

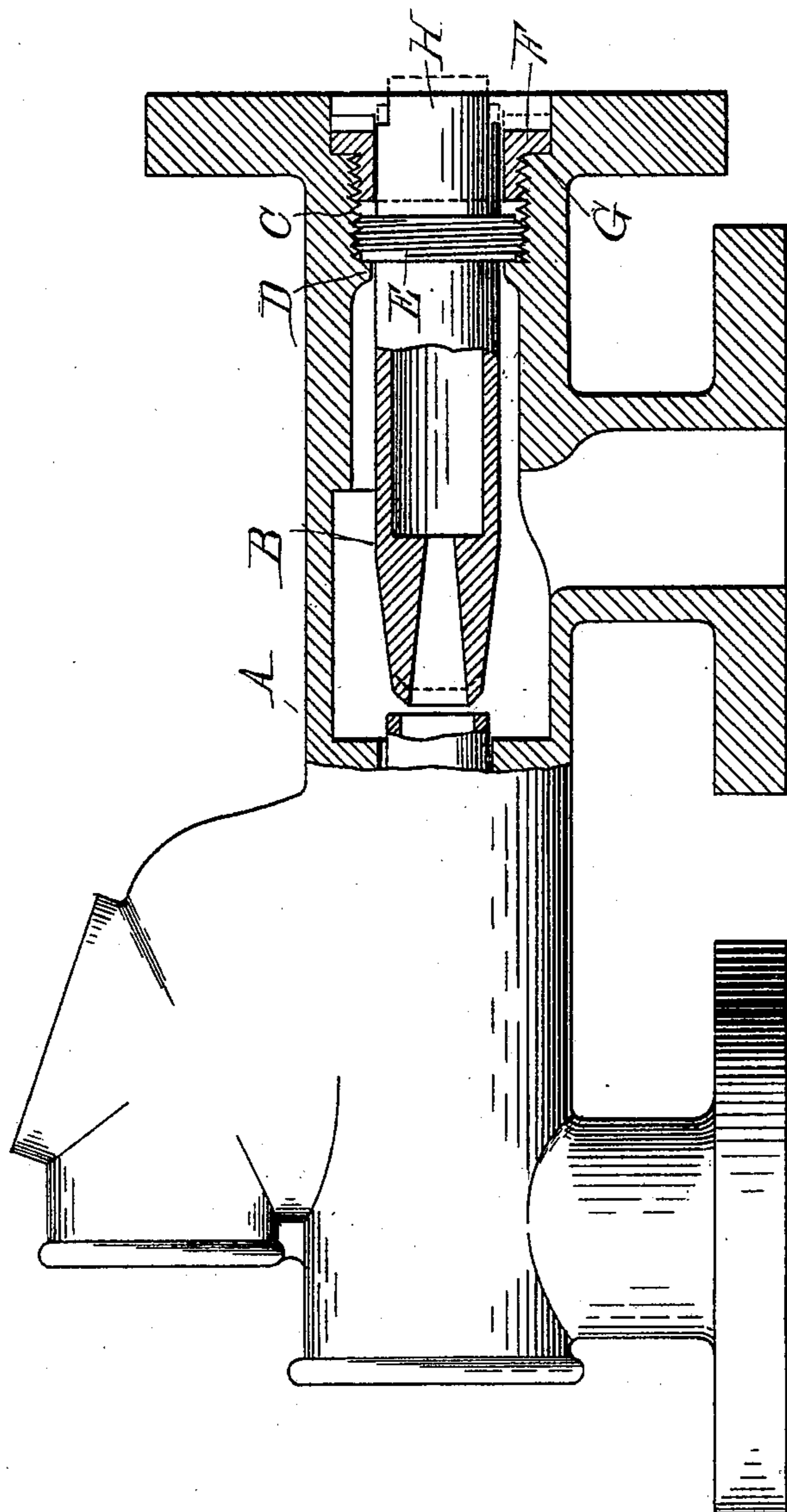
No. 607.227.

Patented July 12, 1898.

W. A. DOWNES.
INJECTOR.

(Application filed Jan. 27, 1898.)

(No Model.)



Witnesses:

O. A. B. Smith
W. B. Doherty

Inventor:

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UNITED STATES PATENT OFFICE.

