

(No Model.)

2 Sheets—Sheet 1.

B. H. SHORT.  
SOLDERING MACHINE.

No. 602,368.

Patented Apr. 12, 1898.

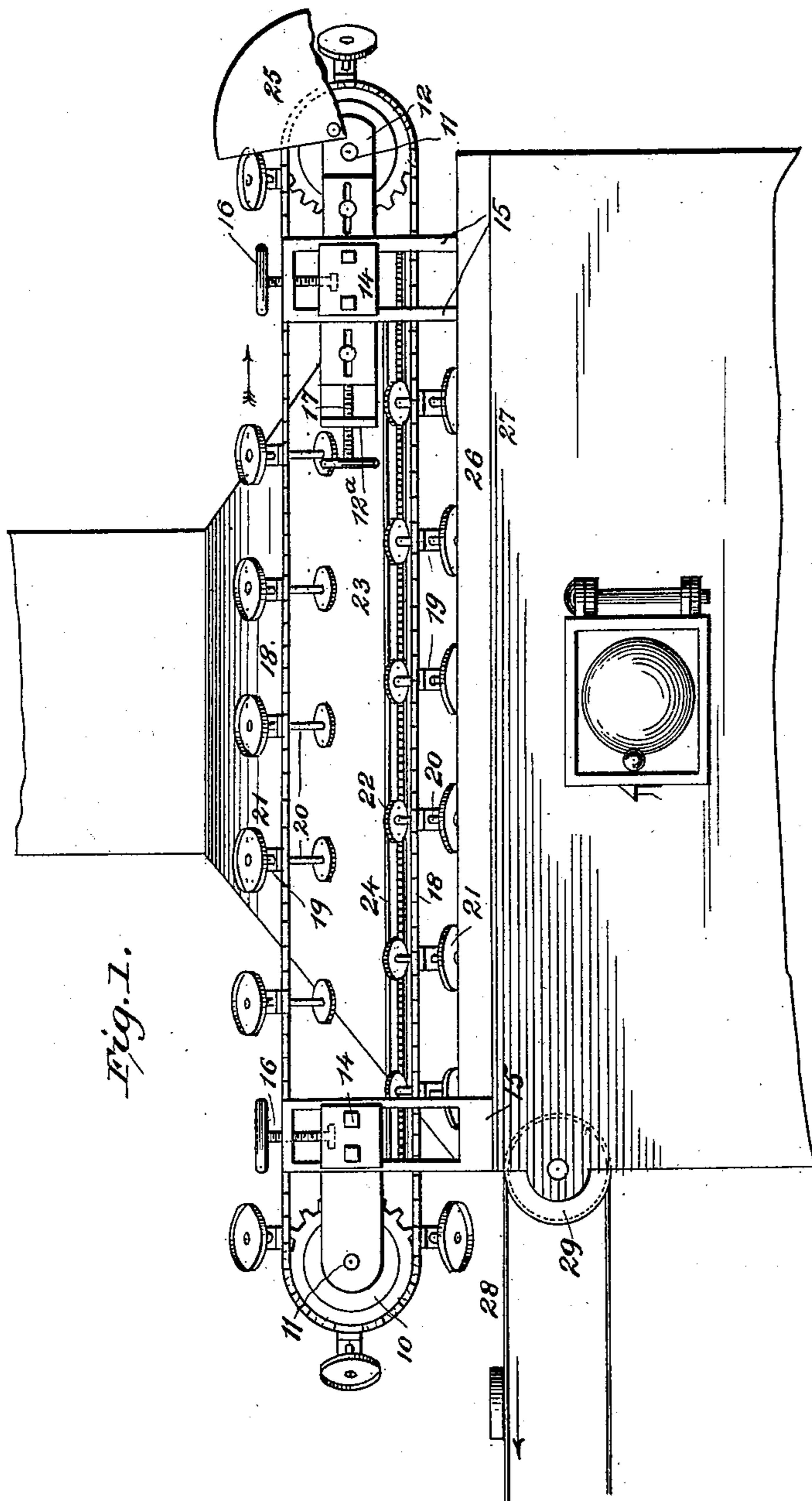


Fig. 1.

