

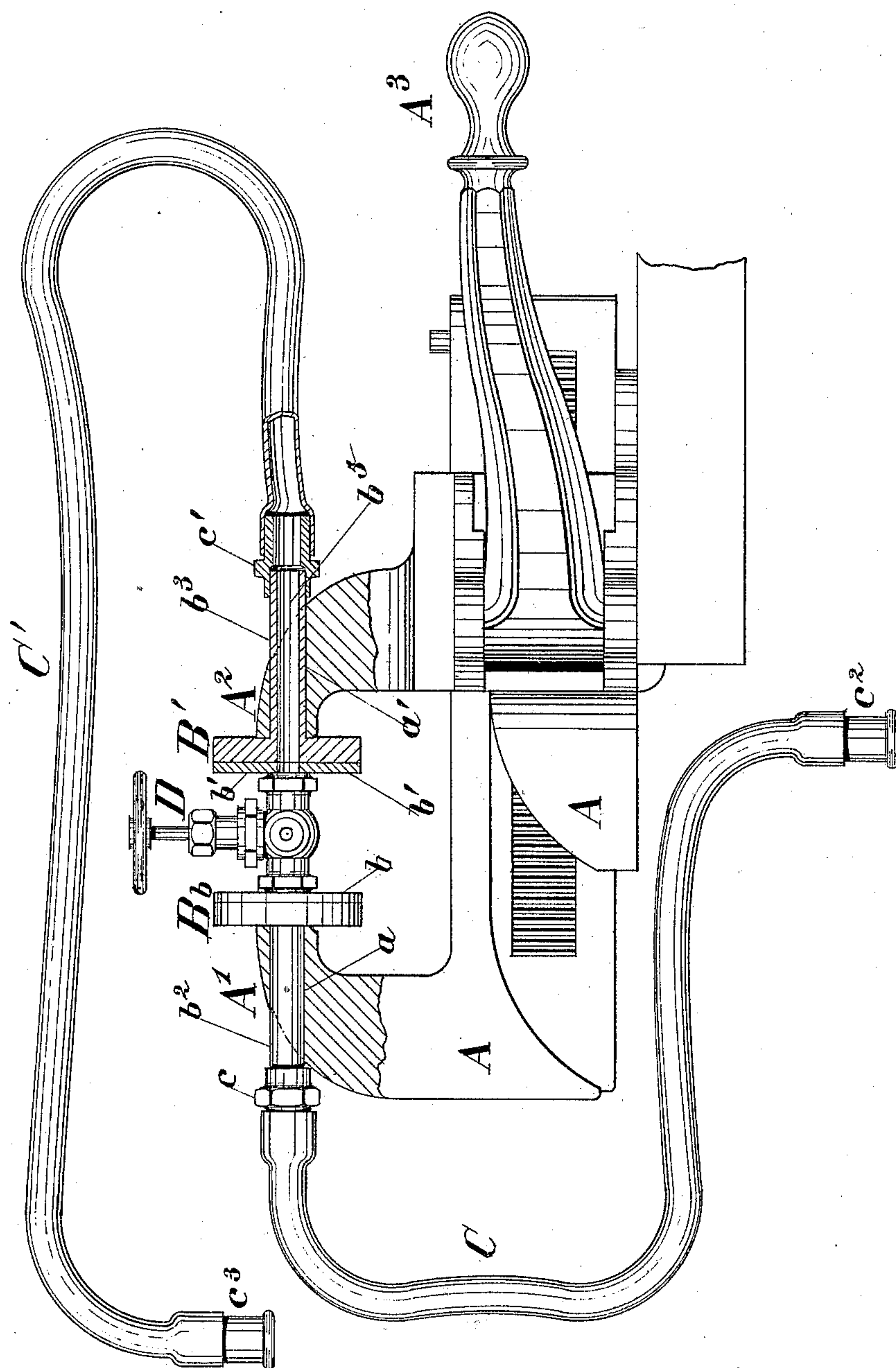
(No Model.)

F. LUNKENHEIMER.

DEVICE FOR PROVING GLOBE VALVES.

