

No. 719,245.

PATENTED JAN. 27, 1903.

H. D. MORTON.
FUSIBLE PLUG.

APPLICATION FILED SEPT. 4, 1902.

NO MODEL.

Fig. I.

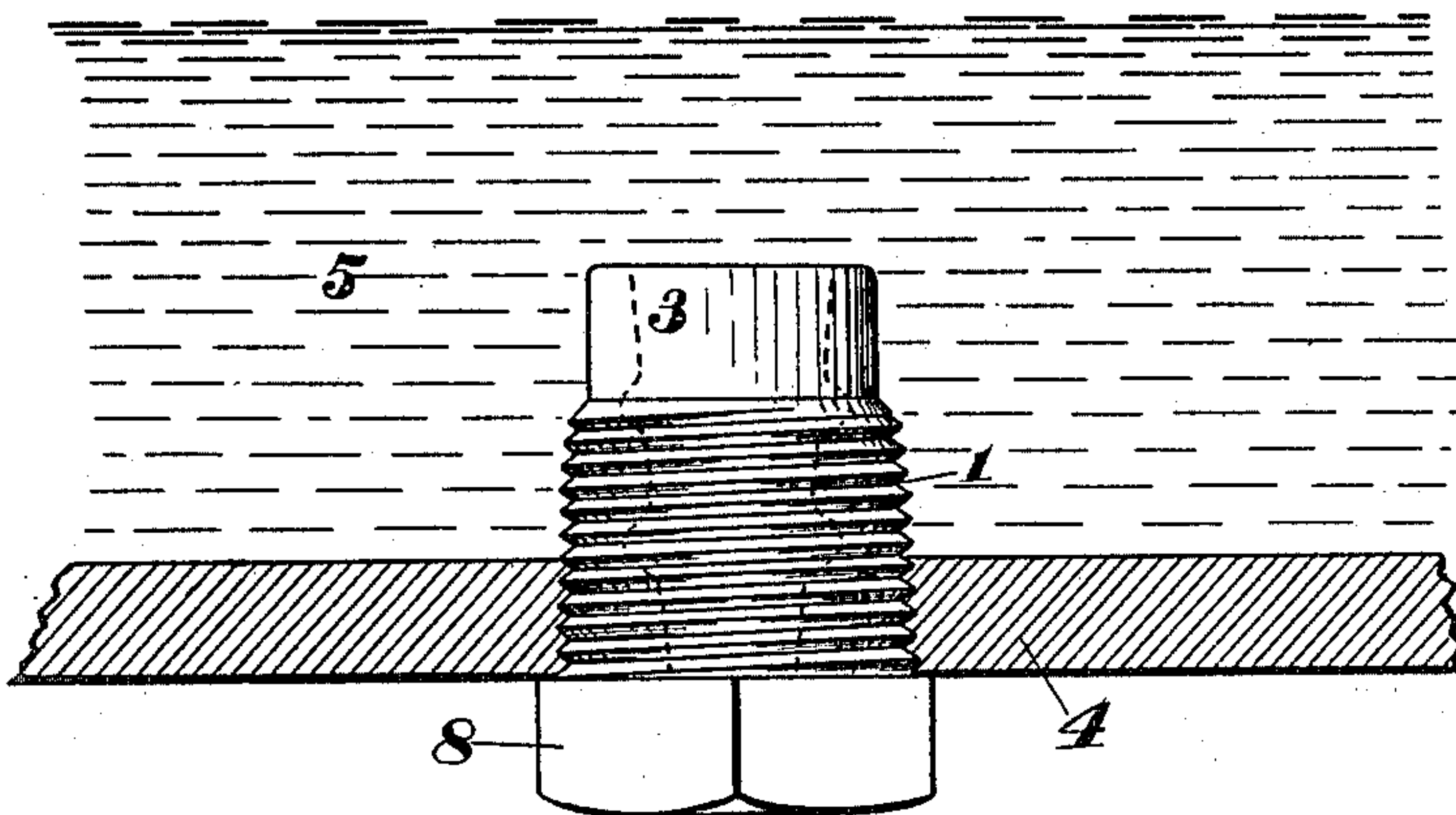


Fig. II.

