

(No Model.)

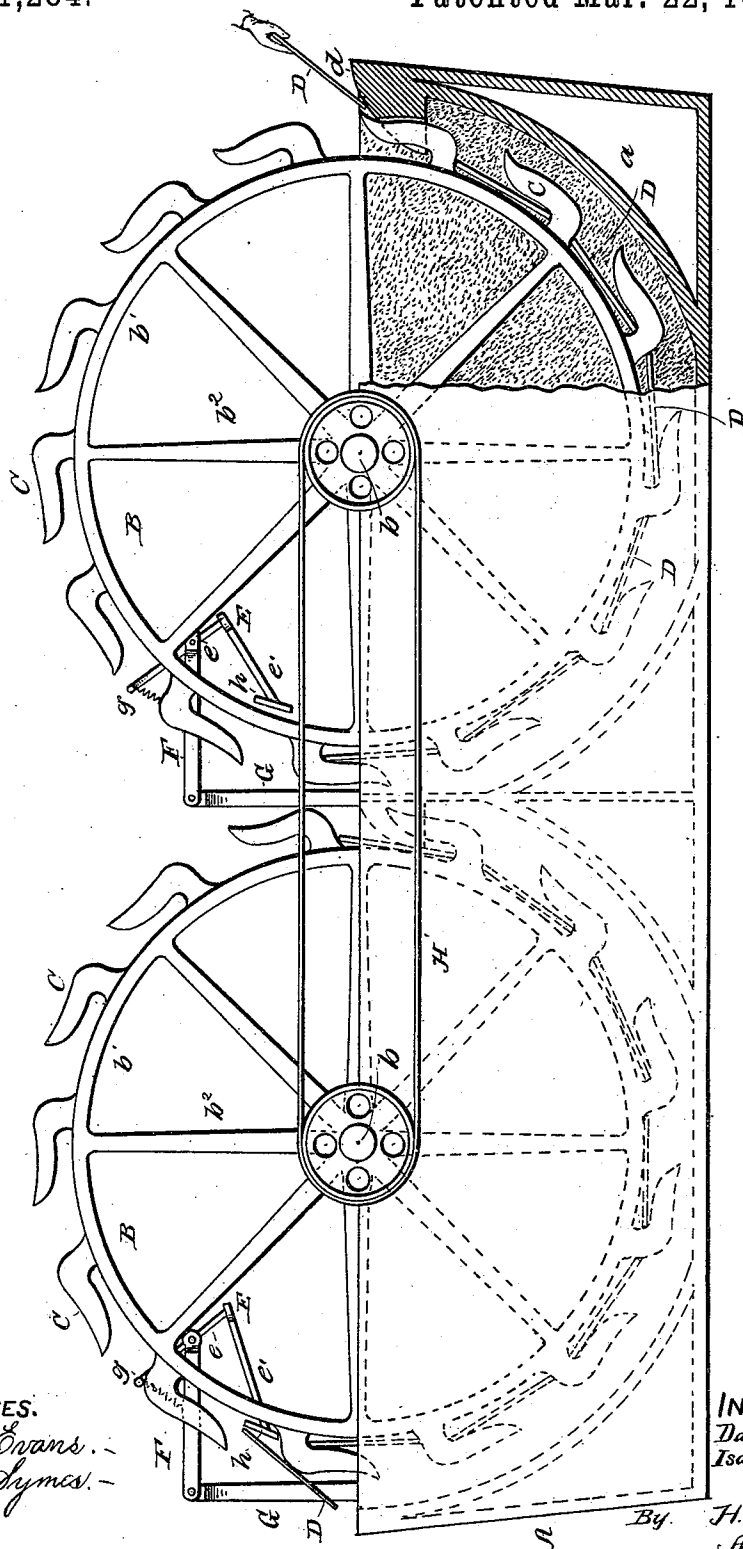
2 Sheets—Sheet 1.

D. WALTERS & I. L. MORRIS.  
MACHINE FOR REMOVING OIL FROM TIN PLATES.

No. 471,284.

Patented Mar. 22, 1892.

Fig. 1.



