T. D. HODGE.

SOAKING PIT.

APPLICATION FILED SEPT. 6, 1918.

1,286,632. Patented Dec. 3, 1918.

Fig. 1.

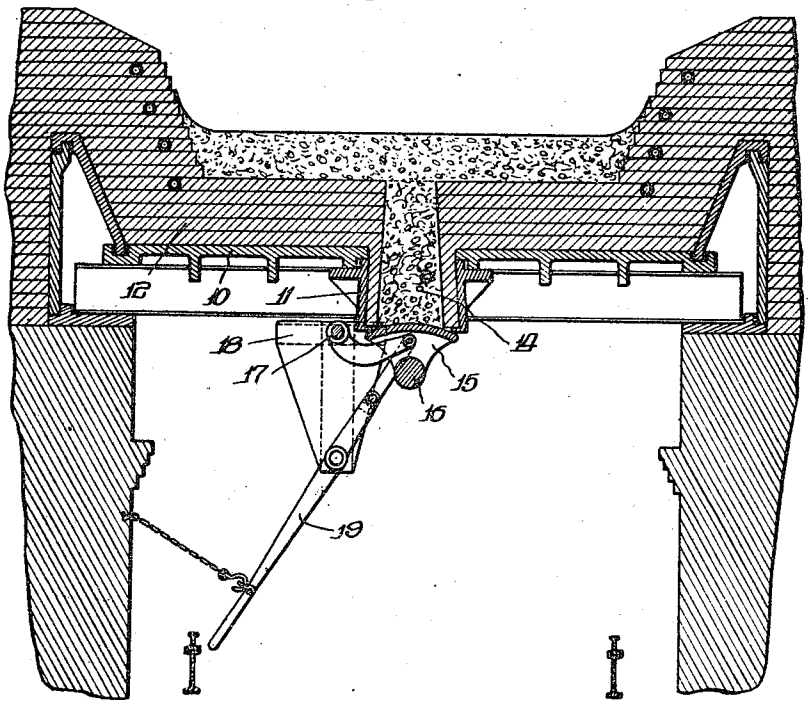
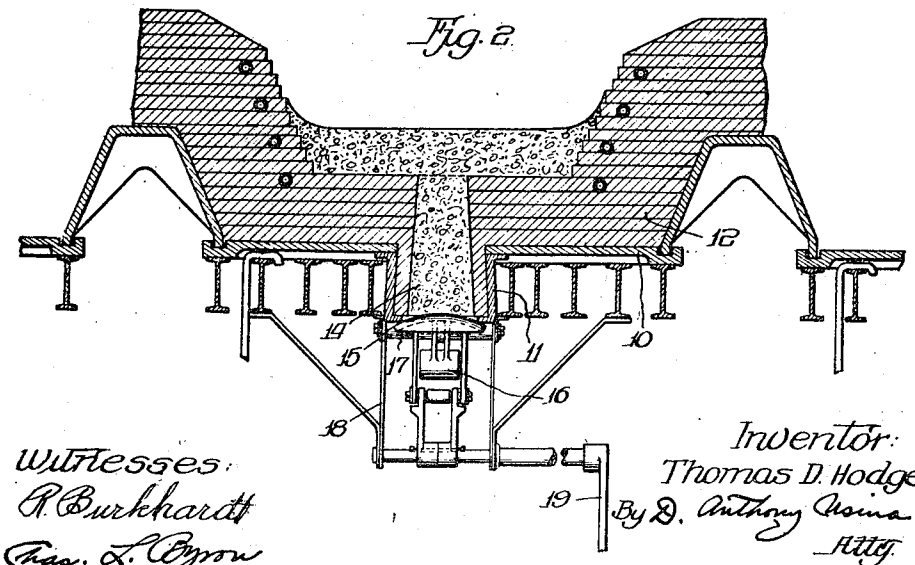


Fig. 2.



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UNITED STATES PATENT OFFICE.

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SOAKING-PIT.

1,286,632. Specification of Letters Patent. Patented Dec. 3, 1918.

Application filed September 6, 1918. Serial No. 252,858.

To all whom it may concern:

Be it known that I, THOMAS D. HODGE, a citizen of the United States, residing at Duluth, in the county of St. Louis and State of Minnesota, have invented certain new and useful Improvements in Soaking-Pits, of which the following is a specification.