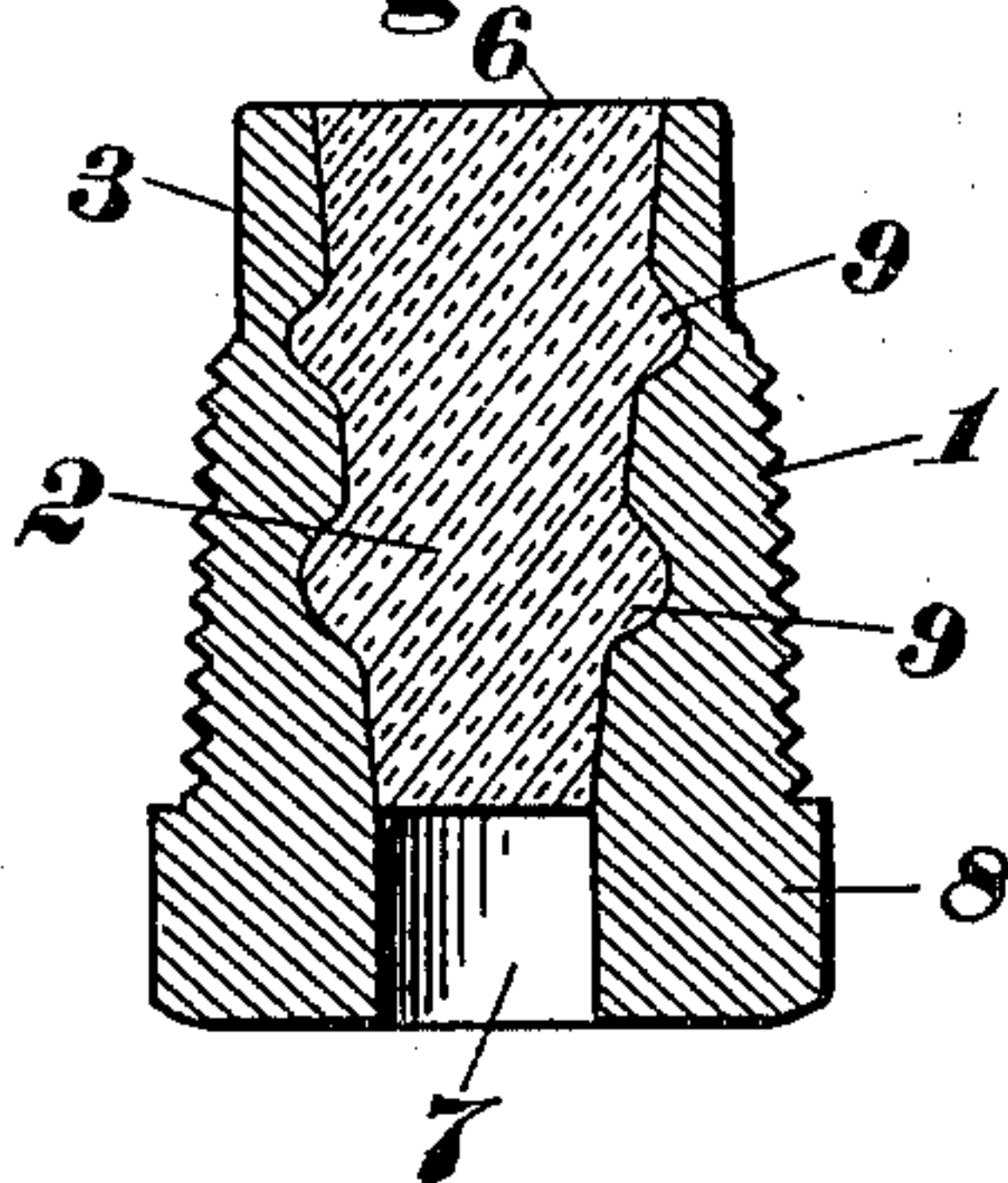
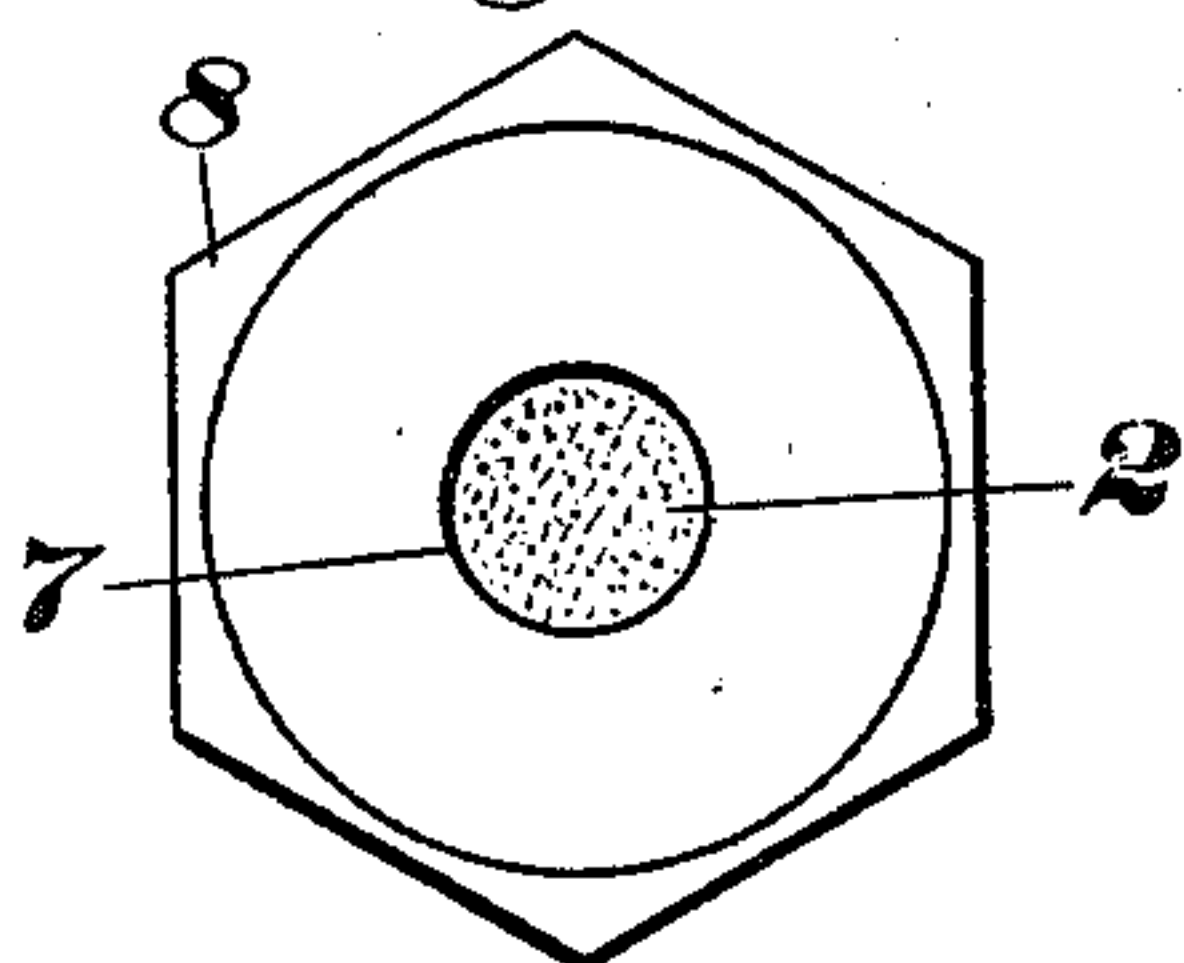


