No. 877,329. PATENTED JAN. 21, 1908.

L. P. HACKER.

FUSIBLE PLUG.

APPLICATION FILED OCT. 23, 1907.

Fig. 1.

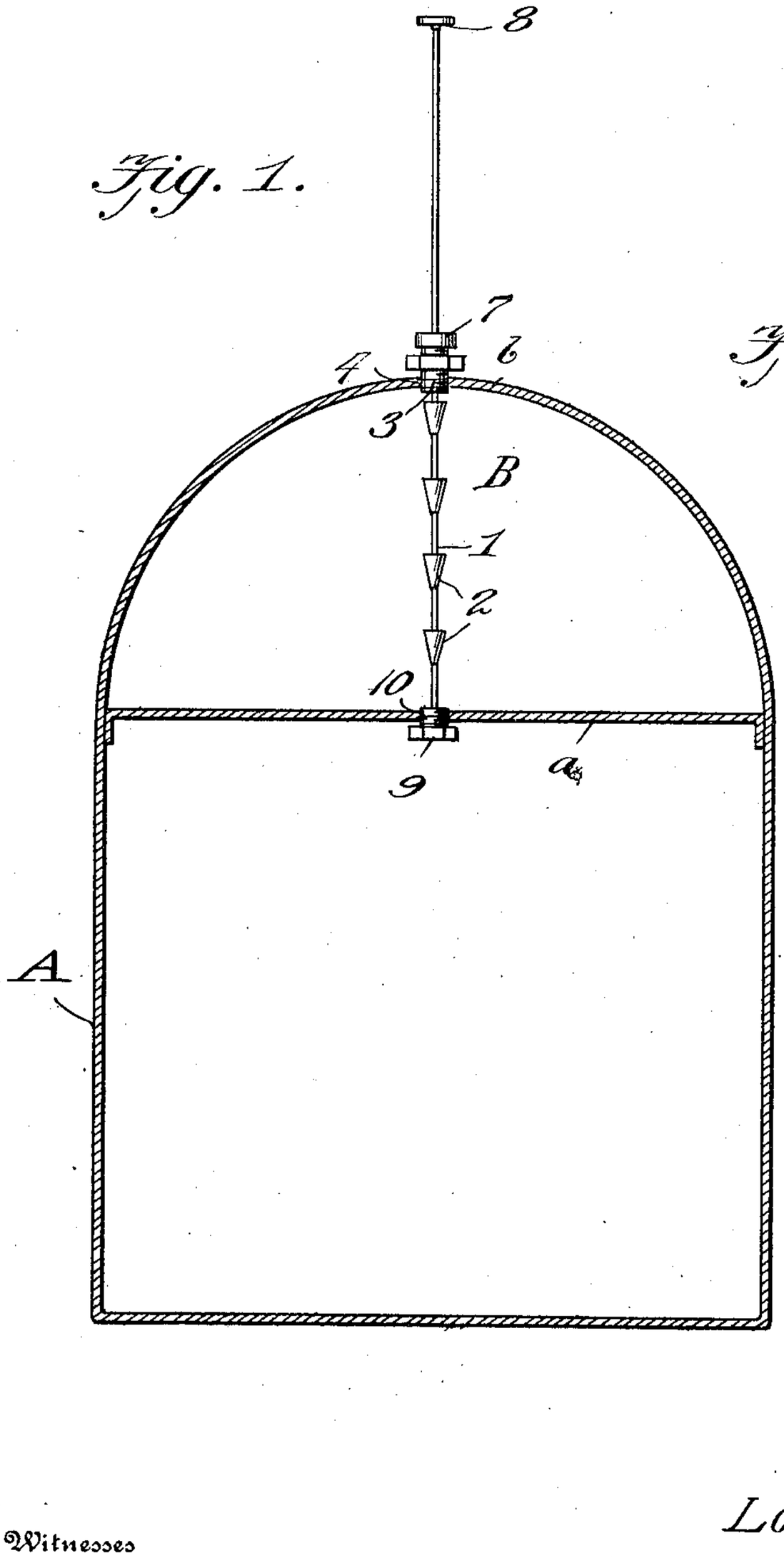
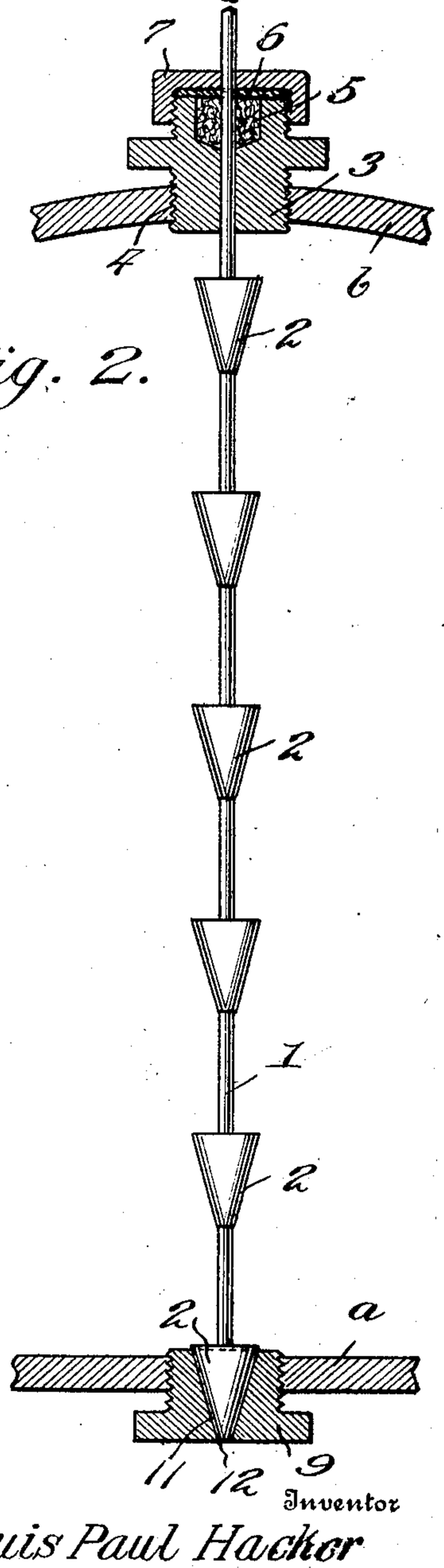


