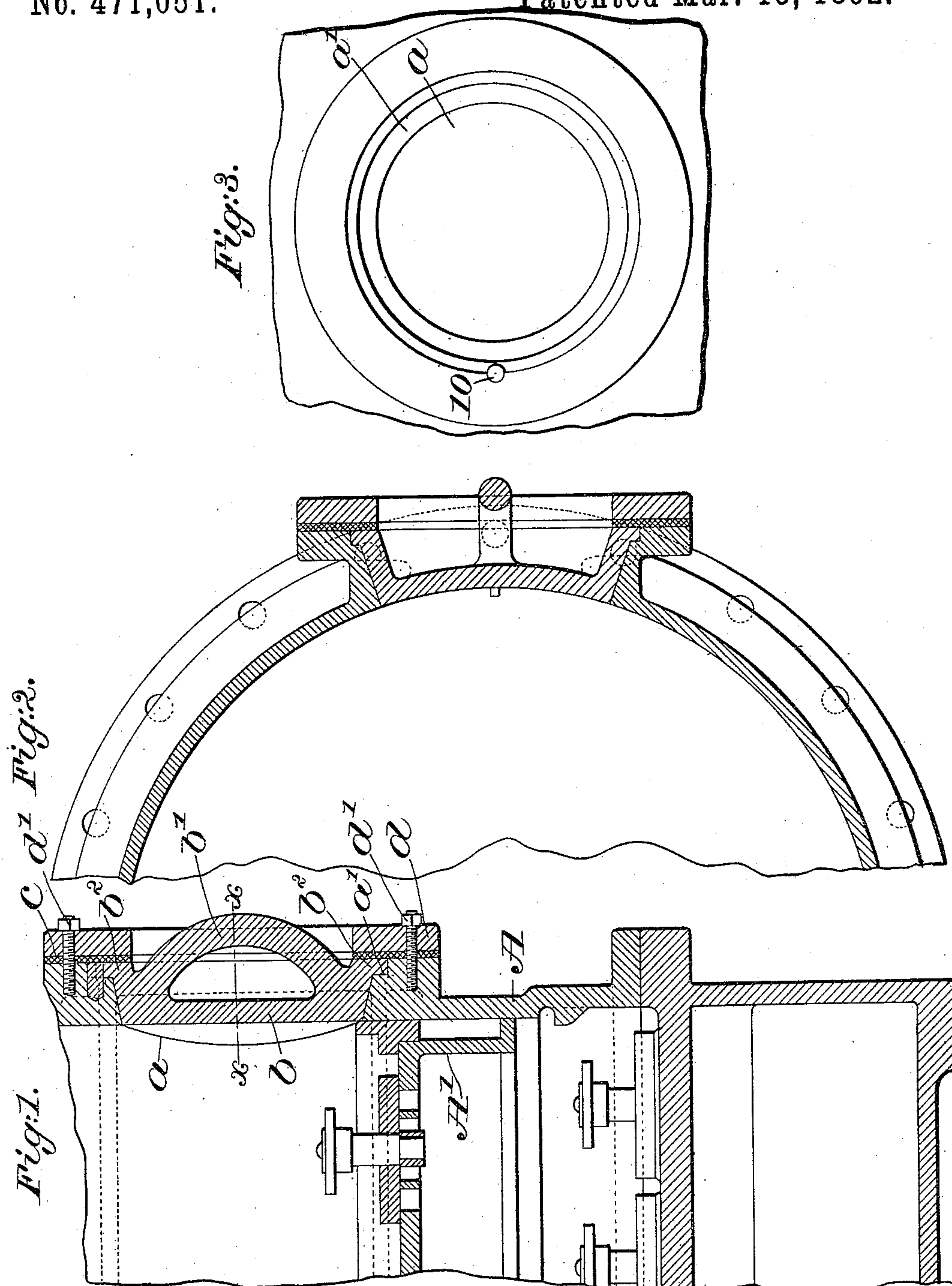


(No Model.)

A. F. HALL.
HAND HOLE COVER.

No. 471,051.

Patented Mar. 15, 1892.



Witnesses.
Edward F. Allen.
Fred M. Ashworth.

Inventor.
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UNITED STATES PATENT OFFICE.

ALBERT F. HALL, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE GEO. F. BLAKE MANUFACTURING COMPANY, OF NEW JERSEY.

HAND-HOLE COVER.

