

(No Model.)

W. REAMS.
LOW WATER FIRE EXTINGUISHER.

No. 365,861.

Patented July 5, 1887.

Fig. 1.

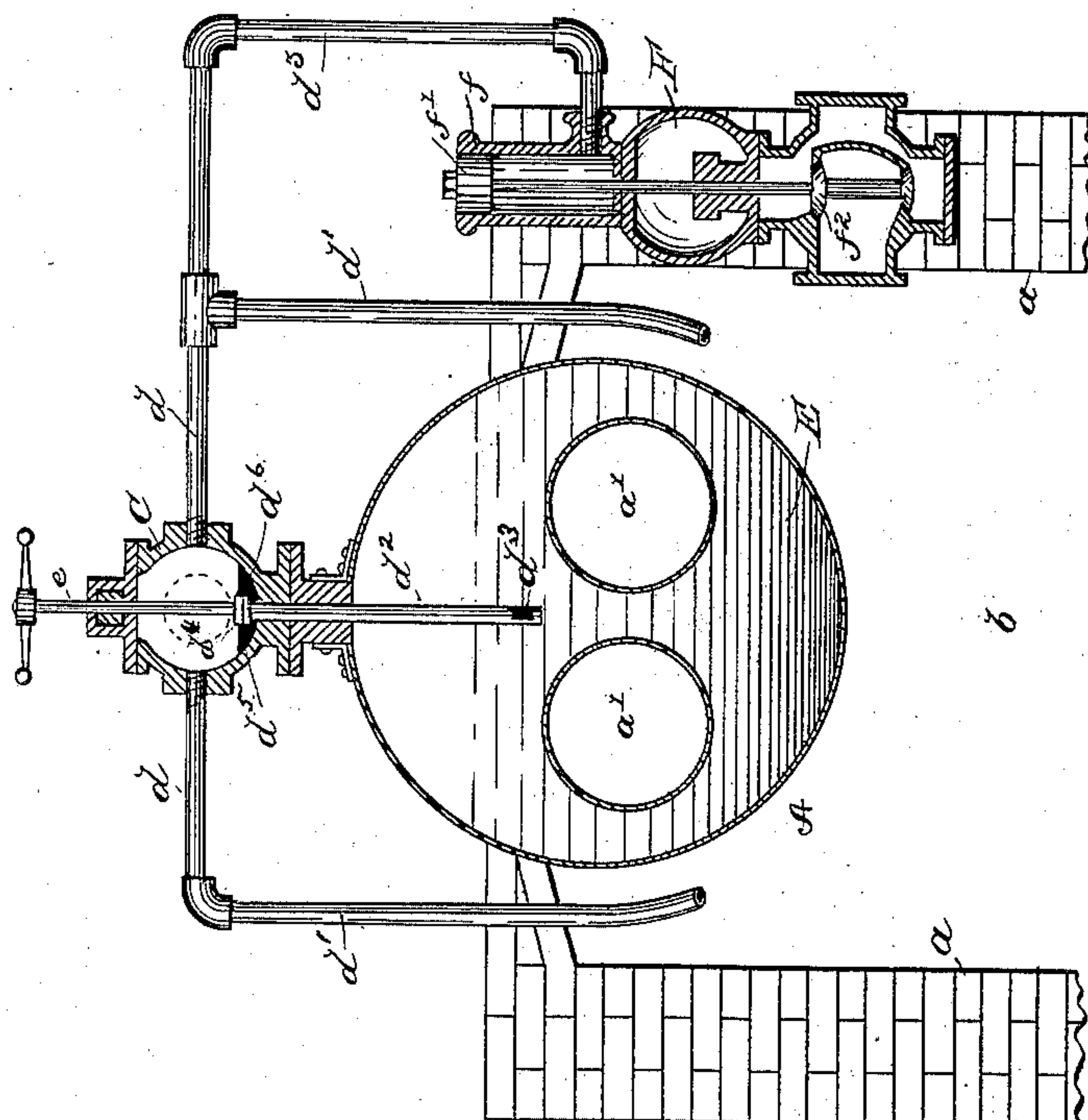
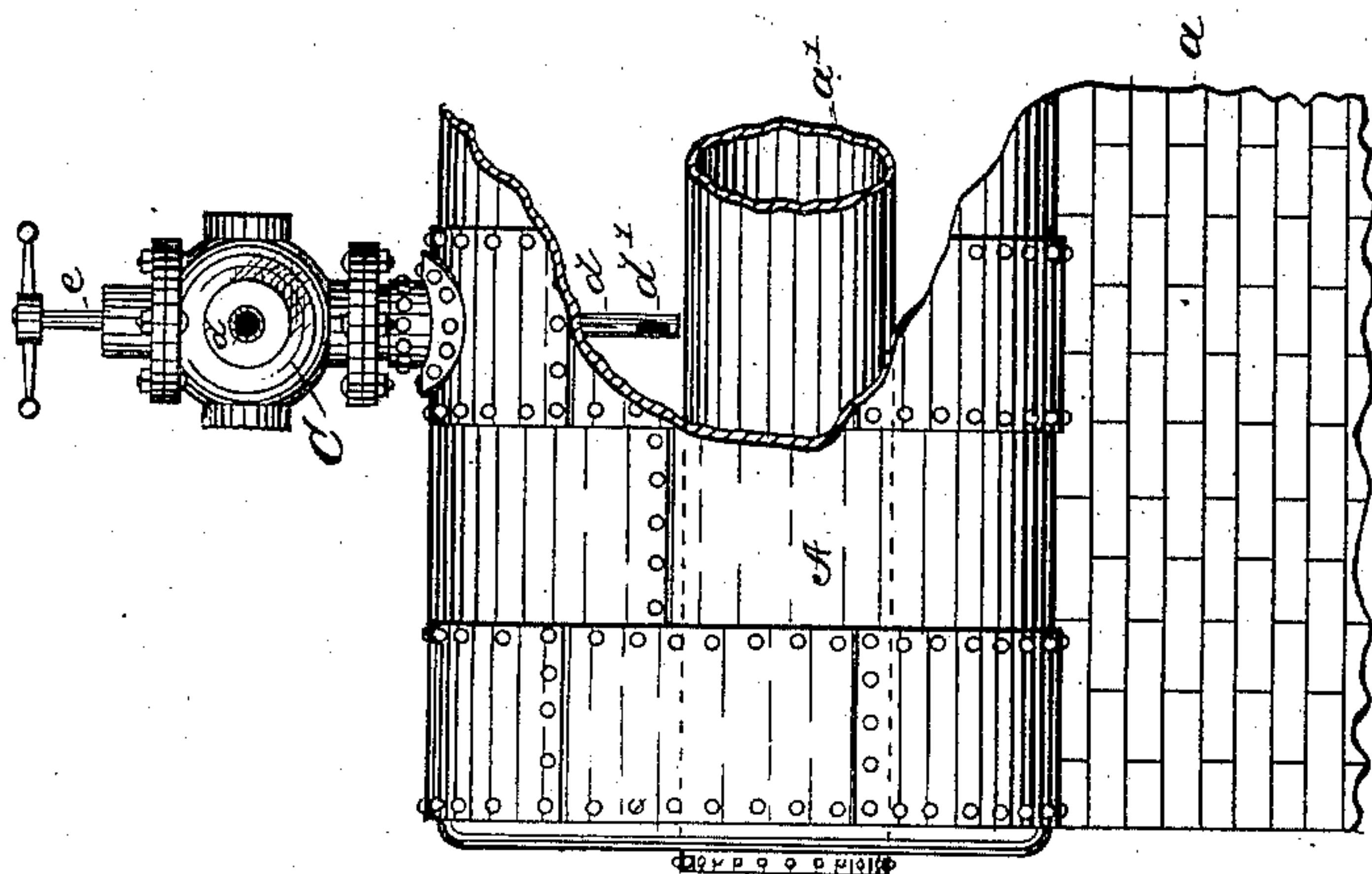


Fig. 2.



