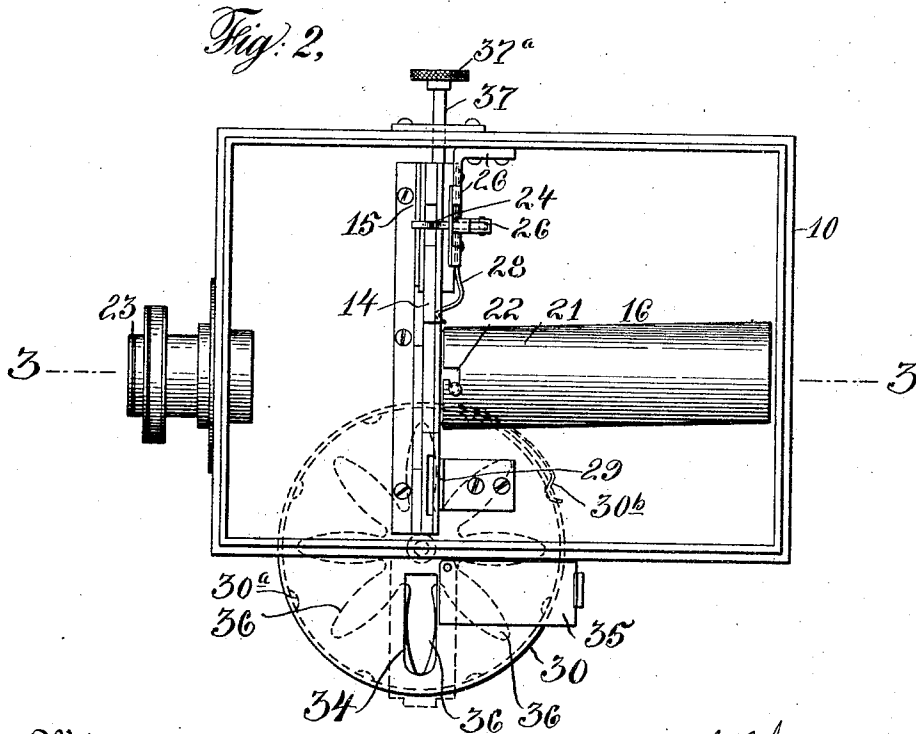
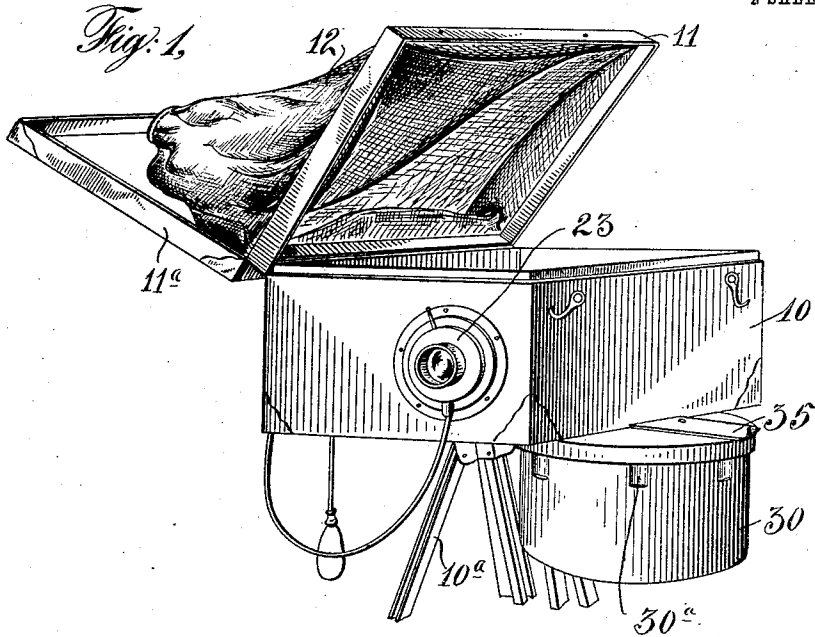


P. V. W. WELSH.
 PHOTOGRAPH MACHINE.
 APPLICATION FILED MAY 28, 1910.

1,004,122.

Patented Sept. 26, 1911.