SPECIFICATION forming part of Letters Patent No. 471,051, dated March 15, 1892.

Application filed December 30, 1891. Serial No. 416,515. (No model.)

To all whom it may concern:

Be it known that I, ALBERT F. HALL, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Hand-Hole Covers, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

10 This invention relates to hand-hole covers and the like, and has for its object to improve the construction of the same, particularly with reference to their application to cylinders and other bearing-surfaces wherein
15 a smooth and unbroken inner surface is required.

In accordance with this invention the cover is seated directly upon the wall of the cylinder of the bearing-surface metal to metal, so
20 that when once in position and the bearing-surface made true there is no opportunity for the cover to be thereafter thrown out of position to break the bearing-surface by the yielding of the packing, as when the latter is
25 interposed between the cover and its seat, for in my improved construction the packing is placed upon the exterior of the cover and is held in place by a ring or plate, as will be fully hereinafter set forth.

30 In the drawings, Figure 1 represents in partial longitudinal section a cylinder provided with a hand-hole fitted with a cover in accordance with this invention; Fig. 2, a partial section of the same on the dotted line $x x$; and Fig. 3, a partial face view showing the
35 cover, packing-ring, &c.

Referring to the drawings, a cylinder A, fitted with a piston A', is provided with a hand-hole a , formed to present upon the exterior of
40 the wall of the cylinder an annular seat a' . (See Fig. 1.) The hand-hole cover b , fitted with a suitable handle b' , is provided with an annular flange b^2 , adapted to rest directly upon the seat a' referred to, metal to metal,
45 a packing-ring c being applied to the exterior of the cover and the surrounding face of the cylinder-wall, said packing being clamped firmly against the cover to hold the same in position and prevent leakage by a
50 clamping-ring d , secured by bolts d' .

In practice the cover will be first secured in place, and the bearing-surface—in this instance the interior of the cylinder—will be then bored or made true, and as the metal or material composing the cover rests in its seat
55 directly upon the metal or material of which the seat is composed, it matters not how yielding the packing upon the outside of the cover may be or how tightly the clamping-ring d may be screwed down upon the pack-
60 ing, it will be impossible to displace the cover or move the same out of its proper plane to thus interrupt the continuity of the bearing-surface. In practice, especially when the bearing-surface is curved, as shown, a dowel-
65 pin 10 will be placed in the seat, it co-operating with a suitable recess in the flange b' of the cover b to guide the cover always into the same position. In the present instance the periphery of the cover is made tapering, as
70 shown, to fit the tapering sides of the hand-hole, this construction enabling the cover to be more easily withdrawn; but while such construction is desirable, it is not essential.

While I have herein shown and described
75 my invention as embodied in the form of a hand-hole cover applied to a cylinder, I do not desire to limit my invention in this particular, as a similar construction may be embodied in man-hole or other covers of this class,
80 and may be applied to any boiler, tank, or other article wherein it is necessary to maintain a tight joint and where it is desirable that the inner face of the cover should lie in the same plane with the inner surface of the
85 article.

The shape and construction of the parts may be varied without departing from the scope of this invention.

I claim—

1. The combination, with a hand-hole cover,
90 of a metallic seat therefor, a packing, and a clamping-plate to clamp the same against the exterior of the cover, substantially as described.

2. The combination, with a hand-hole cover provided with an annular flange, of a metallic seat for said flange, a packing, and a plate to clamp the same upon the outside of said
100 cover, substantially as described.

3. A wall having upon one of its faces a bearing-surface and a hole therein having an annular seat, combined with a cover adapted to fit said hole, with its inner face lying in the
5 same plane with the bearing-surface of the wall and provided with a flange to rest upon said seat metal to metal, a packing, and a plate to clamp the same against the outside of said cover to hold the latter in place, sub-
10 stantially as described.

4. The combination, with a wall having a hand-hole and an annular seat about the same, of a cover for the said hole adapted to rest upon said seat, a packing applied to said
15 cover and wall outside said seat, and a plate

to clamp the same in place, substantially as described.

5. A wall and a hand - hole therein fitted with an annular seat, combined with a cover for the said hand-hole adapted to rest against
20 said seat, a packing, and a plate to clamp the same against said cover, and the wall surrounding said seat, substantially as described.

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

ALBERT F. HALL.

Witnesses:

FREDERICK L. EMERY,
FRANCES M. NOBLE.