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TINNING MACHINE

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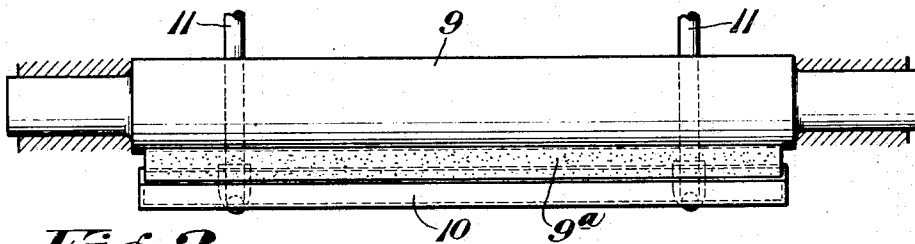
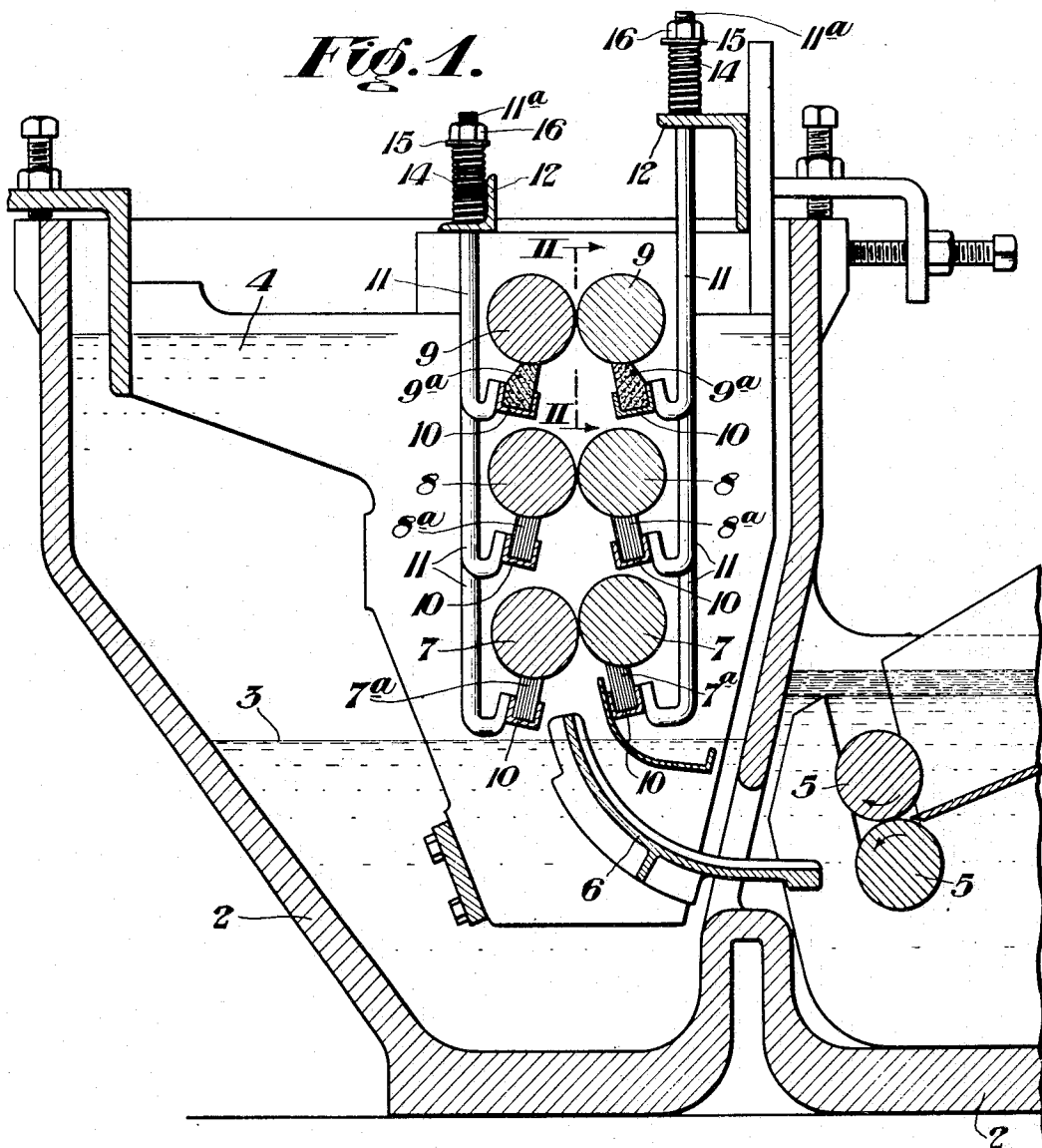


Fig. 2.

