(No Model.) 3 Sheets—Sheet 1.

J. MONTO.

MACHINE FOR IMMERSING TINNERS' ARTICLES IN THE GREASE POT.

No. 421,600. Patented Feb. 18, 1890.

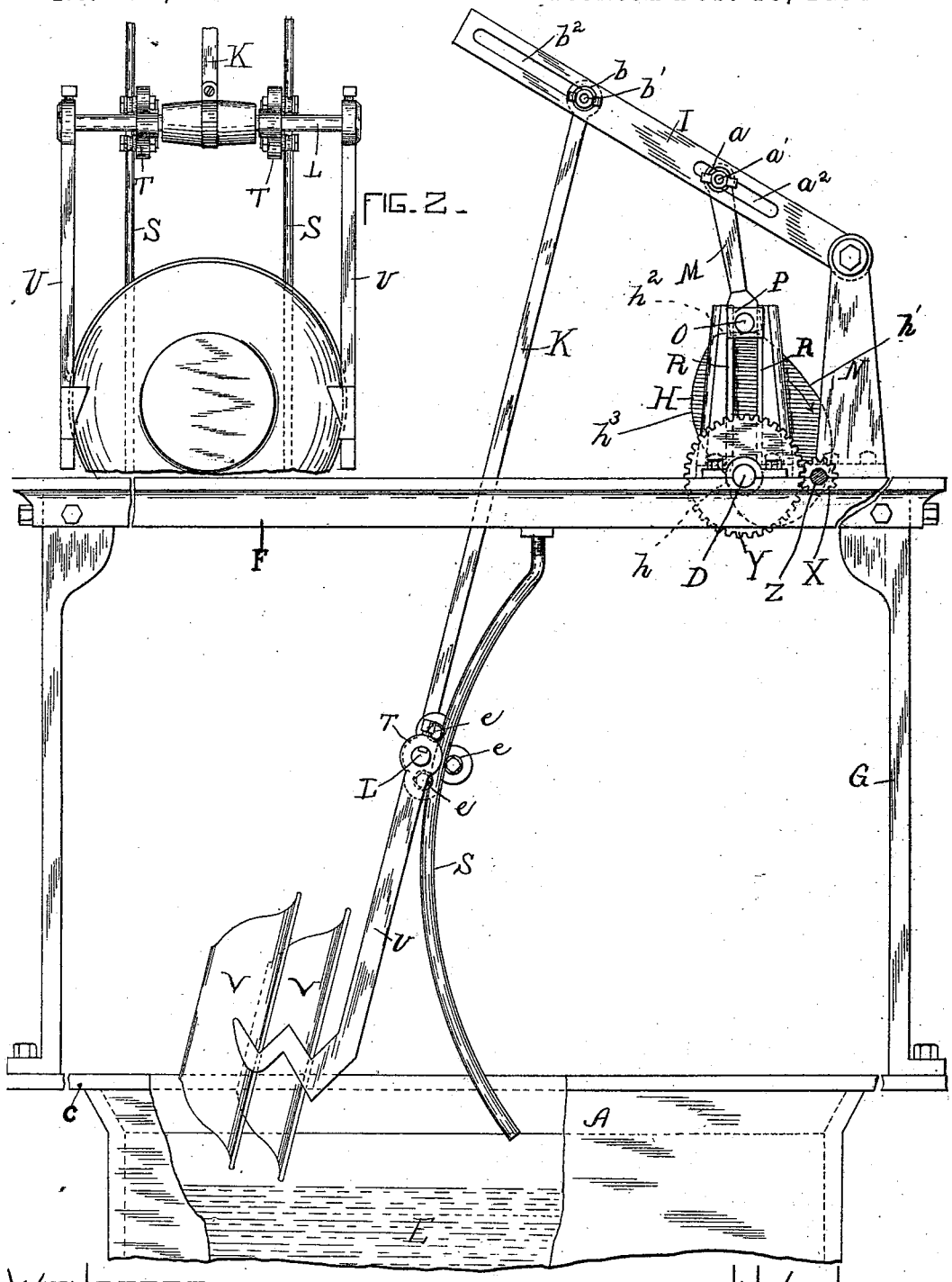

FIG. 1.

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(No Model.) 3 Sheets—Sheet 2.

