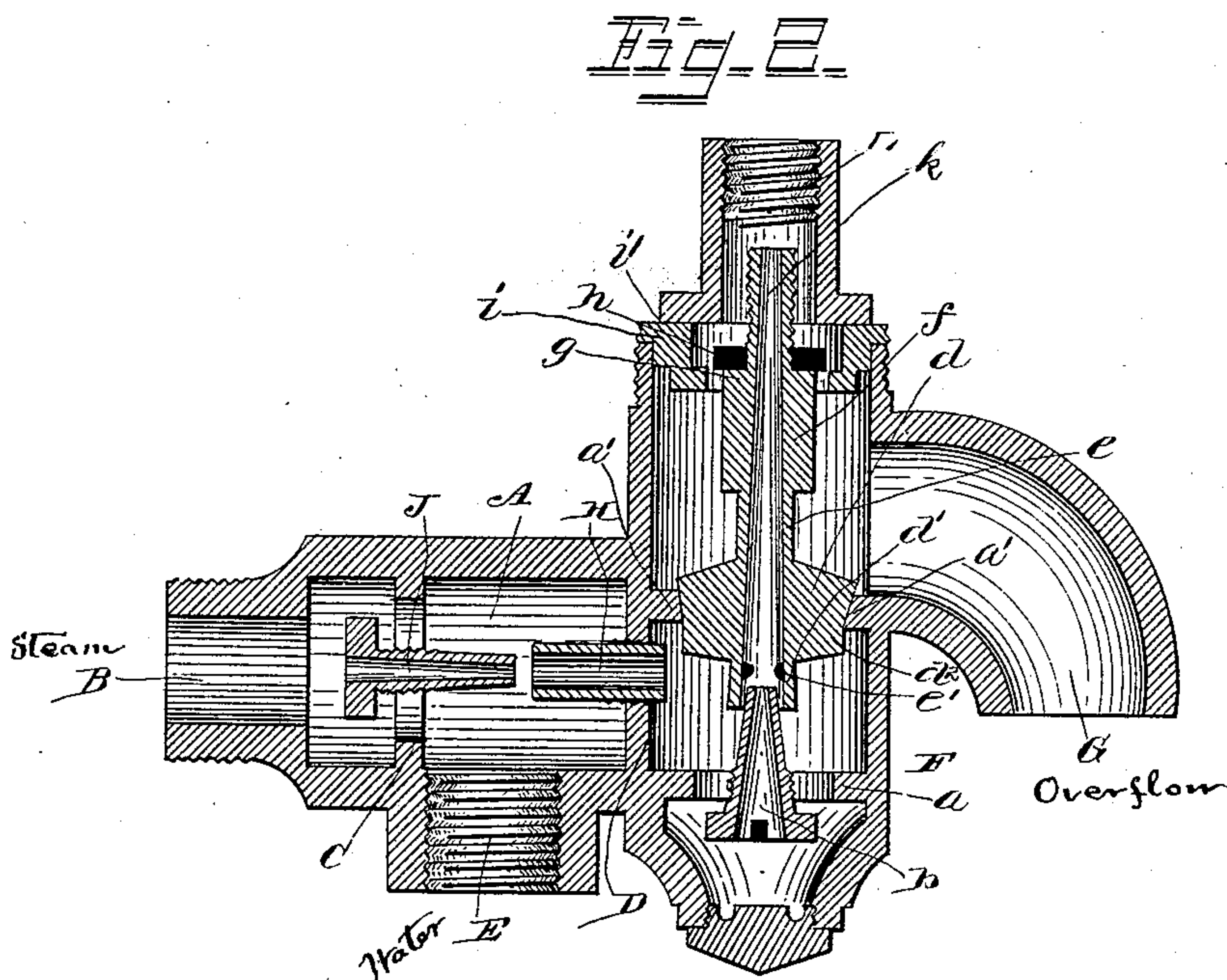
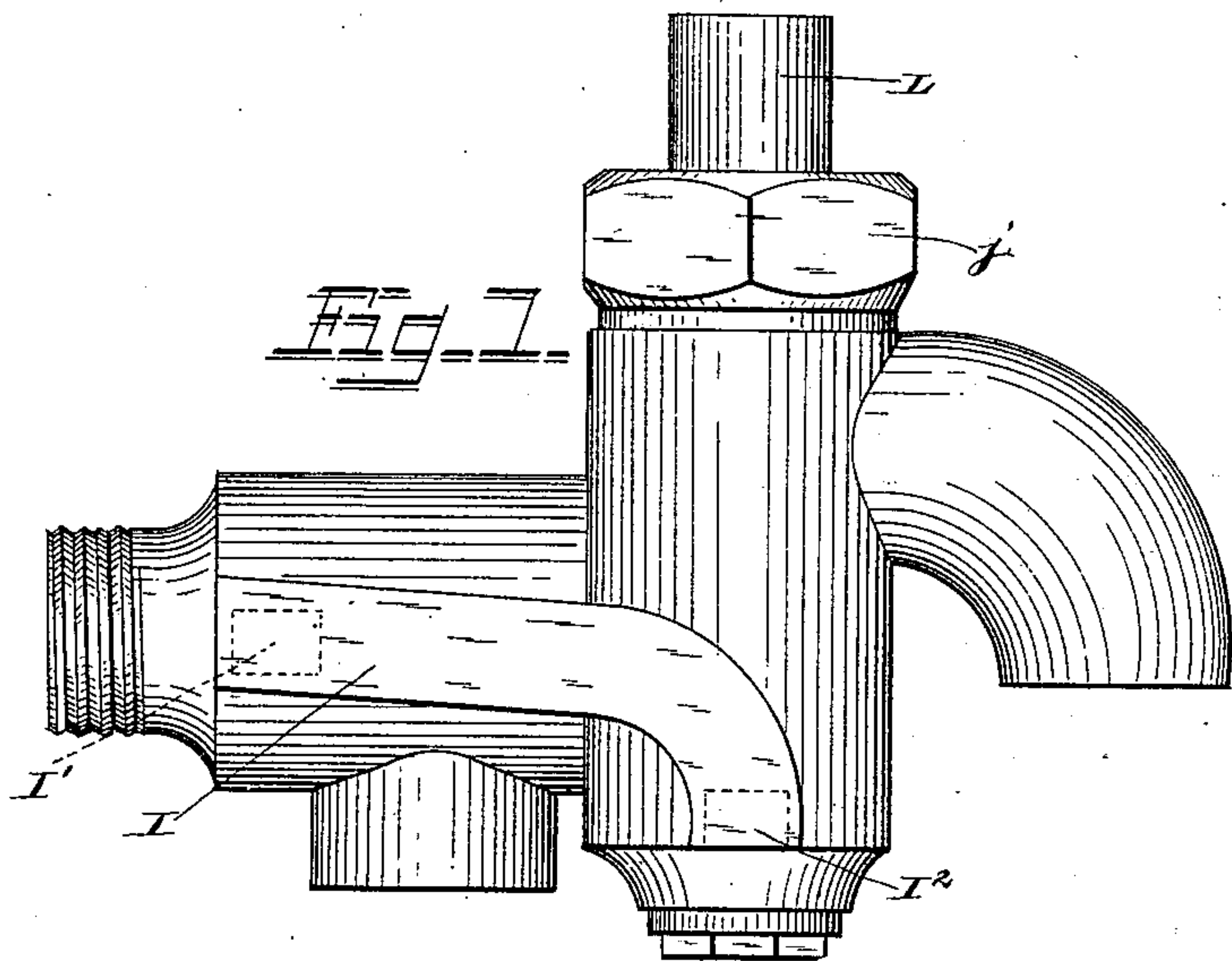


