slight movement of the disk *H* after the finger has dropped into the notch, so that the measuring roller may also turn to a small extent while the film is drawn  
 30 up taut by the winding roller, *D*. When the lever *J* is pressed down by means of the cam *K* a shoulder *j<sup>1</sup>* on it is engaged by a hook *m* on the end of a bar *M* and it is there held with the pawl *I* out of engagement with the  
 35 teeth of the disk *C'* and the finger *j<sup>2</sup>* out of the notch *h<sup>2</sup>* in the disk *H* so that a fresh length of the web may be drawn off the roller *C*. The cam *H'* acting on the opposite end of the bar *M* pushes it gradually outward until  
 40 the hook *m* frees the lever *J*. The lever *J* then rises over the hook *m* which by means of the spring *m'* returns the bar *M* into contact with the lower part of the cam *H'*, but the lever *J* is prevented from rising fully until  
 45 by the further rotation of the disk *H* the finger *j<sup>2</sup>* drops into the notch *h<sup>2</sup>* whereupon it springs upward and the pawl *I* engages the toothed disk *C'* further rotation of the supply roller being prevented until the lever  
 50 *J* is again depressed by the action of the cam *K* operated by the hand lever *L*. At the same time a lever *R* centered at *r* and jointed to the lever *J* by means of a pin *r'* in the latter entering a fork in the lever *R* is thrown up so  
 55 that its opposite end which carries a pricker or needle *r<sup>2</sup>* is sharply depressed and caused to puncture the sensitive film at the line where the negative length ends, the punctured orifice serving to subsequently indicate  
 60 where the negative length should be cut.

By the arrangement of winding and locking mechanism described the strain on the negative length due to the winding of the roller *D* against the power of the brake on the supply roller may be kept very light up  
 65 to the point at which the supply is stopped

by the pawl *I* after which however it may be increased to render the negative length quite taut by continuing to apply pressure on the winding key.

On one side *B* of the apparatus a toothed disk *N* is fitted on a stud or spindle having in engagement with its teeth a spring pressed pawl *n* provided on the end of the lever *J* so that at each depression of the said lever the  
 75 disk is partially rotated by the action of the pawl on its teeth, backward movement being prevented by a second pawl *n'*.

On the face of the disk numbers or figures are engraved or otherwise marked in regular  
 80 sequence. In the outer box an orifice *O* is made and fitted with a magnifying glass through which one only of the figures on the disk face is visible and as the disk is rotated to the extent of a tooth at a time a fresh figure is presented under the magnifying glass.  
 85 The numbers thus exhibited correspond exactly to the number of negative lengths drawn off and by this means it is always possible to see what number of exposures have been  
 90 made.

Having now described the invention, what I desire to claim and secure by Letters Patent is—

1. In a roll-holder for photographic cameras, the combination with the rollers for carrying the sensitive film of the regulating tension brake *G* acting on the film carrying-roller throughout the winding operation, and a ratchet on disk *C'* and spring pawl *I*, the latter automatically brought into engagement  
 95 with the ratchet to lock the supply roller on drawing off a negative length by mechanism actuated from a measuring roller over which the film passes, substantially as described.

2. In a roll-holder for photographic cameras, the combination with the toothed disks *C*, *D'*, carrying the rollers for the sensitive film, of a pawl *I* adapted to engage with the roller disk *C'*, the lever *J*, the hand lever and  
 100 cam *K* adapted to disengage said pawl *I*, the hooked bar *M* engaging said lever and the cam *H'* actuated by the measuring roller *E*, substantially as described.

3. In a roll-holder for photographic cameras, the combination with the lever *J* operated by a cam or pusher *K* and having on it a finger *j<sup>2</sup>*, of the hook-bar *M*, cam *H'*, and notched disk *H* operated by the measuring  
 105 roller *E*, the pawl *I*, and roller disk *C'*, substantially as described.

4. In a roll-holder for photographic cameras, the combination of the lever *J* having the finger *j<sup>2</sup>*, the hook-bar *M*, cam *H'*, and notched disk *H*, operated by the measuring  
 125 roller *E* and the needle lever *R* jointed to the bar *J*, substantially as described.

5. In a roll-holder for photographic cameras, the combination with the web carrying rollers *C*, *D*, and their tooth carrying disks *C'*,  
 130 *D'*, the measuring roller *E* and the spindle *h'*, operated thereby and having the cam *H'* and

notched disk H of the levers J, R, hook-bar M, pawls I and *n* and counter N carrying a visible record of the negatives exposed, substantially as described.

- 5 6. In a roll-holder for photographic cameras, the combination of the side frame of the roll-holder formed with a pin-supporting socket, a removable center pin supported in  
10 on which the web roller rotates, a spring adapted to hold the pin in place in its socket

and permit of its removal therefrom, and adjustable means for holding the pin in contact with the roller in opposition to the action of the spring, substantially as described.

15

In witness whereof I have hereunto set my hand this 14th day of June, 1892.

XAVIER GUSTAVE EDOUARD DE FAUCOMPRÉ.

In presence of—

ROBT M. HOOPER,

PAUL DE SAINT GÉRARD,

8 Rue Baudin, Paris.