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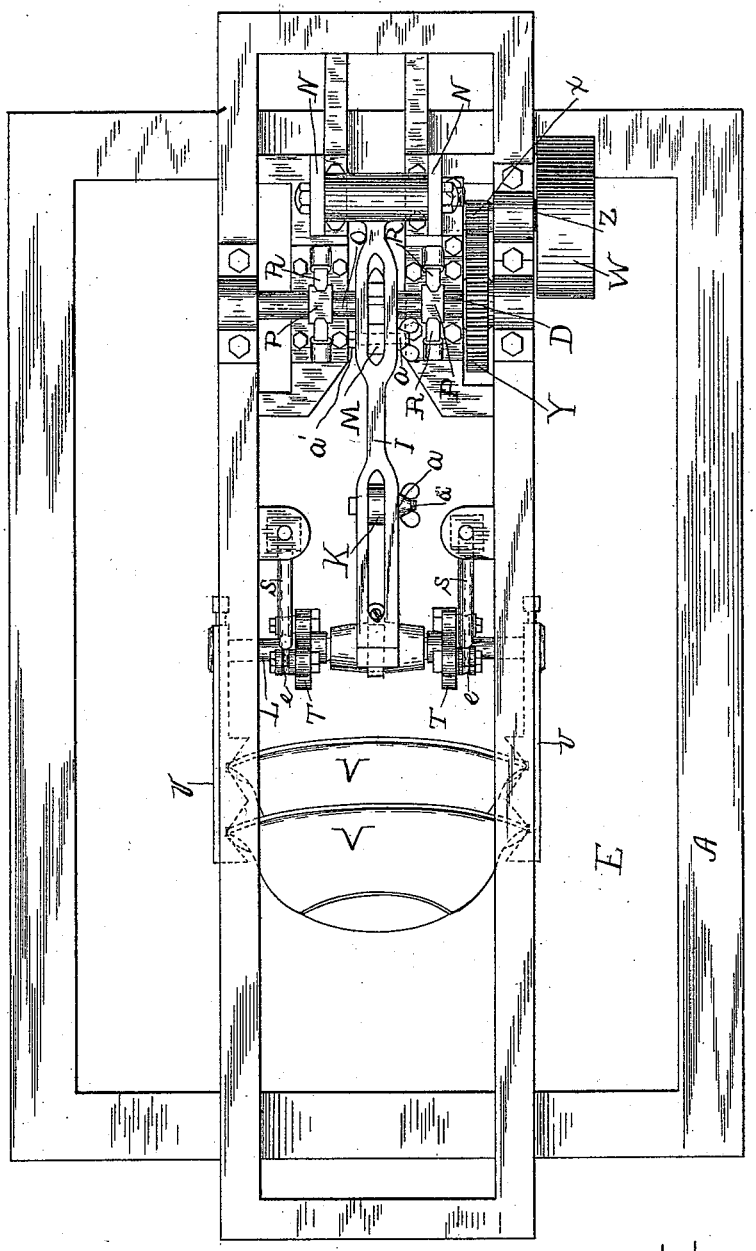

FIG. 3.

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MACHINE FOR IMMERSING TINNERS' ARTICLES IN THE GREASE POT.

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FIG. 8.

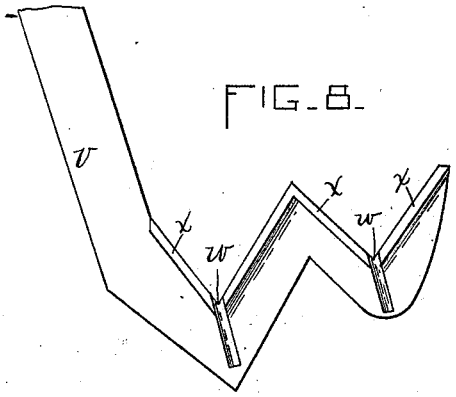


FIG. 9.

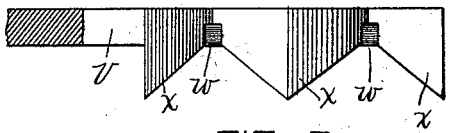


FIG. 10.

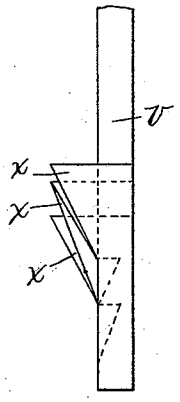


FIG. 4.

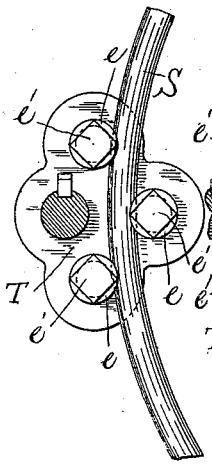


FIG. 5.

