No. 746,108. PATENTED DEC. 8, 1903.

W. D. KYSER & J. C. MORGAN.

SOLDER SAVING MACHINE.

APPLICATION FILED JUNE 19, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

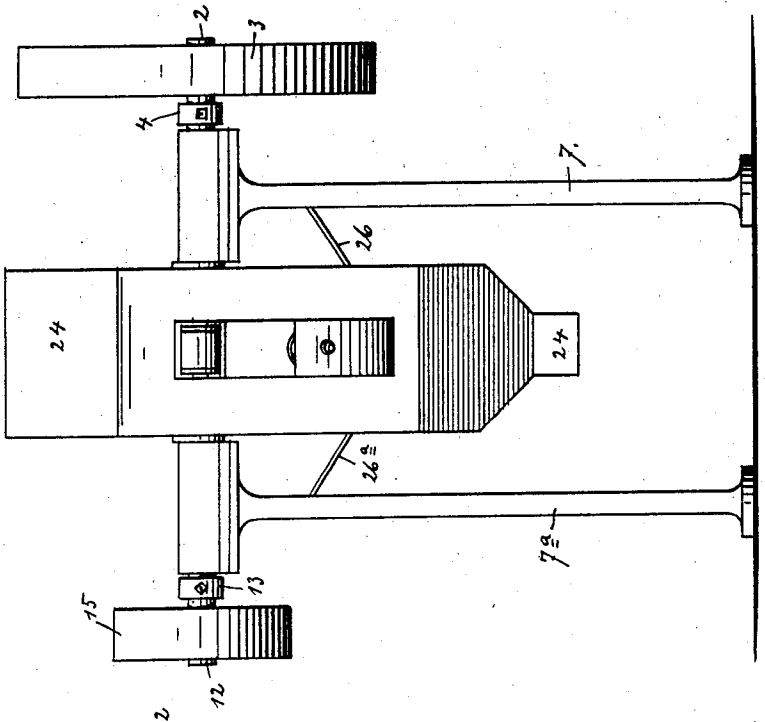


Fig. 2.

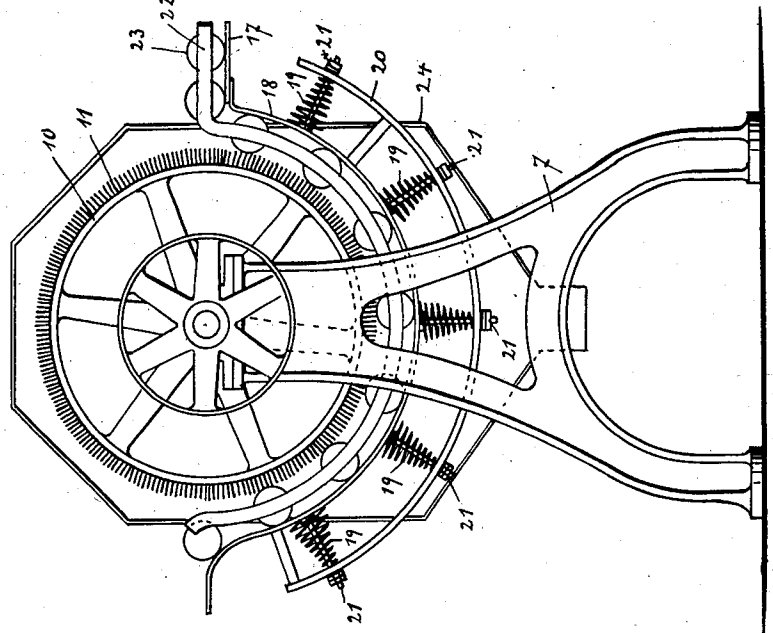


Fig. 1.

