

(No Model.)

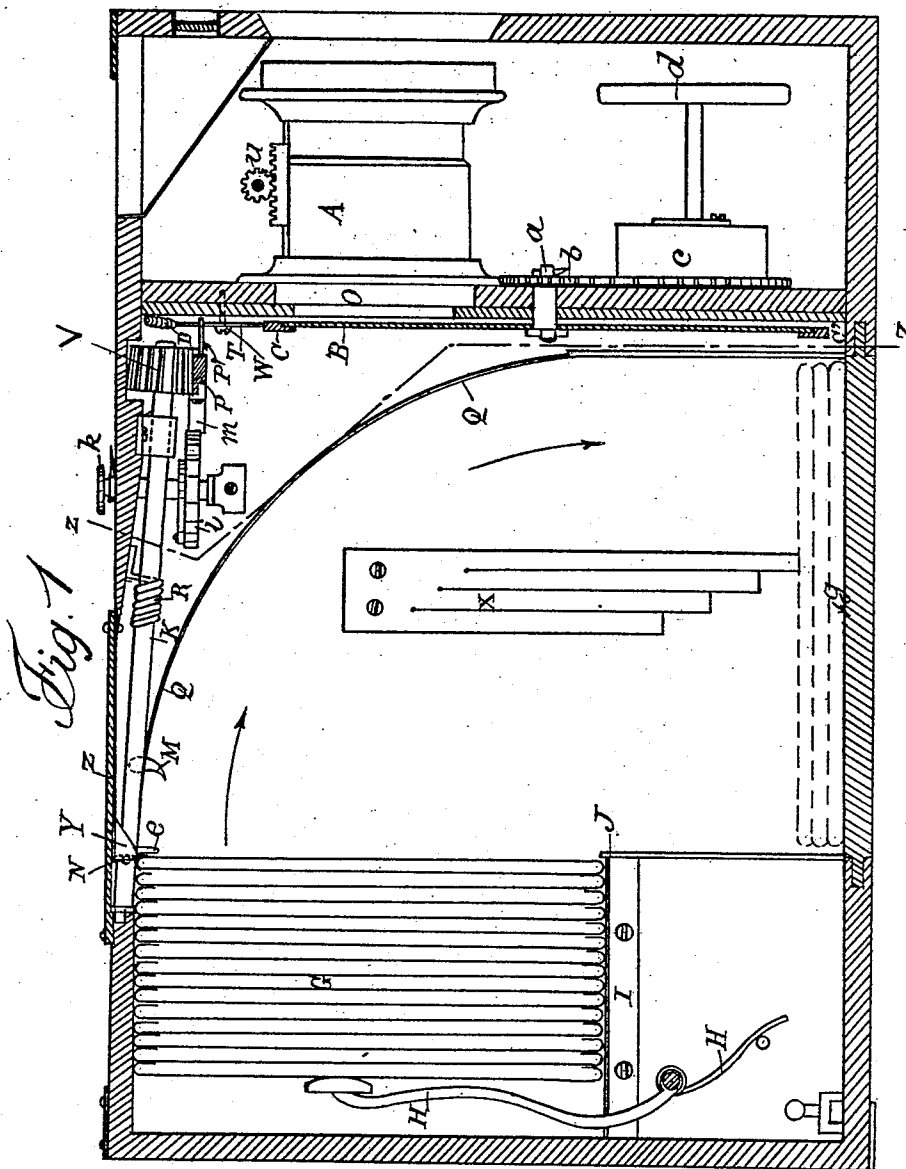
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3 Sheets—Sheet 1.

G. P. C. MARONIEZ.
MAGAZINE CAMERA.

No. 528,176.

Patented Oct. 30, 1894.



Witnesses.
J. Chebret.
O. Block.

Inventor.
Georges P. C. Maroniez.
By: H. de Vos.
Attorney.

