

(No Model.)

5 Sheets—Sheet 1.

J. A. PARSONS.
COIN CONTROLLED PHOTOGRAPH APPARATUS.

No. 519,872.

Patented May 15, 1894.

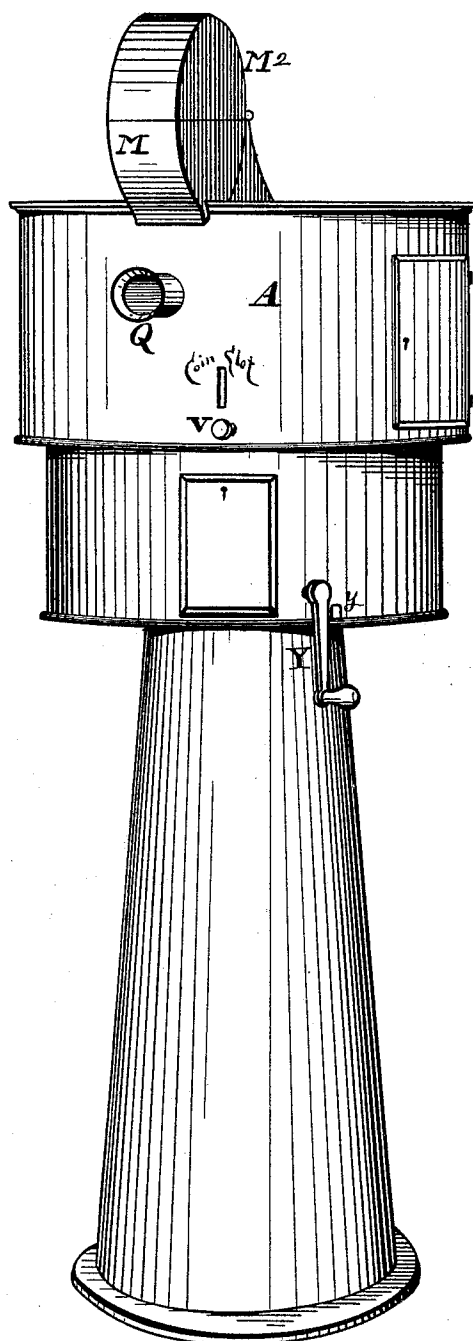


Fig. 1.

Witnesses.

C. M. Burtner.

John C. Talcott.

Inventor,

Joseph A. Parsons.