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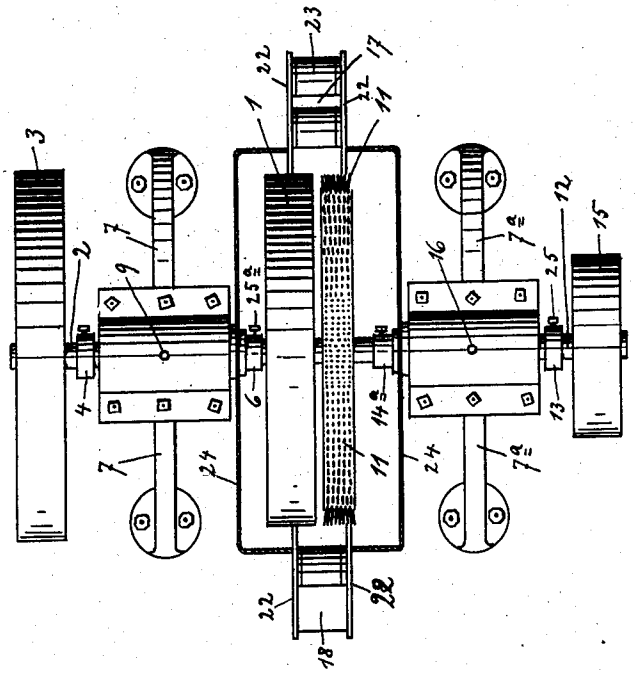


Fig. 4.

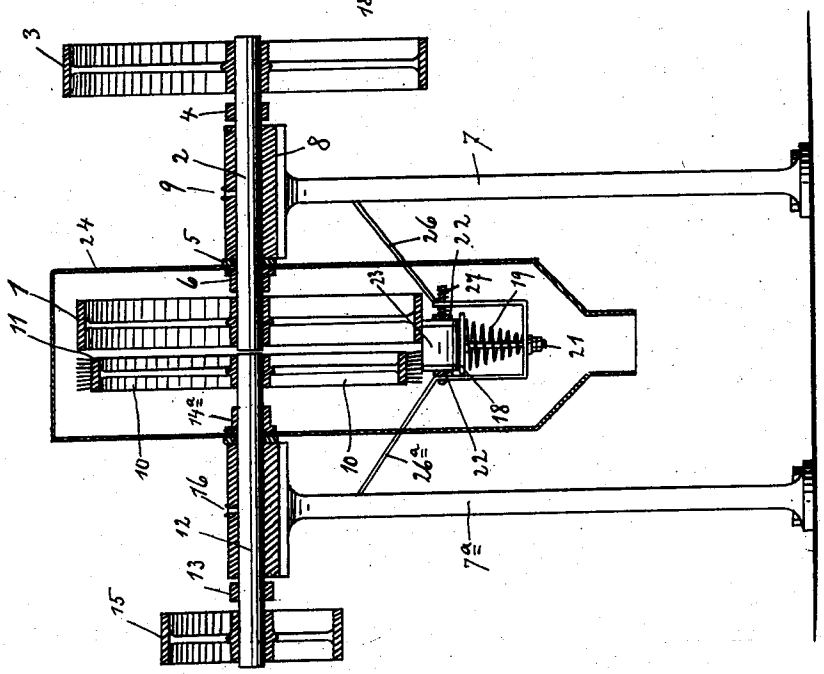


Fig. 3.

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UNITED STATES PATENT OFFICE.

WORTH D. KYSER, OF FRANKFORT, AND JASPER C. MORGAN, OF MOHAWK, NEW YORK.

SOLDER-SAVING MACHINE.

SPECIFICATION forming part of Letters Patent No. 746,108, dated December 8, 1903.

Application filed June 19, 1903. Serial No. 162,220. (No model.)

To all whom it may concern:

Be it known that we, WORTH D. KYSER, residing at Frankfort, and JASPER C. MORGAN, residing at Mohawk, in the county of Herkimer and State of New York, citizens of the United States, have invented certain new and useful Improvements in Solder-Saving Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

Our invention relates to an improvement in solder-saving machines hereinafter more fully pointed out and claimed.

The object and nature of our invention is to provide a solder-saving machine for use in connection with can-soldering machines which will effectually wipe off and save the surplus solder and which is simple in construction and effective in operation.

In the drawings, Figure 1 is a side elevation of our invention. Fig. 2 is an end or side elevation of the machine. Fig. 3 is a vertical central section of the machine. Fig. 4 is a top or plan view of our machine.

Having described our invention with reference to the figures illustrated in the drawings, we will now proceed to describe it more in detail, in which description similar numerals of reference refer to corresponding parts in the several views.