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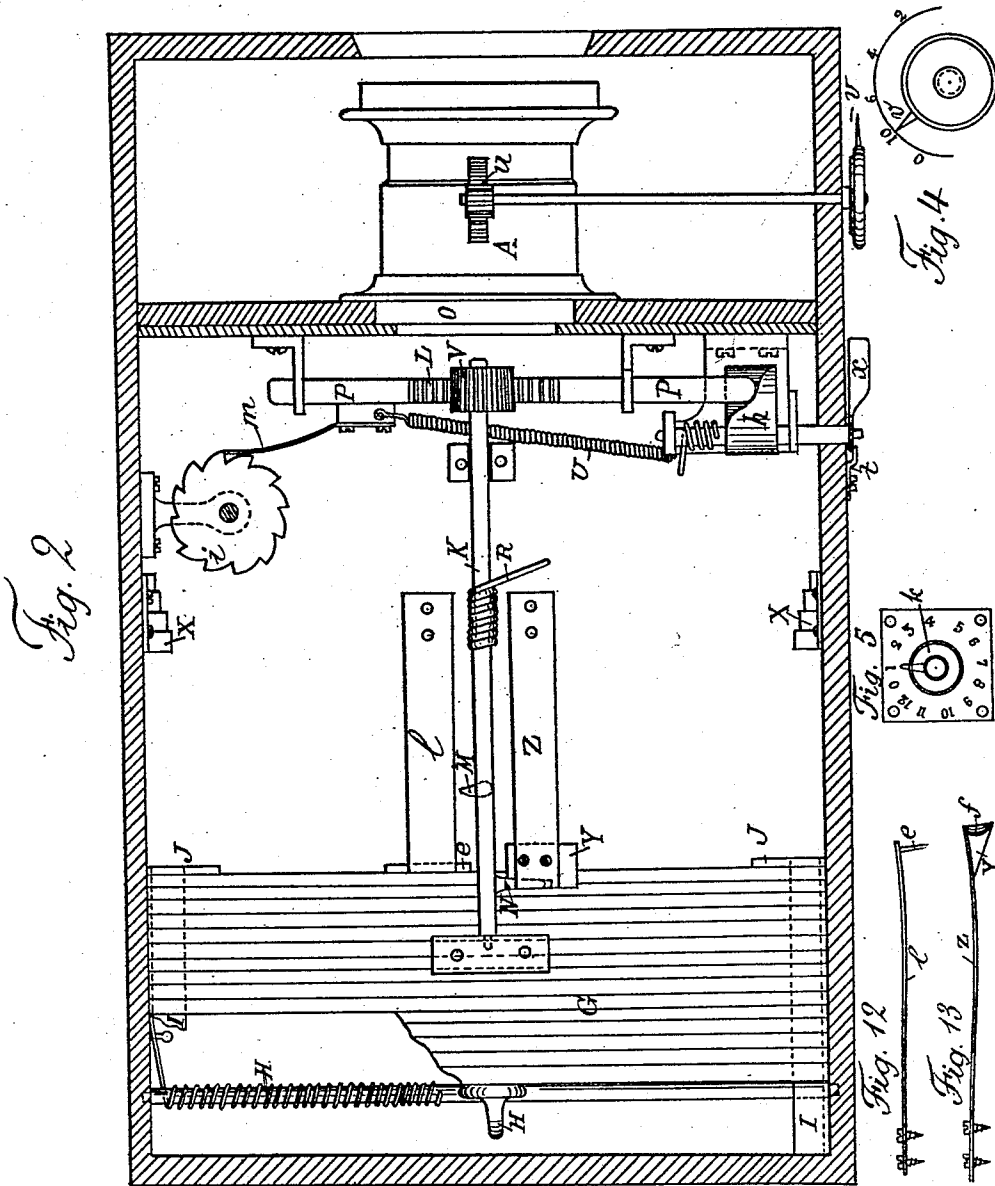
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