2 SHEETS—SHEET 1.



Witnesses:
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Arthur D. Dammell,

Pierre V. W. Welsh, Inventor,
By his Attorney,
W. B. Hutchinson.

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2 SHEETS—SHEET 2.

Fig. 3.

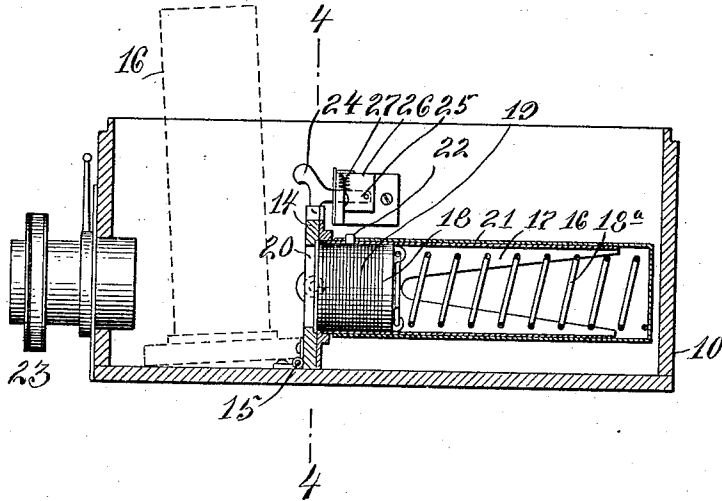
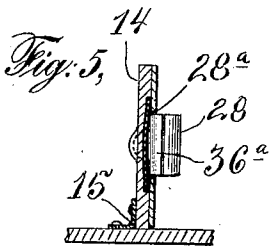
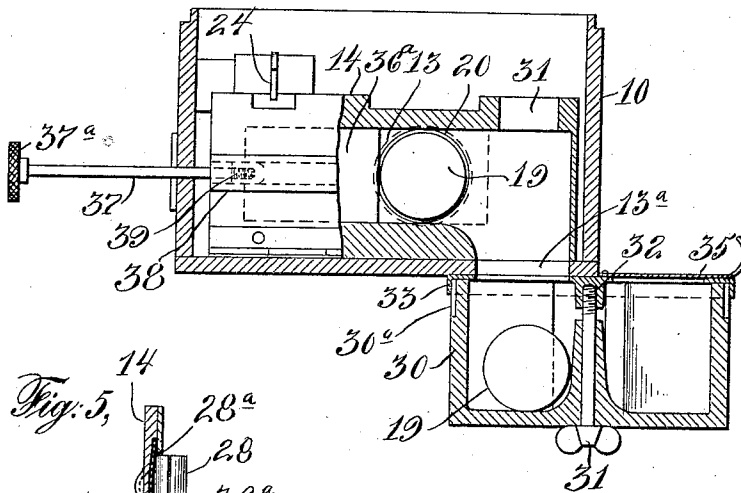


Fig. 4.



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UNITED STATES PATENT OFFICE.

PIERRE V. W. WELSH, OF NEW YORK, N. Y.

PHOTOGRAPH-MACHINE.

1,004,122.

Specification of Letters Patent. Patented Sept. 26, 1911.

Application filed May 28, 1910. Serial No. 563,896.

To all whom it may concern:

Be it known that I, PIERRE V. W. WELSH, of the city of New York, county of Kings, and State of New York, have invented a new and useful Improvement in Photograph-Machines, of which the following is a full, clear, and exact description.

My invention relates to improvements in photograph machines and especially to that type of photograph machines which is used for taking pictures in rapid succession, and in which photographic plates after being exposed are deposited in a developing composition.

Machines of this character are often somewhat complicated and liable to get out of order, and moreover such machines are liable to require too much nicety of operation and adjustment to enable them to be worked successfully by an amateur.

The object of my invention is to produce a cheap simple machine of this character in which a magazine for holding the plates is conveniently disposed opposite the lens, in which the camera can be readily loaded and unloaded, and to provide further a very convenient means for depositing in the tank the plates after being exposed and also provide a tank which has separate receptacles for each plate so that the plates are not likely to be injured or stuck together, while on the other hand each receptacle or compartment communicates with the others so that one liquid charge acts for the whole.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar reference characters indicate corresponding parts in all the views.

