

H. B. TATHAM, Jr.
Gas or Fluid Regulator for Heaters.

No. 220,190.

Patented Sept. 30, 1879.

Fig 1

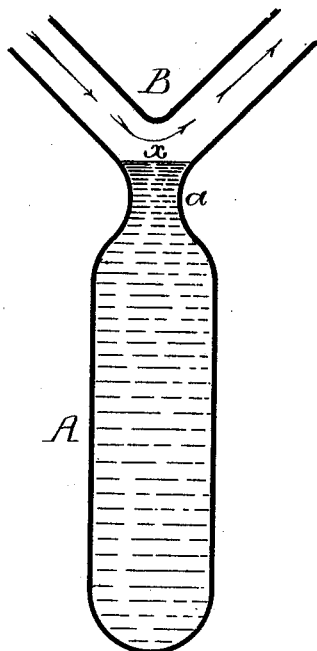


Fig 2

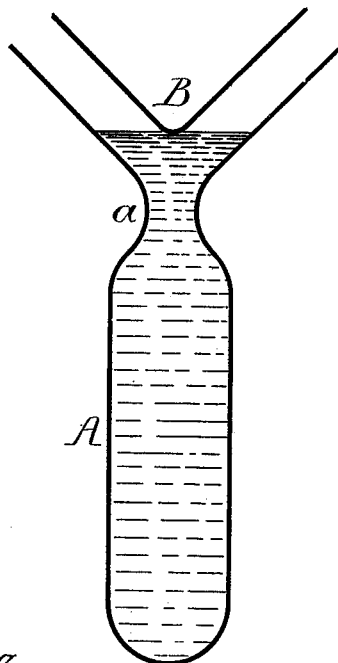
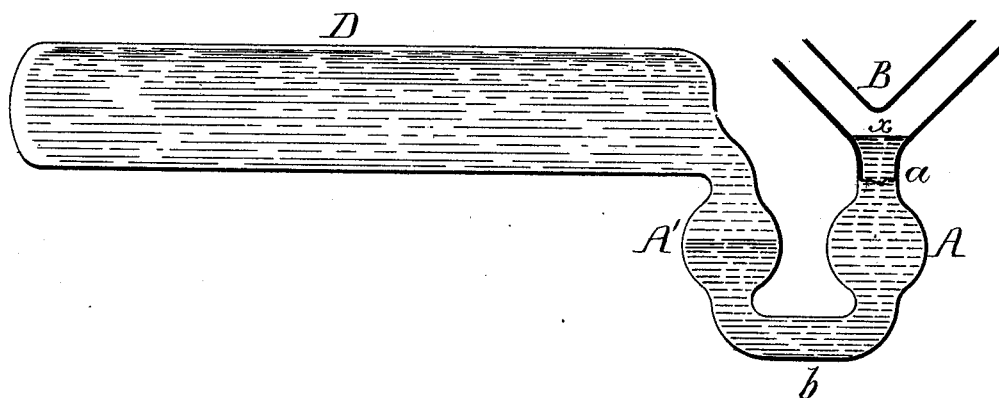


Fig 3



WITNESSES

Henry Cowson Jr.
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INVENTOR

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UNITED STATES PATENT OFFICE.

HENRY B. TATHAM, JR., OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN GAS OR FLUID REGULATORS FOR HEATERS.

Specification forming part of Letters Patent No. **220,190**, dated September 30, 1879; application filed April 8, 1879.

To all whom it may concern:

Be it known that I, HENRY B. TATHAM, Jr., of Philadelphia, Pennsylvania, have invented a new and useful Improvement in Gas or Fluid Regulators for Heaters, of which the following is a specification.

The object of my invention is to construct a simple and effective device for regulating heat in incubators, green-houses, and apartments generally; and this object I attain in the manner which I will now proceed to describe, reference being had to the accompanying drawings, in which—

Figures 1 and 2 are sectional views of my improved regulating device in its simplest form, and Fig. 3 a sectional view of a modified form of the device.

In Figs. 1 and 2, B is an elbow, forming part of a pipe through which gas or coal-oil or other burning-fluid is conveyed to a burner or burners of a heater for maintaining incubating-chambers, green-houses, or other apartments at a proper temperature; and A is a bulb or reservoir containing mercury, or a fluid which will expand and contract under the influence of changes of temperature, the bulb communicating with the elbow through a neck, *a*, and being contained within the chamber to be heated.

As the mercury rises under the influence of an excess of heat, the throat *x* of the elbow will be contracted, the supply of gas or burning fluid to the heater will be restricted, the flame of the burner will be lessened in intensity, and

the temperature in the chamber will be reduced accordingly, the flow of gas or burning-fluid through the pipe being entirely intercepted by the mercury when the heat has induced it to expand to the extent shown in Fig. 2.

A reduction of temperature will be followed by the contraction of the mercury and an enlargement of the throat of the elbow.

When extreme sensitiveness of action is desired, I use the device shown in Fig. 3, in which the elbow is combined with two communicating mercury-bulbs, A A', the latter communicating with a reservoir, D, containing alcohol, ether, or other volatile liquid, the expansion and contraction of which under the influence of variations of temperature renders the device much more sensitive than when mercury alone is used.

I claim as my invention—

The combination of the elbow B of a pipe for conveying gas or fluid to a burner or burners with a reservoir, A, communicating with the angle of said elbow, and containing a liquid capable of expansion and contraction under the influence of changes of temperature, all substantially as set forth.

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

H. B. TATHAM, JR.

Witnesses:

WILLIAM J. COOPER,
HARRY SMITH.