Fig. 2.



Witnesses

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LOUIS PAUL HACKER, OF BEAUMONT, TEXAS

FUSIBLE PLUG.

No. 877,329. Specification of Letters Patent. Patented Jan. 21, 1908.

Application filed October 23, 1907. Serial No. 398,836.

To all whom it may concern:

Be it known that I, LOUIS PAUL HACKER, a citizen of the United States, residing at Beaumont, in the county of Jefferson and State of Texas, have invented new and useful Improvements in Fusible Plugs, of which the following is a specification.

This invention relates to fusible plugs for steam generators, and it has for its principal object to provide a plug replacing device whereby the fireman can quickly and easily insert a new plug when the water becomes so low as to cause the initial plug to be fused, and this without danger of the fire becoming extinguished with the accompanying delay in bringing up the boiler to normal steaming condition.

A further object of the invention is the provision of a plug replacing device comprising a rod or holder permanently mounted in the boiler and accessible from outside and carrying a plurality of plugs which can be successively placed in the fuse holder in the crown sheet, as occasion requires.

With these objects in view and others, as will appear as the description proceeds, the invention comprises the various novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawing, which illustrates one of the embodiments of the invention, Figure 1 is a transverse section of a boiler showing the fusible plug replenishing device. Fig. 2 is an enlarged view of the device.

