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C. H. AYARS.

MACHINE FOR APPLYING FLUX TO CYLINDRIC BODIES.

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Fig. 1.

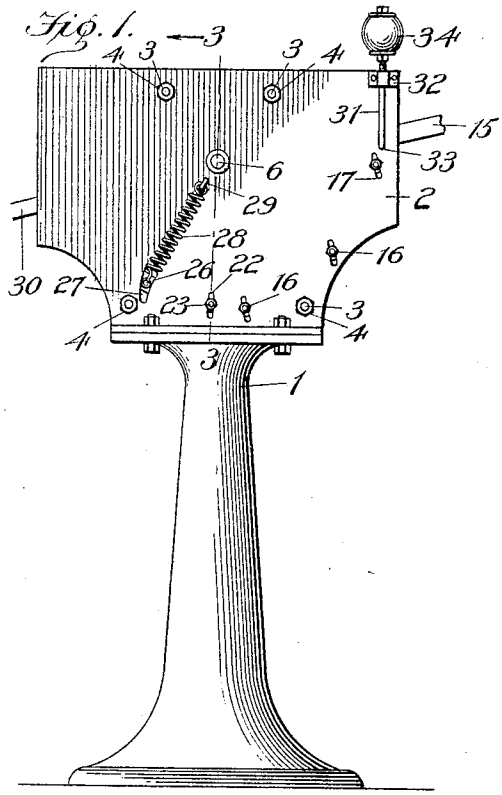


Fig. 3.

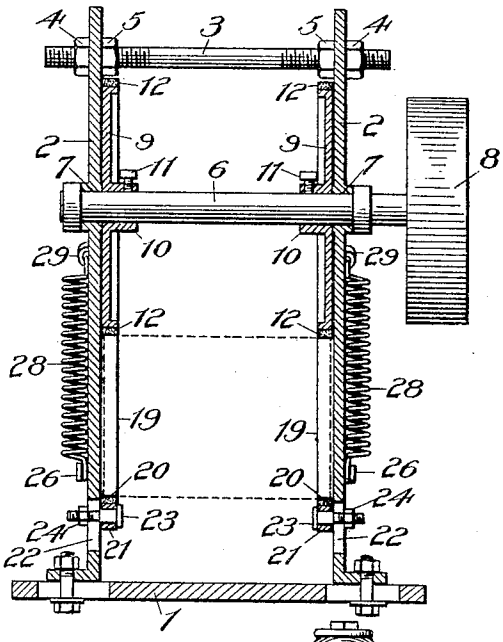
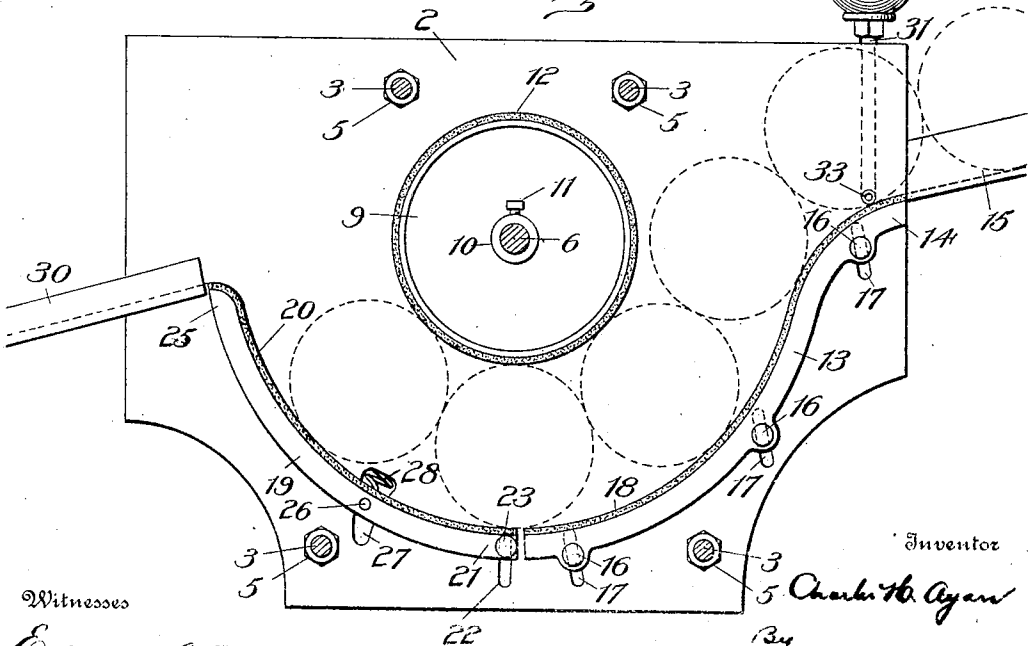


