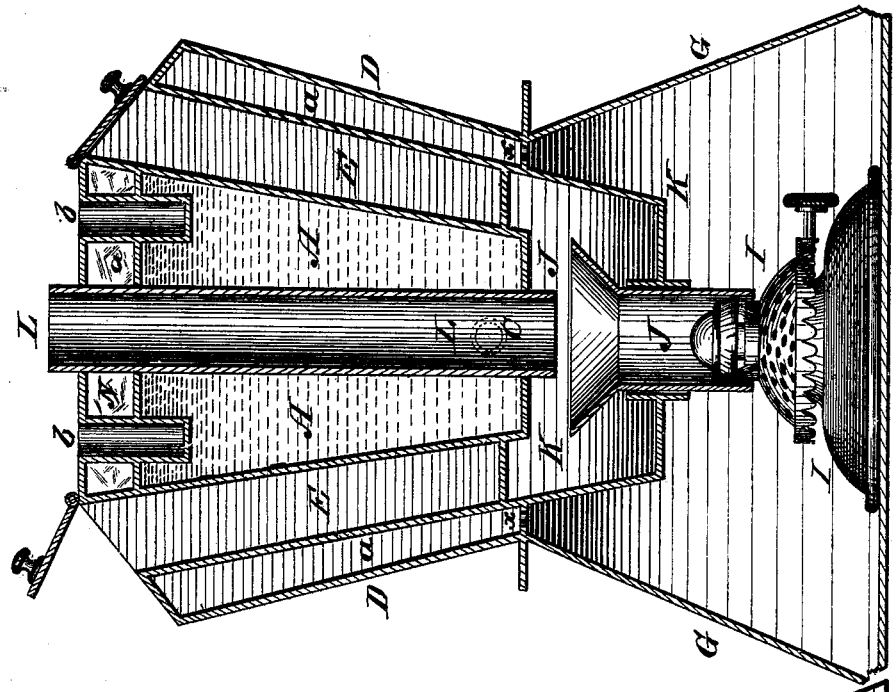
2 Sheets—Sheet 1.

C. J. FELLRATH & L. SCHNELL.

PHOTOGRAPHERS' BATH-WARMER.

No. 188,789. Patented March 27, 1877.

Fig. 2.



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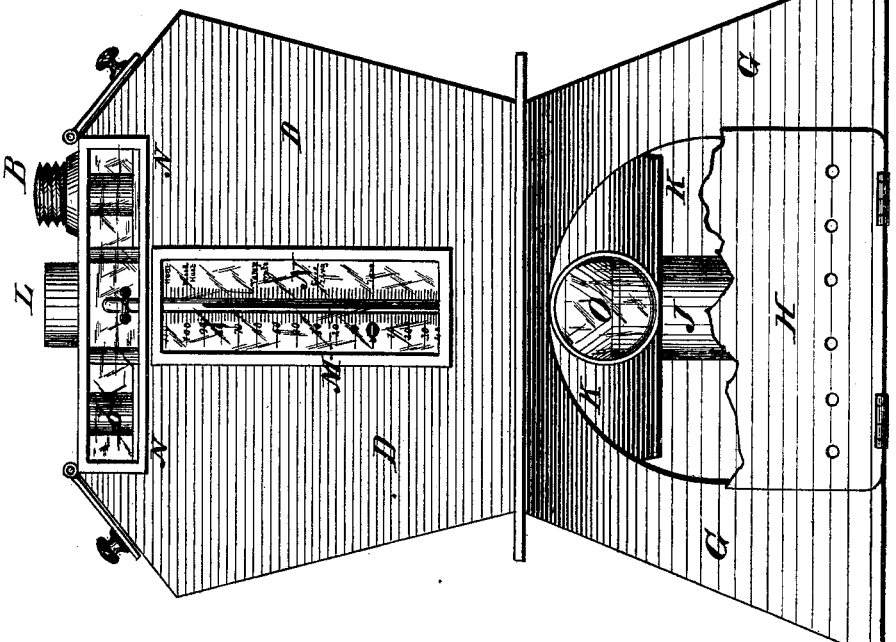

Witnesses:

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Frank T. Duffy

Inventors:

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2 Sheets—Sheet 2.