WITNESSES:

*A. Dieterich*  
*E. McCormick*

INVENTOR

*B. H. Short*

BY

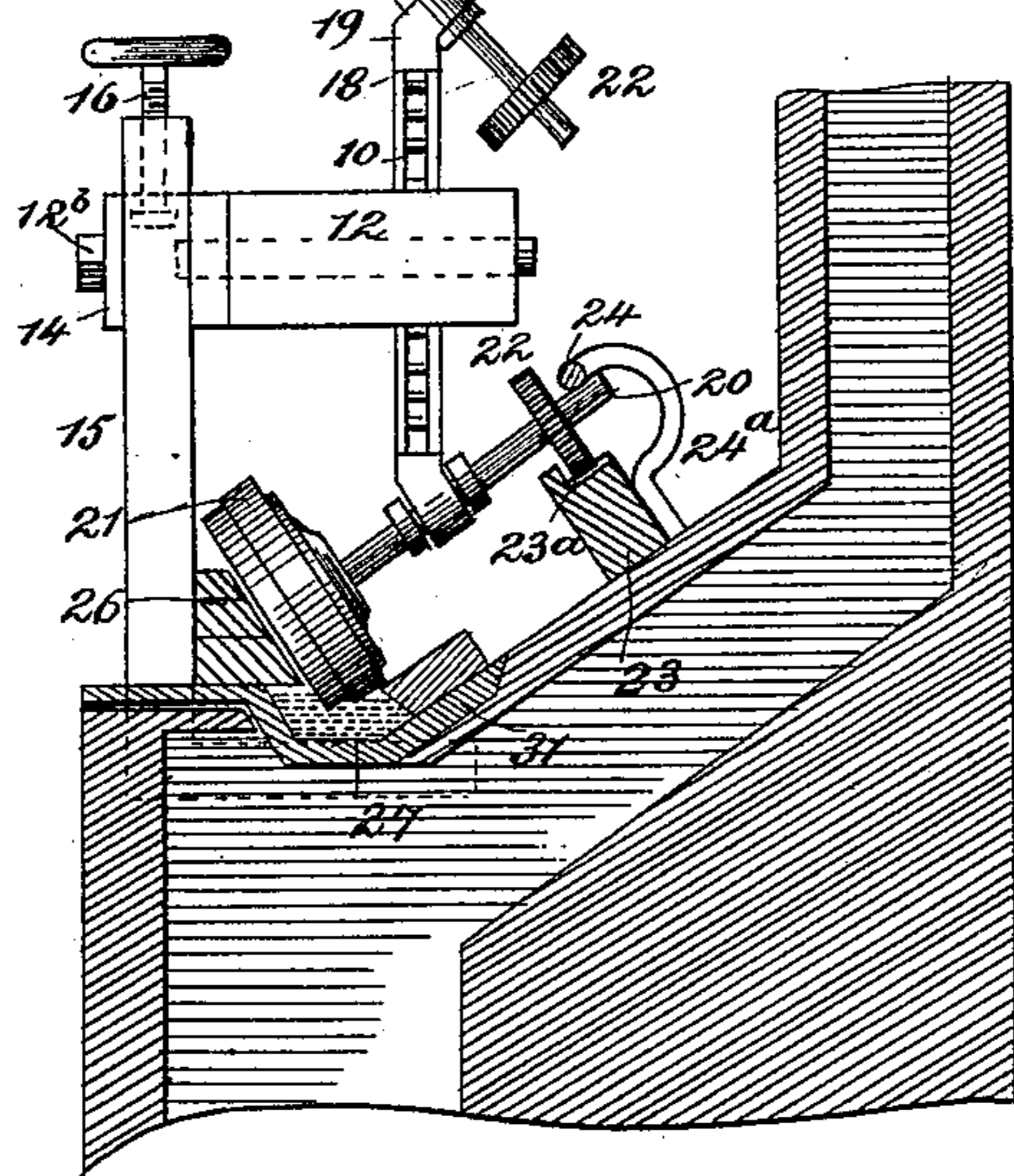
