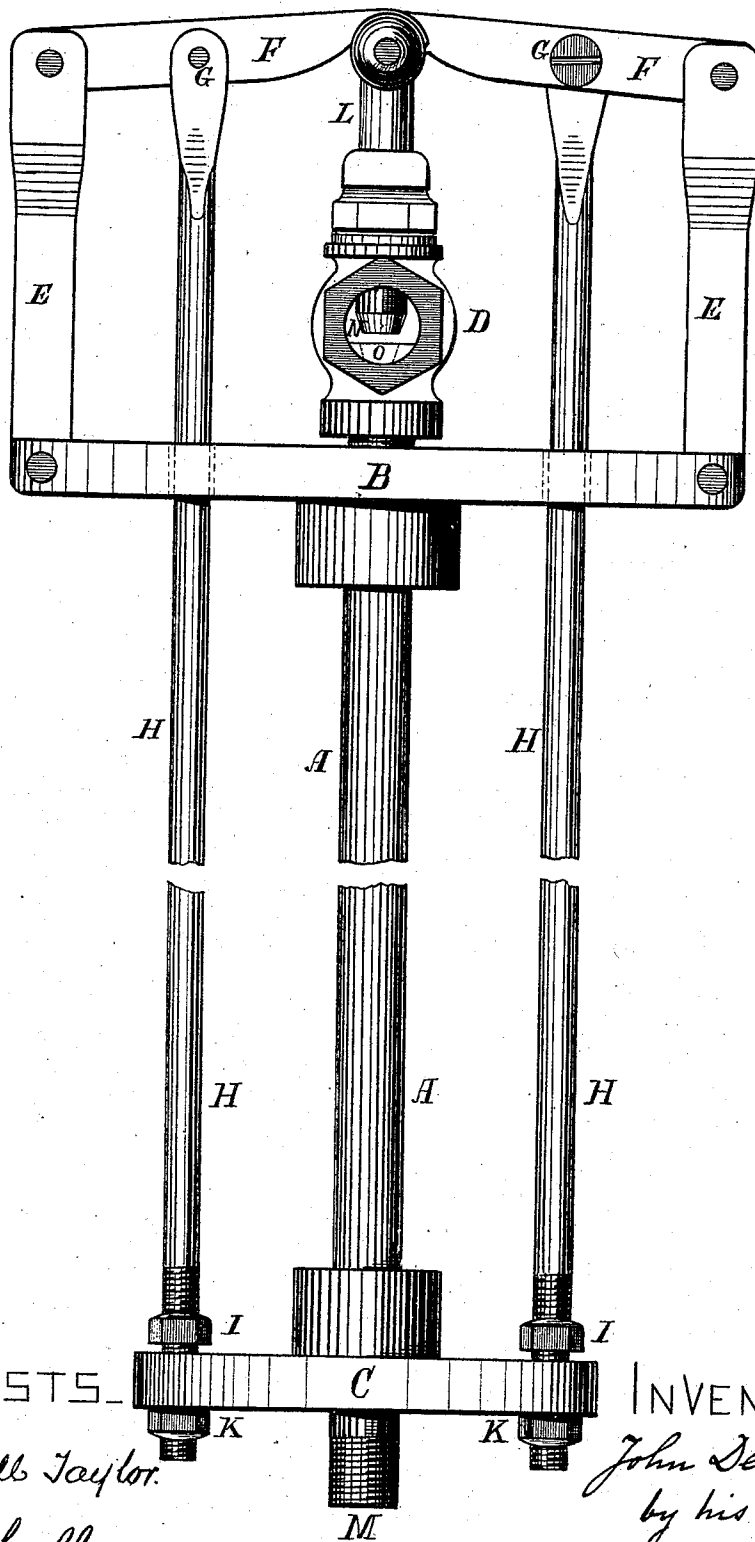


J. DEAKIN.
STEAM-TRAP.

No. 172,001.

Patented Jan. 11, 1876.



ATTESTS.

J. Bonsall Taylor.
C. G. Solthalle

INVENTOR.

John Deakin,
by his Atty.,
Horace Binneys

UNITED STATES PATENT OFFICE

JOHN DEAKIN, OF GLOUCESTER, NEW JERSEY.

IMPROVEMENT IN STEAM-TRAPS.

Specification forming part of Letters Patent No. **172,001**, dated January 11, 1876; application filed November 27, 1875.

To all whom it may concern:

Be it known that I, JOHN DEAKIN, of Gloucester, in the county of Camden and State of New Jersey, have invented a new and useful Improvement in Steam-Traps; and I do hereby declare the following to be 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 drawing, which forms a part of this specification.

This invention is an improvement in that class of steam-traps in which the expansion or contraction of the steam-pipe moves both the valve-seat and the valve-stem toward or apart from each other. Its object is to prevent the bending of the pipe; and to this end it consists in arranging the devices by which motion is imparted to the valve-stem upon both sides of the pipe, so that the tendency of said pipe to bend under pressure of steam shall be counteracted by an equal tendency to bend in an opposite direction.

The manner in which I construct and arrange my improvement is as follows:

A in the drawing represents a steam-pipe, preferably of brass, on which are shrunk or otherwise firmly secured the brackets B and C. D is a globe-valve attached to the outlet end of A, and to which a discharge-pipe may be attached. E E are arms, pivoted at one end to the bracket B, the other end of each arm being pivoted to one of the levers F F, whose fulcrums are at G G, where the said levers are pivoted to iron rods H H, which pass through both brackets. On each of these rods, and on opposite sides of the bracket C, are the set-nuts I and K. The inner ends of the levers F F are both pivoted to the smooth valve-stem L.

The operation of this device is as follows: When steam enters at the inlet end M of the pipe A the pipe expands as it become heated, and the bracket B moves away from C. The rods H H being prevented by the nuts K K from moving in the direction of B, the fulcrums G G remain fixed, and the effect of the movement of B, and the arms E E attached to it, is consequently to move the inner ends of le-

vers F F toward B, thereby bringing the button N of the valve toward its seat O. In addition to the movement above described the expansion also carries the valve away from the bracket B and toward the stem L. This double action increases the sensitiveness of the valve, which is thus closed and escape of steam prevented. The trap is set by slackening nuts I and K, and turning on steam until the water of condensation has been discharged, when the steam is shut off by tightening the nuts K, after which the nuts I are jammed. The trap will then work automatically, the pipe A contracting when condensation takes place, and causing the double movement of the valve and stem in the opposite direction from that heretofore described, thereby opening the valve and permitting the water to escape; and when the steam, driving out the water, enters and expands the pipe again, the valve is closed, as described above.

In shutting off steam to set the trap the tightening of nut K forces the valve-stem toward its seat against the steam-pressure in the pipe, and also presses the outer end of bracket B toward the bracket C. If a rod, H, arm E, and lever F were used only on one side of the pipe the bracket B would then act like a lever, and under the steam-pressure the pipe would bend away from the rod, the effect of which would be to carry the valve-seat to one side and also away from the stem, so that the valve would not close. This defect I have obviated by arranging a rod, arm, and lever on each side of the pipe, thus counteracting the leverage of each end of the bracket by that of the other end; and

I therefore claim as my invention, and desire to secure by Letters Patent of the United States—

The arrangement of the pipe A, valve D, brackets B and C, rods H H, arms E E, levers F F, and valve-stem L, whereby the bending of the pipe is prevented, substantially as described.

JOHN DEAKIN.

Witnesses:

J. BONSALE TAYLOR,
C. SOLTHALLE.