(No Model.) 2 Sheets—Sheet 1.

W. H. DANIELS.

KINETOGRAPHIC CAMERA.

No. 604,733. Patented May 31, 1898.

Fig. 1,

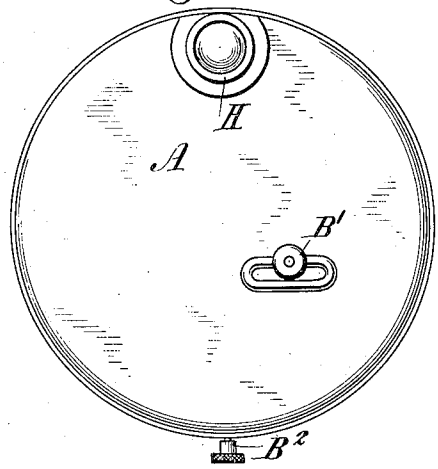


Fig. 2,

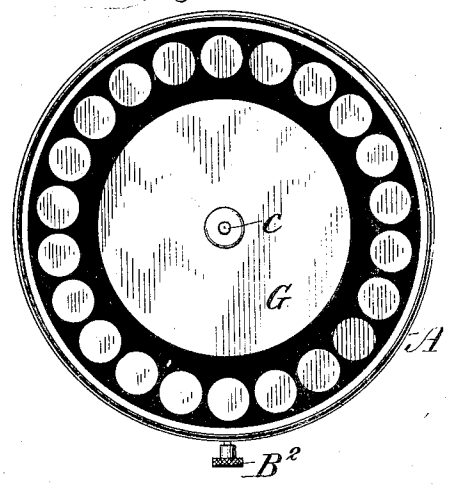


Fig. 3,

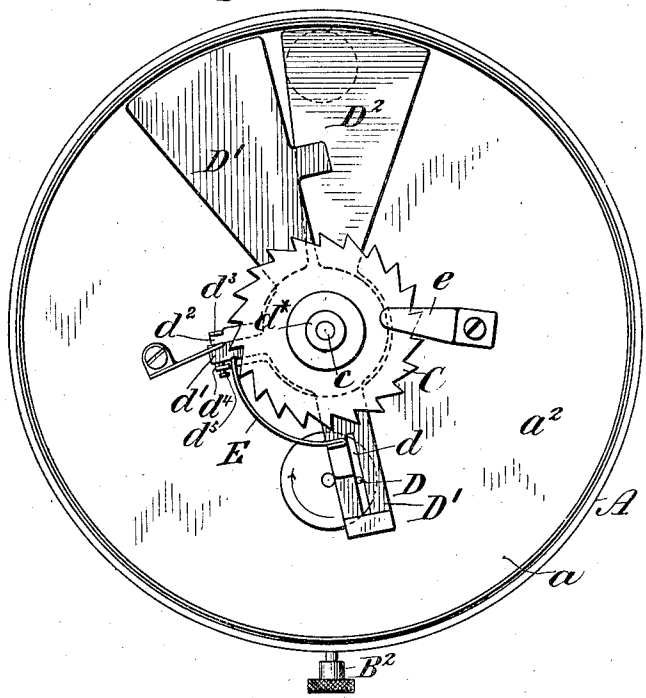
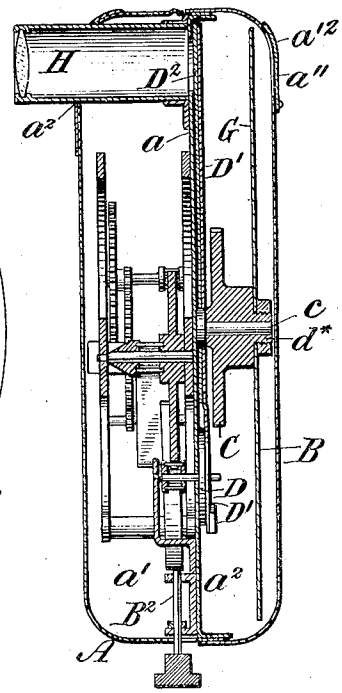


Fig. 4,



WITNESSES:

D. H. Hayward

Ernest Hopkinson

INVENTOR

William H. Daniels

BY Edwin H. Brown

his ATTORNEY

(No Model.) 2 Sheets—Sheet 2.

W. H. DANIELS.

KINETOGRAPHIC CAMERA.

No. 604,733. Patented May 31, 1898.

Fig. 5.

