No. 634,971. Patented Oct. 17, 1899.

W. H. WITHAM.

WORKMAN'S TIME RECORDER.

(Application filed Dec. 5, 1898.)

(No Model.) 2 Sheets—Sheet 1.

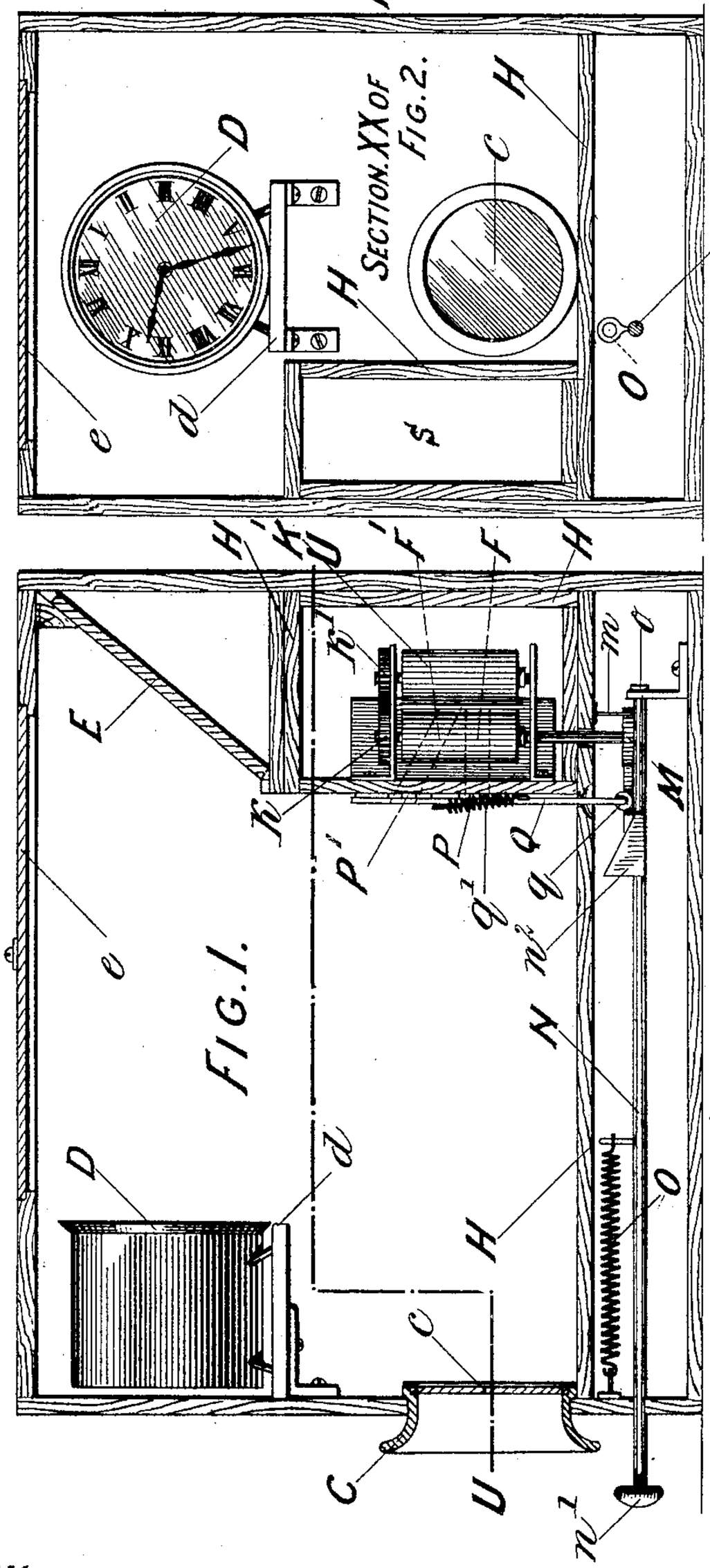