Referring to the drawing, A designates a shell boiler of any approved type to which is applied the device B for replenishing the fuse plugs as they are melted out when the water becomes low. The device B comprises a holder 1 preferably in the form of a rod of such length as to extend from the crown sheet A of the boiler to the top sheet or shell B and at least the same distance beyond the shell, and arranged on this holder are spaced fuse plugs 2 disposed about an inch apart. The rod passes through a bushing 3 threaded in an opening 4 in the shell of the boiler and is provided with a chamber 5 for receiving a packing 6, there being a gland 7 for compressing the packing tightly around the rod so that leakage of steam will be effectually prevented. In the upper extremity of the rod is an enlargement 8 forming a grip whereby the rod can be actuated. Directly under the bushing 3 is a fusible plug holder 9 that is secured into the opening 10 in the crown sheet A, and this holder has a conical seat 11 for receiving a plug 2, the latter being shaped to snugly fit the seat and form a steam-tight joint. The pressure of the steam within the boiler acting on the top side of the plug will force the plug downwardly tight against its seat and positively prevent leakage. The bottom side of the plug holder 9 has an opening 12 which is large enough to permit the rod 1 to be passed through the same so that a new plug can be inserted when one burns out. In practice, the parts are in the position shown, and when, for any reason, the water should become low enough, the bottom or seated fusible plug will melt and as soon as the fireman becomes aware of the fact, he merely pushes the rod 1 inwardly until the second fusible plug is firmly seated in the holder 9, thereby stopping the issuing of steam from entering the fire box. After thus restoring the boiler to normal condition, the pumps can be set into operation for bringing the water level back to normal. The portion of the rod between the first and second fuse plug will pass through the opening 12 and enter the firebox and will, by the intense heat, gradually burn away.

As the rod extends a considerable distance above the boiler, all of the plugs can be successively inserted, as occasion requires, thus rendering it unnecessary to open the boiler for replacing a fusible plug, the boiler being open when all of the plugs have been used and a new device is required. The device is comparatively simple in construction and easy to operate and is extremely inexpensive.

From the foregoing description, taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the apparatus which I now consider to be the best embodiment thereof, I desire to have it understood that

the apparatus shown is merely illustrative, and that such changes may be made when desired as are within the scope of the claims.

Having thus described the invention, what I claim is:—

1. The combination of a boiler including a shell and crown piece, with a fusible plug replenishing device consisting of a holder extending from the crown sheet to the shell and through the latter and mounted for longitudinal movement, and a plurality of fusible plugs rigidly secured thereto and arranged one above another.

2. The combination of a boiler with a fusible plug replenishing device comprising a holder mounted in the boiler and extending therefrom, and a plurality of plugs carried by the holder for use in successive order.

3. The combination of a boiler including a crown sheet and shell, a stuffing box on the shell, and a fusible plug replenishing device comprising a member extending through the stuffing box to the plug holder and movable longitudinally through the stuffing box, and a plurality of plugs arranged on the holder.

4. The combination of a boiler including two spaced walls inclosing a steam space, a fusible plug holder on one of the walls, and a sealing device in the other wall, in combination with a plug replenishing device comprising a longitudinally movable member of a length substantially equal to twice the distance between the walls and extending through the sealing device, and a plurality of fuse plugs fixed on a portion of the holder in the steam space of the boiler.

5. The combination of a fusible plug holder open from one side to the other, a plug-carrying member adapted to be moved through the opening of the holder, and a plurality of plugs permanently attached to the member in spaced relation.

6. As an article of manufacture, a fusible plug replenishing device comprising a member, and a plurality of tapering plugs permanently secured thereto in fixed relation.

7. As an article of manufacture, a rod, and a plurality of tapering plugs of fusible material permanently secured thereon in spaced relation, the plugs being tapered all in the same direction.

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

LOUIS PAUL HACKER.

Witnesses:
F. G. POPINEOU,
E. LARK.