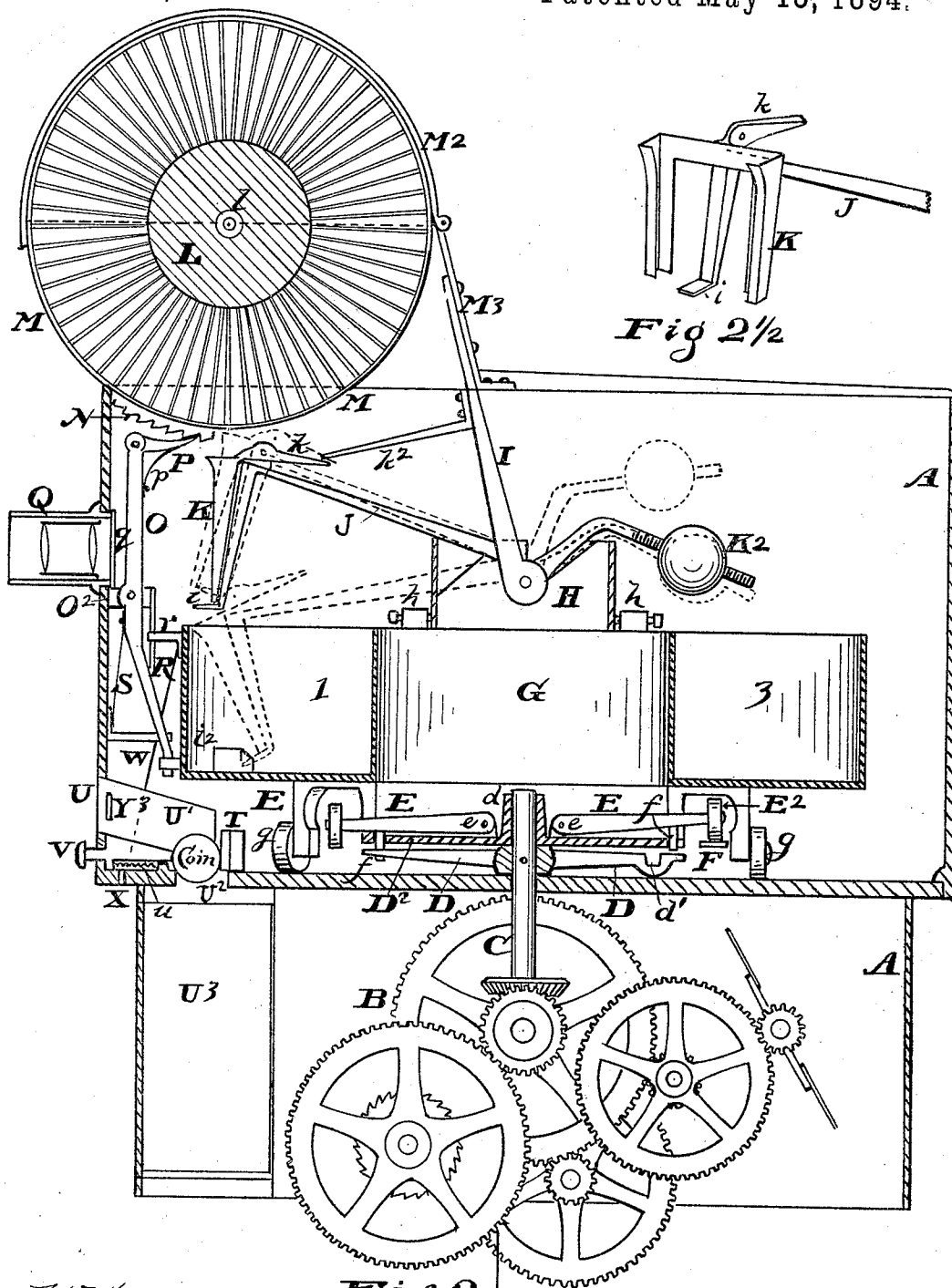
by Geo. W. Tibbitts Atty.

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Witnesses,

C. M. Burtner.