Fig. 2.



Witnesses

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MACHINE FOR APPLYING FLUX TO CYLINDRIC BODIES.

No. 805,833. Specification of Letters Patent. Patented Nov. 28, 1905.

Application filed February 6, 1905. Serial No. 244,289.

To all whom it may concern:

Be it known that I, CHARLES H. AYARS, a citizen of the United States, residing at Salem, in the county of Salem and State of New Jersey, have invented certain new and useful Improvements in Machines for Applying Flux to Cylindric Bodies, of which the following is a specification.

This invention relates to a device for applying flux or acid to the edges of sheet-metal bodies preparatory to soldering the same.

The object of the invention is to provide a machine of this character which will apply the flux with rapidity and at the same time thoroughly and which will be readily adjusted for use in fluxing bodies of different diameters and lengths.

Other objects and advantages arising as the result of novel features in the construction will be hereinafter pointed out.

The accompanying drawings illustrate the invention, in which—

Figure 1 illustrates a side elevation of the machine; Fig. 2, a vertical longitudinal section of the same, and Fig. 3 a vertical cross-section on the line 3 3 of Fig. 1.

Referring to the several views in the drawings, 1 designates a base or support of any suitable construction; 2, the vertical side plates or walls, of which there are two in number and which are held spaced from each other by suitable bolts 3, which extend horizontally through the plates and are provided with nuts 4, adjacent the exterior surface of the plates, and lock-nuts 5, adjacent the interior surface of said plates. These two sets of nuts clamp the opposite surfaces of the vertical side plates and hold the latter rigidly with respect to each other. It will be readily understood that by adjusting the positions of these nuts 4 and 5 in a lengthwise direction with respect to the several bolts the side plates may be moved toward or away from each other. The particular advantage arising from this adjustment will be presently fully explained.

A shaft 6 extends horizontally between the plates 2, and in the present instance the ends of this shaft are sustained in bearings 7, formed by a perforation in each plate. A pulley 8 is mounted on one end of this shaft 6 adjacent the exterior surface of one of the side plates, and by running a belt from any suitable driving source around this pulley 8 the latter and the shaft 6 may be revolved.

Two friction-wheels 9 are mounted on the shaft 6 between the side plates, and these wheels are each provided with collars 10 and set-screws 11, by which they may be independently adjusted on the shaft. These wheels are spaced from each other on the shaft so that each will revolve in a vertical plane at the side near one of the side plates.

A friction-ring 12, of some suitable yielding material, is secured circumferentially around each wheel.

Below the wheels 9 and on the inner surface of each side plate is a rail or support 13, which curves in a direction parallel with the circumference of said wheels. The upper ends 14 of these rails extend to a point in a plane above the horizontal shaft 6, at which end they register and are connected to a suitable trackway or chute 15, the lower end only of which is shown. From this point the rails then begin to curve downwardly and parallel with the circumference of the wheels 9, as previously described. In the present instance these rails or supports are adjustably attached to the side plates 2 by means of bolts 16, which engage the rail and project through slots 17 in said side plates. The upper surfaces of these rails are provided with a strip or packing 18, of a suitable material, such as felt, which, as will presently be explained, is to apply the flux or acid to the bodies that are to be soldered. In the present instance the rails or supports just described extend only part of the way beneath the wheels 9, and these rails or supports after adjustment are preferably rigidly secured in the adjusted position with respect to the circumference of the said wheels.