This invention relates to soaking pits as used in steel works, and more particularly to tapping holes at the bottom of such pits through which slag is passed.

One of the objects of my invention is to improve means for drawing slag from soaking pits.

Another object is to provide a simple and efficient soaking pit tap hole arrangement and an improved closure therefor.

These and other objects are accomplished by means of the arrangement disclosed on the accompanying sheet of drawings, in which—

Figure 1 is a fragmentary cross sectional view of a soaking pit embodying my invention, and

Fig. 2 is a fragmentary cross sectional view of the same soaking pit taken at right angles to the section shown in Fig. 1.

The various novel features of my invention will be apparent from the following description and drawings, and will be particularly pointed out in the appended claims.

Heretofore it has been customary to close the tapping hole of a soaking pit with a tile or slab of refractory material. In some instances a metallic plate has been used to cover the hole. Coke breeze used in the bottom of the pit serves to protect the tile or plate, but when it is necessary to open the tap hole for drawing off the slag, it becomes necessary to forcefully break through the tile or plate. As a result of this procedure, it not infrequently happens that the slag plugs the hole. I have found in practice that a tile or plate is wholly unnecessary, and that the tap hole can be successfully closed by the use of coke breeze alone, provided that some satisfactory means is used to support the coke breeze in the hole for preventing the escape of the same.

By referring to the figures of the drawings, it will be noted that the soaking pit includes a bottom casting 10, associated with which is a circular casting 11 centrally located with respect to the bottom and extending considerably below the same, the bottom casting 10 being provided with built-up refractory material 12, which has an integrally formed portion extending downwardly through the conical casting 11, the sides of which flare outwardly and downwardly. It will be noted that the refractory material as built in the soaking pit provides a passageway 14, which tapers in a manner such that its outlet at the bottom is larger than its upper portion. This passageway 14 normally is filled with coke breeze, the coke breeze also being distributed over the surface of the refractory material 12. The coke breeze in the passageway 14 normally is prevented from escaping through the tap hole by a cover 15 having a weighted portion 16 for maintaining the cover in an upright position. This cover is pivotally supported at 17 to a suitable supporting member 18, there being a toggle connection, including an operating handle 19, whereby the cover 15 may be removed from its normal supporting position in which it closes the tap hole, and returned thereto after having been removed therefrom.

When it is desired to draw slag from the soaking pit it is merely necessary to operate the handle 19, whereupon the cover 15 will be removed from the tap hole. As a result thereof, the coke breeze will pass down through the passageway 14, and the slag will follow the same, the slag being prevented from clogging the tap hole because of the tapered shape given to such tape hole. This column of coke breeze, which is tapered as shown, extends below the casting which forms the bottom of the pit, so that provision is made for natural wear and tear in the bottom of the pit and still enough height of column remains to provide proper closure of the tap hole.

By means of this arrangement, it will be noted that I dispense with the use of any tile, or plate, or refractory clay for sealing the tap hole, thereby overcoming the undesirable features incident to their use.

By means of my present arrangement, slag is drawn from the soaking pits in an efficient manner with a minimum amount of trouble.

It is my intention to cover all modifications of my invention falling within the spirit and scope of the following claims.

What I claim is:

1. In a soaking pit, a tapered tap hole having its smaller end toward the inside of the pit, its outer end being at a point below

the bottom of the pit, a refractory lining for the pit extending down into the tap hole, and removable means for supporting within the tap hole a column of coke breeze.

2. In a soaking pit, a tapered tap hole having its smaller end toward the inside of the pit, its outer end being at a point below the bottom of the pit, and a lining of refractory material for the bottom of the pit extending into the tap hole.

3. In a soaking pit, a tapered tap hole having its smaller end toward the inside of the pit, a refractory lining for said tap hole, and a removable metal closure normally for supporting a column of coke breeze in said tap hole.

4. In a soaking pit, a tapered tap hole having its larger end at the bottom, a refractory lining for said tap hole, a pivotally mounted closure member for said tap hole, and a control member for controlling the operation of said closure member.

Signed at Duluth, Minnesota, this 31st day of August, 1918.

THOMAS D. HODGE.

Witnesses:
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."