Figure 1 is a perspective view of the apparatus embodying my invention. Fig. 2 is a plan view thereof with the cover and hood removed. Fig. 3 is a vertical section on the line 3—3 of Fig. 2. Fig. 4 is a cross section on the line 4—4 of Fig. 3, and Fig. 5 is a detail view showing the spring device for supporting the plunger.

The machine is provided with a camera having a box 10 of any preferred construction, and this is preferably mounted on a tripod 10^a in the usual or in any preferred manner, though of course the mounting of the apparatus has nothing to do with the invention. The box or body 10 is provided with a hinged frame 11 carrying a hood 12 of the usual character, so that the operator

can insert his hand through the hood and load the magazine in the daytime. The body is also provided with a suitable cover 11^a. All this is common to machines of this character, and no novelty is claimed for the parts already described.

Arranged transversely in the body is a chute 13 which extends horizontally through a hinged fly 14, the latter having its hinges 15 at the bottom so that when desired the fly can be tipped forward and bring the magazine 16 which is carried by the fly, to the position shown by dotted lines in Fig. 3, thus enabling it to be easily loaded. The magazine is a tubular structure comprising in part an inner split tube 17 open at the outer end and carrying a piston 18 which is pressed by a spring 18^a so as to force the sensitized plates 19 forward opposite the exposure opening 20 in the fly 14. The magazine also has an outer tube 21 closed at its outer end and which slips on snugly over the inner tube 17 and locks to the same by means of a bayonet joint 22. The exposure opening 20 comes opposite the lens 23 which may be of any usual character but which is preferably one of the form of lenses which are adjustable in and out. The magazine inclines slightly toward the right when standing behind the lens, as this has a tendency to bring the plates 19, hereinafter referred to, into snugger connection with the plunger 36^a.

When the fly 14 is tipped up to the vertical position shown in full lines in Fig. 3, it is held by a catch 24 which can be of any approved kind, but which as shown is pivoted at 25 in the bracket housing 26, the latter being supported on the inner side of the body 10, and the catch is pressed into engagement with the fly by a spring 27, but obviously any suitable fastening device can be substituted for the catch. As the fly is engaged by the catch it strikes against a suitable abutment which in the present instance is in the form of a bracket 29 attached to the bottom of the camera, although it can be attached to any other suitable support. When the fly is tipped up to operative position, the bent spring 28 which is secured to the side of the camera, entering through the slot 28^a (see Fig. 5 of the drawing) presses against the plunger 36^a and holds the latter so that it slides true, as hereinafter described. By this arrangement I avoid the

necessity of making the plunger fit too tight in the chute, and so being liable to get stuck or clogged, while at the same time the accurate movement of the plunger is provided for.

5 The chute 13 has at one end a downward bend as shown at 13^a, which opens from the bottom of the body 10, and through this opening the plates 19 are delivered into the
10 developing tank 30 which is supported on the bottom of the body in a suitable manner to permit it to turn, a convenient means being the thumb screw 31 which engages the boss 32 on the under side of the body 10.
15 The tank has a suitable cover 33 with an opening therethrough which aligns with and forms a continuation of the opening 13^a, and it has another opening 34 in the outer part as shown clearly in Fig. 2 and through
20 which the plates after developing may be lifted from the bath. The plates can be removed in any preferred way, and a convenient means is to use an ordinary horse-shoe magnet for the purpose. The opening
25 34 has a cover 35 which is pivoted to the cover 33, and can be turned so as to cover or expose the opening 34 as desired. The tank 30 can be turned every time a plate is deposited so as to bring another compart-
30 ment 36 below the opening 13^a, and a spring pawl 30^b engages the notches 30^a in the tank and holds the tank temporarily stationary, but the pawl is so light that the tank can be readily turned by hand as desired.
35 To provide for pushing the plates 19 away from the exposure opening and into the developer, a plunger 36^a is used which is manually operated and slides back and forth in the chute 13, the plunger being of ap-
40 proximately the same thickness as one of the plates 19. As a convenient means of operating the plunger, I employ a handle or rod 37 which can be pushed out and in, and has at its outer end a milled head 37^a to
45 enable it to be conveniently grasped. Its inner end is screwed to the plunger as shown at 39, and one wall of the chute is enlarged as shown at 28 to provide for the plunger.