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UNITED STATES PATENT OFFICE

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TINNING MACHINE

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3 Claims. (Cl. 91—59.2)

This invention relates to improvements in tinning machines, and more particularly to mechanism for feeding tin plate or sheets from such machines after they have received the conventional metal coating and while they are in the usual palm oil bath.

In the past, considerable difficulty has been experienced in conveying tin plates through and from the usual liquid metal and palm oil baths. The tin plates as they emerge from the metal bath are conveyed by means of a plurality of rolls upwardly through the palm oil one at a time. The effect of these rolls is to pinch the plates as they come through and remove excess liquid metal from their surfaces before the metal coating solidifies after leaving the palm oil bath. It will be readily apparent that the surfaces of the feeding rolls must be kept in perfect condition, otherwise there will be imperfections in the coated surfaces of the plates or sheets. In other words, if the tin on the plates had impurities or sediment from the metal and palm oil baths which collected on the roll surfaces and were not removed, uneven contact with the plates or sheets would result. Uneven protuberances on the surfaces of the rolls will produce what is known in the art as "freckles" on the coated surfaces of the finished plate, while indentations in the roll surfaces, however slight, will cause "slobbers" on the plate surfaces.

One object of the present invention is to provide a novel combination of brushes for the surfaces of the various rolls in order to obtain perfectly coated plates.

Another object is the provision of a novel roll cleaning medium for tinning machine rolls which will assure clean and even roll surfaces at all times.

These and further objects will appear after referring to the drawing, in which:

Figure 1 is a sectional elevation of a conventional tinning machine with its usual sheet or plate feeding mechanism.

Figure 2 is a view taken on the line II—II of Figure 1.

Referring more particularly to the drawing, the numeral 2 designates a conventional tinning machine, or "tin pot", which contains the usual liquid metal 3 with the palm oil bath 4 floating on its surface.

In accordance with conventional practice, the plates or sheets are fed into the pot 2 by means of a pair of pinch-rolls 5, which are positioned below the surface of the liquid metal. The sheets or plates are deflected upwardly out of the metal bath by means of a deflector plate 6, and into the palm oil bath 4. A plurality of pairs of rolls are disposed beneath the surface of the palm oil for squeezing the surplus liquid metal from the surfaces of the sheets or plates and conveying them upwardly out of the palm oil and tin pot. These

groups of rolls are indicated in the drawing at 7, 8 and 9, and are each provided with a brush for maintaining the roll surface perfectly smooth and clean.

The brushes for the lower two pairs of rolls 7 and 8 are designated at 7^a and 8^a, respectively, and comprise an elongated surface for contacting the entire roll, the brush being composed of asbestos.

The top or uppermost pair of rolls indicated at 9 are provided with brushes 9^a similar in shape to those for the rolls below, but which are composed of soapstone, which provides for extremely fine cleaning and surfacing of the upper rolls which are located adjacent or slightly above the surface of the palm oil 4 in order to feed the sheets or plates out of the tinning machine.

Each of the brushes 7^a, 8^a and 9^a are held in a suitable trough, generally indicated at 10, each of the troughs being suspended on rods 11 which are provided with upper threaded portions 11^a. The upper threaded portions 11^a of the rods are extended through suitable apertures in angles 13, which are secured to the upper portion of the tinning machine, and resiliently and adjustably hold the brushes against the roll surfaces by means of a spring 14, washer 15, and a nut 16 which is threaded on the end of the rod.

While we have shown and described one specific embodiment of our invention, it will be understood that we do not wish to be limited exactly thereto, since various modifications may be made without departing from the scope of our invention, as defined in the following claims.

We claim:

1. In a tinning machine, a liquid metal bath, an oil bath, a plurality of sheet feeding rolls disposed in said oil bath, and soapstone brushes for at least one pair of said rolls.

2. In a tinning machine, a liquid metal bath, a palm oil bath, a plurality of sheet feeding rolls disposed in said palm oil bath, one pair of said plurality having a portion of their surfaces above the palm oil level, and a soapstone brush for each of said last named rolls.

3. In a tinning machine, a liquid metal bath, a palm oil bath, a plurality of sheet feeding rolls disposed in said palm oil bath, asbestos brushes for at least one pair of said rolls, in combination with soapstone brushes for at least the last and uppermost pair of said rolls.

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