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Fig. 2.



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(No Model.)

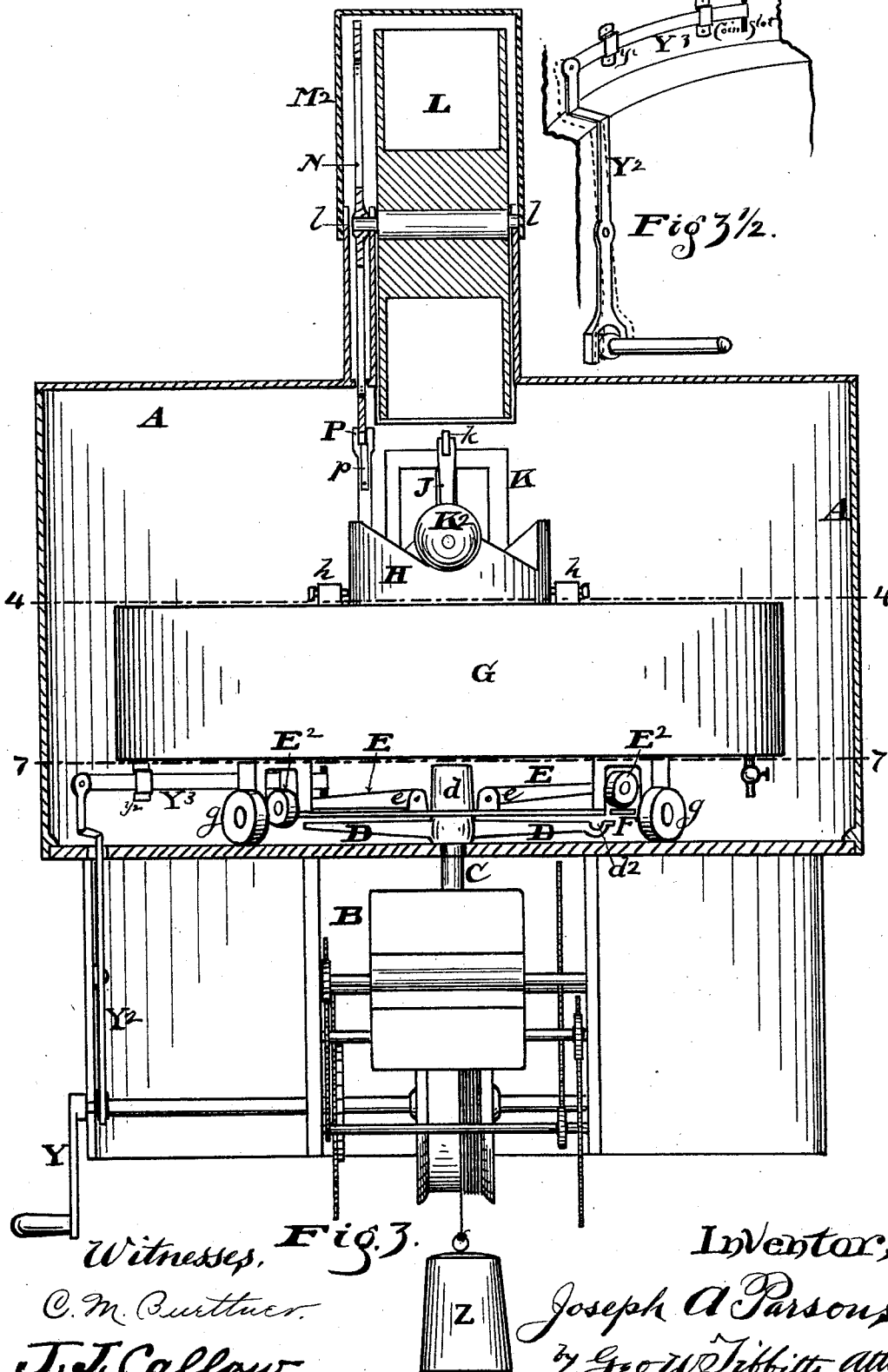
5 Sheets—Sheet 3.