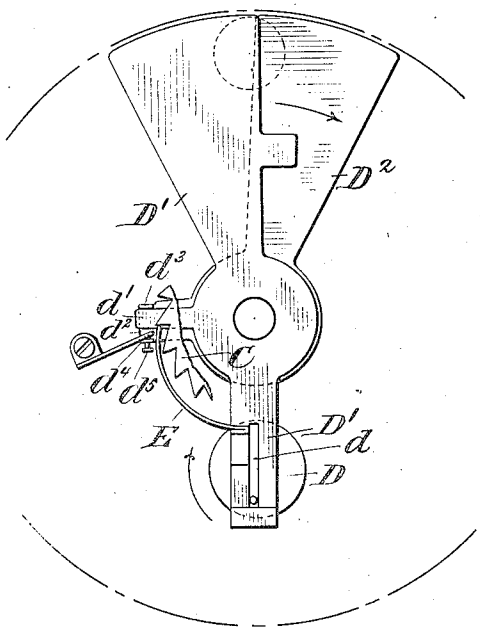
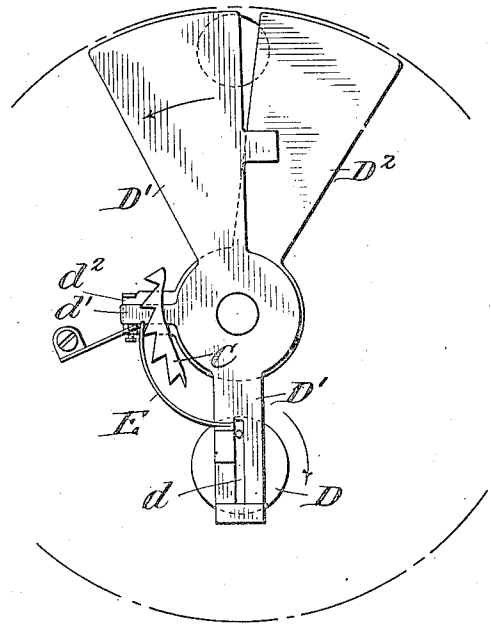


Fig. 6,



WITNESSES:

D. N. Hayward

Bruce Hopkinson

INVENTOR

William H Daniels

BY Edwin H Brown

his ATTORNEY

UNITED STATES PATENT OFFICE.

WILLIAM H. DANIELS, OF NEW YORK, N. Y., ASSIGNOR TO LEO PRANGE, OF BROOKLYN, NEW YORK.

KINETOGRAPHIC CAMERA.

SPECIFICATION forming part of Letters Patent No. 604,733, dated May 31, 1898.

Application filed January 11, 1897. Serial No. 618,700. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. DANIELS, of New York, in the county and State of New York, have invented a certain new and useful Improvement in Articles for Taking and Exhibiting Pictures of Objects in Motion, of which the following is a specification.

I will describe an article embodying my improvement and then point out the novel features in the claims.

In the accompanying drawings, Figure 1 is a front view of an article embodying my improvement. Fig. 2 is a section of the same parallel to the front. Fig. 3 is another section of the same parallel to the front, it being made on a larger scale. Fig. 4 is a transverse section taken through the center of the article. Figs. 5 and 6 are detail views of a shutter.

Similar letters of reference designate corresponding parts in all figures.

A designates a case, which may advantageously be made of sheet metal. While it may be of any desired form, yet it can most economically be made cylindric. Parallel with the front and back a partition a is arranged to divide the case into two compartments a' a^2. In the front compartment a' any suitable arrangement of clockwork B is located. This may best be actuated by a spring and the spring can be wound by a handle B', arranged outside of the case and connected permanently with a winding-arbor. Any suitable detent may be employed—as, for example, a sliding piece B^2, engaging with a tooth of one of the wheels or adapted to extend into the path of a regulating-fan. In the compartment a^2 a ratchet-wheel C is arranged, it being as here shown mounted upon a stud c, which is unconnected with the clockwork, but is supported in the partition a.

