(Model.)

J. DESMOND.

STEAM INJECTOR.

No. 332,386. Patented Dec. 15, 1885.

Fig. 1.

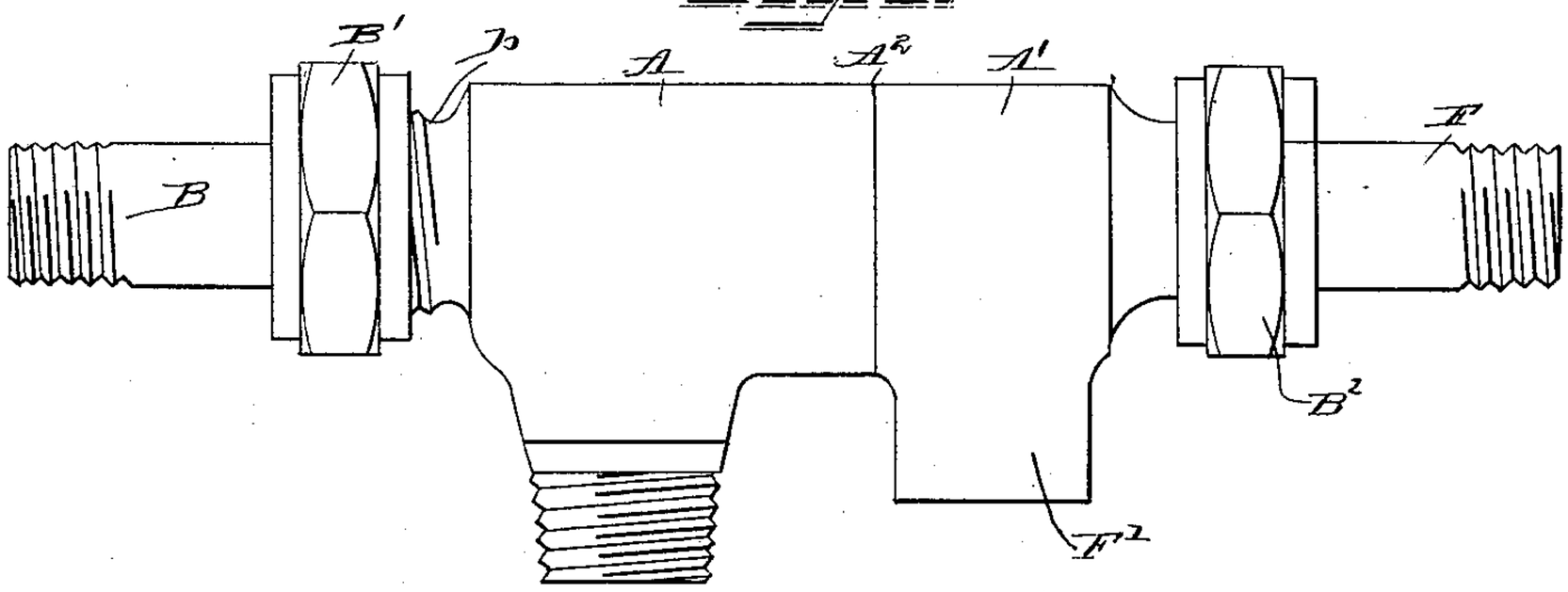


Fig. 2.

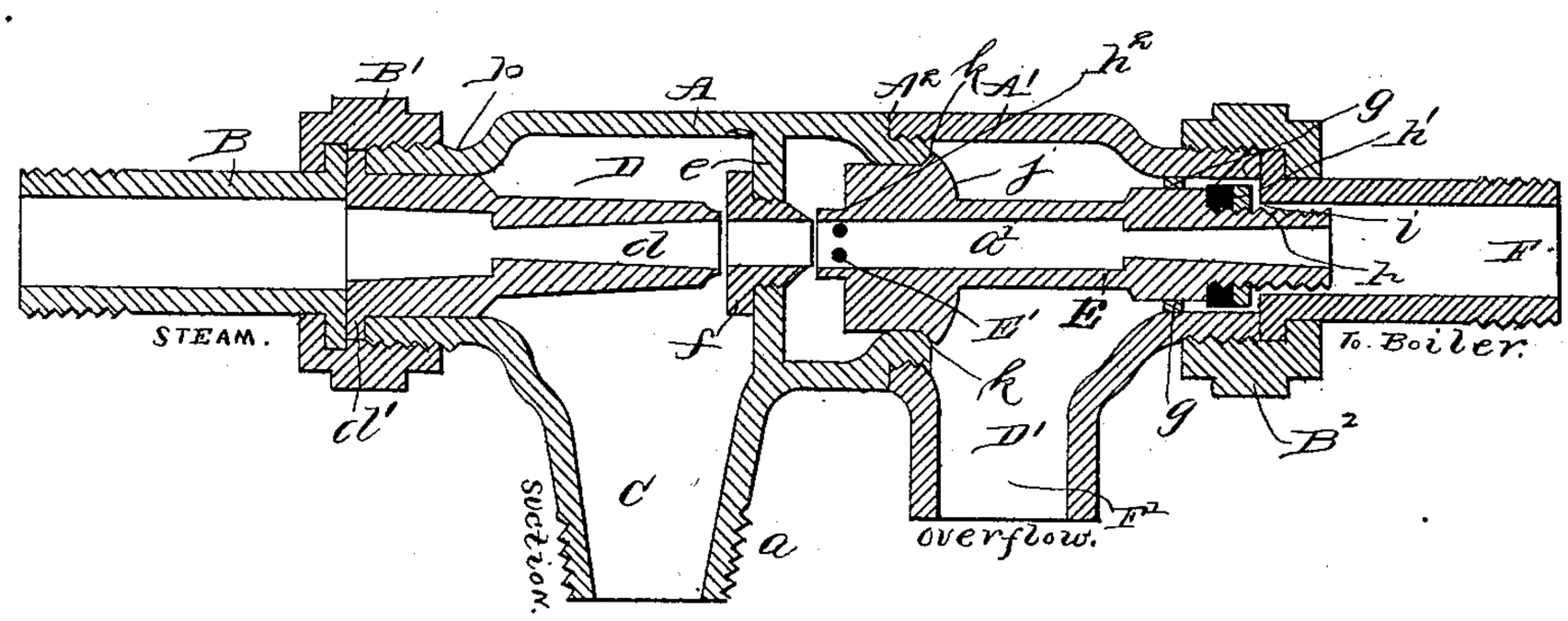
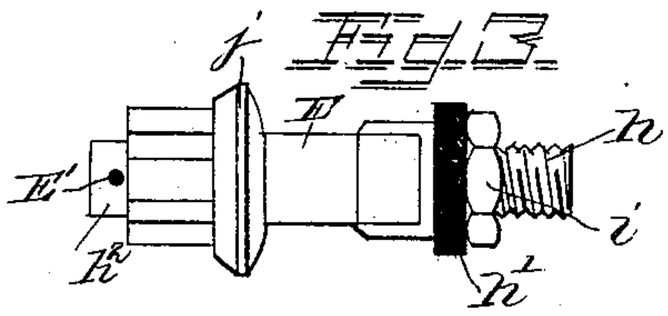