Witnesses

Percy White.

John L. Condron.

Inventor

William Reams.

By his Attorney

L. Thomas Davis.

UNITED STATES PATENT OFFICE.

WILLIAM REAMS, OF PITTSBURG, PENNSYLVANIA.

LOW-WATER FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 365,861, dated July 5, 1887.

Application filed February 16, 1887. Serial No. 227,847. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM REAMS, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Steam-Boiler Low-Water Fire-Extinguishers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in steam-boiler low-water fire-extinguishers in which agencies automatically applied extinguish fires in the furnaces of steam-boilers upon the occurrence of low water, so as to avoid overheating of the boiler and consequent supervening rupture and explosion; and it consists of certain peculiar and novel features of construction and arrangement, as hereinafter more specifically claimed and described. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is an end elevation of a boiler with its head removed and with my improvements applied thereto. Fig. 2 is a side elevation of the same, partially broken away to expose the internal operative parts of my invention.

In the said drawings, A designates the shell of a steam-boiler; *a*, the walls of the setting inclosing the fire-chamber *b*, and *a'* the fire-tubes.

Upon the upper side of the boiler-shell A is set a valve-casing, C. From this casing C lead two or more pipes, *d*, and from the latter two pipes, *d'*, which extend downward into the body of the furnace-chamber *b*, as shown in Fig. 1.

A tube, *d*², extends vertically downward through the shell of the boiler A, and below the normal level of the water contained within the shell A. The lower extremity of the tube *d*² is vertically slotted, as shown at *d*³, and within the tube *d*² works a valve-stem, *e*, which carries a valve, *d*⁴, firmly secured to the stem and seated within the base of the casing C. The water is indicated at E, and it will be seen by reference to the drawings that whenever the level of the water becomes so low as to uncover the slot *d*³ the steam will enter the

tube *d*² and force the valve *d*⁴ upward out of its seat, and thus automatically cause the water to flow from the boiler upward through the tube *d*² and through the branch pipes *d'* upon the fire and extinguish the same, so as to prevent overheating of the boiler and consequent explosion.

F designates an inlet-valve, such as is commonly used for supplying liquid or gaseous fuel for generating heat for raising steam in the boiler. When such liquid or gaseous fuel is employed, a branch pipe, *d*⁵, leads from the casing C to the piston-chamber *f* of the inlet-valve apparatus F, the arrangement being such, as shown in the drawings, as to automatically raise the piston *f'*, and with it the valve *f*², and thus instantly cut off the flow of liquid or gaseous fuel to the boiler.

In order to properly secure the valve *d*⁴ in its normal position, said valve is seated in a mass of fusible solder, *d*⁶, which is melted by the steam, so as to release the valve when low water occurs, the valve casing or chamber being arranged, as shown at *d*⁷, to receive the solder.

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

1. An improved extinguisher for boiler-furnaces, consisting of a valve embedded in a fusible metal in the casing or chamber communicating with the interior of the boiler, and also with the interior of the furnace, and a valve located within said casing and operated by steam from the boiler upon the occurrence of low water, substantially as and for the purposes described.

2. The combination, with the valve-chamber and valve, of the fusible metal and the slotted tube, the valve having its stem arranged as shown and described.

3. The combination, with the shell A, the fluted valve-casing C, mounted thereon and provided with the slotted tube *d*², the valve-stem *e*, having the valve *d*⁴, and the pipes *d* *d'*, leading from the valve-casing to the furnace, of the soldered seat for the said valve *d*⁴, located within the valve-casing, as set forth.

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

WILLIAM REAMS.

Witnesses:

JOHN ALLEN,

JOHN N. BECKITT.