(No Model.)

# E. W. PERRY, Jr.

## PHOTOGRAPHIC APPARATUS.

No. 458,981. Patented Sept. 1, 1891.

Fig. 1.

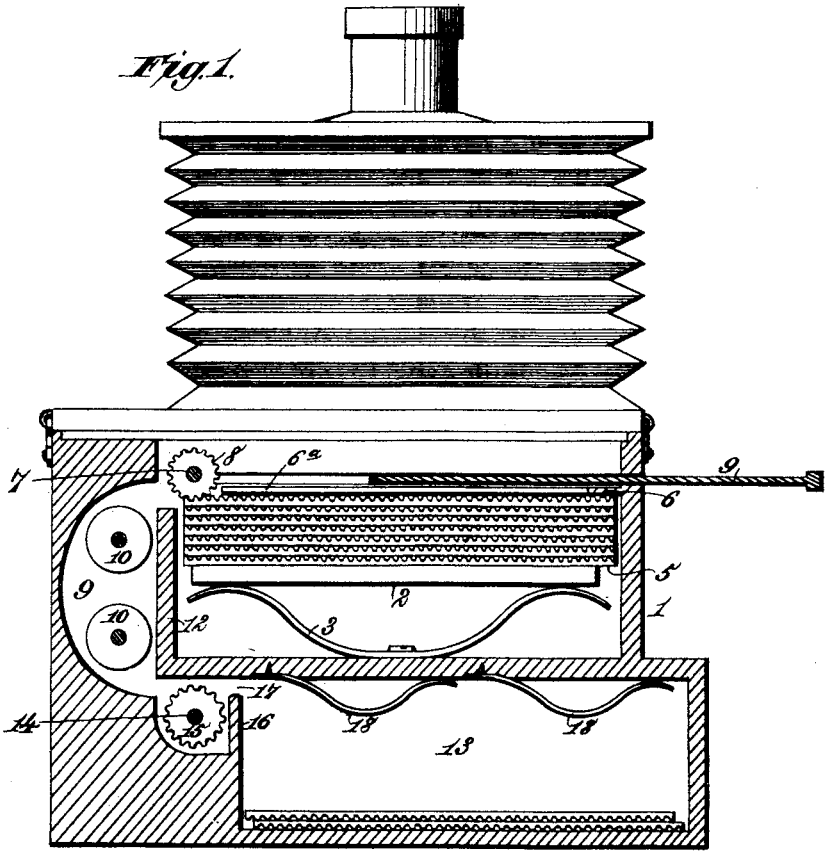
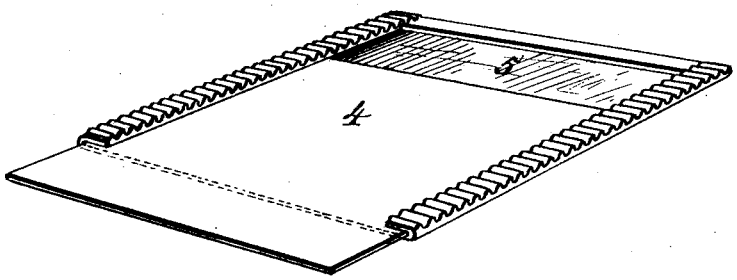



Fig. 2.




Witnesses.
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# UNITED STATES PATENT OFFICE.

ENOCH WOOD PERRY, JR., OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO EMIL KIPPER, OF ADAMS, MASSACHUSETTS.

## PHOTOGRAPHIC APPARATUS.

SPECIFICATION forming part of Letters Patent No. 458,981, dated September 1, 1891.

Application filed February 20, 1890. Serial No. 341,102. (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 Photographic Apparatus, of which the following is a specification.

My invention relates to photographic apparatus of that class wherein the sensitized plates are fed forward in a plate-holder to a point where they may be successively exposed, and wherein they are transferred to a plate-receiving chamber, in order to expose the succeeding plate, which is fed forward automatically otherwise to advance the remaining plates in the plate-holder.

In my application, Serial No. 341,100, filed of even date herewith, I have shown and described different forms of apparatus for transferring the exposed plates to an adjacent plate-receiver arranged upon one side of the plate-holder.

It is the purpose of my present invention to provide simple means whereby a plate may after exposure be transferred to a plate-receiver arranged in rear of the plate-holder, or substantially so.

The invention consists in the several novel features of construction and new combinations of parts hereinafter fully set forth, and then pointed out in the claims following this specification.

Referring to the accompanying drawings, Figure 1 is a sectional view illustrating my invention, the camera being shown in plan view. Fig. 2 is a detail perspective of one of the plates or films and its envelope.

In the said drawings, the reference-numeral 1 designates any suitable form of plate-holder adapted to be arranged at the rear of a camera, and provided with means whereby a pile, stack, or series of sensitized plates may be fed forward to bring the foremost plate to the focal-point and expose the same. The means shown for this purpose consist of a backing or plunger-plate 2, pressed forward by springs 3; but I may substitute for these springs any other suitable form of feeding or adjusting device.