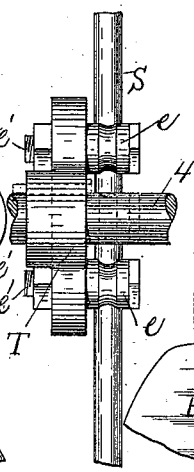


FIG. 6.

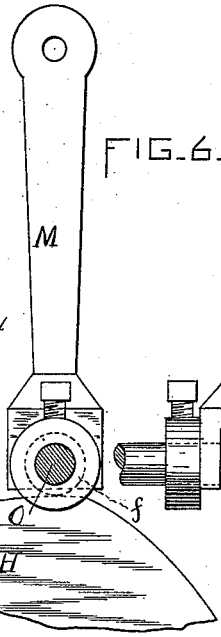
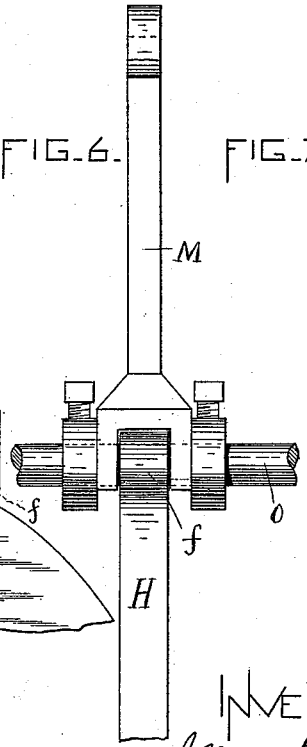


FIG. 7.



WITNESSES.

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INVENTOR.

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UNITED STATES PATENT OFFICE.

JOSEPH MONTO, OF CHELSEA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE STEEL EDGE STAMPING AND RETINNING COMPANY, OF BOSTON, MASSACHUSETTS.

MACHINE FOR IMMERSING TINNERS' ARTICLES IN THE GREASE-POT.

SPECIFICATION forming part of Letters Patent No. 421,600, dated February 18, 1890.

Application filed May 31, 1889. Serial No. 312,768. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH MONTO, of Chelsea, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Machines for Immersing Tinners' Articles in the Grease-Pot, of which the following is a specification.

This invention relates to machines for tinning or retinning manufactured articles of sheet metal to give the same a bright and attractive appearance and cover the marks and defacements incidental to the processes of manufacturing such articles.

In the process of tinning or retinning, the article treated, after being immersed in a bath of melted tin, is immersed briefly in a bath of hot grease, which acts to partially remelt the tin coating and remove any surplus of tin that may be deposited on the article, thus making the coating more uniform and smooth than it would otherwise be. It is important that the period of immersion of the tinned article in the grease bath be exactly right, as a too brief immersion will not produce the desired uniformity and a too protracted immersion will remove too much of the tin coating. In Letters Patent No. 372,555, granted to me November 1, 1887, I have shown an organized machine for automatically immersing and withdrawing tinned articles in and from the grease bath, and thereby insuring exact uniformity of the period of immersion. Said patent also shows means for rocking or tilting the tinned articles as they are being withdrawn from the grease, said rocking or tilting motion giving an improved result, as specified in said patent.

My present invention has for its object to provide simple and efficient means for inserting the tinned articles in and removing them from the grease bath and for giving said articles a rocking motion.

The invention consists in the improved organized machine and in the several combinations of parts hereinafter described and claimed.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a side elevation of my improved machine. Fig. 2 represents a front elevation of the holder or carrier for the articles treated. Fig. 3 represents a top view of the machine. Figs. 4 to 10, inclusive, represent details hereinafter referred to.

The same letters of reference indicate the same parts in all the figures.

In the drawings, A represents the grease-pot, which is provided with suitable means (not shown) for heating the grease bath E. Supported by said pot is a bed-plate or frame C, on which rest the legs G, which support the frame F, by which the mechanism hereinafter described is supported.

I represents a lever, which is pivoted to standards N N on the frame F, and is oscillated in a vertical plane by a cam H through a cross-head O, journaled in boxes P P, which slide between vertical guides R R, said cross-head having a roll *f*, bearing on the periphery of the cam H, and a rod M, connecting the cross-head O with the lever I. The cam H is continuously rotated by a driving-shaft Z, having a pinion X meshing with a gear Y on the shaft D, to which the cam H is affixed, said shafts Z and D being journaled in bearings on the frame F.

The lever I is connected by a rod K with the carrier which holds the articles V V, said articles being here shown as basins. Said carrier is composed of a horizontal rod or cross-head L, to which the lower end of the rod K is connected, (see Fig. 2,) and two arms U U, rigidly attached to the cross-head and having their lower ends extended outwardly, and provided on their inner sides with slots *w w* to receive the articles V V. To the cross-head L are rigidly attached, by keys or otherwise, two plates or frames T T, having studs *e'*, on which are journaled rollers *e*, said plates and rollers constituting what I term "buggies."