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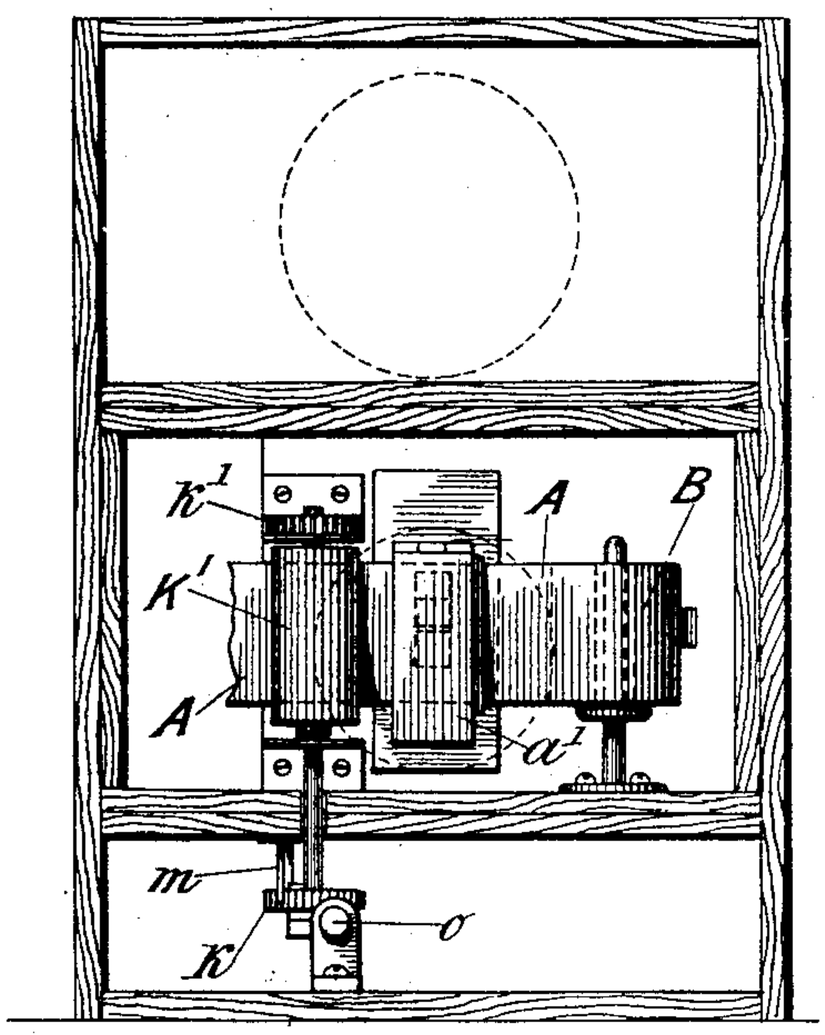
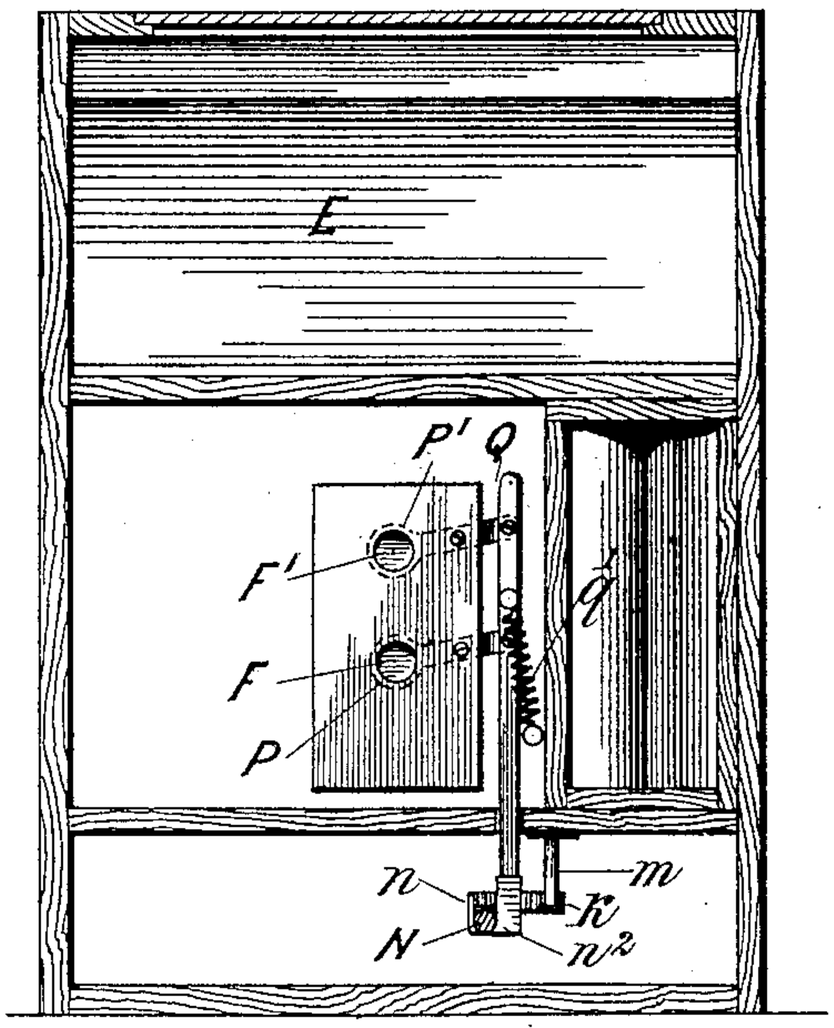
FIG. 5.