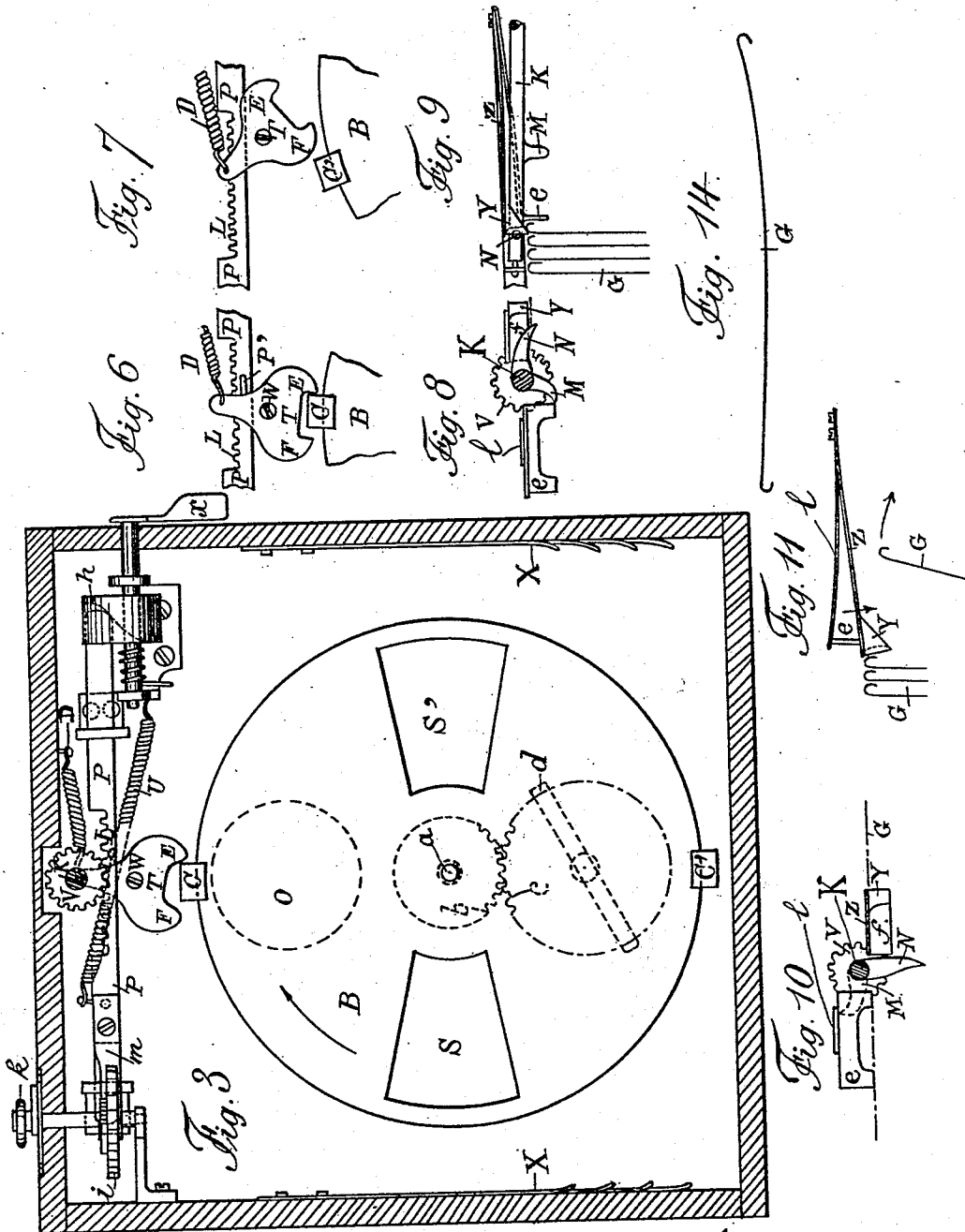
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3 Sheets—Sheet 3.

