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SEAL FOR SOAKING PIT COVERS

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Fig. 1.

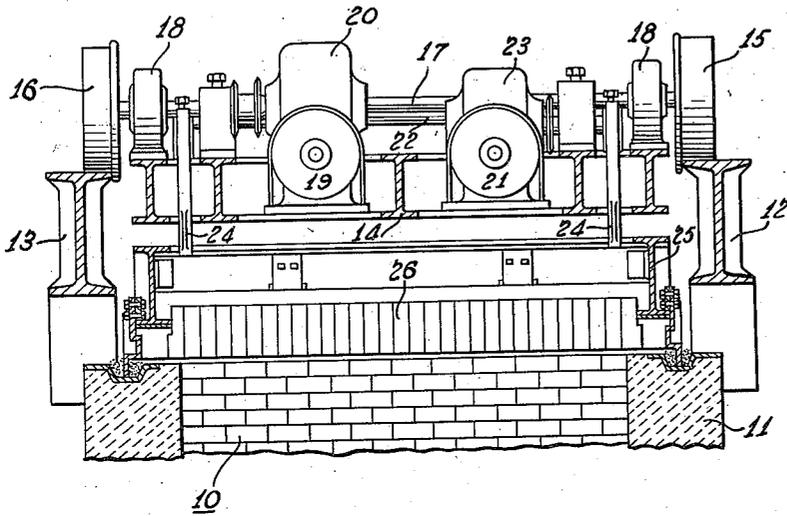


Fig. 2.

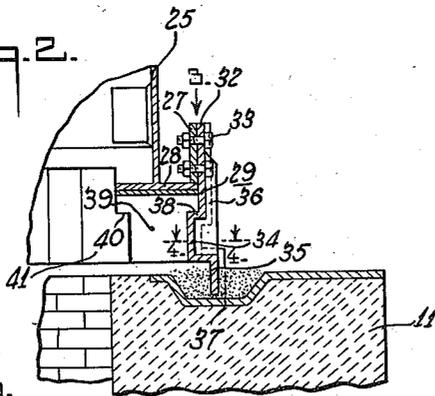


Fig. 3.

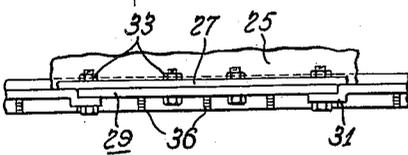
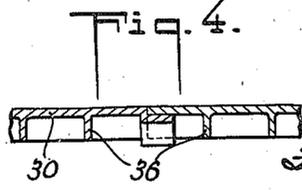


Fig. 4.



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SEAL FOR SOAKING PIT COVERS

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5 Claims. (Cl. 110-173)

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My invention relates to soaking pit covers and more especially to an improved construction of a sand seal for such covers.

Further objects and advantages of my invention will be apparent from the following description considered in connection with the accompanying drawings which form a part of this specification and of which:

Fig. 1 is a cross-sectional view showing a soaking pit cover embodying my invention;

Fig. 2 is a cross-sectional view on an enlarged scale showing a portion of the device illustrated in Fig. 1;

Fig. 3 is a plan view looking in the direction of the arrow 3 in Fig. 2; and

Fig. 4 is a cross-sectional view taken on the line 4-4 of Fig. 2.

Referring to the drawings, reference character 10 designates generally a soaking pit having brick walls 11. Extending along either side of the pit are rails 12 and 13 upon which is supported a travelling carriage 14. The carriage is provided with flanged wheels 15 and 16 which run on the rails 12 and 13 and which are mounted on shafts 17 supported in bearings 18 which are attached to the frame of the carriage. An electric motor 19 is mounted on the frame and operatively connected to the shafts 17 through a gear reduction 20.

Also mounted on the frame is an electric motor 21 which drives shafts 22 through a gear reduction 23. Shafts 22 drive suitable hoisting mechanism arranged to raise and lower members 24, which extend beneath the frame of the carriage. The lower ends of the members 24 are secured to I-beams 25 which constitute the steel framework of a suspended arch 26. The construction of the carriage 14, together with the driving and hoisting mechanism as well as the construction of the suspended arch are all old and well known and consequently have not been described in detail. It is sufficient for an understanding of the present invention to state that the hoist mechanism operated by the motor 21 may raise and lower the suspended arch, while the driving motor causes the carriage together with the suspended arch to travel on the rails 12 and 13 so as to remove the soaking pit cover from the soaking pit.

A metal strip 27 is welded to the outer edge of the lower flange 28 of each of the I-beams 25, as is more clearly shown in Fig. 2. Bolted to the outer faces of the strips 27 is a plurality of metal members 29 and 30. The members 29 and 30 are of similar construction, except that the mem-

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bers 30 are formed with offset ends 31 which lap over the straight ends of members 29 in order to form a ship-lap joint between the two. When assembled, members 30 alternate members 29.

