

(No Model.)

E. W. PERRY, Jr.
SHUTTER FOR PHOTOGRAPHIC CAMERAS.

No. 422,825.

Patented Mar. 4, 1890

Fig. 1.

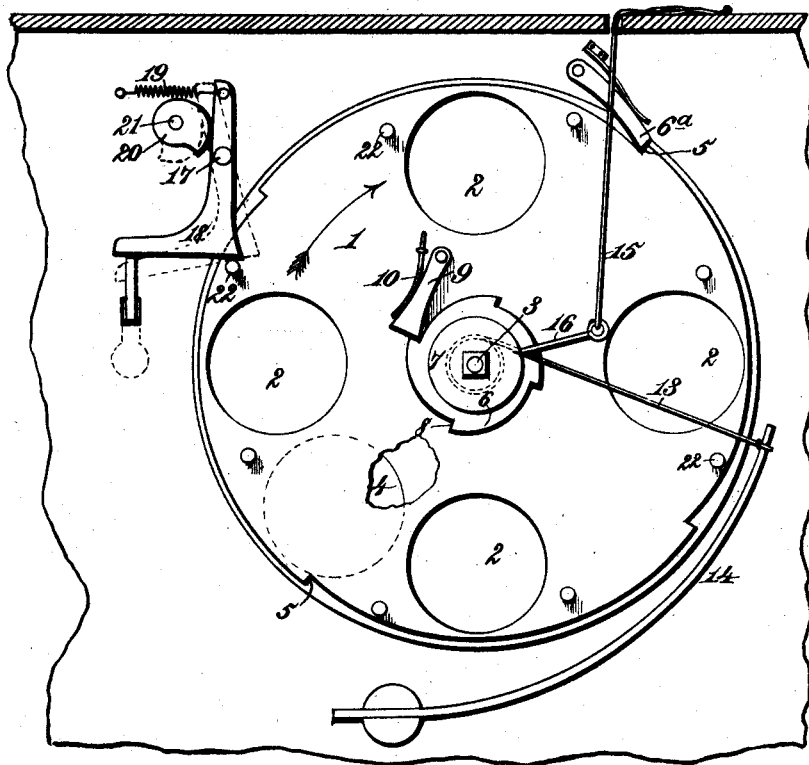


Fig. 2.

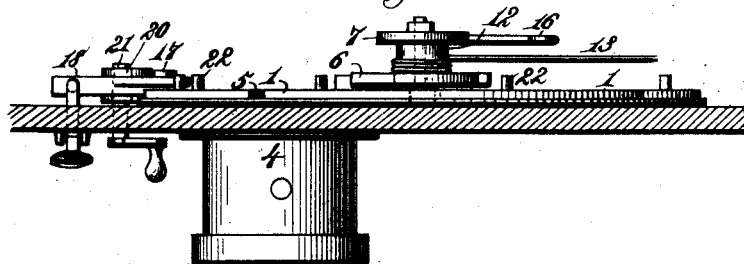
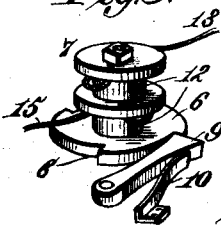


Fig. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

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SHUTTER FOR PHOTOGRAPHIC CAMERAS.

SPECIFICATION forming part of Letters Patent No. 422,825, dated March 4, 1890.

Application filed March 21, 1889: Serial No. 304,127. (No model.)

To all whom it may concern:

Be it known that I, ENOCH WOOD PERRY, Jr., a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in Shutters for Photographic Cameras, of which the following is a specification.

My present invention relates to photographic cameras, and the purpose thereof is to provide a shutter which shall never open except during the interval of exposure and which can be reset without replacing the plate-holder slide and without covering the lens of the instrument.

It is well known that in all the cameras in use at the present day in which an instantaneous shutter is employed the plate which has been exposed must be protected from light before the shutter can be reset. This protection is generally effected by closing the front of the lens or by pushing in the slide of the plate-holder. After the shutter is reset these coverings must be again removed before another exposure can be made, and not only is this increased manipulation exceedingly troublesome, but even the most experienced operators often forget to guard against admission of light while setting the shutter, and in consequence the plate is spoiled.

It is the main object of my invention to provide a simple and easily-operated shutter in which the additional manipulation referred to is wholly avoided, the apparatus removed from dependence upon the operator's memory, and in which the shutter never revolves backward in order to be set.

In the accompanying drawings, Figure 1 is a face elevation of the shutter. Fig. 2 is a central horizontal section of the parts shown in Fig. 1. Fig. 3 is a detail perspective of the ratchet and barrel.

