No. 711,978. Patented Oct. 28, 1902.

C. S. L. KENNEDY.

PHOTOGRAPHIC BATH APPARATUS.

(Application filed Dec. 26, 1901.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

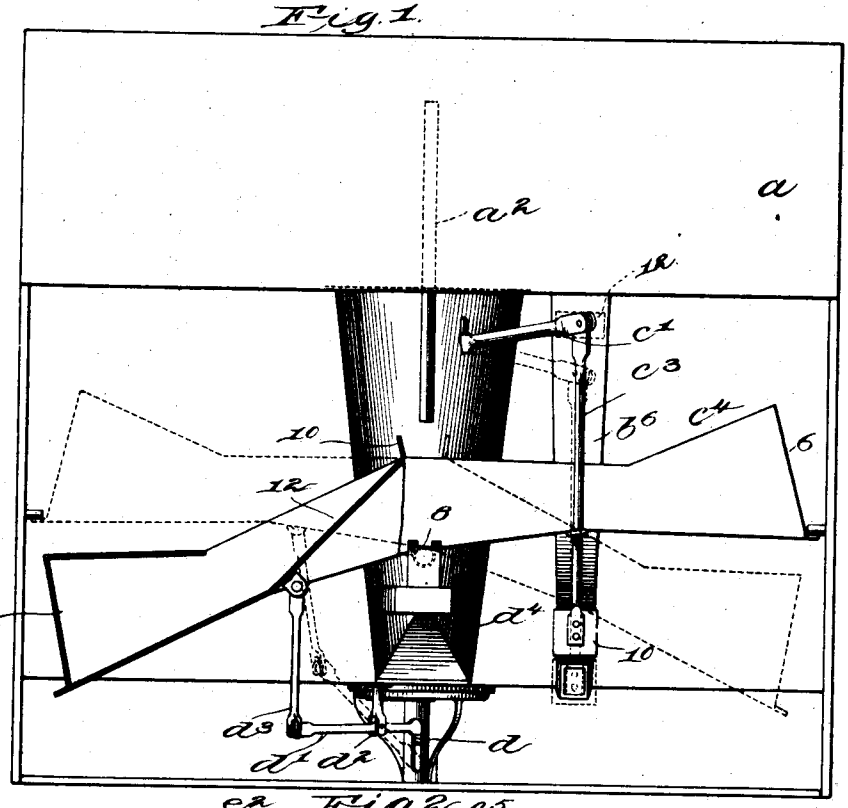
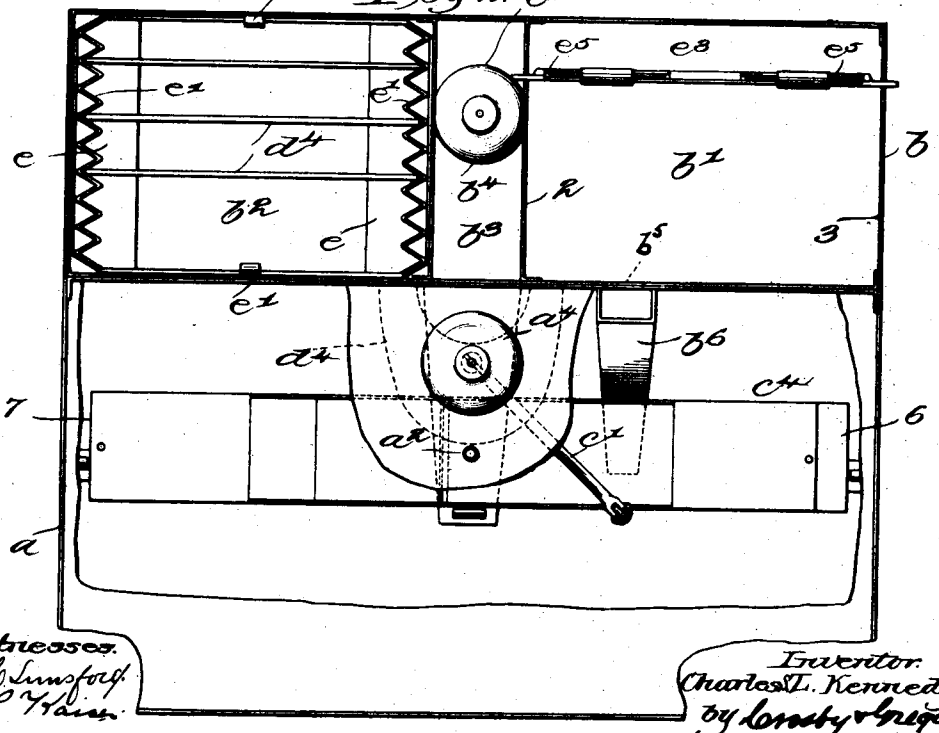


Fig. 2.



