

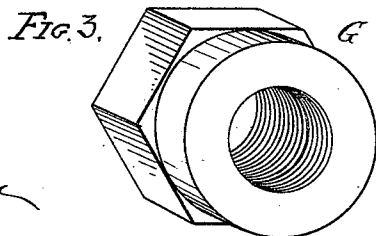
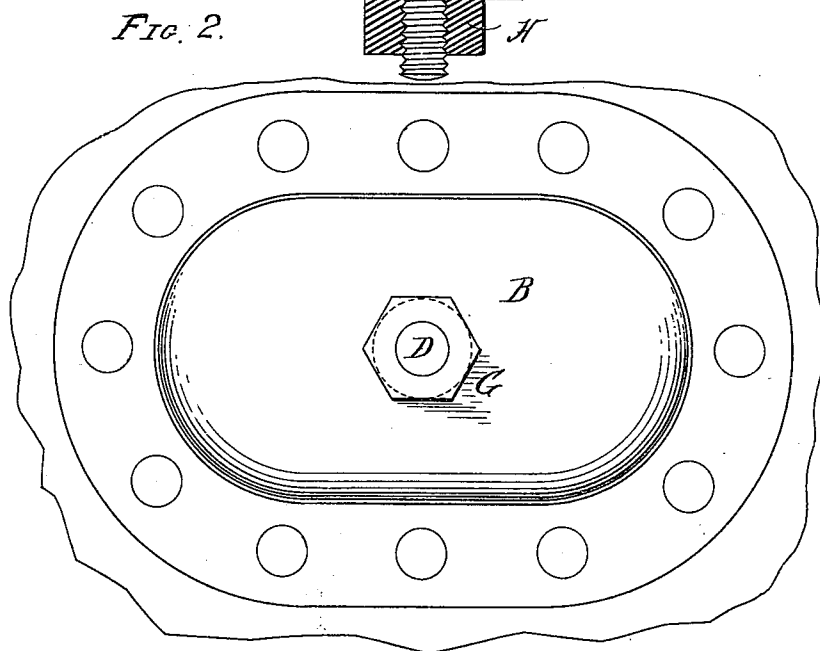
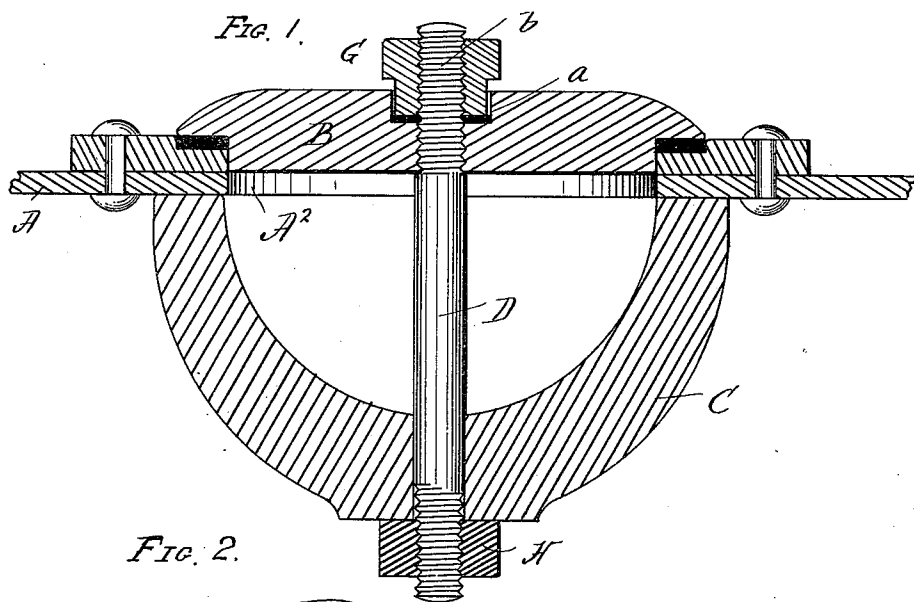
(No Model.)

J. D. SMITH.

CLOSURE FOR HAND HOLES OF BOILERS.

No. 546,789.

Patented Sept. 24, 1895.



WITNESSES.
Wm H. Chapin
H. J. Clemons

INVENTOR
John D. Smith
by Chapin & Co.
Attys.

UNITED STATES PATENT OFFICE.