Fig. III.



WITNESSES:
P. W. J. Lander,
George Mammel

INVENTOR.
Henry D. Morton
By J. Richards & Co.
J. Richards

UNITED STATES PATENT OFFICE.

HENRY D. MORTON, OF SAN FRANCISCO, CALIFORNIA.

FUSIBLE PLUG.

SPECIFICATION forming part of Letters Patent No. 719,245, dated January 27, 1903.

Application filed September 4, 1902. Serial No. 122,125. (No model.)

To all whom it may concern:

Be it known that I, HENRY D. MORTON, a citizen of the United States, residing at San Francisco, county of San Francisco, and State of California, have invented certain new and useful Improvements in Fusible Plugs; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to what are called "fusible plugs" to protect steam-boilers and like vessels from overheating and to certain improvements in these devices that render their action more uniform and reliable.

My improvement consists in constructing fusible plugs with an extension projecting some distance within the water-space, so the metal to be melted by the water will be removed from the greater heat of the boiler-shell and subject to uniform temperature.

It also consists in an open cavity in the outer end of the plug, so the melting metal will be removed from direct contact with the fire or flames, and in annular corrugations or recesses on the interior of the plug or shell, which fill with the melted metal, forming retaining-ledges that secure it from coming loose or being removed except by melting.

The object of my improvement is to provide a fusible plug that depends wholly on the temperature of the interior of the boiler for its melting-point and will otherwise act with precision at a predetermined temperature. To this end I construct fusible plugs, as illustrated in the drawings herewith forming a part of this specification, Figure I being a side view of one of my improved fusible plugs in place; Fig. II, a central section through the same, and Fig. III an end view thereof.

The main body of the plug 1 is of brass or other non-corrosive metal that will resist the temperature of the boiler, and 2 the filling or case composed of an alloy that will fuse or melt at some predetermined temperature and

pressure in excess of what the boiler is intended to withstand.

The main shell 1 is made with an extension 3, that projects within the boiler-shell 4 and into the water or water-space 5, equal to a diameter or more of the plug, so that melting will begin at 6 and from the temperature at that zone within the boiler and without influence of the furnace temperature. At 7 I leave an open space equal to the depth of the projecting head 8 or to a point parallel to the outer circumference of the boiler-shell 4. This prevents direct contact of the fusible metal 2 with the flames or gases of combustion and prevents melting at this point and possibly the melting of the whole of the fusible metal by conduction of the furnace temperature.

The fusible metal 2 I secure in the shell 1 by means of ledges 9, of which there can be one or more formed by channels or corrugations on the interior of the shell 1, as seen in Fig. II. This secures the fusible metal 2 from being forced inward by a vacuum in the boiler or other cause; also prevents leaks between the shell 1 and fusible metal 2.

Having thus described the nature and objects of my improvements in fusible plugs, what I claim, and desire to secure by Letters Patent, is—

A fusible plug for steam-boilers, having a projection extending inwardly beyond the shell to a distance at least equal to the plug's diameter, said plug being bored with an aperture having channels 9, and filled with fusible metal leaving a cavity at the outer end of the plug beyond the boiler-shell when inserted, substantially as specified.

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

HENRY D. MORTON.

Witnesses:

HENRY C. DROGER,

P. W. J. LANDER.