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MAGAZINE CAMERA.

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Patented Oct. 30, 1894.



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UNITED STATES PATENT OFFICE.

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GEORGES PHILIBERT CHARLES MARONIEZ, OF BOULOGNE-SUR-MER, FRANCE.

MAGAZINE-CAMERA.

SPECIFICATION forming part of Letters Patent No. 528,176, dated October 30, 1894.

Application filed July 21, 1892. Serial No. 440,851. (No model.) Patented in France August 25, 1891, No. 215,659; in Belgium May 30, 1892, No. 99,886; in Luxembourg May 30, 1892, No. 1,630; in Italy May 31, 1892, No. 32,010/26, and in Spain May 31, 1892, No. 13,387.

To all whom it may concern:

Be it known that I, GEORGES PHILIBERT CHARLES MARONIEZ, a citizen of the French Republic, residing at Boulogne-sur-Mer, France, have invented new and useful improvements in Magazine-Cameras, of which the following is a specification, and for which I have obtained Letters Patent as follows: In France, No. 215,659, dated August 25, 1891; in Belgium, No. 99,886, dated May 30, 1892; in Italy, No. 32,010/26, dated May 31, 1892; in Spain, No. 13,387, dated May 31, 1892, and in Luxembourg, No. 1,630, dated May 30, 1892.

My invention relates to photographic apparatus wherein the movement of the shutter and the change of plates are performed successively by a single manipulation of the operative mechanism and is fully disclosed in the following specification of which the accompanying drawings form a part in which like parts are designated by similar letters of reference throughout the several views, and in which—

Figure 1 is a vertical longitudinal section of the apparatus. Fig. 2 shows a central longitudinal section of the casing of the apparatus, together with a plan view of a portion of the operative mechanism, parts of said mechanism being omitted. Fig. 3 shows a transverse section on the line $z-z$ of Fig. 1. Fig. 4 shows a front view of the focussing indicator. Fig. 5 shows a plan view of the indicator giving the number of exposures made. Figs. 6 and 7 show detail views of the anchor. Figs. 8, 9, 10, 11, 12, 13 and 14 show detail views of the mechanism for changing the plates.

The apparatus see Figs. 1, 2, and 3, is composed of a box or case, provided at its front end with an objective A, equipped with a rack u so as to allow of an adjustment of the focus, which is accomplished by means of a rod provided with a pinion which meshes with said rack, the rod being also provided with a thumb-wheel having a finger or pointer which operates in connection with a dial plate on the outside of the casing. See Figs. 2 and 4 to indicate the focus. Behind the board carrying the objective and arranged against the same, is a shutter composed of a

disk B provided with two apertures S and S', designed to pass successively behind the opening O, (Figs. 1 and 3,) and this disk is mounted on a stud a on which is also keyed the cog-wheel b , which is geared to the spring barrel c , which can be operated by means of a key d and wound up for a great many exposures. On the periphery of the shutter disk and midway between the openings S S', see Figs. 1, 3, 6 and 7, are arranged two stops C' C' for the shutter and they co-operate with a lever T the lower member of which is in the shape of an anchor which is arranged in the upper part of the box to arrest the movement of the shutter. This anchor pivoted at W and acted upon by a spring D has, in its normal position, the tooth E lowered, and the tooth F raised, so that the tooth E, retaining the stop C, prevents the shutter from turning in the direction of the arrow under the action of the spring in the barrel c . If under the impulse of the thrust-blade P, provided with a pin P' which strikes the upper end of lever T, the tooth E is raised, the shutter will be released, and will consequently rotate and uncover the objective, when the tooth F will be lowered and act as a check against which the second stop C' will abut. When the impulse of the thrust-blade discontinues and the same is moved backward under the action of the spring U, the anchor T, will again assume its original position and the stop C', released by the tooth F, which is raised, will bear against the tooth E, and the shutter is again in position for another operation, which is renewed for each exposure.

The apparatus can be constructed for glass plates or films and for any desired size. The frames G, Fig. 14, containing the plates are of thin metal, slightly curved so as to be springy and these frames operated upon and pushed forward by the spring H, are placed one behind the other, in the rear part of the camera, and they are supported at the lower ends upon two guides I. The first or front frame abuts against two metal pieces J, which project about two millimeters above the guides I. In the upper part of the box, is placed a rod K which is connected with the thrust-blade P, by means of a rack L, and a pin—