C. J. FELLRATH & L. SCHNELL.

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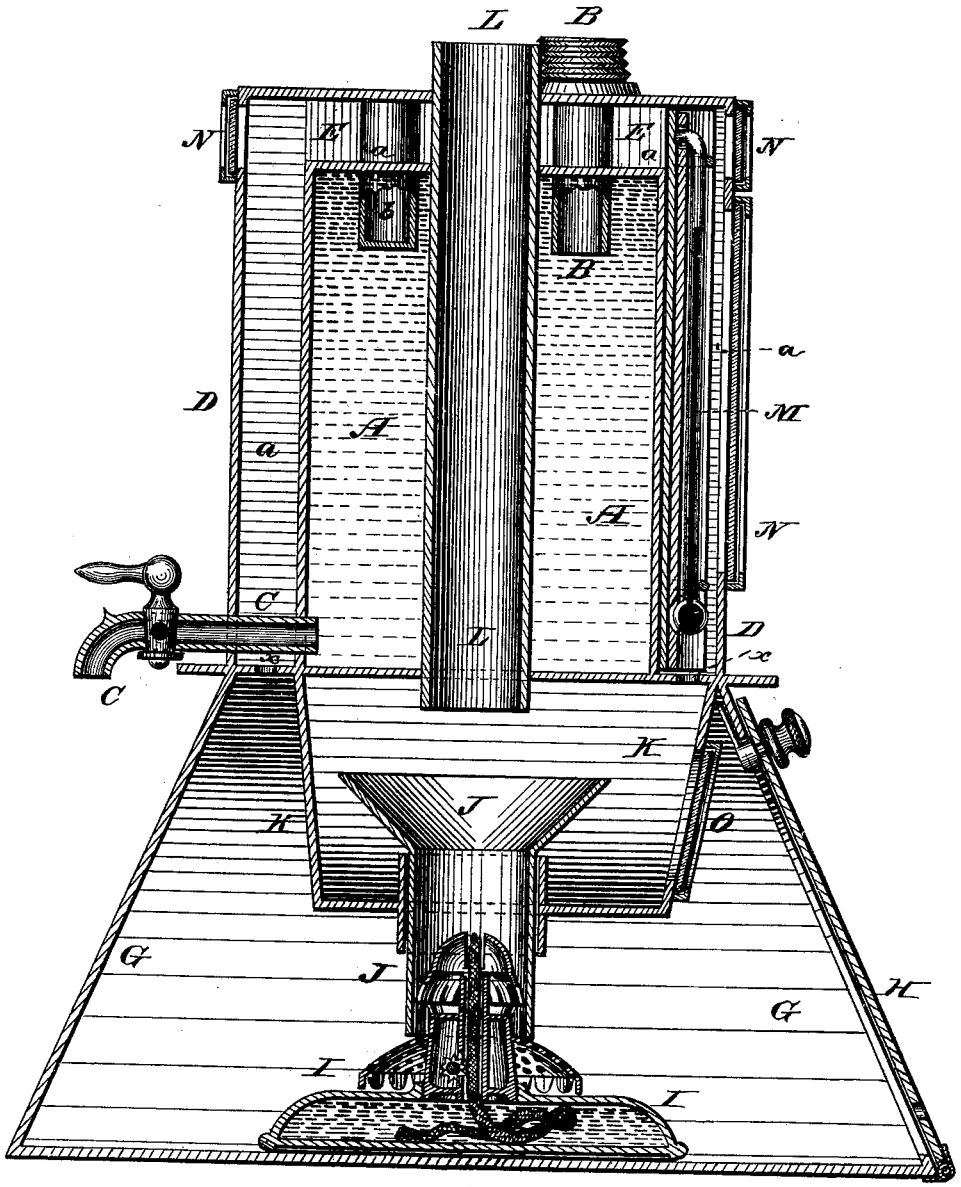
Fig. 3.



