Oct. 2, 1923. 1,469,323

J. LONGO

PLATE HOLDING FRAME FOR BOSH

Filed May 24, 1921 2 Sheets-Sheet 1

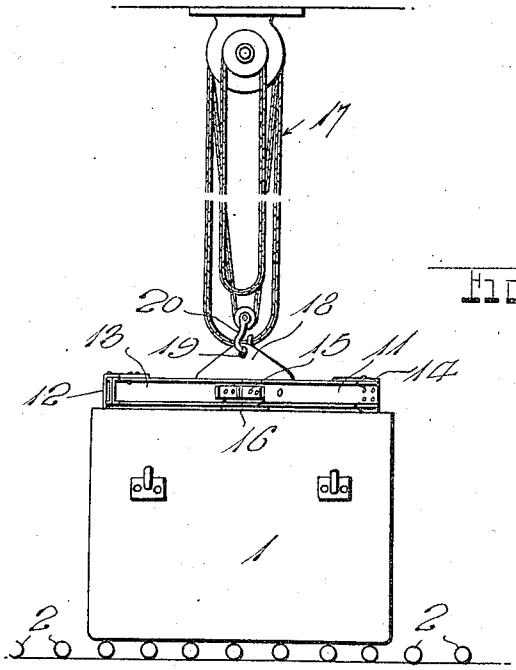


FIG. 4.

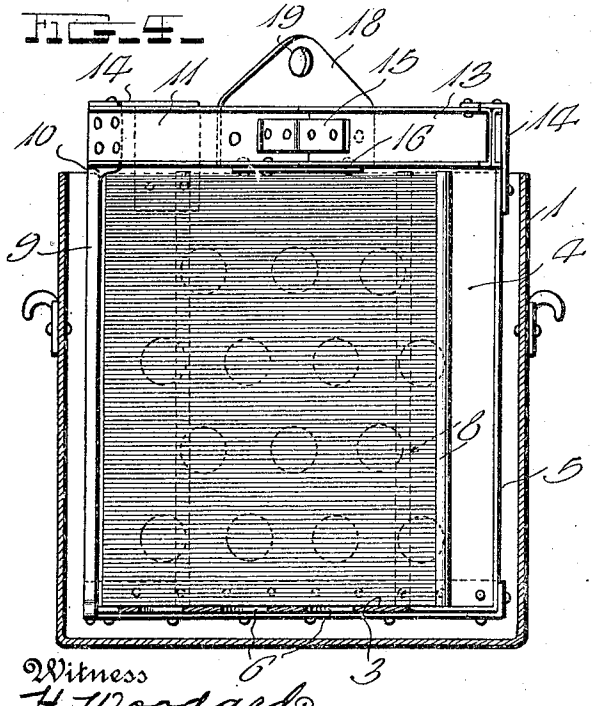
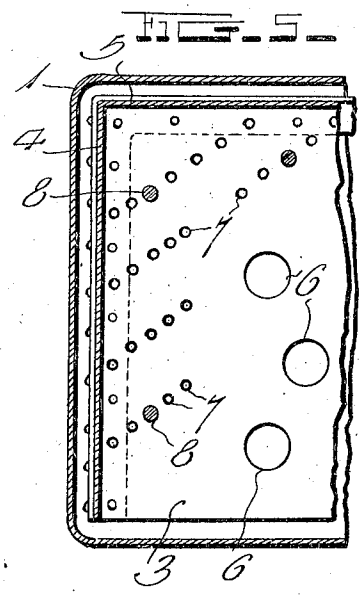


FIG. 5.