Witnesses.
W. C. Sumsford.
A. C. Yates.

Inventor.
Charles L. Kennedy.
by Crosby & Gregory
Attys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 711,978. Patented Oct. 28, 1902.

C. S. L. KENNEDY.

PHOTOGRAPHIC BATH APPARATUS.

(Application filed Dec. 26, 1901.)

(No Model.) 2 Sheets—Sheet 2.

Fig. 3.

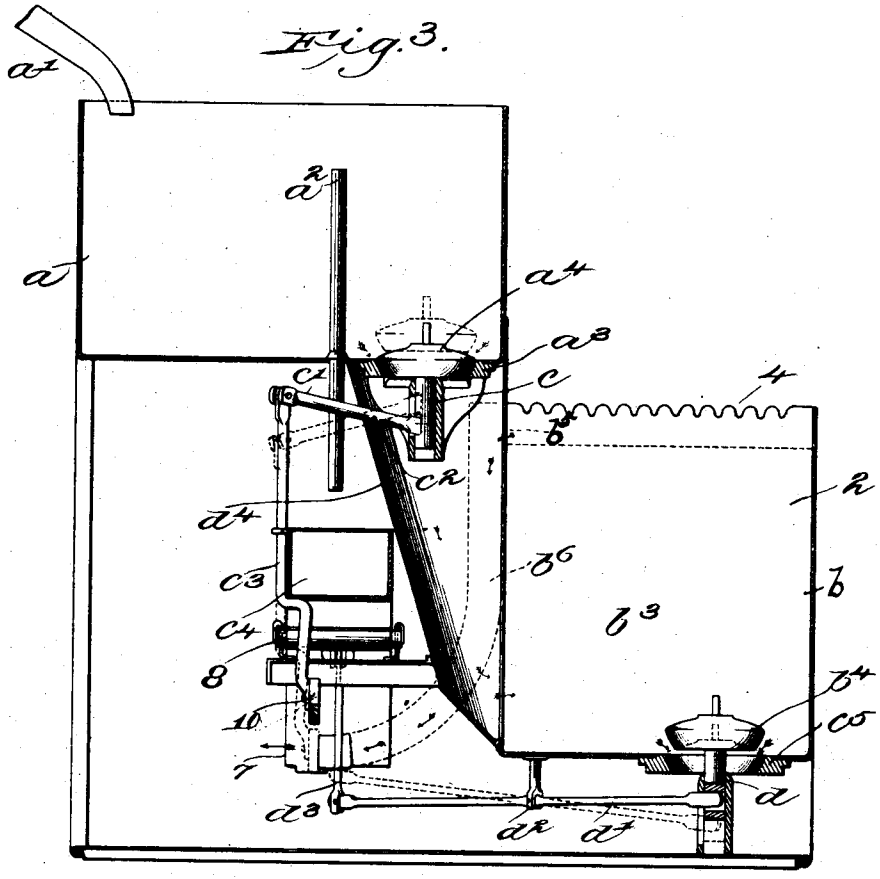


Fig. 4.

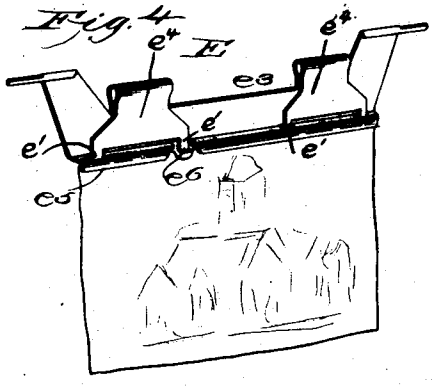
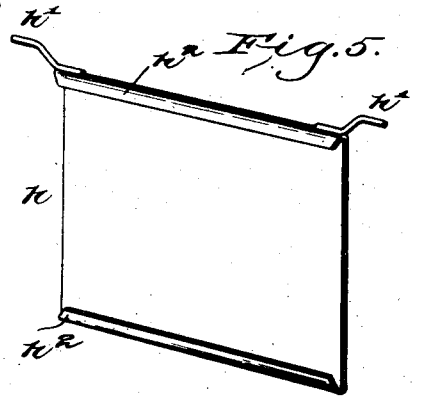


Fig. 5.