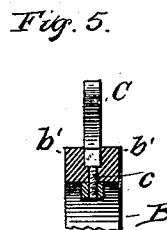
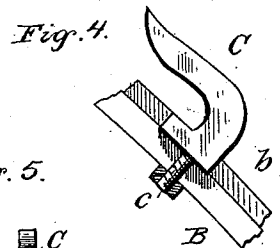
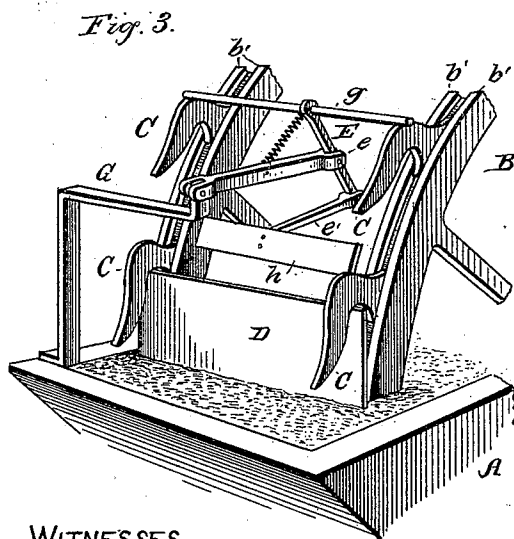
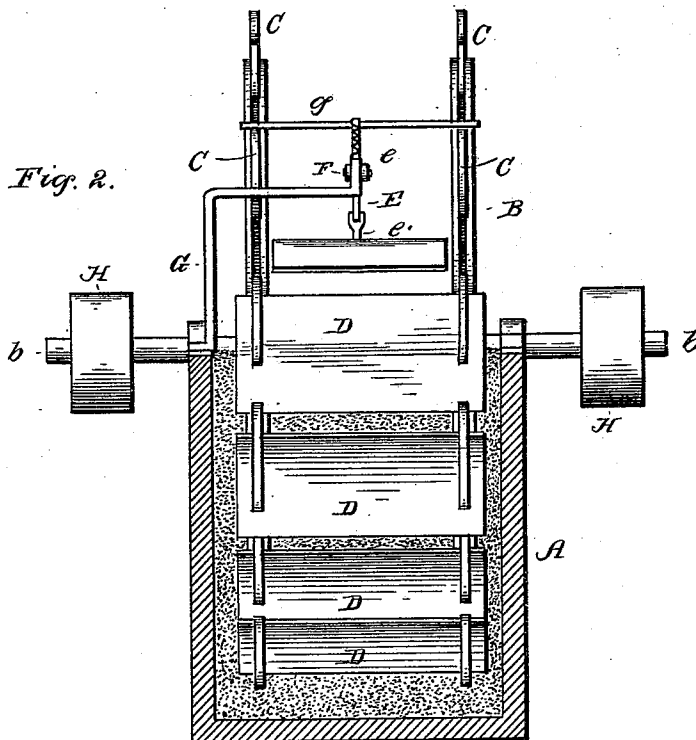
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# UNITED STATES PATENT OFFICE.

DAVID WALTERS AND ISAAC L. MORRIS, OF CLEVELAND, OHIO.

## MACHINE FOR REMOVING OIL FROM TIN PLATES.

SPECIFICATION forming part of Letters Patent No. 471,284, dated March 22, 1892.

Application filed May 8, 1891. Serial No. 392,101. (No model.)

*To all whom it may concern:*

Be it known that we, DAVID WALTERS and ISAAC L. MORRIS, citizens of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Machines for Removing Oil from Tin Plates; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to machines for removing the oil from tin plates.

In the manufacture of tin plates the sheets are passed through rollers immersed in oil, and hence when the sheets leave the rollers they are covered with oil. This oil necessarily must be removed before the plates are placed upon the market; and the object of our invention is to provide a simple, cheap, and efficient machine for doing this work expeditiously.

In the accompanying drawings, Figure 1 is a side elevation of the machine with the box or receptacle at the right partly broken away. Fig. 2 is an end elevation with the end of the box or receptacle removed, so as to disclose the position and relation of the parts within. Fig. 3 is a perspective view of a section of one of the wheels and of the transferring mechanism operated by the wheel and showing the relation the parts sustain at the instant the wheel begins to operate said mechanism to transfer or discharge a plate. Figs. 4 and 5 are sectional details showing how the carrying-teeth are adjustably supported in their wheels.

The two wheels being successive in their operation, the construction and operation of both being the same, as is also the mechanism connected with each wheel, a description of one will answer for both mechanisms.

A represents the box or receptacle in which the wheels B revolve. This box in this instance is shown as divided into two separate compartments, and two separate boxes or chambers might be used. Each wheel has a shaft *b*, supported in suitable bearings in the sides of the box in which it turns, and these shafts have rim-wheels of uniform size, connected by a belt *H*, so that both will run in unison and in the proper relation to one another,

as required. The purpose of the wheels B is to carry the tin plates through the process of cleansing hereinbefore referred to, and to this end we fill the boxes or chambers A with wheat-bran or the like material, which serves to absorb the oil from the surface of the plates, as well as to cleanse them by frictional contact and action. For this purpose we make each wheel with a double set of rims *b'*, connected with the hub thereof by spokes or arms *b<sup>2</sup>*, and transversely connected by rods or braces, if deemed necessary. These rims, corresponding somewhat to the felloes of a wagon-wheel, have a peripheral slot or groove, in which are adjustably supported the plate-carriers C. These carriers are shown here as having threaded shanks *c*, which extend through the rims *b'*, with nuts to hold them in locked position.