At the lower ends or terminations of the rigid rails or supports I provide yielding rails or supports 19, which are also provided on their upper surfaces with a packing of yielding material 20. These yielding rails are preferably pivoted adjustably at their lower ends 21 adjacent the ends of the rigid rails, and, as illustrated in the drawings, one way of forming this pivot is by providing slots 22 in the plates 2 at the point where the pivot is to be located and to insert a shouldered bolt 23 from the inner side through said slot and

engage its inner end loosely with the lower end 21 of the yielding rail. By then screwing a nut 24 on the outer end of the bolt 23 the latter may be rigidly secured in its adjusted position. This adjustment is necessary if the rails or supports 13 are adjustable, as will be readily understood. The yielding rails 19 are also curved in a direction substantially parallel with the circumference of the wheels 9, although they are not maintained in a position parallel with said wheels. In order that the free ends 25 of these yielding rails may be sustained in an elevated position, in the present instance I provide each of them with a laterally-projecting pin 26, which projects through a slot 27 in the side plate 2, and on the exterior of said plate I secure the lower end of a spiral spring 28 to the projecting end of said pin 26, while the upper end of said spring is preferably secured in a perforated lug 29 on the side of the plate. This arrangement serves to draw the free ends of the rails yieldingly toward the wheels 9, while the upper end of the slot 27 limits said upward movement of the rails. It will be noted that the extreme upper ends of the yielding rails terminate at a point in a plane below the horizontal axis of the wheels 9, and adjacent said ends I provide a chute or trackway 30, on which the bodies may roll as they pass from the yielding rails.

Adjacent one edge of the side plate and above the upper ends 14 of the rigid rails or supports I provide flux or acid tubes 31, which in the present instance extend downwardly on the outside of the plates 2 and are secured thereto by a suitable bracket or block 32. The lower ends of these flux-tubes extend inwardly at 33 through a perforation in the side plate, and said inner ends terminate at the side of the packing 18 on the upper surface of the rails 13 and deposit the flux or acid on said packing. The upper ends of the flux-tubes are in communication with a liquid flux or acid receptacle 34, from which the flux is supplied. As the flux discharges from the ends of the tubes 31 it will be absorbed by the packing material 18, and the latter will be kept moist. As the bodies roll with their ends resting on the packing material they will gather up the flux and further distribute it over the packing material 18 and also onto the packing 20 of the yielding rails 19 and the packing 12 on the revolving wheels 9. By this means the flux is thoroughly distributed over the packing-surfaces.

It is to be understood that the expression "cylindric bodies" applies to bodies with the ends applied as well as to bodies without ends, and the expression wherever used in the specification or claims is to be so construed.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a machine for fluxing cylindric bodies the combination with parallel curved concentric surfaces between which the bodies are sustained, of means for revolving one of said surfaces to advance the bodies by revolving them and means for applying and distributing the flux through said curved surfaces.

2. In a machine for fluxing cylindric bodies the combination with a curved supporting-surface on which the bodies are sustained, of a device having a circular surface concentric with the supporting-surface and spaced from the latter to form a curved way for the bodies, means for revolving said device to advance the bodies by rolling them, and means for applying flux to the bodies as they advance in said curved way.

3. In a machine for fluxing cylindric bodies the combination with a curved supporting-surface on which the bodies are sustained, of a revolving device to contact with the bodies and advance them along the supporting-surface, and means for supplying flux to one of said surfaces to transfer it to the advancing bodies.

4. In a machine for fluxing cylindric bodies the combination with a curved supporting-surface, of a revolving device sustained so as to revolve in a path concentric with but spaced from said supporting-surface to form a curved way for the bodies; a flux-distributing material on said surface, and means for supplying flux to said material.