Both members 29 and 30 are formed with an upper plane portion 32 which is bolted to the strip 27 by means of the bolts 33. Below the portion 32 there is an offset portion 34, which extends inwardly beneath the flange 28 of the I-beam, but is spaced downwardly therefrom. Below the offset portion 34 is another offset portion which provides a downwardly extending flange 35. At spaced points along the length of the members 29 and 30 there are provided ribs 36 which extend at right angles to the other portions of the members.

The upper surface of each of the walls 11 of the soaking pit is formed with a trough preferably provided with a metal lining 37. The flange 35 is adapted to extend into this trough when the soaking pit cover is in its lowermost position. The trough is filled with sand or other suitable granular heat-resisting material so as to form, together with the members 29 and 30, a seal for preventing escape around the edges of the cover of hot gases from the soaking pit.

As will be seen from Fig. 2, the offset portion 34 of the members 29 and 30 provides a shoulder 38 for supporting a T-shaped tile 39 which fills the space immediately below the flange 28 of the I-beam 25. Tile 39 is also supported by a suitable shoulder 40 formed on the adjacent tile 41 which is part of the suspended arch.

When it is desired to open the soaking pit the soaking pit cover is raised by the hoisting mechanism sufficiently so that the flange 35 clears the upper edge of the wall 11. Thereafter, the soaking pit cover may be moved from above the pit by running the carriage along the rails 12 and 13. The pit may be closed by running the carriage along the rails until the cover is directly above the pit whereupon it may be lowered by the hoisting mechanism, the flanges 35 penetrating the sand in the trough.

The members 29 and 30 are maintained at a relatively low temperature by virtue of the large radiating surfaces presented to the atmosphere, due in part to the extension of the members above the lower flange of the I-beam. Such surface is also materially increased by the provision of the ribs 36 which ribs also serve to strengthen the members 29 and 30 and thus prevent warping thereof. Heat is also carried away from the members 29 and 30 by conduction through the

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strips 27 and I-beam 25 to which these strips are welded. The provision of tile 39 immediately below the I-beam and inside the members 29 and 30 protects the I-beam and most of the surface of members 29 and 30 from direct contact with the hot gases.

Leakage of hot gases between the members 29 and 30 is prevented by the ship-lap construction. If it is desired to remove one of the members 29 this may be done by taking out the bolts 33 which hold this member to the strip 27, whereupon the member may be moved downwardly until it has cleared the lower edge of the overlapping ends 31 of the members 30 on either side thereof. This operation may be performed when the soaking pit cover has been removed from directly above the pit, thus giving room for the member 29 to be dropped downwardly. A member 30 may be removed by simply removing the bolts which secure it to the strip 27 and then moving the member outwardly in a horizontal direction.

While I have shown one more or less specific embodiment of my invention, it is to be understood that this has been done for the purpose of illustration only and that the scope of my invention is not to be limited thereby but is to be determined by the appended claims.

What is claimed is:

1. In a soaking pit cover, a metal framework including an I-beam at the edge of said cover having a horizontal lower flange, a metal strip welded to the outer edge of said lower flange and extending upwardly therefrom, and a sealing member secured in heat transfer relation to said strip and extending downwardly below said lower flange, said member having an inwardly offset portion below said flange providing an internal shoulder.

2. In a soaking pit cover, a metal framework including an I-beam at the edge of said cover having a horizontal lower flange, a metal strip welded to the outer edge of said lower flange and extending upwardly therefrom, and a sealing member secured in heat transfer relation to said strip and extending downwardly below said lower flange, said member having an inwardly offset portion below said flange providing an internal shoulder and an outwardly offset downwardly extending sealing flange below said inwardly offset portion.

3. In a soaking pit cover, a metal framework including an I-beam at the edge of said cover having a horizontal lower flange, a metal strip welded to the outer edge of said lower flange and extending upwardly therefrom, and a plurality of

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sealing members removably secured in heat transfer relation to said strip and extending downwardly below said lower flange, alternate sealing members being formed with outwardly offset ends and intermediate sealing members having straight ends, said offset ends lapping over said straight ends.

4. A metal sealing member for a soaking pit cover comprising an elongated sealing member having a longitudinally-extending portion by means of which it is adapted to be supported from a soaking pit cover, an offset longitudinally extending shoulder facing upwardly toward said supporting portion for supporting a cover part, a second longitudinally extending portion offset on the opposite side of said supporting portion from said shoulder, said second offset portion having a longitudinally extending sealing edge extending downwardly from said supporting portion, and heat radiating and strengthening ribs on said member extending transversely of said member from said second offset portion to said supporting portion.

5. A metal sealing member for a soaking pit cover comprising an elongated sealing member having a longitudinally extending portion by means of which it is adapted to be supported from a soaking pit cover, an offset longitudinally extending shoulder facing upwardly toward said supporting portion for supporting a cover part, a second longitudinally extending portion offset on the opposite side of said supporting portion from said shoulder, said second offset portion having a longitudinally extending sealing edge extending downwardly from said supporting portion, one end of said sealing member being laterally offset to provide a ship lap joint, and heat radiating and strengthening ribs on said member extending transversely of said member from said second offset portion to said supporting portion.

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