It will be understood that the sheets of tin have different widths and that adjustment of the carriers is necessary to adapt the wheels to the widths that may be made. Thus one sheet may be twenty inches wide and another twenty-four or less than twenty inches, as may be required. Hence removal or adjustment of the carriers is necessary to adapt the wheel to the different widths that may for the time being be rolled. The said carriers are somewhat hook-shaped, the hook portion running with the periphery of the wheels and of sufficient length to support the plates as they are fed in at one side of the wheel. The adjustment of the carriers should be such that the distance from the engaging portion of one carrier to the rear shoulder or heel of the other is just equal to the width of the plate. Then in the operation of carrying the plate will be supported along both its edges and yet be perfectly free to be dislodged and transferred to the next wheel or cast off after finishing. How this occurs is clearly shown in Fig. 1. There a number of sheets or plates D are shown as being carried around by the wheel, one for or in each carrier or set of opposite carriers in the same wheel and all resting not only in the carriers by which they are borne, but against the shoulders of those next in succession. The plates are dropped by hand into the wheel, as seen in Fig. 1, though this might also be done mechanically, and a transverse bar or shoulder *d* along the end of

the box throws the top of the plate in as it is carried down. The bran or its equivalent in the box A then supports the plate D against the heel of the next succeeding carrier, and it is borne around in this position to the point of discharge.

The box or receptacle A is shown here as having a false bottom *a*, corresponding to the circular form of the wheel, and as the plate is carried down through the bran the exposed lower surface is completely cleansed of the oil. As the plate rides up on the left of the wheel it rests against the heel of the next following carrier and is supported thereby. When the plate has emerged from the bran and been carried above the first receptacle, it is in position to transfer to the next wheel, and this transfer is made to reverse the plate, so that the opposite side may be exposed to the bran and cleansed. This is done by simply pushing the plate off the shoulders of the carriers on which they rest, when they slide into the carriers of the second wheel, as clearly seen in Fig. 1. The two wheels B at their contiguous points travel in reverse directions, and they are so arranged in respect to one another that the carriers of the first wheel come centrally opposite the space between two sets of carriers in the second wheel. This brings the plate in position for transfer at the right time, and the transfer is made by any suitable mechanism, the construction of which may be largely varied and yet be within the spirit and scope of the invention. In this instance we show an elbow-lever E, pivoted centrally of its forearm *e* on an arm F, rigid with a standard G. Above the pivot-point at the end of the forearm *e* is a cross-rod *g*, rigid with said arm and long enough to extend across the opposite carriers and held normally in such relation thereto that when said carriers move up to engaging position with said cross-rod the rod will strike the inclined or curved back edge thereof and thrust the opposite end *e'* of the arm forward. This lower end *e'* of arm E has a cross-piece *h* at its extremity, which bears against the tin plate and presses it out, so that it drops automatically into the empty carriers of the second wheel.

The construction and operation of this mechanism is alike for both wheels, and the plate as it leaves the last wheel is thrown off to the dusting-machine, which is made the subject of another application of even date herewith. It may be found in some instances that one wheel will do the work, in which case the other wheel may be dispensed with, and one, two, or more wheels may be used as occasion requires.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A receptacle, a wheel journaled to rotate in said receptacle, and hook-shaped plate-holders having their rear or heel portions formed to support one edge of a plate that is held within the hook portion of an adjacent holder.

2. A receptacle, a wheel journaled to rotate in said receptacle, and hook-shaped plate-carriers adjustable on the circumference of said wheel, having their rear or heel portions formed to support the edge of a plate that is held within the hook portion of an adjacent holder or carrier.

3. A receptacle, a wheel journaled to rotate in said receptacle, and hook-shaped plate carriers or holders, with means for securing them adjustably upon the periphery of said wheel.

4. The combination of a receptacle, a plate-carrying wheel, and means for dislodging plates from said wheel, comprising the pivoted arm F and the elbow-lever E, held normally in position to be acted on intermittently by the carrying-wheel to dislodge plates, substantially as described.

5. The wheel constructed around its periphery for the adjustment of plate-carriers on the radius of the wheel and carriers constructed to be adjusted, substantially as described.

Witness our hands to the foregoing specification this 30th day of April, 1891.

DAVID WALTERS.  
ISAAC L. MORRIS.

Witnesses:

H. T. FISHER,  
N. L. McLANE.