In the drawings, 1 represents a circular carrier or driving wheel, which may or may not be covered with an adhesive substance for increasing the friction of the cans. This wheel is rigidly held on the driving-shaft 2, driven by driving-pulley 3, and is held from and thrust by collars 4, 5, and 6 and is mounted in frame 7 in a suitable bearing 8. The size of the driving-pulley and the speed of the line-shaft to which it is connected will determine the speed of driving-wheel 1, which in practice revolves about fifty revolutions per minute. For lubricating the bearing we provide opening 9.

For wiping the solder from the top and bottom seams of the cans as they come from the solder-bath we provide the rotary brush-wheel 10, which has on its periphery brushes 11, which are cemented or otherwise secured to the periphery of rotary brush-wheel 10. This wheel is rigidly held on shaft 12, which is held in the frame from end thrust by collars 13 and 14 and is mounted in standard or frame 7^a and is rigidly held on the driving-pulley 15, which is connected to the line-shaft and driven, preferably, at an approximate speed of six hundred revolutions per minute.

The brushes on the periphery of brush-wheel 10 run in contact with the seam of the can as it comes from the solder-bath. The shafts 2 and 12 at their inner ends run substantially in contact with each other, and the bearing of the shaft is lubricated through opening 16, Fig. 4.

For feeding the cans into the machine we provide a horizontal and a circular or concave track. The horizontal portion is indicated by numeral 17 and the circular or concave portion by numeral 18, which circular or concave track conforms, substantially, with the curvature of the circular driving-wheel 1 and the brush-wheel 10 and the ends of brushes 11, so that the brushes run with a high speed on the seam of the can, where the molten solder remains as it comes from the solder-bath. The concave track 18 is supported and adjustably held in its work by coil-springs 19, the lower ends of which bear upon the inner surface of concave support 20, and the upper ends of the springs bear against the under side of the track and which are held in place by screw-threaded bolts and nuts 21, which in this instance consist of two jam-nuts, to prevent the same from working loose and which can be so adjusted as to give the right tension on concave or circular track 18, so as to give the cans the proper tension and support the track in proper position to carry the cans against the brushes on circular brush-wheel 10 and the rotary driving-wheel.

For preventing the cans from end movement we provide curved end pieces 22 22, Fig. 3, at both ends of the cans.

The horizontal end 17 of the track fits onto the end of the solder-bath, so that as cans 23 are moved out of the solder-bath they are guided onto curved track 18, where their peripheries are engaged by driving-wheel 1, which holds the series of cans and drives them downward, forward, and upward and out of the machine, while the rapidly-rotating brush

wipes the molten solder from the seam of the cans as it rotates, thereby effecting a large item of saving in the quantity of solder used on the cans.

For protecting the operation of the machine and to confine the molten solder wiped from the cans we provide, preferably, a tin or other frame 24, Fig. 3, which collects and confines the solder brushed from the cans within the case, which is detachably connected to the frame by means of collars 6 and 14ª on the shafts, which are capable of being adjusted and held rigid at the point of adjustment on the shaft by means of set-screws or their equivalent. The set-screws are shown in Fig. 4 at 25 25ª. The track is held in position by side supports 26 26ª and are made adjustable by jam-nuts 27, Fig. 3. The side supports 26 26ª are secured to the frame or standards supporting the frame.

Changes and modifications in the mode of construction may be made without departing from the spirit of our invention.

The operation of the machine is as follows: As the series of cans are moved out of the solder-bath where the end seams of the cans are soldered they move downward onto the concave track, where they are engaged on periphery by the circular driving-wheel, where they are held and carried on the concave track at a slower rate of speed than the rotation of the brush and are held in position and continually rotated so as to present the seam of the cans to the operation of the brush. The circular brush-wheel rotating at a higher rate of speed than the cans, the brush running in contact with the seam of the cans, the molten solder is rapidly brushed from the can-body and is permitted to fall into the case surrounding the machine, and this solder is saved for future use. By adjustably arranging the concave track on which the series of cans move suitable adjustment may at all times be maintained so as to facilitate the rotation and movement of the cans through the machine.

What we claim as new, and desire to secure by Letters Patent, is—

1. The combination of a rotary carrier-wheel, a yielding track substantially conforming to a portion of the circumference of the carrier-wheel and a brushing-wheel substantially concentric with and parallel with the plane of the carrier-wheel and arranged at the side of the carrier-wheel, substantially as set forth.