Witnesses.
H. C. Sinsford.
R. C. Kaiser.

Inventor.
Charles L. Kennedy
by Crosby & Gregory
attys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES S. L. KENNEDY, OF NORTH EASTON, MASSACHUSETTS.

PHOTOGRAPHIC BATH APPARATUS.

SPECIFICATION forming part of Letters Patent No. 711,978, dated October 28, 1902.

Application filed December 26, 1901. Serial No. 87,191. (No model.)

To all whom it may concern:

Be it known that I, CHARLES S. L. KENNEDY, a citizen of the United States, residing at North Easton, in the county of Bristol and State of Massachusetts, have invented an Improvement in Photographic Bath Apparatus, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention has for its object the production of a novel apparatus for use by photographers for washing negatives and prints. As this work is now commonly done the negatives are left to stand in water and the prints and films are commonly laid in running water. I have found by experiment that the prints are better washed when suspended for a definite length of time in what may be considered still water than when laid in running water so long as the water in which the prints are suspended is changed frequently. Changing the water frequently rather than employing running water results in economy of water, which in cities is important.

In my invention I have provided a main reservoir to contain water and have operatively connected with it an auxiliary reservoir or reservoirs in which I may suspend prints or films or may stand up or sustain glass plates. I have provided the main and auxiliary reservoirs each with a suitable valve or equivalent whereby the water may be permitted to leave the main reservoir and enter the auxiliary reservoir and may be permitted to leave the auxiliary reservoir at stated intervals of time. I have provided, as herein shown, a beam or lever, which is suitably connected with said valves to open and close them, and the time of operation of the beam is controlled by the flowing of a small stream of water; but this invention is not in all cases limited to the use of a beam actuated by water to open and close the valves periodically and instead I may use any other suitable or equivalent mechanical device. By suspending the prints or films in water all liability of injury thereto, which is common when the films are laid one on top of another in water, is obviated.

Figure 1 is a rear side elevation of one form of apparatus embodying my invention in one of the best forms now known to me. Fig. 2 is a plan view thereof with the bottom of the main reservoir partially broken out. Fig. 3 is a section in the line x, Fig. 2. Fig. 4 is a detail to be referred to. Fig. 5 shows a film-holder such as may be used.

The main reservoir a, supplied with water, it may be, from any suitable source, as a spigot a', has a small overflow-pipe a^2, out through which water will flow when the reservoir is filled even with the top of the pipe a^2. The bottom of the reservoir has a valve-seat a^3, with which coacts a valve a^4. Alongside of the main reservoir and shown as located at a lower level is an auxiliary reservoir b, divided, as shown, to form two smaller reservoirs b' b^2, with the central space b^3 between. The reservoir b has a valve b^4 and an overflow-opening at b^5, from which leads a conduit b^6. The valve a^4 has a depending stem c, (see Fig. 3,) notched at one side to be engaged by a lever c', having its fulcrum at c^2, and said lever has connected to its opposite end a link c^3, suitably shaped to be depressed by any suitable actuating device, herein shown as a beam c^4, pivoted at 8 and having its ends 6 and 7 shaped to receive water from the overflow-pipe a^2. The lower end of the lever c^3 is provided with a closure or face 10, that at times acts to close the open lower end of the conduit b^6. The valve b^4, coacting with the seat c^5, has its stem d engaged by a valve-mover, shown as a lever d', having its fulcrum at d^2 and suitably connected with the beam c^4 by a link d^3. The valve a^4 closes the passage d^4, leading into the reservoir b. To sustain the glass-plate negatives d^4 in the division b^2 of the reservoir b, I have provided a metallic basket composed of a bottom plate e, notched side walls e', and suitable upright rods e^2, by which to lift the basket from and put it into the reservoir.