ion V, rigidly mounted on the said rod, so that this rod will, under the action of the thrust-blade, and immediately after the motion of the shutter, perform a quarter of a revolution. This rod is equipped with two spur shaped teeth M, N arranged at right angles to each other, and the tooth M, which in its normal position is turned downward and bent toward the left, allows the first plate to escape. To this effect it co-operates with a plate *e* fixed upon the end of a spring *l*, that pushes it downward, and against which pin, in this position, the upper part of the first frame bears. When the rod K, is rotated by means of the rack L, and pinion V the tooth or spur M is raised toward the left side and having accomplished one eighth of a revolution strikes under the spring *l*, raises it, and pushes the plate *e* by which the first plate is held, upward and the foremost plate being pushed forward by the spring H, and the wedge-spring Y, hereinafter described, swings forward guided by two circular guides Q and drops flat in the lower part of the apparatus where it is held by stepped springs X, and at the same time, the tooth or spur M, is raised, the tooth or spur N, is lowered and placed before the second plate which is thus prevented from dropping after the first. When the pressure of the thrust-blade is stopped, the rod K is turned back by the spring R and assumes its original position, and the second plate abutting against the tooth or spur M pushes its end downward, and everything is ready for a new operation. The tooth or spur N, co-operates with a wedge-shaped piece Y, arranged upon the end of a flat spring Z, and this piece Y is equipped with a notch *f* into which, when in its normal position, the tooth or spur N enters, and thus pushes the piece into a recess provided in the top wall of the camera box or casing. When in consequence of the oscillating motion of the rod K, the tooth or spur N, is lowered, the piece Y, is released and it is lowered under the action of the spring Z, upon which it is arranged. The edge of the wedge-piece Y will then enter behind the foremost plate, that has just been exposed, and will force it to swing forward, even if the apparatus should be slightly inclined backward. (See Figs. 1 and 11.)

At the right, and at the left side of the box, are arranged two very thin springs X formed in four steps of different height, leaving between the steps, space for three plates. Each plate in dropping will readily pass the spring, and is then firmly kept in its place, so that the apparatus may be turned in any direction. A slide *g* is provided in the bottom of the casing through which the exposed plates may be removed without disturbing the others.

The thrust-blade P, is provided at its end with a spring pawl *m* that, at every forward motion, rotates a ratchet wheel *z*. This ratchet wheel acts upon a dial at the outside of the

apparatus which may be placed at zero by means of a thumb wheel *k*, and which will thus automatically show the number of exposed plates. (See Figs. 1, 2, 3 and 5.)

The thrust-blade P, which operates the entire mechanism is made of brass, and the rack L, operates the pinion V, which is provided with a pin P' which acts upon the anchor T in its forward motion. This motion is timed so that the anchor becomes at once disengaged, and at the end of the motion when the pinion V, has caused the teeth or spurs M and N to turn, the plate will be removed and drop down. Consequently the two actions are successive and not simultaneous. This thrust-blade P, is operated by a cam, *h* connected with a handle *x*, at the outside of the apparatus, which can be operated by the hand, without shaking the apparatus in the least. When this handle is turned for one quarter of a revolution, the cam will push forward the thrust-blade, which operates the anchor, and also the rotation of the rod carrying the teeth or spurs.

t, is a safety stop for limiting the motion of the handle *x*.

With the return movement of the thrust-blade, which is caused by the spring U, all parts assume their original position, and a second picture may be taken at once. It will thus be seen that all the moving parts of the device are connected together, and that all motions are performed very rapidly and are caused by a single manipulation.

It is obvious that it is very easy to take several photographs successively, for instance twenty in a minute, and the great simplicity of the operation also makes it possible to have the apparatus operated by persons who have not the slightest experience. It will also be seen from the foregoing description, that the disk or shutter B, is continually operated upon by the spring drum *c*, and that its operation, is automatic and its revolution certain and positive, whenever the other parts of the apparatus are put in operation through the agency of the thrust-blade P.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a photographic apparatus, the combination with a casing, adapted to carry a series of spring-pressed plates and provided with an objective as A, of a revoluble shutter, having apertures therein, a thrust-blade or bar, and an anchor in connection with the shutter whereby the movement of the latter is controlled, a spring *l* provided with a pin as *e*, and a rod K connected with said thrust-blade and anchor and provided with spurs M and N, by which the change of the plates is effected, the entire apparatus being operated by a single movement of the thrust-blade, substantially as shown and described.

2. In a photographic apparatus, the combination with a casing, adapted to carry a series

of spring-pressed plates, of a revoluble shutter having apertures therein, a thrust-blade as P, a rod K, and a spring-operated wedge as Y, said parts being connected and operating
5 to control the shutter and change the plates successively, but at one and the same operation, substantially as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 20th day of May, 1892.

GEORGES PHILIBERT CHARLES MARONIEZ.

Witnesses:

VICTOR MATRAY,
F. MATRAY.