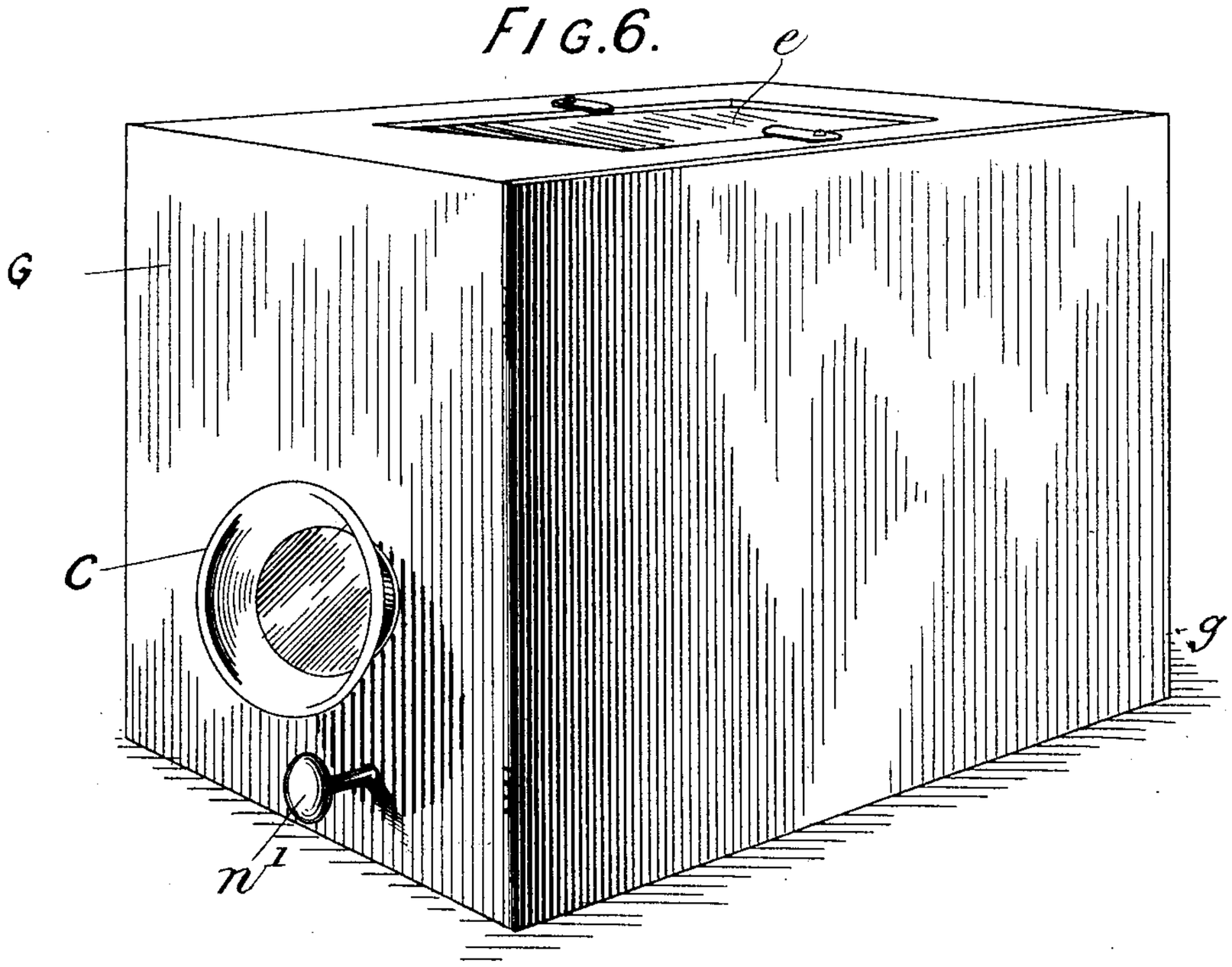
SECTION. Z-Z OF FIG. 2.

