

C. KESSES.
 PHOTOGRAPHIC EXPOSING CLOCK.
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1,384,528.

Patented July 12, 1921.

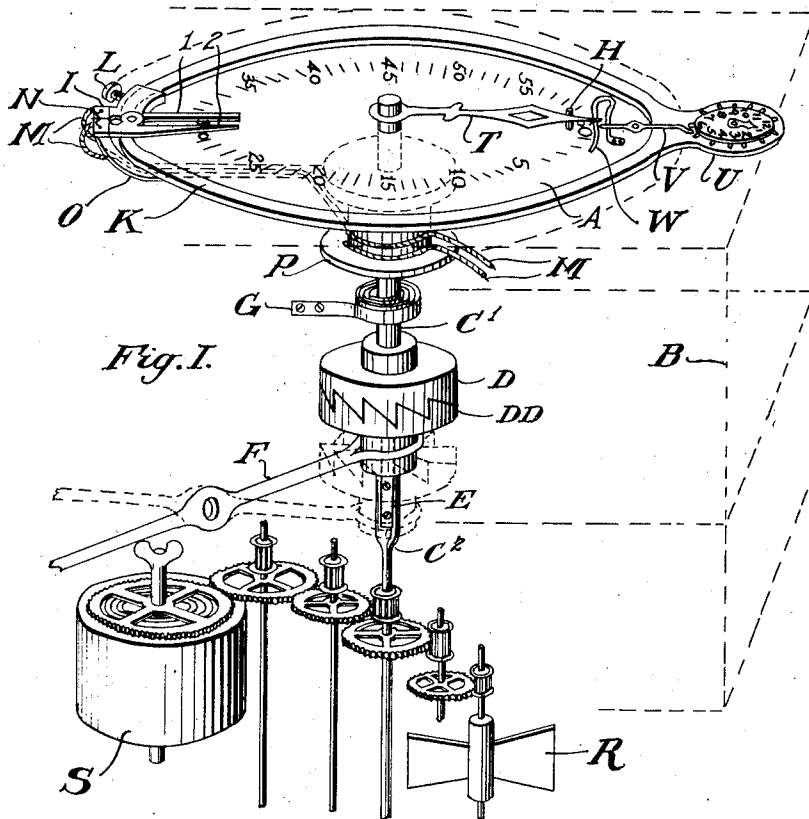


Fig. I.

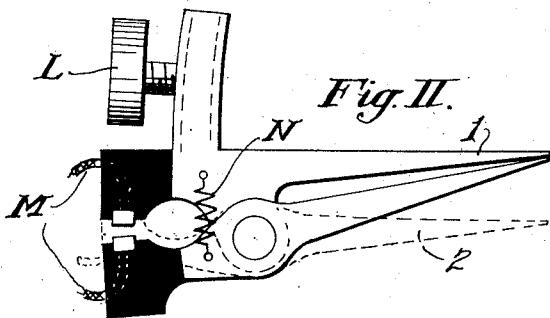


Fig. II.

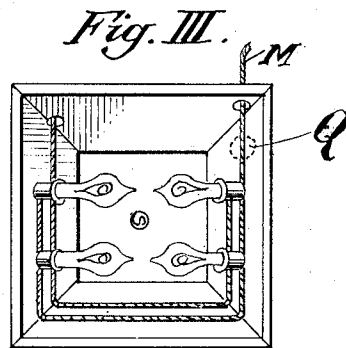


Fig. III.

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PHOTOGRAPHIC EXPOSING-CLOCK.

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To all whom it may concern:

Be it known that I, CHARLES KESSES, citizen of the United States, and resident of New York city, in the county of New York and State of New York, have invented a certain new and useful Photographic Exposing-Clock, of which the following is a specification.

My invention relates to improvements in an exposing device which operates automatically in conjunction with the photographic printing machine and the objects of my improvements are, first;—

To provide an exposing clock for a printing machine, which makes any number of prints from a negative, each one having exactly the same time of exposure, after the device is regulated for the density of the negative, the strength of the light in the cabinet and the sensitivity of the paper; second, a noiseless device which is very convenient in the dark room; third, a device which works in conjunction with a printing machine and operates automatically, which can be regulated from one to sixty seconds, and opens the circuit of the current thereby stopping the exposure of the print, returns the hand to its fixed position and closes the circuit to be ready for the next exposure; fourth, an indicator which counts automatically the number of exposures.

I attain these objects by the mechanism illustrated in the accompanying drawing, in which—

Figure I is a perspective view of the entire machine; Fig. II, a detailed front view of a regulator carrying insulated wires; Fig. III, a top view of the inside of a printing machine, showing the electric connection with the exposing device.