A crank D, here shown as consisting of a wrist-pin extending from a disk is driven by the clockwork, the said disk being mounted upon one of the shafts of the clockwork. The crank enters a slot d, formed longitudinally in one part D' of a shutter D' D^2. This part of the shutter is made in the form of a lever journaled upon a hub d^*, which is concentric with the shaft c. The crank D in rotating oscillates the lever consisting of the part D' of the shutter. It also operates the ratchet-wheel intermittently, this being accomplished in the present instance by a spring-pawl E, which is attached at one end to the lower part of the lever, constituting the one part D' of the shutter and being adapted at the other end to engage with the faces of the ratchet-teeth one at a time. Any suitable device may be used for preventing the ratchet-wheel from turning backward—as, for instance, a friction-finger e, fastened to the partition a and bearing upon one side of the ratchet-wheel. D^2 is the other part of the shutter, it being made in the form of an elbow or bell-crank lever and fulcrumed to the same hub upon which the part D' of the shutter is fulcrumed. Adjacent to its arm d' the part D^2 of the shutter is provided with a corresponding arm d^2, which near its outer end is provided with lugs d^3 d^4. The arm d' of the part D' of the shutter works between these lugs d^3 d^4. By means of the arms d' d^2 and the lugs d^3 d^4 the part D' of the shutter operates the part D^2 of the shutter. The extent of movement may be regulated by a set-screw d^5.

It will be seen that the main arms of the parts D' D^2 of the shutter are segmental and that the part D' is adapted to overlap the other part D^2. When the clockwork is released, the crank D will oscillate the part D' of the shutter, and after that is moved a slight distance by itself it will take up the part D^2 of the shutter and move that in unison with it. When the oscillation of the part D' of the shutter is reversed, it will move a short distance before imparting movement to the other part of the shutter. Thus when the two parts of the shutter are moving in one direction there will first be provided a space between them, and then they will be moved past the opening which they are to control, and on the reverse oscillation the opening between the parts of the shutter is closed before the two parts move past the opening which is to be controlled.

The ratchet-wheel carries a disk G, upon which pictures are to be taken or exhibited for representing objects in motion.

A lens-tube H extends through an opening a^{10} in the front of the case from an opening

in the partition *a*. The back of the case is provided with an opening a^{11} opposite the lens-tube. It will not be necessary, however, for the lens-tube to extend to the partition *a*.

If the article is to be used for taking pictures, a sensitized film must be arranged upon or used for the disk G. If, however, the article is to be used simply as an exhibitor of pictures, the disk may be made of any transparent material having pictures suitably mounted upon it.

The opening in the rear of the case should of course be closed where the article is to be used as a camera, and this may be done by any suitable device—as, for instance, a swinging piece or slide a^{12}, such as is used for covering a keyhole.

It will be seen that whether the article is used as a camera or as an exhibitor of pictures the motion of the disk G will be intermittent.

For exhibiting pictures it will only be necessary to uncover the back opening a^{11} and hold the article up to any light, look through the lens-tube, and start the parts in motion.

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

1. The combination with a case provided with openings which are in line with each other, a movable picture-carrying surface within the case arranged intermediate and in line with the openings, and automatic means for imparting an intermittent movement to the surface, substantially as described.

2. The combination with a case provided in its opposite sides with openings which are in line with each other, a lens fitted in one of said openings, a movable picture-carrying surface within the case arranged in line with the openings, and means for imparting an automatic intermittent movement to the surface, substantially as described.

3. The combination with a case provided in its opposite sides with openings which are in line with each other, oscillating shutters operating intermittently, a picture-carrying disk within the case in line with the openings thereof, and automatic means for imparting an intermittent, rotary motion to the disk alternately with the shutters, substantially as specified.

4. The combination with a case provided in its opposite sides with openings which are in line with each other, a lens-tube fitted in one of said openings, an automatic, intermittently-moving surface within the case arranged in line with the openings, an oscillating shutter intermediate the lens-tube and movable surface, and means for intermittently actuating the shutter alternately with the intermittent motion of the surface, substantially as specified.

5. The combination with a case having an opening, of a movable surface within the case in line with the opening, an oscillating shutter intermediate the opening and movable surface, said shutter comprising two parts having a relative movement to each other, and means for simultaneously moving the two parts of the shutter in opposite directions, substantially as described.

6. The combination with a case having an opening, of a movable surface within the case in line with the opening, an oscillating shutter intermediate the opening and movable surface adapted to open when moved in one direction, and to remain closed when in the opposite direction, and automatic mechanism for operating the shutter and for moving the movable surface, substantially as described.

7. The combination with a case, of an oscillating shutter, a crank for operating said oscillating shutter, an intermittently-operated wheel deriving motion from said crank, and a disk carried by said wheel, substantially as specified.

8. The combination with a case, of a shutter composed of two parts D', D^2 having arms d', d^2, and one of said arms having lugs d^3, d^4, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM H. DANIELS.

Witnesses:
ANTHONY GREF,
CORTLANDT WOODBURN.