Witness
H. Woodard

Inventor
J. Longo

By H. B. Williamson & Co
Attorneys

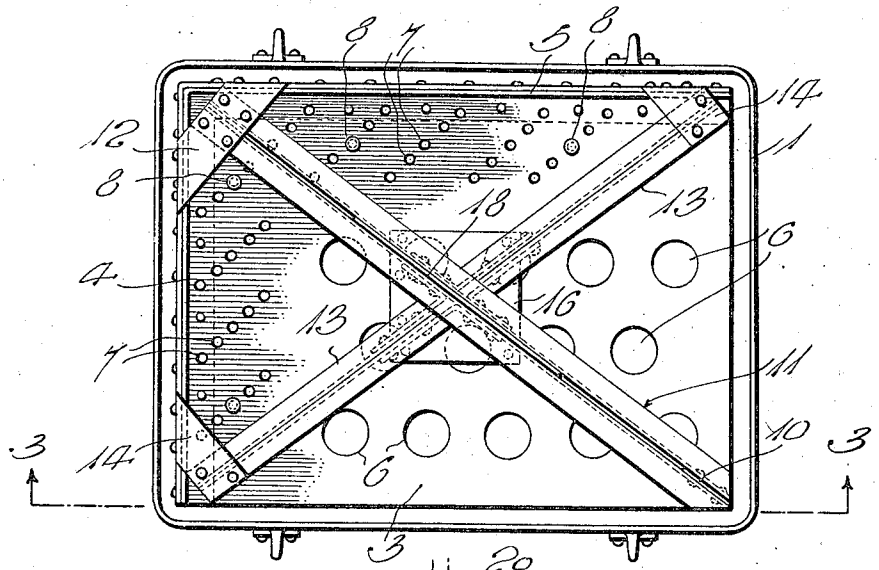
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Fig. 2.



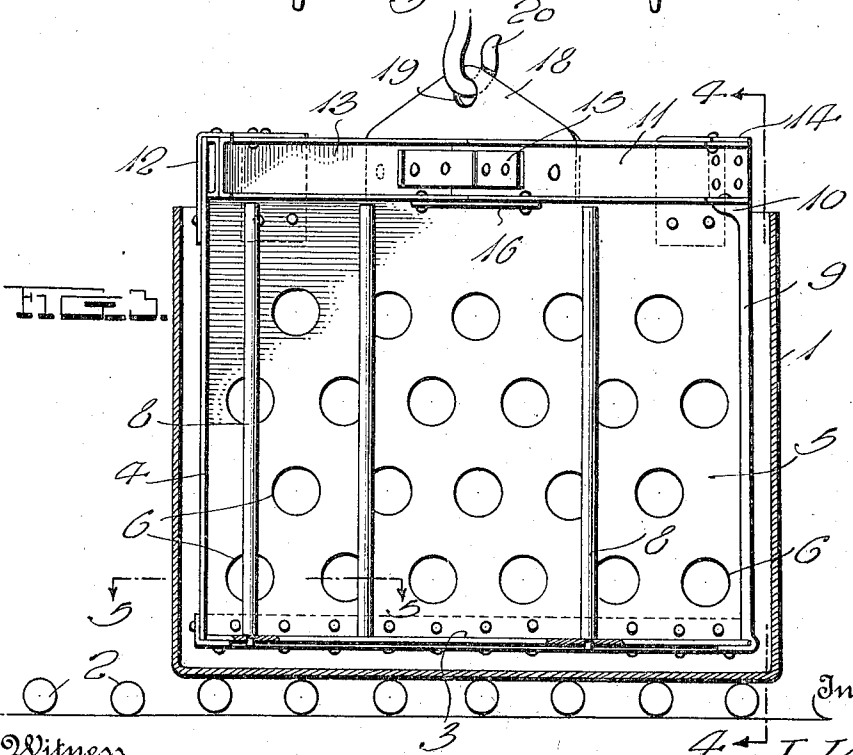


Fig. 3.

Witness
H. Woodard

Inventor
J. Longo

By H. B. Williamson & Co

Attorneys

Patented Oct. 2, 1923. 1,469,323

UNITED STATES PATENT OFFICE.

JOSEPH LONGO, OF CANONSBURG, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO PASQUALE LUONGO, OF CANONSBURG, PENNSYLVANIA.

PLATE-HOLDING FRAME FOR BOSH.

Application filed May 24, 1921. Serial No. 472,090.

To all whom it may concern:

Be it known that I, JOSEPH LONGO, a citizen of the United States, residing at Canonsburg, in the county of Washington and State of Pennsylvania, have invented certain new and useful Improvements in Plate-Holding Frames for Bosh; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an improved plate holding frame for use in connection with a bosh or tank in which sheets of tin plate are to be placed while being conveyed from the pickling machine to the tinning machine. In manufacturing tin plate, the plates are treated in the pickling machine and when removed they are immersed in water in a tank or bosh while being conveyed to the tinning machine so that the plates which have been pickled cannot become rusted while being conveyed from the pickling machine to the tinning machine.