No. 277,756.

Patented May 15, 1883.



Attest

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DEVICE FOR PROVING GLOBE-VALVES.

SPECIFICATION forming part of Letters Patent No. 277,756, dated May 15, 1883.

Application filed February 24, 1883. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK LUNKENHEIMER, of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Devices for Proving Globe-Valves, of which the following is a specification.

My invention has for its object the construction of a simple and efficient device for proving globe and check valves, or stop-valves, the screw ends of which are substantially parallel; and it consists, essentially, of a quick-acting vise (as a Stephens vise or a Parker vise, although an ordinary parallel-jaw vise may be used, but it is objectionable on account of the slowness of action) the jaws of which are furnished with circular disks of a diameter of face somewhat greater than the screw end of the largest valve to be proved, which disks are provided with elastic surfaces—as rubber—upon their inner faces, between which elastic surfaces the valve to be proved is gripped by the jaws of the vise in the usual manner. The stems or spindles of the disks, by means of which they are attached to the vise-jaws, are drilled axially and are provided at their outer ends with screw-threads, by means of which and an ordinary pipe-coupling flexible tubes are attached thereto, for the purpose of producing a pressure or vacuum upon either side of the valve to prove its tightness, all of which will be fully explained hereinafter.

In the accompanying drawing, which represents a quick-acting vise with portions of the jaws cut away to show the construction of my invention, A is an ordinary parallel jaw bench, of what is known as the "Stephens" pattern, with jaws A' A² and gripping-lever A³, by means of which the jaws are forced together to grip a piece of work.

B B' are circular disks, provided upon the front or inner sides with rubber or leather faces b b', and upon the back sides with hollow cylindrical stems b² b³. Holes a a', drilled horizontally through the vise-jaws B B', receive the stems b² b³, and permit of a limited lateral motion to said stems, whereby valves the screw ends of which are not strictly parallel are gripped as securely as those with true parallel faces.

C C' are flexible tubes, attached at their inner ends by means of the screw joints c c' to the tubular stems b² b³, and provided at their outer ends with mouth-pieces c² c³.

D is an ordinary globe-valve, shown in the apparatus ready for proving.

The tubular stems are really continuous from the mouth-pieces c² and c³ to the plug or disk of the valve D.

The action of the device is as follows: The jaws B B' of the vise being drawn apart far enough to receive the valve D, the valve is approximately centered and gripped between the jaws, the elastic surfaces b b' forming airtight joints with the screw ends d d' of the valve. The operator then takes the tubes C C', and, by blowing or sucking in them alternately, determines the tightness of the valve. The same result may be had by using a force-pump in connection with the pipes C C'.

Heretofore valves were proven by screwing them onto a steam-pipe and applying steam-pressure; but experience has shown that small leaks cannot be detected in this manner, while the slightest leak will be manifest by an air-pressure or by a partial vacuum.

Stop-cocks may be proven by this device with as great facility as valves, and by adapting the inner surfaces of the disks B B' to correspond, other fittings than valves and cocks may be proven in the same manner.

It is obvious that the vise A may be discarded and a special frame with adjustable jaws or other suitable gripping apparatus be substituted without departing from the principle of my invention, the essential requisites of which are the elastic-surfaced disks B B' and the flexible tubes C C', and that stiff tubes might be employed instead of those shown; but such would not be as convenient as the flexible tubes.

Having described my invention, what I claim is—

1. A device for proving globe-valves, combining in its structure two jaws, B B', for gripping and holding the valve between them, and tubes C C, extending through the jaws respectively and serving to force air into or exhaust it from opposite ends of the valve, substantially as described.

2. In a device for proving globe-valves, the combination of two jaws, B B', each having an elastic surface, b , between which the valve to be proved is gripped with a tube, C, having a mouth-piece, c^2 , a tubular stem, b^2 , extending through one of the gripping-jaws, and a joint, c , connecting the stem and tube, whereby air can be forced into and exhausted from the valve, substantially as described.

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

FREDERICK LUNKENHEIMER.

Witnesses:

JOHN W. HILL,
JOSEPH W. SIMS.