The end walls 2 3 of the portion b' of the reservoir b are suitably notched or otherwise shaped to sustain a print-holder E, one good form of which I have shown detached in Fig. 4. The holder shown is composed of a bar e^3 and one or more spring-clips e^4, the bar having a downturned rim or ledge e^5, against which the spring-prongs e' of the holder nip

and hold the edge of the print to be suspended in the water in the reservoir *b*.

Suspending the prints or films at one edge better exposes them to the action of the water and prevents one print or film from rubbing against another.

In operation let it be assumed that both reservoirs have been filled with water and the glass-plate negatives and prints or films are properly inserted in the chambers of the reservoir *b* and that the beam occupies the position shown by dotted lines, Fig. 1, the valve a^4 being closed and the valve b^4 open. The water is permitted to enter and fill the reservoir *a*, and soon the water begins to run from the reservoir through the overflow-pipe a^2, and the water falling on the incline 12 enters the end 7 of the beam. A small quantity of water will act to turn the beam into the full-line position, Fig. 6. As the beam comes into the full-line position the valve b^4 is raised, permitting the water to flow from the chambers b' b^2 of the reservoir *b*, and thereafter the water escaping through the pipe a^2 falls on the opposite incline 12 and enters the end 6 of the lever, causing it to be again turned into its dotted-line position. This movement of the lever, acting through the rod c^3 and lever c', opens the valve a^4 and closes the valve b^4, letting the water in the reservoir *a* enter the reservoir *b*. As the lever moves into the dotted-line position, Fig. 1, it causes the closure 10 to be carried from the full-line position, Figs. 1 and 3, into the dotted-line position shown in said figures opposite and to close the open end of the conduit b^6. When the water enters the reservoir *b* up to the outlet b^5, the water passes through said outlet into the conduit and meeting the closure moves the link c^3 laterally from under the beam, when the weight of the valve a^4, which is greater than the weight of the link c^3 and its parts carried by it, drops on its seat, and thereafter the reservoir *a* will be filled again to the point of running over, when it will again actuate the beam in the manner described, so that a continuous operation of filling one reservoir and then the other, emptying each in succession, will be carried on.

Fig. 5 shows a film-holder *h*, having suitable projections *h'*, by which it may be sustained on the walls of the reservoir *b*, said holder having inturned ends h^2, behind which may be engaged the ends of the film.

The compartments 6 7 at the ends of the beam c^4 will have a suitable leak device (shown as a small hole) to permit the water standing in the lower end of the beam to escape therefrom at the proper rate of speed. One of these holes is indicated at the left in Fig. 1.

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

1. In a photographic bath apparatus, a main and an auxiliary reservoir, a valve coacting with each of said reservoirs, and means to open and close said valves automatically at desired intervals of time to first discharge the water from said auxiliary reservoir and then discharge therein the water from the main reservoir.

2. In a photographic bath apparatus, a main and an auxiliary reservoir, a valve in each of said reservoirs, and means connecting said valves controlled by the overflow of water from the main reservoir to effect automatically the opening and closing of said valves to change the water in the auxiliary reservoir.

3. In a photographic bath apparatus, a main and an auxiliary reservoir, and a valve in each reservoir, combined with means intermediate said valves and controlled by water overflowing from the main reservoir to automatically open and close said valves to change at predetermined times the water in both said reservoirs.

4. In a photographic bath apparatus, a main and an auxiliary reservoir each having a valve, an overflow-conduit connected with said auxiliary reservoir, a device to close the open end of said conduit, said device being moved away from said conduit by the overflow of water into the conduit from the auxiliary reservoir.

5. In a photographic bath apparatus, a main and an auxiliary reservoir, a valve in each reservoir, and a lever connected with each valve, said levers being moved at intervals by water overflowing from the main reservoir and opening and closing said valves to supply the auxiliary reservoir with water at predetermined times.

6. In a photographic bath apparatus, a main and an auxiliary reservoir, a valve in each of said reservoirs, a lever connected with each valve, the valve of the main reservoir being closed when the valve of the auxiliary reservoir is open for the discharge of water therefrom.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES S. L. KENNEDY.

Witnesses:
GEO. W. GREGORY,
EDITH M. STODDARD.