2. The combination in a solder-wiping machine of a carrier-wheel, a track substantially conforming to a portion of the circumference of the carrier-wheel, a brushing-wheel arranged at the side of the carrier-wheel and with its brush of somewhat larger diameter and means for driving the carrier-wheel and brushes, respectively.

3. In a solder-wiping machine, the combination of a rotary carrier-wheel, a curved track substantially conforming to a portion of the circumference of the carrier-wheel and a brushing-wheel mounted in a plane parallel with and close to the carrier-wheel and adapted to operate simultaneously on the projecting ends of several cans moving along the same curved track, substantially as set forth.

4. In a solder-wiping machine for cylindrical cans, the combination of a curved track, a rotary brush substantially conforming to the curved track and adapted to operate on cans passing along the curved track and means for moving the cans along the curved track and rolling them, substantially as set forth.

5. In a solder-wiping machine, the combination of a curved track, guides at either side of the track, a rotary carrier-wheel coöperating with said curved track to move and roll cylindrical cans thereon and a circular brush arranged at the side of and parallel with the carrier-wheel adapted to operate on the end of said cans as they move along the said track, substantially as set forth.

6. In a solder-saving machine, the combination of two wheels, mounted to be rotated in parallel planes at different rates of speed, one wheel provided on its periphery with projecting brushes to run in contact with the seam to be operated on the other wheel running in contact with and rotating the can under the brushing-surface, a track in which the cans are moved by the rotating wheel and mechanism for rotating the wheels.

7. In a solder-saving machine, the combination of two rotating wheels having the same axis, the wheels mounted to be rotated at different rates of speed, one wheel provided with a brushing-surface extending from its periphery and the other wheel mounted to run in contact and to rotate the can-body under the brushing-surface, a track for conveying the can by the operation of one of the wheels whereby the seam of the can is passed under the brushing-surface of the other wheel and mechanism for rotating the wheels at different speeds.

8. In a solder-saving machine, the combination of two wheels rotating at different rates of speed, one wheel provided on its periphery with a brushing-surface to operate on the seam of a can, the other wheel running in contact with the can for rotating the same, a semicircular track in which the cans move and are rotated under the brushing-surface, and mechanism for rotating the wheels.

9. In a solder-saving machine, the combination of two rotating wheels having the same axis, the wheels mounted to be rotated at different rates of speed, one wheel provided with a brushing-surface extending from its periphery and the other wheel mounted to run in contact with and to rotate the can-body under the brushing-surface, a semicircular track for delivering the cans to the brushing-surface and permitting the cans to be rotated under the brushing-surface and mechanism for revolving the wheels.

10. In a solder-saving machine, the combination of two rotating wheels operated in parallel planes at different rates of speed, one wheel provided with a brushing-surface on its periphery and the other wheel mounted to run in contact with and to rotate the can under the brushing-surface, a semicircular flexible track having underneath the same yielding supports for carrying the cans in contact with the wheel for rotating the same under the brushing-surface, means for revolving the wheels independently of each other, substantially as set forth for the purposes stated.

11. The combination of a rotary carrier, a yielding track substantially conforming to a portion of the carrier-wheel and a rotating brush substantially concentric with the plane of the carrier and arranged to operate adjacent to the side of the rotary carrier, substantially as set forth.

12. The combination of a solder-wiping machine of a rotary carrier, a track substantially conforming to a portion of the rotary carrier, a rotary brush arranged to operate at the side of the rotary carrier and of somewhat larger diameter and means for driving the rotary carrier and brush, respectively.

13. In a solder-wiping machine, the combination of a rotary carrier, a curved track substantially conforming to a portion of the rotary carrier and a rotary brush mounted in a plane parallel with and close to the carrier and adapted to operate simultaneously on the projecting ends of several cans moving along the track, substantially as set forth.

14. In a solder-wiping machine, the combination of a curved track, a rotary carrier cooperating with said curved track to move and roll cylindrical cans thereon and a rotary brush arranged to operate at the side of and parallel with the rotary carrier adapted to operate on the end of said cans as they move along the said track, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

WORTH D. KYSER.
JASPER C. MORGAN.

Witnesses:
E. T. DE GIORGI,
E. REMINGTON.