No. 724,939. PATENTED APR. 7, 1903.

J. L. M. A. REIS.

MANHOLE OR OTHER COVER.

APPLICATION FILED JULY 23, 1901.

NO MODEL.

Fig. 3.

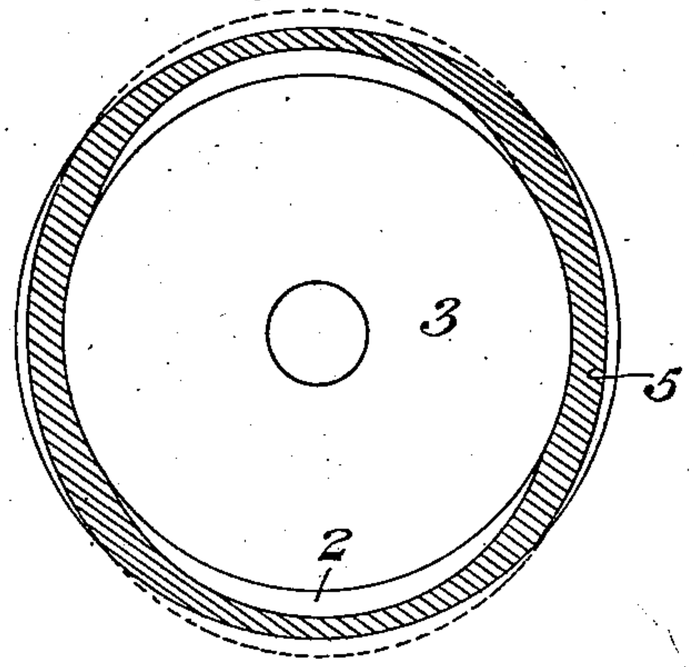


Fig. 2.

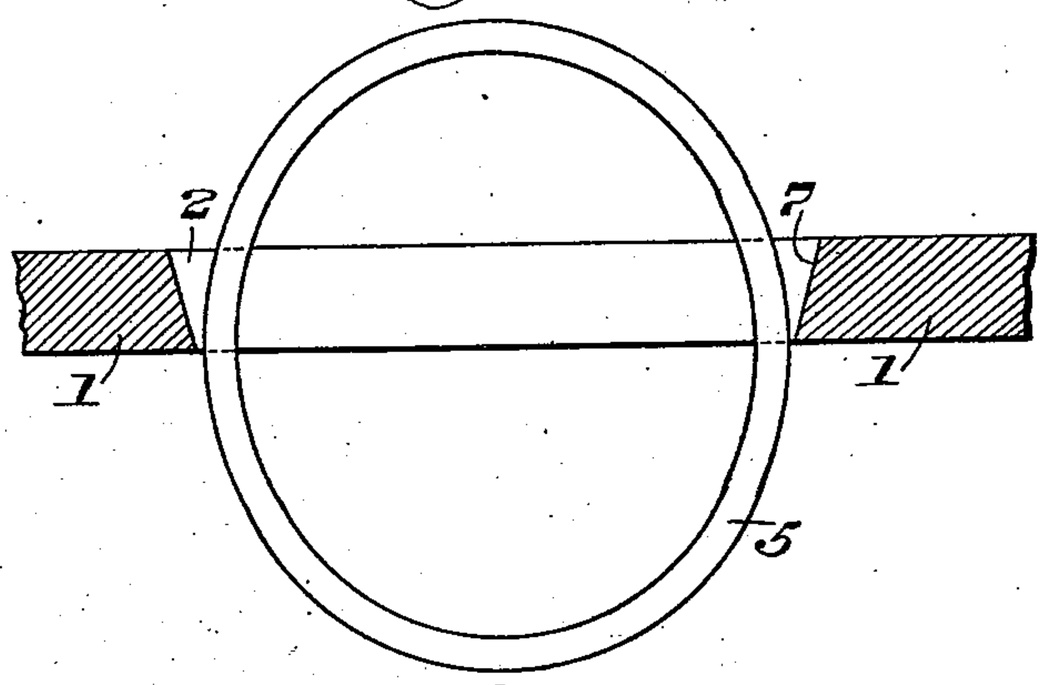
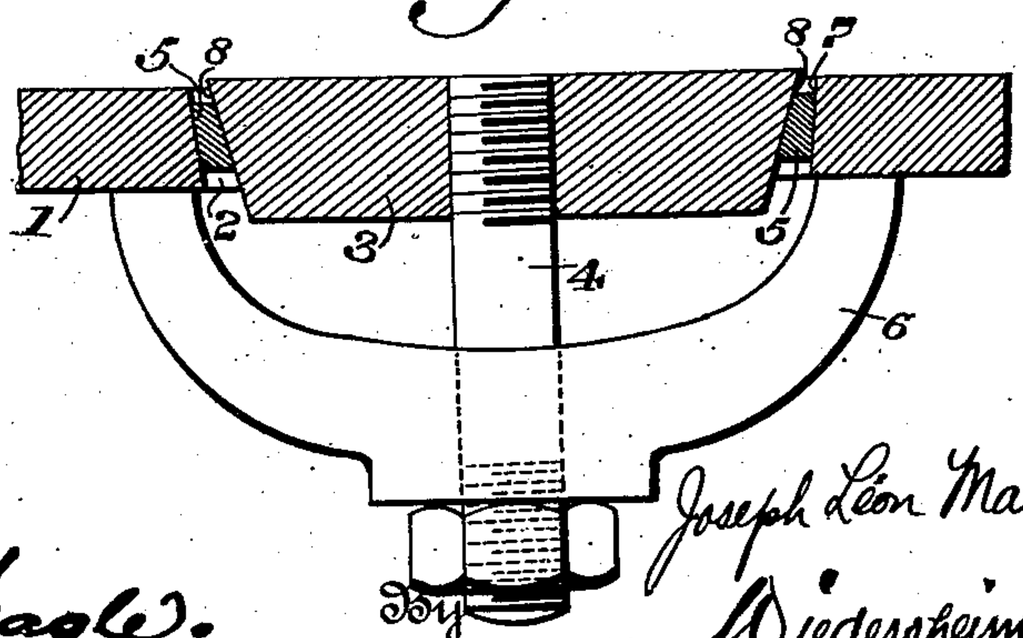