According to present usage in tin plate mills, the plates are placed vertically within the tank and when removing the tin plate from the tank for further treatment, the entire service of one man is required to remove the tin plate and place it in a pile near the tinner who takes the tin plate from the pile and places it in the tinning machine. Removal of the tin plate from the tank for further treatment requires that the person moving the tin plate stand beside the tank, whereas it is well known that the person giving attention to the tinning of the metal must be beside the machine or place of treatment. Thus, for removing the metal from the tank the entire time of another man is required, in addition to the person operating the machine or giving attention to the treatment of the metal.

One object of the invention is to provide a frame for use within the tank, whereby the service of the additional man required to remove the tin plate from the tank may be dispensed with.

Another object of the invention is to so construct this frame that it may fit into a bosh of a conventional construction thus permitting it to be sold as a separate article and simply used in connection with tanks already in use.

Another object of the invention is to so construct this frame that plates of different sizes may be placed in the frame, gage pins or stakes being removably carried by the bottom of the frame so that the plates may be easily placed in the frame in the proper positions.

Another object of the invention is to provide a frame so constructed that the plates may be passed into the frame at the open front thereof and drawn out of the frame through the open end thereof, thus making the frame so constructed that the plates may be easily handled and slipped into the frame in a horizontal position where they will be piled one upon the other and also drawn out of the frame in a horizontal position so that they can be easily handled and passed into the tinning machine.

Another object of the invention is to provide a frame of the character described which will be cheap to produce and strong and durable and easy to operate.

This invention is illustrated in the accompanying drawings, wherein:

Figure 1 is a side elevation of a bosh having the improved frame associated therewith.

Figure 2 is a top plan view of the bosh and frame.

Figure 3 is a longitudinal vertical sectional view taken along the line 3—3 of Fig. 2.

Figure 4 is a transverse sectional view taken along the line 4—4 of Fig. 3.

Figure 5 is a detail horizontal sectional view taken along the line 5—5 of Fig. 3.

This improved tin plate carrying frame is used in connection with a bosh or tank 1 which is of a conventional construction and in the present illustration is shown resting upon rollers 2 so that it can be easily moved into a convenient position for use after being placed near the tinning machine not shown. Of course, it is understood that the tank or bosh could be placed directly upon the ground or upon any suitable support desired. The frame which is to carry the tin plates taken from the pickling machine is provided with a bottom 3, an end wall 4 and a rear wall 5, these walls and the bottom being provided with openings 6 so that water can readily pass through these walls when the frame is in the tank or bosh 1. It will be further noted that the bottom is provided with openings 7 which extend in spaced rows parallel to

the end wall 4 and rear wall 5 and are intended to receive the reduced lower end portions of stakes 8 which will be placed in the frame when necessary according to the size of plates which are to be placed in this frame. This frame is provided with a corner post 9 which is secured to the bottom and has its upper end portion flattened to provide a head 10 which will be secured between the angle irons which are secured together by rivets and provide a cross-bar 11 which extends diagonally across the upper end of the frame and has its second end portion secured by rivets to the bracket 12 formed from a strip of sheet metal, the end portions of which are bent so that they will extend downwardly and may be connected with the rear and end walls of the frame. A second cross-beam which is also formed of angle iron extends diagonally of the frame substantially at right angles to the cross-beam 11 and is provided with end sections 13 which have their outer end portions connected with the supporting bracket 14 carried by the walls 4 and 5 and their inner end portions connected with the cross beam 11 by angle brackets 15. In addition to providing the angle brackets 15 for connecting these cross bars, there has been provided a plate 16 which is positioned beneath and secured to the underfaces of the cross beams. It will thus be seen that there has been provided a tank which will be open at one end and in front and also open at its upper end and further that there has been provided a tank having the bottom and walls perforated so that water in the tank or bosh can easily circulate. In order to permit the frame to be lifted from the tank or bosh by means of the hoisting tackle indicated in general by the numeral 17, there has been provided a plate 18 which is secured between the angle iron bars which form the cross bar 11. This plate is provided with an opening or eye 19 and it will be readily seen that when the hook 20 engages the eye 19, the hoisting tackle can be operated to draw the frame upwardly out of the tank.