In the said drawings, the reference-numeral 1 designates the shutter-disk, having one or more openings 2, as desired. This disk, which is of any desired size according to the number of openings therein, is pivotally mounted or journaled upon a stud 3 upon the front board, whereby its openings are brought in line with

the lens-opening 4. In the outer edge of the disk are formed notches 5 in one or more places, which receive pawls or holders 6, whereby a retrograde movement of the shutter is prevented, as the disk is intended to revolve in only one direction and only to expose the plates, or for the purpose of focusing by a lens and ground glass. Upon the stud 3 is also mounted loosely a ratchet and barrel 6 and 7, the former having teeth 8, with which a pawl 9 engages, said pawl pivotally mounted on the face of the disk and being thrown by a light spring 10 into engagement with the ratchet. Upon the barrel is formed a spool 12, of which there may be two, one receiving the cord or chain 13, leading to a strong leaf-spring 14, by the tension of which the barrel is turned, and the other a cord 15, by which the other cord is wound and a proper tension imparted to the spring. Instead, however, of the second spool, I may employ a lever 16, rigid upon the barrel, to which a winding cord may or may not be attached.

Mounted upon an axis 17, projecting from the front plate of the camera, is an angular stop 18, drawn by a spring 19 against a cam 20, which is pivoted upon a pin 21, and may be set at any convenient point to limit the throw of the stop. The angular portion of the latter may be brought, by the adjustment of the cam 20, into the path of either one of two separate series of pins, pegs, or other projections 22, one series arranged at a given radial distance upon the inner face of the shutter, and the other series, alternating with the first, being arranged at a greater or less radial distance. By the separate adjustments of the angular stop the latter may be caused to engage with the pins of the outer series only, or with those of the inner and outer series alternately, whereby I am able to use the shutter for either instantaneous or time exposures.

The operation is as follows: The spring impelling the shutter being brought to tension, the angular stop is adjusted to the exposure desired. If the exposure is to be instantaneous, the cam 20 is turned so that the angular part of the stop shall engage with the outer series of pins 20 only. When in readiness,

the stop 18 is tripped by any suitable device, whereupon the shutter makes a partial revolution, one of its openings passing the lens-opening, which is immediately covered by the body of the shutter. If, however, a time exposure is desired, the stop is thrown in to engage the inner series of pins, as well as the outer. Thus when engaged with one of the latter the lens-opening is closed; but when tripped the shutter turns until the other pin of the inner series comes in contact with the stop, arresting the shutter at the point where the lens-opening is permanently exposed or registered with the shutter. After each operation one or more of the stop-pawls 6 engage with the peripheral notches 5 and prevent retrograde movement.

The position of the stop 18 may be changed by the action of the cam 20 at any time and even after the shutter is set without disturbing the latter and without opening the camera-box, the cam being operated by any suitable form of lever upon the outside capable of being turned in opposite directions to operate the cam and set the stop.

What I claim is—

1. In a photographic camera, a shutter adapted for either time or instantaneous exposure, said shutter being mounted upon an axis and turned continuously but intermittently in the same direction, in combination with an adjustable stop and with two different series of pins or projections upon the shutter, the one series adapted for instantaneous and the other series for time exposures, as may be desired, substantially as described.

2. In a photographic camera, the combination, with a revolving shutter having one or more openings, of a concentric barrel having a ratchet connected with the shutter by a spring-pawl, a cord or chain winding on the barrel and impelled by a spring, an adjustable stop arresting the shutter at different points, and means for preventing retrograde movement of the shutter, substantially as described.

3. In a photographic camera, the combination, with a circular shutter centrally mounted and having one or more openings registering with the lens-opening, of a barrel loosely mounted on the same axis and having a ratchet connected to the shutter by a spring-pressed pawl on the latter, a spring-impelled cord winding on the barrel, a pivoted spring-actuated stop adjustable by a pivoted cam and adapted to engage either of two alternating series of pins projecting from the shutter at different radial distances, and means for tripping said stop and preventing retrograde movement of the shutter, substantially as described.

4. In a photographic camera, the combination, with a circular shutter having one or more openings and provided with one or more notches engaging with pawls to prevent rearward rotation, of a separate barrel having one or more spools to receive an actuating-cord, a spring-pressed pawl pivoted on the shutter and engaging a ratchet on the barrel, an angular stop pivoted on a separate axis and thrown by a spring in one direction and by a pivoted cam in the other, two alternating series of pins mounted on the shutter at different radial distances, and means for tripping said stop, substantially as described.

5. In a photographic camera, a circular revolving shutter having one or more openings, means for revolving said shutter in one direction and arresting its revolution in the other direction, an adjustable stop engaging two separate series of stop-pins on the shutter, and means for preventing retrograde rotation of the shutter, substantially as described.

In testimony whereof I have affixed my signature in presence of two witnesses.

ENOCH WOOD PERRY, JR.

Witnesses:

THOMAS FORD,
ANDREW J. QUINN.