Fig. 3.



WITNESSES.

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UNITED STATES PATENT OFFICE.

JOHN DESMOND, OF CLEVELAND, OHIO, ASSIGNOR TO ROE STEPHENS, OF DETROIT, MICHIGAN.

STEAM-INJECTOR.

SPECIFICATION forming part of Letters Patent No. 332,386, dated December 15, 1885.

Application filed August 11, 1885. Serial No. 174,128. (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 improvement has for its object to render the mechanism of steam-injectors less complex, and their operation in practice more efficient, while attaining the minimum as to cost of production; and it consists in the peculiar construction, combination, and arrangement of its parts, substantially as hereinafter more fully shown and described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of my steam-injector. Fig. 2 is a longitudinal section, and Fig. 3 is a detail view thereof.

In the construction of my steam-injector, which comprises the sections A and A′, which are screwed together at A^2, a male screw for this purpose being formed on the periphery of one section, and a corresponding female screw in the other section, I removably secure the steam-port B to section A by means of pipe-coupling B′, section A being provided with a threaded pipe-periphery at *b*. I also cast integral with section A the suction-pipe C, having threaded periphery at *a* for connecting thereto a well or water-supply pipe by means of a pipe-coupling. The threaded extension A^2 of the section A forms a seat for the valve-tube E, and against the edge of said extension a disk of said valve-tube is designed to impinge, as will appear further on. Chamber D is comprised in section A, and has longitudinally disposed therein the tapered steam-tube *d*, having rim *d′* projecting against the lateral edge of the pipe-periphery *b* of section A, which effectually closes chamber D at one end, a transverse wall, *e*, being formed at the other end of said chamber, wherein is removably inserted the nipple *f*. Chamber D′ is provided with the transverse wall *g*, which wall has a coincident aperture for the free play therein of slide-valve E. (See Fig. 3.) Slide-valve E is tubular and provided with the small apertures E′, and with a tapering passage, *a′*, formed through its center. It is threaded at *h* for reception of the leather washer *h′* and the nut *i*, with which washer *h′* is secured in position, and it is also provided with a metallic disk, *j*, cast integral therewith. Thus constructed, valve-aperture *k* may be closed either by steam-pressure from the boiler, causing washer *h′* to press against wall *g* and tube h^2 to register with nipple *f*, or by water-pressure, causing the metallic disk *j* to press against the end of the screw-threaded portion A^2 of the section A.

F represents a steam-pipe leading into the steam-boiler, which is secured to the injector by means of pipe-coupling B^2.

The operation is as follows: Steam being admitted through the steam-inlet port B and tapered tube D, slide-valve E is closed by condensation, and water flows through the suction-pipe C into chamber D, and is forced therefrom through the nipple *f* and the passage *a′* of the slide-valve E into the boiler by the steam proceeding from the steam-port B, its admission being regulated by a globe-valve, (not shown,) until the boiler being thus supplied with water the surplus thereof flows out through the overflow-pipe F′, whereupon the slide-valve E is simultaneously forced forward, thus opening aperture *k* and cutting off the water-supply.

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

1. A steam-injector consisting of the section A, having suction-pipe C, steam-tube *d*, and nipple *f* in wall *e*, and section A′, having wall *g*, slide-valve E, and overflow-pipe F′, substantially as shown, and for the purpose described.

2. In a steam-injector, the slide-valve E, having washer *h*, and metallic disk *j*, disposed on either side of wall *g*, substantially as shown, and for the purpose described.

3. The combination of slide-valve E, thread-

ed extension A^2 of section A, and chamber D', having apertured wall *g*, substantially as shown, and for the purpose described.

4. The combination of section A, having threaded extension A^2, slide-valve E, disposed in apertured wall *g* of chamber D', and nipple *f* in wall *e*, substantially as shown and described.

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

JOHN DESMOND.

Witnesses:
ANDREW MCLELLAN,
GEO. W. BORGMAN.