Similar letters refer to similar parts throughout the several views.

A dial A is secured to the casing or frame work B. A shaft C is in two parts, 1 and 2. A clutch D is secured to the shaft C¹ and is meshed to a clutch DD which is slidably arranged on the shaft C². A rail E secured to said shaft is fitted in a corresponding opening in the clutch DD to connect or disconnect both shafts, as shown by the dotted line position of said clutch.

A lever F is secured to said clutch and is operatively connected to the printing cabi-

net, to move the clutches together by closing of the cabinet and disconnect by opening of the same.

A spring G is secured to the shaft C and to the frame or casing B to return the hand T when the same is released from the clutch DD to its fixed position at a pin H.

A regulator I a separate view of which is shown in Fig. II is movably arranged on a rim K which surrounds the dial A. Said regulator is in two parts, part 1 is secured by a set screw L to the rim K, the part 2 is a lever arranged to open and close the circuit. Each part carries an electric wire M, which is insulated by hard rubber, the ends of said wires must be flattened to fit together, and a spring N is secured to the two parts of the regulator to press said wires together. The second part will be moved by the hand of the clock toward part 1 and so break the circuit. From this regulator both wires running insulated in a bracket O and are carried to and around a pulley P which is loosely fitted around the shaft C. The regulator, the bracket and pulley are joined together to allow combined turning about said shaft.

From the pulley both wires are leaded to the printing cabinet, to a position Q shown in Fig. III which is a top view of the inside of the cabinet. Before connecting the wires, the current to the cabinet must be disconnected. An opening in the side of the cabinet must be inserted and the wire must be cut at said position, to be joined and insulated, each part of the cut wire to each part of the wire from the regulator.

The clock work operates the electric device being connected through the shaft C' C''. The upper part of said clock is a paddle wheel R, the size of the paddles must be in proportion to give the right air-resistance for the movement of the hand around the dial required, at the lower part of said clock work is a spring or a weight S. A chain of gears and pin wheels connects said paddle wheel with said spring.

An anchor escapement for the clock work may be substituted for the paddle wheel, if the noise from the same is not objectionable.

Now the coöperation of the several parts throughout a complete circle of movements involved in the printing is shown. The reg-

ulator is moved to indicate the desired time of exposure, and secured in place by the screw L to the rim K, the negative and the paper are placed in position, the cabinet is closed thereby moving the clutches DD together and connecting the hand T with the clockwork. The hand moves to the regulator or lever 2, opens the circuit and stops at part 1, thereby stopping the exposure of the print.

By the opening of the cabinet the clutch is released, thereby releasing the hand, which is returned by the spring G to its fixed position at the pin H and the regulator is closed by the spring N to be ready for the next exposure.

An indicator U is secured above the dial A and is operatively connected to the hand T by the lever V said hand will move the indicator each time the device is actuated and the hand is hindered in returning by a curved bracket W which is secured to the dial.

I am aware, that prior to my invention clocks have been used for counting the seconds for exposure. I therefore do not claim such a combination but I claim the combination, in an exposing device for a photographic printer, of a clock having a regulator which carries the current, movably attached around the dial and means on said regulator to open the circuit by the movement of the hand, all substantially as set forth.

I claim:

1. In combination with a time clock, having a dial with a switch operating device, a frame having two hinged parts, one part containing the clock operating mechanism and the other part carrying the dial the two parts so arranged that the switch operating device and clock operating means are con-

nected by a clutch on the closing of the frame, substantially as set forth.

2. In a time clock having an electric device, the combination of a switch consisting of a member which carries a contact plate, a lever arranged on said member which carries a second contact plate, a spring to bring said contact plates in close position, a support for said switch and its wires, a frame having two hinged parts, one part containing the clock operating mechanism and the other part carrying a dial and moving arm, the two parts so arranged that the arm and clock operating means are connected by a clutch on the closing of the frame, thereby separating said contact plates after a predetermined period by the moving arm, substantially as set forth.

3. In a time clock having an electric device, the combination of a switch and its support, a dial carrying switch, operating means, a frame having two hinged parts, one part containing clock mechanism and the other part carrying the dial with its switch operating means the two parts so arranged that the switch operating means and clock mechanism are connected by a clutch to open the switch through said means, substantially as described.

4. The combination in a time clock having an electric device which operates in conjunction with a photo printer, the combination of a circuit connector having the contact plates in a closed position and is movably attached to a rim which is secured around the dial and means to separate said contact plates by the movement of the hand; all substantially as set forth.

Signed at New York city, in the county of New York and State of New York, this 7th day of Sept., A. D. 1920.

CHARLES KESSES.