JOHN D. SMITH, OF DALTON, ASSIGNOR OF TWO-THIRDS TO W. LIBBEY
EATON, OF HOLYOKE, MASSACHUSETTS.

CLOSURE FOR HAND-HOLES OF BOILERS.

SPECIFICATION forming part of Letters Patent No. 546,789, dated September 24, 1895.

Application filed March 20, 1895. Serial No. 542,496. (No model.)

To all whom it may concern:

Be it known that I, JOHN D. SMITH, a citizen of the United States of America, residing at Dalton, in the county Berkshire and State of Massachusetts, have invented new and useful Improvements in Closures for Hand-Holes of Boilers, of which the following is a specification.

This invention relates to improvements in hand-hole or manhole covers for boilers and the fastening means therefor, the principal object being to overcome the difficulty commonly experienced by reason of the nut which screws onto the retaining-bolt for the hand-hole cover being so burned onto the bolt as to render its detachment oftentimes impossible, or, at best, very inconvenient.

The object of this invention is attained by the means substantially as hereinafter described, and set forth in the claims, whereby the place of screw engagement of the nut with the bolt which holds the hand-hole cover is immersed in or protected by the water within the boiler against the burning action.

The invention is shown in the accompanying drawings, in which—

Figure 1 is a sectional view through the portion of the boiler comprising the hand-hole and the hand-hole cover and confining means therefor. Fig. 2 is an inner face view of Fig. 1. Fig. 3 is a perspective view of one of the nuts.

In the drawings, A represents a portion of the boiler, having, as usual, the hand-hole A².

B represents the hand-hole cover.

C is the yoke, and D is the retaining-bolt.

In this construction the cover B is centrally drilled and tapped and is countersunk or has the round socket *a* at and surrounding the inner orifice of the screw-tapped hole. The bolt D is, before the cover is placed in the boiler, screwed through and beyond the cover, its screw-threaded portion *b* receiving at the inner extremity the nut G, which is shown as of the form externally seen in Figs. 1 and 3—that is, its inner half or portion is turned round and of smaller diameter than the aforesaid socket *a*, while the outer portion thereof is hexagonal or of equivalent form to be engaged by a wrench. The depth of the round part of the nut is slightly greater than the

depth of the socket, so that the shoulder would never bottom against the rear side of the hand-hole cover. The outer end of the bolt is also screw-threaded and receives the external nut H, which is turned up against the yoke. The inner end of the rounded part of the nut G is embedded in a packing of lead or paint and is, with a powerful wrench, very tightly turned against the base of the socket, and as the bolt has usually been riveted permanently at its inner end to the cover, both bolt and cover had to be thrown away.

In many boiler-furnaces the bolt D and nut H are subjected to such intense heat that upon desiring to remove the hand-hole cover the said nut is found to be burned onto the outer end of the bolt, so that it cannot be turned off, and it has been necessary to either twist off the end of the bolt or split the nut with a cold-chisel, leaving the bolt ruined. Now, under the present invention, where the nut H is burned onto the bolt by the application of a wrench, the bolt may be turned out from the cover and nut at the inner side thereof, which latter is found to be in a good state of preservation by reason of its immersion within the water in the boiler. The bolt is then thrown away and a new bolt and nut H are supplied at a very small cost, and yet assuring much economy over the methods heretofore pursued, where the bolt D was a permanent part of the cover, which necessitated supplying a new cover as well as bolt.

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

1. The combination with the boiler having the hand or man hole, of the hand-hole cover having the screw-threaded hole through it with the enlarged orifice at the inner side, the bolt screw-threading through the cover and protruding inwardly beyond it, and a nut adapted to seat itself and be packed in the base of the said orifice as it is screwed upon the inner extremity of the bolt, and the yoke, C, and nut, H, externally applied, substantially as described.

2. The combination with the boiler having the hand-hole, of the hand-hole cover internally applied and closing said hole and having the screw-threaded hole through it with

the circular orifice or socket at the inner side, the bolt screw-threading through the cover and protruding inwardly beyond it, the nut having the hexagonal or equivalent formation and also having its forward portion round and adapted to enter within said socket as the nut is screwed upon the inner extremity of the bolt, and the yoke C, and nut, II, externally applied about and upon the bolt, substantially as described.

JOHN D. SMITH.

Witnesses:

WM. S. BELLOWS,

W. L. EATON.