WILLIAM A. DOWNES, OF DETROIT, MICHIGAN, ASSIGNOR TO THE
PENBERTHY INJECTOR COMPANY, OF SAME PLACE.

INJECTOR.

SPECIFICATION forming part of Letters Patent No. 607,227, dated July 12, 1898.

Application filed January 27, 1898. Serial No. 668,406. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. DOWNES, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Injectors, of which the following is a specification, reference being had therein to the accompanying drawing.

The invention consists in the construction of the steam end of an injector, comprising a steam-jet which can be adjusted longitudinally to or from the lifting-tube, so as to adapt the injector to lower or higher steam-pressures, with means for holding the jet at its adjusted position, which means are simple and do not increase the expense of the machine.

To this end the invention consists in the construction, arrangement, and combination of the various parts, all as more fully herein-after described.

In the drawing I have shown an elevation of an injector-casing, the steam end being shown in vertical central section, and the position of the steam-jet being shown by full and dotted lines.

A is the injector-casing, which is provided with the usual steam and water inlets and discharge and overflow connections required in an injector and with the usual lifting and delivery jets as required to work in connection with the steam-jet B. The interior of the casing at the steam end is provided with a screw-threaded portion C, which terminates in a shoulder D. The steam-jet B is provided with the collar E, exteriorly screw-threaded and adapted to engage with the screw-threaded portion C in the casing.

F is a ring adapted to embrace the top of the steam-jet and exteriorly threaded to engage with the screw-threaded portion C described. This ring is preferably flanged, the flange being adapted to be screwed up against a shoulder G and provided with suitable spanner holes or shoulders, so that it may be removed. The steam-jet is likewise provided with projections or recesses, such as shown at H, so that without taking it out of the machine it may be turned for the adjustment hereinafter described.

The parts being constructed as described,

it will be seen that there is something of a space or distance between the lower end of the ring and the shoulder D, in which the collar E is located, and that the collar is narrower than this space, so that by turning the steam-jet it may be given an endwise adjustment until it strikes either the end of the ring or the shoulder D.

It frequently happens in sending out an injector that the user finds that he is obliged to use it at steam-pressures for which the injector is not adjusted and for which no means are provided for adjusting it positively and without the use of hand-manipulated valves. He is therefore obliged, in order to get the service required, to buy a new machine. By this construction, in case the machine is sent out with the jet screwed down, so that the collar E is locked against the shoulder D, we will say that it is adapted to work up to the pressure of one hundred and fifty pounds. If that is the service required, nothing is necessary to be done to the machine but connect it up and use it; but if it is desired to use it at, say, one hundred and seventy-five pounds pressure the engineer has simply to disconnect the machine, turn the steam-jet outward to a stop—that is, until the collar E strikes the lower end of the ring F—and connect it up again, when the machine is adapted for this new range of steam-pressures. The different adjusted positions of the jet are shown in full and dotted lines. I deem it desirable to have this adjustment within the machine for several reasons: First, by having it, as described, there is no question of the proper amount of adjustment or manipulation; second, the engineer has no means to adjust it from the outside, so that ignorant men will not ordinarily make the wrong adjustment, and, third, no packing-boxes are required for a valve-stem, and the cost of the machine is not materially increased.

What I claim as my invention is—

1. In an injector, the combination of a casing, a steam-jet having a limited, longitudinal screw-threaded adjustment in the casing, two shoulders formed at opposite ends of the adjusting movement of the jet against which it may be turned to lock it, the outer shoulder being detachable.

2. In an injector, the combination of a casing, a steam-jet having a screw-threaded engagement within the casing, two shoulders which limit the adjusting movement of the jet and against which it may be turned to lock it, an exteriorly-screw-threaded ring fitting around the jet and engaging a screw-thread in the casing, forming the outer shoulder.

10 3. In an injector, the combination of the casing, an interiorly-screw-threaded portion at the steam end, a shoulder at the end thereof, a steam-jet, a screw-threaded collar on

the steam-jet engaging said screw-thread in the casing, and a screw-threaded ring fitting over the jet and engaging the screw-thread in the casing, the collar on the jet adapted to be locked against the shoulder at the inner end of its movement or against the ring at the outer end of its movement.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM A. DOWNES.

Witnesses:

M. B. O'DOHERTY,
OTTO F. BARTHEL.