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UNITED STATES PATENT OFFICE.

CHARLES J. FELLRATH AND LEWIS SCHNELL, OF GATESVILLE, TEXAS.

IMPROVEMENT IN PHOTOGRAPHERS' BATH-WARMERS.

Specification forming part of Letters Patent No. **188,789**, dated March 27, 1877; application filed February 8, 1877.

To all whom it may concern:

Be it known that we, CHAS. J. FELLRATH and L. SCHNELL, of Gatesville, in the county of Coryell and State of Texas, have invented certain new and useful Improvements in Photographers' Bath-Warmers; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to bath warmers and coolers for photographers' use, and its object is to give the bath the same temperature all through, which is of great importance; and to this end the nature of this invention consists in the construction and combination of parts, as will be hereinafter more fully set forth.

In the annexed drawings, Figure 1 is a front elevation, and Figs. 2 and 3 are central vertical sections, of our invention.

A represents the reservoir containing water. This reservoir may be made of copper or any other suitable metal, and is provided with inlet B at the top, having a suitable screw-cap faucet, C, at the back for drawing off the hot water when needed, and it is surrounded by an exterior shell, case, or jacket, D, so as to form an air-chamber, *a*, entirely around the inside reservoir. In the top of the reservoir A are suitable pockets *b b*, for the insertion of the bottles containing the chemicals for developing, intensifying, and fixing. In the sides of the reservoir A are formed chambers E E, provided with suitable lids, for the insertion of the bath-dishes which contain the chemicals of the bath. The reservoir, with its surrounding shell or jacket, is supported on a hollow base, G, of suitable construction, provided with a door, H, having suitable perforations for the admission of air. In this base is placed a lamp, I, over which is placed a movable funnel, J, extending up into a heat-generator, K, formed on or attached to the bottom of the reservoir, on the under side thereof. The funnel J allows the heat of the flame to escape, its widest opening being a little above the point where the flame begins to heat the chimney L. This chimney is entirely disconnected from the lamp, and passes through the center of the reservoir, as shown. The heat of the flame escapes partly along the bottom of the reservoir A and through perforations *x x* into the air-chamber *a*, while a portion of the heat enters the disconnected chimney L and warms the inside reservoir. Attached to the front side of the reservoir A is a thermometer, M, and in the front of the outside shell D are suitable windows N, to observe the thermometer as well as the inside vessel. In the front of the heat-generator K is a window, O, for observing the flame of the lamp.

If the thermometer should indicate a temperature above that desired, this can be regulated by the application of a little cold water in the reservoir A through the inlet B.

Different means have been employed by photographers for keeping their chemicals, especially the bath, at a working temperature during cold weather. By applying a flame to the bottom of a vessel containing water the liquid will be warmest on the bottom. By the application of a lamp with a metal chimney through the water the lower part remains cold, the upper warmer, and the immediate vicinity of the chimney the warmest, while the remote corners remain cold. By our invention these objections are entirely overcome, and the water in the reservoir will be of the same temperature throughout.

Photographers have found nearly as much difficulty in keeping their baths at right temperature in warm weather as in cold. By making the inlet B of proper size pieces of ice or salt and ether may be admitted for cooling purposes, and which can be let out with the water. Should, therefore, the thermometer show a temperature below that desired, the lamp can be applied; vice versa, the ice or the salt and ether.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The funnel J, in combination with the lamp I, generator K, reservoir A, and disconnected chimney L, substantially as and for the purposes herein set forth.

2. The combination of the reservoir A, exterior jacket D, forming air-chamber *a*, with perforations *x x*, the generator K, lamp I, and

disconnected chimney J, substantially as and for the purposes herein set forth.

3. The funnel J, lamp I, generator K, and reservoir A, in combination with chimney L and the exterior jacket D, constructed and arranged substantially as and for the purpose set forth.

In testimony that we claim the foregoing as our own we affix our signature in presence of two witnesses.

CHARLES J. FELLRATH.
LEWIS SCHNELL.

Witnesses:
WM. O. CAMPBELL,
M. R. HOOD.