When this device is in use, the tank is placed close to the pickling machine and as the sheets of tin plate are removed from the pickling machine, they are passed into the frame through the open front and will rest flat in the frame in a horizontal position and be piled one upon another. If large plates are being handled, the stakes 8 will not be put in place as these large plates will occupy practically the entire interior of the frame. When however smaller plates are being handled, the stakes will be placed in openings 7 in the proper rows and when the plates are placed in the frame, they will be brought into engagement with the rows of stakes. When the frame is completely filled with the plates of sheet metal, the tank containing the frame and which will of course be filled with water above the height of the plates, will be lifted by means of a suitable crane and will be carried over to the tinning machine where it will be lowered and left in position. The hook 20 of the hoisting device 17 can be passed through the opening 19 and the frame will be gradually lifted out of the tank. As the frame is drawn upwardly, the plates will be removed through the open end of the frame and as the operator, or tinner as he is known, draws the plates from the frame, he will immediately place them in the tinning machine. When the plates have all been removed from the frame and placed in the tinning machine, the frame can be again lowered into the tank and the tank returned to the original position in operative relation to the pickling machine. It will thus be seen that there has been provided a frame for use in connection with a bosh tank which is so constructed that the sheets of tin plate can be very easily and quickly put into the frame and held in a horizontal position where they are not liable to become bent at the corners and further that with this arrangement a single operator can remove the sheets of tin plate from the frame and place them in the tinning machine. A great saving is thus accomplished since the services of an assistant for the tinner can be dispensed with and the necessity of piling of the plates by the tinner before placing them in the tinning machine can be done away with.

I claim:

1. A plate holding frame for fitting into an open liquid holding tank, said frame being open at its top and open at its front and at one end, cross bars extending across the upper end of the frame transversely of each other and connected at their point of meeting, a corner post supporting the outer end of one of said cross bars, abutment stakes removably mounted in said frame for engaging plates placed in the frame to properly position the plates in the frame, and hoist engaging means at the intersection of the cross bars.

2. A plate holding frame for fitting into a liquid holding tank open at its upper end, said frame having a bottom, a rear wall and an end wall and being open at its front and at one end, the bottom and walls being provided with liquid passages and the bottom having stake receiving openings arranged in spaced lines running parallel to the rear and end walls, vertical stakes having their lower ends removably fitting into the stake receiving openings to engage the edges of plates piled in the frame and properly position the plates in the frame, and means for engaging a hoisting element whereby the

frame may be moved upwardly and lifted bodily out of the tank.

3. A plate holding frame for fitting into an open liquid holding tank, said frame being open at its top and open at its front and at one end for permitting sheets of tin plate to be passed into the frame through the open front and placed horizontally in a pile in the frame and permitting the plates to be drawn outwardly in a horizontal position through the open end, cross bars extending diagonally across the upper end of the frame at right angles to each other and connected at their point of meeting, a corner post supporting one end of one cross bar, abutment stakes in said frame for engaging plates placed in the frame, and hoist engaging means at the intersection of the cross bars.

4. A plate holding frame for fitting into a liquid holding tank open at its upper end, said frame having a bottom, a rear wall and an end wall and open at its front and at one end, the bottom and walls being provided with liquid passages and the bottom having stake receiving openings arranged in spaced lines running parallel to the rear and end walls, vertical stakes having their lower ends removably fitting into the stake receiving openings, a corner post at the junction of the open front and end, cross bars connected with the upper ends of the corner post and walls and extending diagonally across the upper end of the frame and united at their point of meeting, and a hoisting element engaging element carried by the cross bar.

5. A plate holding frame for fitting into a liquid holding tank open at its upper end, said frame having a bottom, a rear wall and an end wall, the bottom having stake receiving openings arranged in spaced lines running parallel to the rear and end walls, vertical stakes having their lower ends removably fitting into selected openings of the bottom for engaging the edges of plates placed in said frame, a corner post carried by said bottom, cross bars extending diagonally across the upper end of the frame and having the outer ends connected with the post and walls and connected at their point of meeting, and means at the intersection of the cross bars for engaging a hoisting device for drawing the frame out of a liquid holding tank.

In testimony whereof I have hereunto set my hand.

JOSEPH LONGO.