50 By reference to Fig. 5 it will be seen that the plunger 36^a is slightly concavo-convex, and that the walls of the chute 13 are concaved so that one of the plates 20 will rest on its edges in the chute and not touch the
55 sides. Then as the plunger is moved to push the plate forward, it will pass by the next plate with its concaved side opposite the said next plate so that it will not scratch or injure the plate, while the plate
60 being pushed, bearing as it does only on its edges, will likewise not be scratched by the walls of the chute.

In operation, as soon as an exposure is made, the operator pushes in the handle 37
65 and the plunger 36^a pushes forward one of

the plates 19 which drops through the opening 13^a into one of the compartments 36 of the developing tank. In case any plate should stick I have provided an opening 31 in the top of the chute so that the operator
70 can reach in with a wire or other fine instrument and dislodge the stuck plate. After the plate is dropped, the operator turns the tank 30 one notch so as to bring a fresh compartment beneath the opening 13^a and
75 the handle 37 is again pushed in and out so as to deposit the next plate, and so on.

It will be seen that I provide a very simple mechanism for accomplishing the desired end, and it will further be seen that
80 while the developing tank has separate compartments for each plate, all the compartments are in communication, as they are radially arranged and one bath serves for all.

It will of course be understood that some
85 of the details which I have described may be changed without affecting the principle of the invention, the essential things of which are the general arrangement of the fly with its magazine, the chute, and the
90 developing tank of the construction shown.

It will also be readily seen that the camera can be used without the particular form of developing tank shown, but the two work
95 together, and it is better to use this form of tank.

I claim:—

1. A camera having a fly tiltable in relation to the box of the camera, said fly having a chute therein and an opening opposite
100 the lens of the camera, a magazine connected with the fly and discharging plates opposite the aforesaid opening, and a plunger sliding within the chute for pushing the plates suc-
105 cessively along the chute.

2. A camera having a fly tiltable in relation to the box of the camera, said fly having a chute therein, and having an opening
110 aligning with the lens of the camera, a separable magazine connected with the fly opposite the opening, and a plunger mechanism for pushing the plates successively from in front of the magazine and along the chute.

3. A camera having a fly tiltable in relation to the box of the camera, said fly having
115 a chute therein discharging outside the camera body, a plate holding magazine arranged to deliver plates into the chute and opposite the lens, a developing tank receiving plates discharged from the chute, and
120 plunger mechanism sliding horizontally within the chute and pushing the plates successively along the chute.

4. A camera having a fly tiltable in relation to the box of the camera, said fly having
125 a chute therein and an opening opposite the camera lens, a two part magazine on the wall of the fly opposite the opening, the inner part of the magazine carrying plates and the outer part serving as a cover, and a
130

spring actuated piston within the magazine to force the plates to position.

5 5. A camera having in its body a fly tiltable in relation to the box of the camera, said fly having a chute therein and an opening opposite the lens, a discharge opening through the camera body, a plate magazine on the back of the fly and opposite the lens, a catch to hold the fly in operative position, 10 and a plunger for pushing the plates from the magazine along the chute.

15 6. A camera having a fly tiltable in relation to the box of the camera, said fly having a chute therein and having an opening therein opposite the lens, said chute being arranged to discharge through the wall of the camera, the fly also having an opening in its upper edge connecting with the chute on the discharge side of the plate delivery, 20 and a plate delivery for supplying plates to the chute.

25 7. The combination with the fly having a chute horizontally disposed therein, of the magazine delivering plates into said chute, the sides of said chute being concave so that the plates will bear only on their edges against the top and bottom walls of the

chute, and a plunger to push the plates along the chute.

8. The combination with the fly having a chute therein and the magazine delivering plates into the chute, of the concavo convex plunger sliding within the chute to push the plates therefrom. 30

9. The combination with the fly having a chute therein discharging outside of the camera body, and the plunger sliding within the chute, of the horizontally arranged magazine delivering plates into the chute in advance of the plunger, said magazine being 40 inclined away from the discharge end of the chute.

10. The combination with the fly having a chute therein, and the magazine delivering plates into the chute, of the plunger sliding 45 within the chute to push the plates along the chute, said plunger being provided with clearance on the side next the plates, whereby the face of the plate is out of contact with the passing plunger.

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Witnesses:

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