The sensitized plates 4 are formed of any one of the known flexible materials suitable for the purpose—such, for example, as zylonite, gelatine papers, or other substance—and each plate is inclosed or carried by an envelope 5, formed of flexible material, such as rubber, paper, zylonite, or any other substance which is sufficiently flexible and capable of intercepting the actinic rays. The margins of the envelope are folded or turned over upon the outer surface of the plate, and said margins are corrugated, toothed, or otherwise so formed as to present a suitable holding surface or surfaces for the transferring device or devices. When the plates thus provided with envelopes are arranged in the plate-holder, they are pressed forward by the adjustable support or plunger-plate against a flange 6, arranged at one end of the plate-holder.

At or near the other end of the plate-holder and in front of the pile of plates is placed a vertical shaft 7, having a gear or wheel 8 at each end adapted to engage with the margins of the envelopes by which said plates are inclosed. These gears, only one of which is shown in the drawings, may form the support for the plates at one end of the plate-holder as the said plates are pressed forward by the plunger-plate 2, though I may substitute therefor one or more strips or ribs similar to the flange 6.

At the end of the plate-holder is formed a chamber 9, in which one or more guide-rolls 10 are journaled, the wall of said chamber being curved outside these rolls to provide a passage for the plate as it is impelled by the gears 8. The wall 12, separating the chamber 9 from the plate-holder, is terminated at such a point as to permit the passage of the exposed plate under the impulse of the gears, but preventing any movement or displacement of the other plates in the same direction.

In the rear of the plate-holder is a plate-receiving chamber 13, between which and the chamber 9 is journaled an independent shaft 14, having gears 15, which also engage the corrugated or toothed edges of the envelope on the exposed plate. A partition 16 separates the plate-receiving chamber from the recess containing the gear 15; but a slot or passage 17 is formed in this partition at the

end thereof to permit the transfer. It will be seen that as the plates are successively removed from the position of exposure by the gears 8 they will pass over the curved wall of the chamber 9 and into mesh with the gears 15 by the subsequent revolution, whereof they will be shot into the receiving-chamber. In this chamber are arranged one or more springs 18, by which the entering plate is first deflected and then bodily thrown toward the rear to pile the transferred plates successively in the receiver and remove each one as it enters from the path of the next succeeding plate.

Ribs or flanges 6ª may be extended upon the top and bottom of the plate-holder to support the plates as they are pressed forward, and, if desired, one or more friction-rolls may be interposed between the end of the plate resting on the flange 6 and the end supported by the gears 8. A slide 9 closes the plate-holder in the usual manner.

It must be understood that I may use a single gear 8 only, instead of employing two gears, one for each margin of the plate or plate-envelope. I may also dispense with the marginal portions of the envelopes and employ a frictional bearing acting directly upon the surfaces of the plates at or near their edges, instead of upon the margins of the envelopes.

A hinged flap may be employed to close the slot 17 in the wall of the receiver after the entrance of each plate.

I may omit the guide-rolls entirely and use simply a curved lateral passage at the end of the plate-holder communicating with the receiver, and this construction will give good practical results, though the guide roll or rolls are preferable as they diminish the friction.

It is preferable in shifting the plates to the plate-receiver to use wheels either made of or having their peripheries surfaced with rubber, which may be vulcanized or raw, the latter being best, though rubber vulcanized at a low heat may also prove equally good.

I do not claim in this application the sensitive plate constructed as described and shown; but

What I claim is—

1. In a photographic magazine plate-holder, a rotary transferring device which impinges upon the surface of the sensitive plate or its holder for the purpose of transferring it from one compartment to another, substantially as described.

2. The combination, with a plate-holder, of a plate-receiver arranged in rear thereof and a rotary transferring device whereby the exposed plates are successively impelled from the position of exposure to the plate-receiver, substantially as described.

3. The combination, with a plate-holder, of a plate-receiver arranged in rear thereof and communicating therewith by a curved lateral passage at the end of the plate-holder, and a transferring device engaging directly with the plates or with the marginal portions of their envelopes and impelling them through said curved passage, substantially as described.

4. In a photographic apparatus, the combination, with a plate-holder provided with suitable means for feeding a stack or series of sensitized plates forward to expose the outer plate, of a plate-receiver arranged in rear of said plate-holder, gearing meshing with the toothed or corrugated margins of the envelopes inclosing said plates, and one or more guide-rolls arranged in a chamber at the end of the plate-holder, substantially as described.

5. In a photographic apparatus, the combination, with a plate-holder, of an adjustable support for feeding a pile or series of sensitized plates forward against one or more supports by which the outer plate is held in position for exposure, gearing arranged at or near one end of the plate-holder and adapted to mesh with or act upon the toothed, corrugated, or roughened margins or flanges of the envelopes inclosing said plates, guide-rolls arranged at one end of the plate-holder in a chamber having a curved wall, and an independent gear or gears arranged in a recess between the guide-rolls and the end of a plate-receiving chamber arranged in rear of the plate-holder, substantially as described.

6. In a photographic apparatus, the combination, with a plate-holder, of an adjustable plate support pressing the series of sensitized plates forward against one or more supporting flanges or ribs, a plate-receiver arranged in rear of the plate-holder, one or more gears arranged in the plate-holder and meshing or engaging with the toothed or corrugated flanges of the envelopes carrying the plates, guide-rolls arranged at one end of the plate-holding chamber, and an independent gear or gears arranged between the guide-rolls and the end of the plate-receiver, the latter being provided with one or more springs, whereby the entering plates are pushed toward the rear, substantially as described.

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

ENOCH WOOD PERRY, JR.

Witnesses
EDW. L. COWELL,
THOMAS FORD.