J. A. PARSONS.

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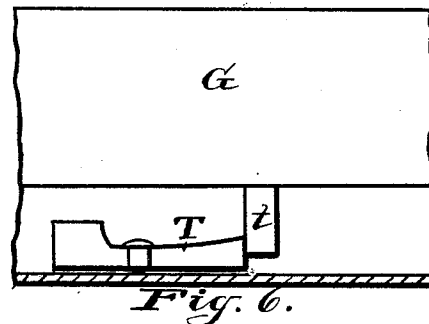
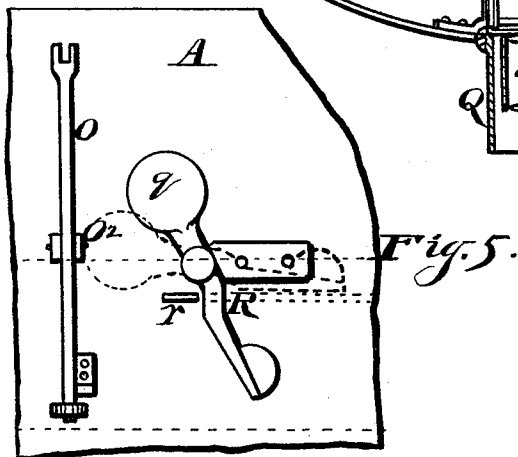
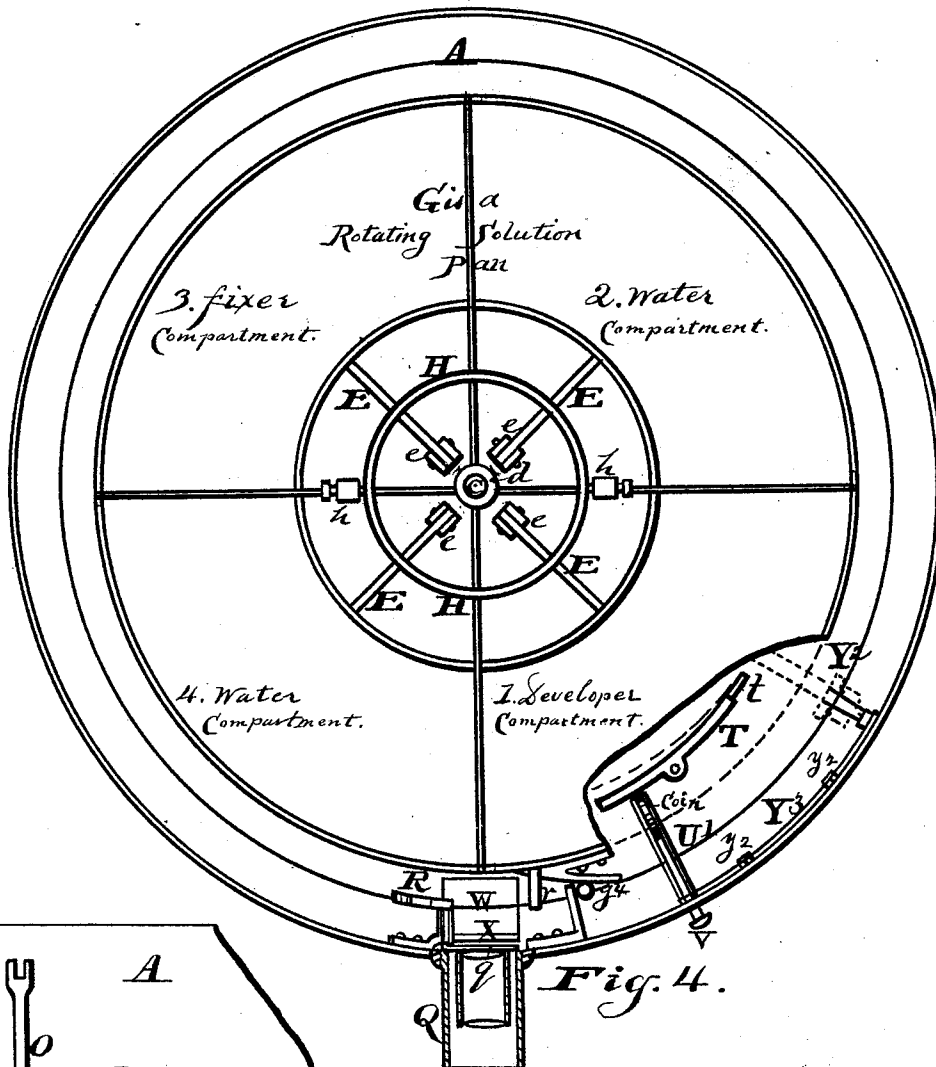
5 Sheets—Sheet 4.