(Model.)

J. DESMOND.  
STEAM INJECTOR.

No. 326,408.

Patented Sept. 15, 1885.



WITNESSES.

*W. J. Schneider.*  
*John McGill.*

INVENTOR.

*John Desmond*  
*By Ayers*

ATTORNEYS.



# UNITED STATES PATENT OFFICE.

JOHN DESMOND, OF CLEVELAND, OHIO, ASSIGNOR TO SIMON & O'NEILL, OF  
SAME PLACE.

## STEAM-INJECTOR.

SPECIFICATION forming part of Letters Patent No. 326,408, dated September 15, 1885.

Application filed June 1, 1885. (Model.)

*To all whom it may concern:*

Be it known that I, JOHN DESMOND, a citizen of the United States of America, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Steam-Injectors, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to an improvement in steam-injectors; and it consists in the peculiar construction, combination, and arrangement of its parts, by which its action is rendered automatic, substantially as hereinafter more fully shown and described.

In the accompanying drawings, Figure 1 is a side elevation of my steam-injector. Fig. 2 is a central longitudinal section.

In constructing my steam-injector, chamber A, having steam-inlet pipe B, transverse walls C and D, and water-supply pipe E, is cast integral with chamber F, having overflow-pipe G. The passage-way between these chambers consists of a tapering tube, J, a tube, H, and steam-duct I, the latter being cast integral with one side of the injector, and is slightly curved at one end thereof. Steam-duct I and chamber A are connected by a coincident orifice at I', and duct I and chamber F are in like manner connected at I<sup>2</sup>. The wall C of chamber A is provided with a threaded orifice, wherein is inserted the correspondingly threaded and tapering tube J, and in a similar orifice in wall D of said chamber tube H is in like manner inserted. The tube J is also made flaring, the larger end thereof being arranged in line with the threaded steam-inlet pipe B, in order the better to receive the full force of the steam.

Chamber F having opening therein, overflow-pipe G, as aforesaid, is divided into compartments. Wall *a*, having centrally disposed therein the tapering tube *b* and valve *d*, also serves to separate chamber A into compartments during the flow of the water into the boiler, at which time the valve *d* is closed by the condensed steam against the inner peripheral flange, *a'*, also formed integral with chamber F.

Valve *d* consists of the disk *d'*, having the radiating lugs *d<sup>2</sup>* immediately beneath the same and integral with its tubular valve-rod *e*. The tubular valve-rod *e* is also provided with the transverse orifices *e'*, and the mouth of the lower end of the tube is tapered to conform to the taper of tube *b*. The valve-rod *e* is also fluted longitudinally at *f*, the fluting terminating at one end in a disked shoulder, *g*, forming the bearings of the elastic washer *h*, and valve-rod *e* is also encircled by packing-ring *i*, having shoulder *i'*, which is tightly secured in place by means of the nut *j*, which has an orifice provided centrally therein for the valve-rod tube *k*, having cap *L*, wherein plays the valve-rod *e*.

Chamber A being filled with water, the water is forced by pressure of the steam through the tube *b* toward the boiler, and as the steam which passes through the curved duct I comes into contact with this water it is forced into the boiler, and when the boiler is filled the valve *d* ascends and the overflow-water finds egress through the overflow-pipe G.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, with the chambers A and F, the tubes J, H, and *b*, and the overflow-pipe G, of the valve *d* and the steam-duct I, the latter located on the outside of the outer wall of the injector, substantially as shown and described.

2. In a steam-injector, the steam-duct located on the outside of the injector and opening into chambers A and F, in combination with the valve *d* and the overflow-pipe G, the whole arranged to permit the simultaneous lifting and forcing of a supply of water, substantially as shown and described.

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

JOHN DESMOND.

Witnesses:

LEMAN HUNTER,  
HENRY W. WELKER.