5. In a machine for fluxing cylindric bodies the combination with a curved supporting-surface on which the bodies are sustained, of a revolving device having a circular surface to contact with the bodies and advance them along the supporting-surface; means for permitting adjustment of one of said surfaces with respect to the other to alter the distance between them, and means for applying flux to said bodies while they are advancing.

6. In a machine for fluxing cylindric bodies the combination with a curved supporting-surface, of a revolving device sustained so as to revolve in a path concentric with but spaced from said supporting-surface to form a curved way for said bodies; flux-distributing material on said supporting-surface and means for supplying flux to the material on said supporting-surface to be transferred to the bodies as they advance.

7. In a machine for fluxing cylindric bodies the combination with a concave supporting-surface, of a revoluble device sustained so as to revolve in a vertical plane and concentric with but spaced from said concave surface to form a concave curved way for said bodies; means for revolving said device to advance the bodies through said concave way, and means for applying flux to said bodies as they advance through said way.

8. In a machine for fluxing cylindric bodies, the combination with a concave trackway, of a flux-distributing material on said concave

trackway; means for supplying flux to said material; a circular head sustained above said trackway and spaced from the latter, and means for revolving said head while in contact with the bodies to roll them along said trackway on the flux-distributing material and apply the flux.

9. In a machine for fluxing cylindric bodies the combination with a stationary concave support of a circular revoluble head above said support; a yielding concave support, and means for supplying flux to the stationary support.

10. In a machine for fluxing cylindric bodies the combination with a stationary concave support, of a circular head above said support; means for adjusting the positions of said support and head; a yielding support at the end of the stationary support; a flux-distributing material on said supports and means for supplying flux.

11. In a machine for fluxing cylindric bodies the combination with an adjustable concave support, of a circular head above said support; a curved support pivoted at one end adjacent the lower end of the adjustable support and having its end movable in a direction toward or away from said head and means for supplying flux.

12. In a machine for fluxing cylindric bodies the combination with a concave support, of a circular head above said support; means for adjusting the position of the concave support with respect to the circular head; a curved support pivoted at the lower end of said first-named support; means for adjusting the pivoted support with respect to the circular head; means for yieldingly sustaining the free end of said pivoted support, and means for supplying flux to said concave support.

13. In a machine for fluxing cylindric bodies the combination with the parallel concave supports spaced from each other, of circular heads to coact with each of said supports; means for revolving said heads while in contact with the edges of the bodies to be fluxed and means for supplying flux to concave supports to be applied to the bodies as the latter are advanced by said heads.

14. In a machine for fluxing cylindric bodies the combination with the parallel spaced-apart concave supports; means for adjusting the position of the supports in a direction toward or away from each other; circular heads to coact with said supports; means for adjusting the positions of the supports with respect to said heads; means for revolving said heads, and means for supplying flux to said supports.

15. In a machine for fluxing cylindric bodies the combination with a plurality of parallel concaved supports, of means for adjusting said supports in a vertical plane; movable concave supports each having one end pivoted adjacent the lower end of said first-named supports and the ends of each of said pivoted supports being movable; a flux-distributing material on said supports and on which the bodies may roll; means for supplying flux to said material; a circular head above said adjustable supports to contact with the bodies to be fluxed, and means for revolving said head to advance the bodies.

16. In a machine for fluxing cylindric objects the combination with the side plates, of a concave support secured to each of said side plates; a circular head above each of said supports and adjacent each side plate; means for supplying flux to each of said supports and means for revolving said circular heads.

17. In a machine for fluxing cylindric objects the combination with the side plates, of means for adjusting the side plates in a direction toward or away from each other; a concave support secured to each of said side plates; means for vertically adjusting said supports on said side plates; a circular head above said supports; means for revolving said head to advance the circular objects, and means whereby flux may be applied to said circular objects as they are advanced between the side plates.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES H. AYARS.

Witnesses:

HATTIE B. AYARS,

J. G. RICHMOND.