J. A. PARSONS.

COIN CONTROLLED PHOTOGRAPH APPARATUS.

No. 519,872.

Patented May 15, 1894.



Witnesses,
C. M. Buettner.
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J. A. PARSONS.
MAIN CONTROLLED PHOTOGRAPH APPARATUS.

No. 519,872.

Patented May 15, 1894.

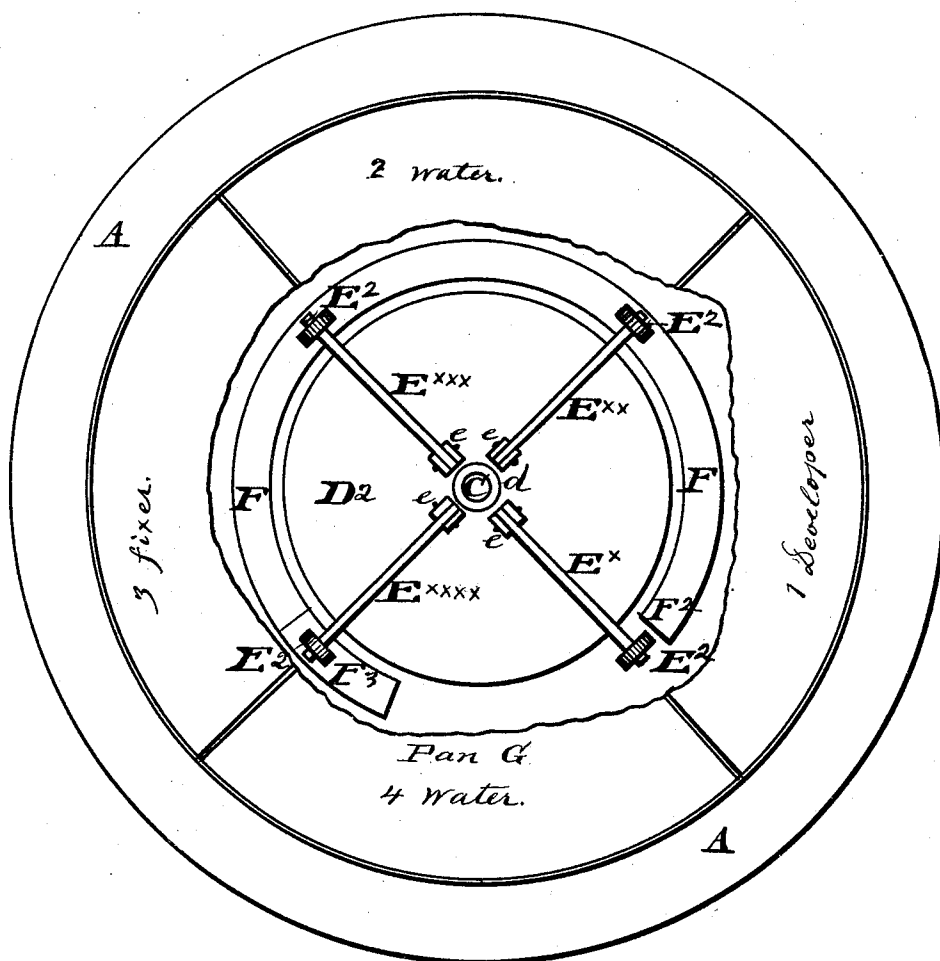


Fig. 7.

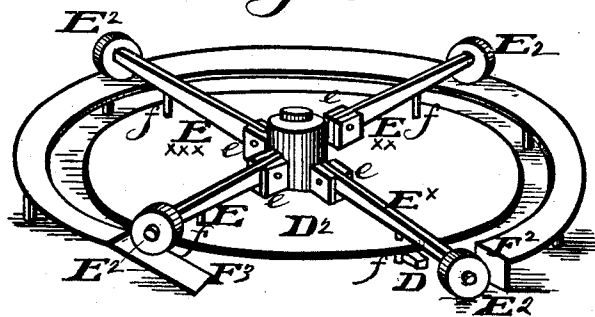


Fig. 8.

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UNITED STATES PATENT OFFICE.

JOSEPH A. PARSONS, OF ROCKY RIVER, OHIO.

COIN-CONTROLLED PHOTOGRAPH APPARATUS.

SPECIFICATION forming part of Letters Patent No. 519,872, dated May 15, 1894.

Application filed February 5, 1894. Serial No. 499,197. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH A. PARSONS, a citizen of the United States, residing at Rocky River, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Automatic Coin-Controlled Photographic Apparatus, of which the following is a specification.

This invention relates to a coin-controlled apparatus for automatically taking, developing, fixing and delivering a tin-type photographic portrait, and consists in the novel constructions and combinations of mechanisms for accomplishing said results, substantially as hereinafter described and pointed out in the claims.

In the accompanying drawings:—Sheet 1, Figure 1 is a view in perspective of the exterior casing in which are supported and concealed all the working parts of the apparatus. Sheet 2, Fig. 2, is a central vertical section through all the working parts. Fig. 2½ is a view of the sensitized plate holder on end of arm J. Sheet 3, Fig. 3 is a transverse vertical section of the same. Fig. 3½ is a detached view of the coin slot closing device. Sheet 4, Fig. 4 is a top or plan view on cross-section line 4, 4, on Fig. 3, showing the rotatable solution pan and attachments. Fig. 5 is a view of part of the inside casing, showing the lens cover. Fig. 6 is a detached view of the coin actuated stop-lever, controlling the movements of the pan. Sheet 5, Fig. 7 is a cross-section on line 7, 7, on Fig. 3, showing the mechanism beneath the pan employed for rotating the same. Fig. 8 is a detached perspective view of said pan rotating mechanism.

A in the several views is the box or casing which contains and supports the working mechanisms.

B is a clock-work motor, located in the lower compartment of the casing, provided for operating the several mechanisms in the upper compartment.

C is a central shaft extending through and below the floor of the upper compartment, and is connected by bevel gear with the said clock-work motor, and receives rotary motion therefrom.

D is a double-arm lever, keyed onto the shaft C above the floor of the upper compartment,

and by which the other mechanisms are driven.

D² is a plate or disk having a central sleeve *d*, which sets loosely over the upper end of said shaft C, and rests upon the hub of the lever D.

E, E are four arms or levers pivotally attached to lugs *e, e*, immediately surrounding said sleeve *d* and they extend out to the four quarters of the disk D², and a little beyond the periphery of said disk and have on their outer extremities wheels E² which ride on a circular raised track F, surrounding said disk, and each of said levers E is provided with pins *f* which extend down through holes provided for them in the disk, by means of which, at certain intervals, the said disk and levers are made to revolve, as and for the purpose hereinafter shown. The circular track F, that will be seen in Fig. 8, extends only about three-fourths the way around the disk D² and has a square drop termination at F², which allows the arms E to drop when they arrive at that point in their revolutions. The other terminus of the track has a short incline F³ leading from the floor up to it, up which the wheels travel and again elevate the said arms, the objects of which will be hereinafter fully explained.