FIG. 4.



SECTION. Y-Y OF FIG. 2.

FIG. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM HENRY WITHAM, OF LONDON, ENGLAND.

WORKMAN'S TIME-RECORDER.

SPECIFICATION forming part of Letters Patent No. 634,971, dated October 17, 1899.

Application filed December 5, 1898. Serial No. 698,362. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HENRY WITHAM, a subject of the Queen of Great Britain, residing at London, England, have invented a certain new and useful Improvement in Workmen's Time-Recorders, of which the following is a full, clear, and exact specification.

This invention relates to apparatus for recording the time at which each workman enters or leaves a factory or other premises or the time at which a night watchman visits given localities, and has for its object to avoid any doubt as to the identity of the person who has set the apparatus in motion. For this purpose I combine a clockwork with a photographic camera and accessories in such a manner that every time the apparatus is set in motion it will photograph the face of the person standing before it and also indicate the time at which the photograph was taken.

In the accompanying drawings, Figure 1 is a longitudinal vertical section of an apparatus embodying my invention. Fig. 2 is a horizontal section of the same along line U U of Fig. 1; Fig. 3, a transverse section along line X X of Fig. 2 looking toward the front. Fig. 4 is a section along line Y Y looking toward the back; Fig. 5, a transverse section along line Z Z of Fig. 2 looking toward the front; Fig. 6, a perspective view of the apparatus.

The apparatus chiefly comprises a photographically-sensitized surface, preferably a movable film A, mounted on a roller B and adapted to travel a given distance every time a button n' is depressed, a clock D, provided with an ordinary dial or other time-indicator and illuminated by a suitably-placed reflector E, a pair of lenses and lens-tubes F F', one for projecting a picture of the operator and the other for projecting a picture of the clock-dial, and a double camera-shutter or a pair of shutters adapted to act for both lenses at the same time and in the case of electric lighting to close and open the circuit of an electric lamp.

The entire mechanism is inclosed in an outer box G, provided with a hinged lid g, and the principal parts are attached to an inner box H, which forms a dark chamber and can be removed bodily after the lid g has been opened.

In the example shown by Fig. 2 the fresh film is wound off a vertical roller or reel B and guided between two feed or transporting rollers K K', which are covered with india-rubber and geared together by tooth-wheels k k'. The axle of the roller K extends from the bottom of the box containing the film-holder and carries a ratchet-wheel M, by means of which the rollers may be set in motion. This is effected by a spring-pawl n, attached at one end to a horizontal push-bar N and adapted to enter with the other end between the teeth of the wheel M. The push-bar N extends through the front wall of the box G and is provided with a button n'. The forward motion of the push-bar is produced by hand and limited by the button n'. The return motion is produced by a spring O and limited by the head o of the push-bar.

The front wall of the box G has a large opening, into which is fitted a receiving-tube C, which may be closed by a glass disk or window, and the lens F and the film A are so arranged that if a man holds his face in front of the said opening a clear portrait may be projected on the film. The clock is placed on a shelf d above the said opening and the lens F' is so arranged that an image of the clock-dial may be projected on the film above the said portrait if the clock-dial is properly illuminated. This is effected by means of the reflector E, which receives light through the glass panel e, fixed in the top of the box G. The said lenses F F' are mounted on a pair of lens-tubes placed at an acute angle to each other and provided with a double shutter adapted to be operated by the motion of the push-bar N. In the construction represented by the drawings each lens-tube is covered by a disk P or P', formed at one arm of a horizontal lever, the other arm of which is connected with a vertical rod Q, carrying at its lower end a friction-roller q. For lifting the said rod Q the push-bar N is provided on one side with a lug n^2, the top of which forms an inclined plane so arranged that by pushing the bar N forward the friction-roller q will be caused to roll up the inclined plane, and thereby to remove the disks P P' from the respective lens-tubes. As soon as the push-bar is released it will be drawn forward by the spring O and the shutter will

be caused to descend by a helical spring q'. The push-button is placed so as to stop the bar N when the roller q has reached the highest point of the lug n^2.

In the drawings, a is a brake-spring for the rolled-up film A, a' a device for holding the film in place during its exposure, and a^2 a guide for conducting the exposed film into the lateral store-room S, which forms part of the dark chamber. The inner box or dark chamber H is constructed like a drawer adapted to slide in the outer box G.

m is a stationary retaining-pawl to prevent the ratchet-wheel from turning backward.