S S represent curved guide-rods, attached to the frame F and projecting downwardly therefrom toward the grease-pot. The rollers *e* are arranged to run upon said rods, each plate or frame T having three of said rollers, two of which are arranged to bear on the convex side of a guide-rod *s* and the other on the concave side. (See Figs. 1 and 4.)

It will be seen that the lever I is oscillated

by the continuous rotation of the cam H and is caused to reciprocate the carrier through the connecting-rod K, the carrier-arms U U, with the articles V V thereon, being thus alternately immersed in and raised from the bath E. It will also be seen that the curved guide-rods S S and the buggies engaged therewith give the carrier-arms U U and articles V V a rocking or tipping motion during their downward and upward movements, said motion having the effect to more uniformly distribute the tin coating on the articles V. The extent of the reciprocating movements imparted to the carrier, and consequently the length of the period of immersion, may be varied by varying the points of connection of the rods M and K with the lever I, said lever being provided with slots a^2 b^2, which receive, respectively, the bolts a' b', which connect the rods M and K with said lever. The bolts a' b' are provided with thumb-nuts a b, whereby the bolts may be loosened, so that they may be adjusted in said slots. The rods M K are shown in Fig. 1 as adjusted to give the carrier a short stroke or reciprocating movement, which may be lengthened by moving the bolt a' inwardly or toward the pivoted end of the lever I and the bolt b' outwardly.

The lower portions of the arms U U are W-shaped, the slots w w being at the re-entrant angles of the arms, as shown in Figs. 8 and 9. The arms are provided between said slots with beveled wings or flanges x x, which are arranged, as shown in Figs. 8, 9, and 10, to guide the articles V V into the slots w w, both the oppositely-inclined upper surfaces and the beveled inner edges of said flanges converging to the slots w w and constituting tapering throats, which guide the articles V to the slots, and therefore enable said articles to be very quickly inserted.

The cam H is provided with two concentric portions or dwells h h^2, the portion h being nearest the axis of the cam, while the portion h^2 is farthest from said axis. When the cross-head O rests on the portion h, the lever I is at its lowest point and is held there for a brief interval, the carrier being meanwhile held at rest below the surface of the bath. The cam rotates in the direction indicated by the arrow in Fig. 1, and the portion h' of the cam which acts to raise the lever I is formed to move said lever and the carrier very slowly at first, and then more rapidly, the greater part of the upward movement being at a uniform speed, which is greater than the speed at the commencement. When the portion h^2 reaches the cross-head O, the lever I is at its highest point, and is there held by said portion h^2 long enough to enable attendant to remove the treated articles and place others in the arms U without stoppage of the cam H. After the portion h^2 passes from the cross-head O the descending portion h^3 of the cam allows the carrier to descend into the bath.

My invention is not limited strictly to the details of construction herein shown, excepting as hereinafter specified, and the same may be variously modified without departing from the spirit of my invention.

I claim—

1. The combination of the grease-pot, the fixed curved guide-rods, the carrier adapted to hold one or more articles to be treated and engaged with the guide-rods, and means for reciprocating the carrier on the guide-rods, the curvature of said rods giving the carrier a rocking or tipping motion during its reciprocating movements, as set forth.

2. The combination of the grease-pot, the fixed curved guide-rods, the carrier composed of the cross-head having buggies engaged with said guide-rods, and the arms U U, secured to said cross-head, and means for reciprocating the carrier upon the guide-rods, as set forth.

3. The combination of the carrier, the lever I, connected therewith, the power-driven cam H, the cross-head O, supported by said cam, fixed guides for said cross-head, and the rod M, connecting the cross-head with the lever I, as set forth.

4. The cam having the concentric portion or dwell h^2 at its highest point, combined with the carrier and intermediate mechanism, consisting of the lever I and rods K M, whereby the rotary movements of the cam are converted into reciprocating movements of the carrier, the said portion h^2 of the cam holding the carrier at rest when the latter is elevated, as set forth.

5. The combination of the lever I, the power-driven cam; the carrier, the rods M K, interposed between the lever and the cam and carrier, respectively, and means for varying the points of connection of said rods with the carrier, whereby the stroke imparted to the carrier may be varied, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 16th day of May, A. D. 1889.

JOSEPH MONTO.

Witnesses:
C. F. BROWN,
A. D. HARRISON.