G is a circular solution pan, having four compartments: 1, to contain a developing solution; 2 to contain water; 3 to contain a fixing solution and 4 to contain water. *g*² are stops in the bottom of the pan to prevent the tilting of the plate holder and dropping the plate. The pan is provided with casters *g, g*, and it sets over the aforesaid rotatable disk D² and is made to rotate with it as hereinafter shown.

H is a cam ring adjustably attached with the top and center of the pan G, by the blocks and set-screws *h, h*, the top edge of said cam ring is formed of four recesses each having one vertical side and one inclined side, the purpose of which will be hereinafter explained.

I is an arm attached to and depending from the top or cover of the casing A, its lower end terminating centrally, and within the said cam ring.

J is a lever pivoted to the said arm I, the

long arm of which rests and rides upon the cam ring, and is raised and lowered by the rotations of the cam ring. On the end of the long arm of said lever J is carried a plate holder K. The opposite shorter arm of the lever is bent to pass over the top of the cam ring without touching and has a counter-balance ball K² screwed onto it whereby it may be adjusted to nearly counter-balance the weight of the plate-holder, and render less friction of the lever riding on the cam and enable the cam to easily elevate the plate-holder. The plate-holder K is pivotally attached to the elbow of the lever J, so that it may be swung outward as seen in dotted lines on Fig. 2. It consists of an open frame, seen in detached view Fig. 2¹, into which a plate drops from the plate magazine drum above, the bottom edge of the plate resting on a foot i on the lower end of lever J until released, for discharge by the swinging of the said holder, which will be fully explained in the description of the operation of the machine.

L is a magazine drum for holding sensitized plates, provided with thin radial cells into each of which is placed a plate for charging the magazine. The drum is supported by a shaft l resting in bearings at the sides of the box or shell M, attached to the front top part of the casing A, the lower edge of the drum extending down a short distance into the chamber directly over the aforesaid plate-holder K. The upper half of the magazine drum is inclosed by a cover M² hinged at the rear side to a support M³ attached to top of case A. This cover entirely incloses the drum from the light.

N is a ratchet wheel attached to the journal at one side of the drum, having as many teeth as there are cells in the drum. This ratchet wheel is also inclosed in the casing with the drum, and is made to rotate the drum, one tooth at each revolution of the developing pan G for feeding plates to the holder K by means as follows:

O is a vertical lever fulcrumed at its middle part to a stud O² fixed to the inside of the casing A. To the top end of said lever O is pivoted a pawl P engaging with the ratchet wheel N and is held up in contact with the ratchet wheel by a spring p, the lower arm of said lever is bent toward the pan G and is held in position by a spring S on its back, between it and the casing A, the lever O is moved by an inclined projection g⁴ on the side of the pan G at a given time, for rotating the drum to deposit a plate therefrom through a slot in the bottom of the drum facing into the plate-holder K.

Q is a tube containing lenses, fixed in the side of the casing A opposite to the plate-holder K. The inner end of said tube is closed by a disk q on a tilted weighting lever R, fulcrumed under the lens tube opening, the disk q is moved to uncover the tube for making the exposure of light to the plate in holder K

by means of an arm or projection r on the pan G, striking against a short perpendicular portion of said lever R and pushing it in the direction of the arrow. The rest of the lever riding on said projection R until it has passed by, then the weighted end of the lever falls and again shuts the lens tube.

U is a slot in the side of the casing for the reception of a nickel five cent coin, U' is a narrow or thin inclined tube into which the coin enters and rolls down to a curved stop lever T fulcrumed to the floor of casing A, and over a slot U² in the floor in the front of the left hand end of said curved lever, this end of said lever partially covers the said slot U², so the coin cannot fall through it until said lever is pushed inward to uncover, when the coin falls into a drawer or receptacle U³ provided for that purpose. The curved lever T serves as a stop-latch or lock to the rotations of the pan G which has a depending lug or arm t that comes in contact with the right hand end of said lever T and arrests it until said lever is again pushed and releases it. To do this a push button V is provided beneath the slot U, the inner end of the stem of which rests against the edge of the coin as seen in Fig. 2. Under the said stem of the button is provided a retracting spring u for holding the button outward. The pushing of the button pushes the coin, and the coin pushes the lever and uncovers the slot U², the coin is then free to fall, and the pan is unlatched and immediately begins to revolve.