The means for operating the shutters and for transporting the film may, however, be similar to those used in other photographic apparatus. A special device for providing three different lengths of exposure is described in a concurrent application, Serial No. 707,948. Instead of an ordinary clock-dial or an image of the same any other suitable time-indicator may be brought within the range of one of the lenses.

I am aware that it has been proposed to suspend a photographic camera in a compartment of a railway-carriage in order to take views of the interior of the compartment; but there was no clock attached to the photographic apparatus nor was there a separate device for recording the time on the traveling film, and I do not claim the said apparatus or combination.

I claim—

1. A workman's time-recorder comprising in its construction a box having an opening for the admission of light, a sensitized surface situated in a dark chamber secured to the said box, an optical projecting apparatus adapted to project on the said sensitized surface an image of any object situated in front of the said opening, a time-indicator mounted in the said box within the range of the projecting apparatus so as to produce on the sensitized surface an image in proximity to that of the external object, and means for operating the optical projection apparatus and for shifting the sensitized surface, substantially as described.

2. A workman's time-recorder comprising in its construction a box having an opening for the admission of light, and in proximity thereto a time-indicator, a sensitized surface situated in a dark chamber secured to the said box, a double optical projecting apparatus, one half of which is adapted to project on the said sensitized surface an image of any object situated in front of the said opening, while the other half is adapted to project in proximity thereto an image of the time-indicator, and means for operating the optical projection apparatus and for shifting the sensitized surface, substantially as described.

3. A photographic-portrait camera and time-recorder, comprising in its construction a photographically-sensitized surface situated in a dark chamber and adapted to move in the same, a pair of photographic lenses and lens-tubes adapted to project separate images on the sensitized surface, a clockwork time-indicator situated within the range of one of the said lenses, so that the latter may project its image on the sensitized surface, while the other lens projects on the same an image of external objects, an optical shutter adapted to control the passage of light through the lenses to the sensitized surface, and mechanism for operating the said shutter and for shifting the sensitized surface, the whole being adapted to operate substantially as described.

4. A photographic-portrait camera and time-recorder comprising in its construction a photographically-sensitized surface situated in a dark chamber, a pair of lenses and lens-tubes adapted to project separate images on the sensitized surface, a clockwork time-indicator situated within the range of one of the said lenses, so as to project its image onto the sensitized surface, while the other lens is adapted to project on the same an image of external objects, a mirror adapted to illuminate the said time-indicator, an optical shutter adapted to control the admission of light through the said lenses to the sensitized surface, and mechanism for operating the said shutter and shifting the sensitized film in unison, substantially as described.

5. A workman's time-recorder comprising in its construction a photographically-sensitized film mounted on rollers inclosed in a dark chamber and adapted to move in the same, a pair of photographic lenses and lens-tubes adapted to project separate images on the sensitized surface, a clockwork time-indicator situated within the range of one of the said lenses, so that the latter may project its image on the sensitized surface, while the other lens is adapted to project on the same an image of an external object, an optical shutter adapted to control the admission of light through the lenses to the sensitized surface, mechanism for operating the said shutter, and mechanism for transporting the said film a given distance at each operation, the whole being adapted to operate substantially as described.

6. A workman's time-recorder comprising in its construction a box having an opening for the admission of light and containing a time-indicator operated by clockwork, a sensitized surface situated in a dark chamber secured to the said box, a pair of lenses mounted between the dark chamber and the said opening and adapted to project separate images on the sensitized surface, one being an image of any object situated in front of the said opening, and the other an image of the said time-indicator, mechanism for controlling the passage of light through the lenses to the sensitized surface and for shifting the sensitized surface a given distance at each operation, substantially as described.

7. A workman's time-recorder comprising in its construction a box having a front opening and a glass roof for the admission of light, and containing a time-indicator operated by clockwork, and a mirror adapted to illuminate the said time-indicator, a sensitized surface situated in a dark chamber secured to the said box, a pair of lenses mounted between the said sensitized surface and the said opening and adapted to project on the said sensitized surface separate images, one being an image of any face appearing before the front opening, and the other an image of the said time-indicator, mechanism for controlling the passage of light through the lenses to the sensitized surface at each operation, substantially as described.

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

WILLIAM HENRY WITHAM.

Witnesses:
J. WETTER,
CHAS. ROCHE.