Fig. 1.



Witnesses

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UNITED STATES PATENT OFFICE.

JOSEPH LÉON MARIE ALPHONSE REIS, OF ANTWERP, BELGIUM.

MANHOLE OR OTHER COVER.

SPECIFICATION forming part of Letters Patent No. 724,939, dated April 7, 1903.

Application filed July 23, 1901. Serial No. 69,409. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH LÉON MARIE ALPHONSE REIS, a subject of the King of Belgium, residing at 30 Boulevard Leopold, Antwerp, in the Kingdom of Belgium, have invented a certain new and useful Manhole or other Cover, of which the following is a specification.

This invention relates to manhole or other covers for steam-generators and the like, and has for its object to provide an improved device whereby a perfectly tight joint between the metal cover and the metal of the boiler may be obtained without the aid of any ordinary packing or lute, while at the same time such covers may be readily introduced into position from the exterior.

The invention consists, essentially, in the use of a circular tapering cover of smaller diameter than the aperture to which it is applied, so as to enable it to be introduced from the exterior, in combination with a metallic conical and flexible ring which serves to fill the space between the edge of the cover and the edge of the aperture, the said ring being pressed into position in the aperture by the cover.

In order that my invention may be fully understood, I will proceed to describe the same with reference to the accompanying drawings, in which—

Figure 1 is a sectional view showing the cover in position. Fig. 2 is a sectional view showing the aperture which is to be covered and the manner of introducing the flexible ring. Fig. 3 is a front view showing the manner in which the cover automatically presses the ring into position.

According to my invention the aperture 2 to be closed in a boiler-wall 1 is formed with an edge 7, slightly tapering inward. The cover 3 is also formed with tapering edge 8, but in a more accentuated form than the aperture, and said cover 3 is provided with a bolt 4 for tightening it, and its diameter is of such a size as to enable it to be readily introduced in the aperture 2. A flexible metal ring 5 is provided, which serves to fill the annular space resulting from the difference in the diameters of the aperture 2 and its cover 3 and to form a perfectly tight joint without having to grind the parts together.

For applying the cover the operation is as follows: The cover 3 is introduced first into the aperture 2, and then the metal packing-ring 5 is inserted by slightly compressing it into an oval shape, as shown, Fig. 2, and is then erected and placed in position. The cover 3 is then pulled forward, and owing to its tapered shape it is enabled to enter the packing-ring 5, although oval, and gradually reshapes the latter to its circular form, as shown in Fig. 3, while at the same time advancing it into its proper forward position. The final tightening with increased force is effected by tightening the nut 9 of the screw-bolt 4 against a bow piece or strap 6, for example, so as to compress the packing-ring more and more between the tapering surfaces 7 8. The internal pressure also aids, after the joint is made, in keeping the joint tight.

The ring 5 is made of relatively soft and inoxidizable metal and forms a perfectly tight joint without fear of the parts becoming oxidized by long contact with water or becoming firmly fixed together, as is generally the case where iron is in contact with iron.

The improved arrangement has the advantage that the parts do not require to be ground together and do not require to be fitted with precision even, while, moreover, the tapering surfaces of the aperture in the plate and of the cover are not subject to wear, so that only the packing-ring, which is of small value, requires renewing when necessary.

Having thus described my invention, what I claim is—

In a manhole or other cover, the combination with a wall formed with a circular tapering aperture, the smaller diameter of which is situated at the outside of the wall, of a circular cover tapered in the same direction, the taper of the aperture and cover being at different angles and converging toward the inside of the wall, the larger diameter of the periphery of said cover being less than the smaller diameter of the aperture, a flexible metallic ring situated between the edges of the cover and the aperture, and means for exerting an outward pressure upon said cover to compress said ring.

In witness whereof I have hereunto set my hand in presence of two witnesses.

JOSEPH LÉON MARIE ALPHONSE REIS.

Witnesses:

FRANCIS WANILLO,

H. CHRISTIANSEN.