W is a chute for the discharge of the finished plate at the completion of each revolution of the pan into which the plate falls when the plate holder relinquishes it as hereinbefore described. At the lower end of said chute is made a slot X in the floor of the casing through which the plate emerges, and may fall into the hand of the operator, or a suitable receptacle if desired.

Y is a crank on the protruding end of the slot drum shaft by means of which the weight Z is wound up in the usual manner. The weight in this machine is not allowed to run down farther than to make one revolution of the pan G so that the operator must make one turn of the crank for the taking of each photograph.

Y² is a vertical lever fulcrumed at its middle part to the casing A, the lower end having a fork spanning an eccentric on the clock drum shaft by means of which said lever is actuated. The top end of the lever extends through the floor into the upper chamber, and is bent to connect with one end of a slide piece Y³, fixed in loops Y² on the inside surface of the casing. The other end of slide piece covers the coin slot for the purpose of closing said slot until the proper time for inserting the coin, which is just after turning the crank and winding up the weight Z before the machine can be set in operation.

The working of this apparatus is as fol-

lows:—The person intending to take his portrait first gives the crank Y one complete revolution only, the crank striking against the stop y on the casing; next he drops a nickel five cent coin in the coin slot, then takes his position about twenty inches in front of the lens tube, then places his thumb on the button V pushing the same; this pushes the latch lever T, releasing the pan G which immediately starts to revolve. The projection r on the pan uncovers the lens tube and makes the exposure to the sensitized plate in the holder K. As soon as this projection has passed the limit of the lever R, said lever drops and again shuts the lens tube. The pan continues revolving, and as the first fall space on the cam ring reaches the arm J holding the plate, the said cam ring being adjusted so as to time the fall of the plate holder to immediately follow the exposure; the said plate holding lever drops and submerges the plate in the developing solution in the first compartment, as seen by dotted lines in Fig. 2. The lever is soon raised by riding up the incline which lifts the plate and holder up out of the developing compartment and as the pan continues its revolution, the lever falls again at the next fall space, dipping the plate in the water in compartment No. 2, and so on lifting the plate and dipping it next in the fixing solution in compartment No. 3, and next lifting the plate and dipping it in the fourth and last compartment, thus finishing the photographing operation. The fourth incline on the cam ring has a little higher point than the others, which raises the lever J a little higher as it passes over it, as seen in dotted lines in Fig. 2. This causes the point of the lever k to strike the arm k^2 on the support I and thereby cause the lower end of plate-holder K to swing forward, which carries the bottom edge of the photograph plate off from the foot i of the holder, setting said plate free, which then falls into chute W and is discharged through the slot X. The inclined projection g^2 on the pan G also pushes the lower end of lever O, the upper end of which moves the ratchet wheel N one tooth; this brings the next cell in the magazine drum L over the slot and another sensitized plate slips through and is caught in the plate holder, ready for the repetition of working the apparatus. The stop t on the pan as the pan revolves, rides against the inside surface of the curved lever T and pushes the left hand end of said lever outward again, as it passes, which re-sets the said lever T so that when stop t comes around again, it strikes against the end of lever T and arrests further revolutions of the pan.

The above described movements must be gone through with again, in order to take another picture.

It is required that the sensitized plate should remain in the chemical solutions a longer time than in the water baths. To provide for this I construct the pan moving apparatus as follows:—One arm of the driving

lever D is made a little longer than the opposite arm, and in its upper side near the end is made a notch d^2 , and the pins on two of the levers E are placed a little nearer the edge of the plate D^2 so that to rotate the pan one revolution, the lever D makes three revolutions; and the two arms of said lever move the pan at variable intervals in the following manner:—When the pan starts, the levers E are in the position shown in Fig. 8, and the pan G with the water compartment 4 at the front. The lever E^x , is seen down, its wheel E^2 having dropped off the track at F^2 . Now the long arm of lever D strikes the depressed pin f on said lever, and carries the pan around with it until said lever E^x , is raised by its wheel riding up the incline F^3 , which elevates the pin f , and lets the lever G pass on, without carrying the pan any farther. When the lever E^x arrives at the top of the incline the next lever E^{xx} has arrived at the drop and falls; this causes its pin f to descend ready for the long arm of the lever D to come in contact with it when it comes around again. This allows the pan to remain at rest and keep the sensitized plate in the developer, while the said lever is making three-fourths of its revolution, then said lever D carries the pan around the second quarter of a revolution, and brings lever E^{xxx} around to the drop F^2 ; now the pin on lever E^{xxx} being farther from the edge of the disk D^2 allows the short arm of lever D to strike said pin f and it carries the pan around the third quarterly revolution. In the time that the short lever reaches said pin the sensitized plate has been dipped into the water compartment No. 2, and the lever E^{xxxx} arrives at the drop. Now the pin on lever E^{xxxx} having been raised, the short arm passes on and makes a three quarter revolution and then it strikes the pin of lever E^{xxxx} and carries the pan the fourth quarter revolution; this carries the lever E^{xxxx} up the incline, and the lever E^x again arises at the drop, the pan now having completed one revolution is stopped by the latch lever T before mentioned. While the long arm of said lever D has been going around it has not struck or interfered with the pins on levers E^{xx} and E^{xxx} because the notch d^2 in its upper surface allows it to pass then without touching when they are down. A door is provided in the side of casing A for convenience of access to interior for filling or renewing the solutions, and g^3 are cocks for drawing off contents of the pan by attaching hose, as seen in Fig. 3.

Having described my invention, I claim—

1. In a coin controlled photographing apparatus, a rotatable solution pan, a cam ring mounted on the center of said pan, a sensitized plate holding lever, journaled over the center of said cam ring and riding on the ring, a plate holder mounted on moving end of said lever and means for rotating the pan to depress the holder for immersing the plate in the several compartments of the pan, substantially as specified.

2. In a coin controlled photographing apparatus, a clock work motor B, vertical shaft C connected to and operated by said motor rotating double lever D, keyed to said shaft C and having one long arm provided with a notch d^2 and an opposite shorter arm, a disk D^2 having sleeve d fitting loosely over said shaft, levers E pivoted to central part of said disk their extremities extending over its edge and carrying pin f extending down through holes in said disk, a three-quarter circle raised track F surrounding said disk, and wheels E^2 on the extremities of said levers E adapted to ride on said track and to raise the pins at stated intervals, and free them from contact with the levers E for rotating the said disk intermittently, substantially as and for the purpose set forth.

3. In a coin controlled photographing apparatus, the shaft C, rotatable double lever D mounted on said shaft, disk D^2 having central sleeve d also loosely mounted on said shaft C levers E pivotally mounted on disk D^2 and provided with pins f and extending through holes in the disk and adapted to be rotated at intervals prescribed in combination with the compartment solution pan G, having the casters g and setting over said disk D^2 and lever E, and adapted to revolve with said disk D^2 , substantially as specified.

4. In a coin controlled photographing apparatus the combination with the rotatable solution pan G having the inclined projection g^2 of the lever O fulcrumed to the casing A and provided on its top end with a spring pawl P engaging with the ratchet wheel N and adapted to be pushed at its lower end by said projection g^2 for turning the magazine drum, substantially as specified.

5. In a coin controlled photographing apparatus the combination with the rotatable solution pan G having the projection r of the weighted lever R fulcrumed to the casing A and provided with a lens tube covering disk q adapted to uncover said lens tube by the movements of said pan for making the exposure substantially as specified.

6. In a coin-controlled photographing apparatus, the combination of the rotatable solution pan G provided with the arm t depending from its bottom, of the curved lever T, having curvature of shorter radius than the curvature of the pan, and fulcrumed at its middle part to the floor of the casing A; the coin tube U' , push button V, provided with retractile spring u , adapted, when a coin is inserted in said tube U' , to push one end of said lever T and release the stop t , to allow the coin to fall, and to start the pan rotating, and as said stop t travels with the pan along the inside curvature of said lever T, to push and reset said lever for stopping the pan at the completion of each revolution substantially as specified.

7. In a coin controlled photographing apparatus the combination with the clock weight drum shaft of the lever Y^2 fulcrumed to the side of the casing A, its lower end provided with a fork spanning an eccentric on said shaft, its upper end bent and connected to a sliding piece Y^3 covering the coin slot in the casing, and adapted to be actuated for uncovering the said slot by the turning of the crank Y substantially as specified.

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Witnesses:

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