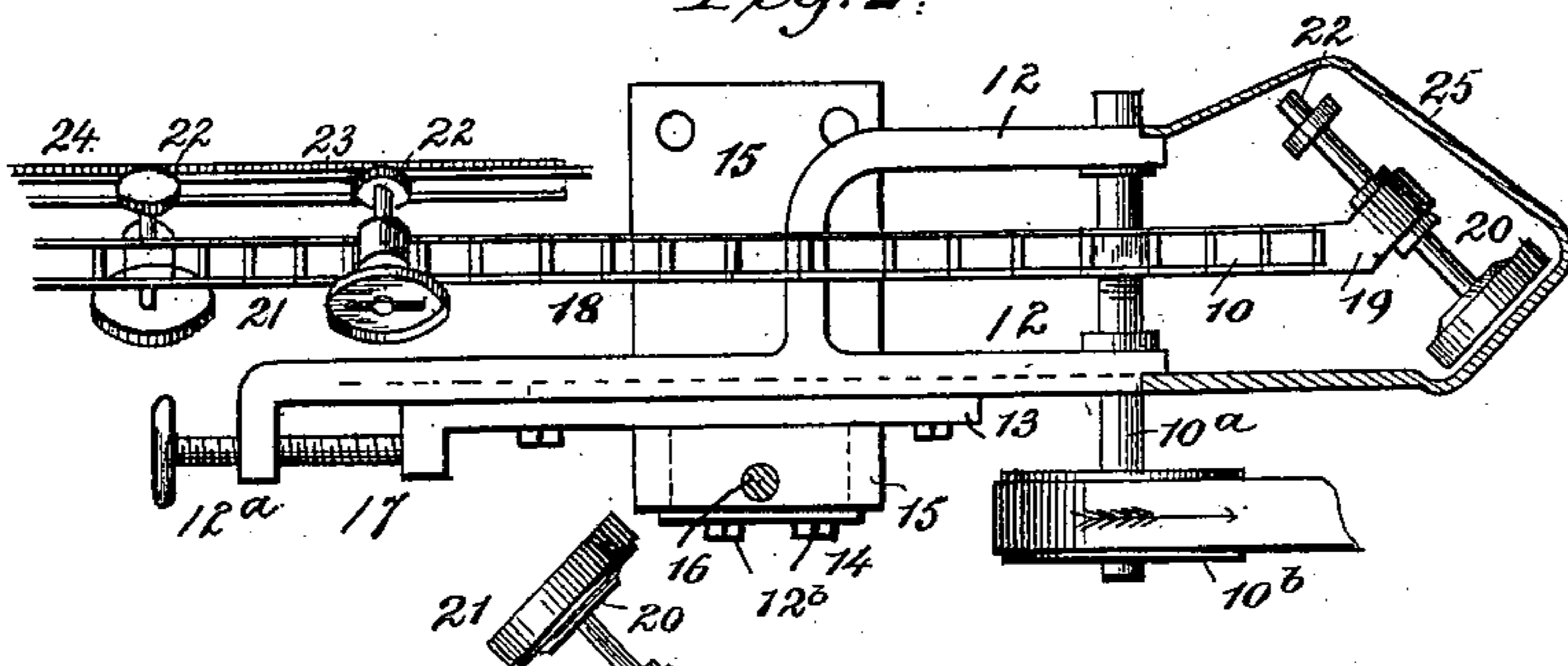
*Frederick Dieterich*  
ATTORNEY.

2 Sheets—Sheet 2.

No. 602,368.

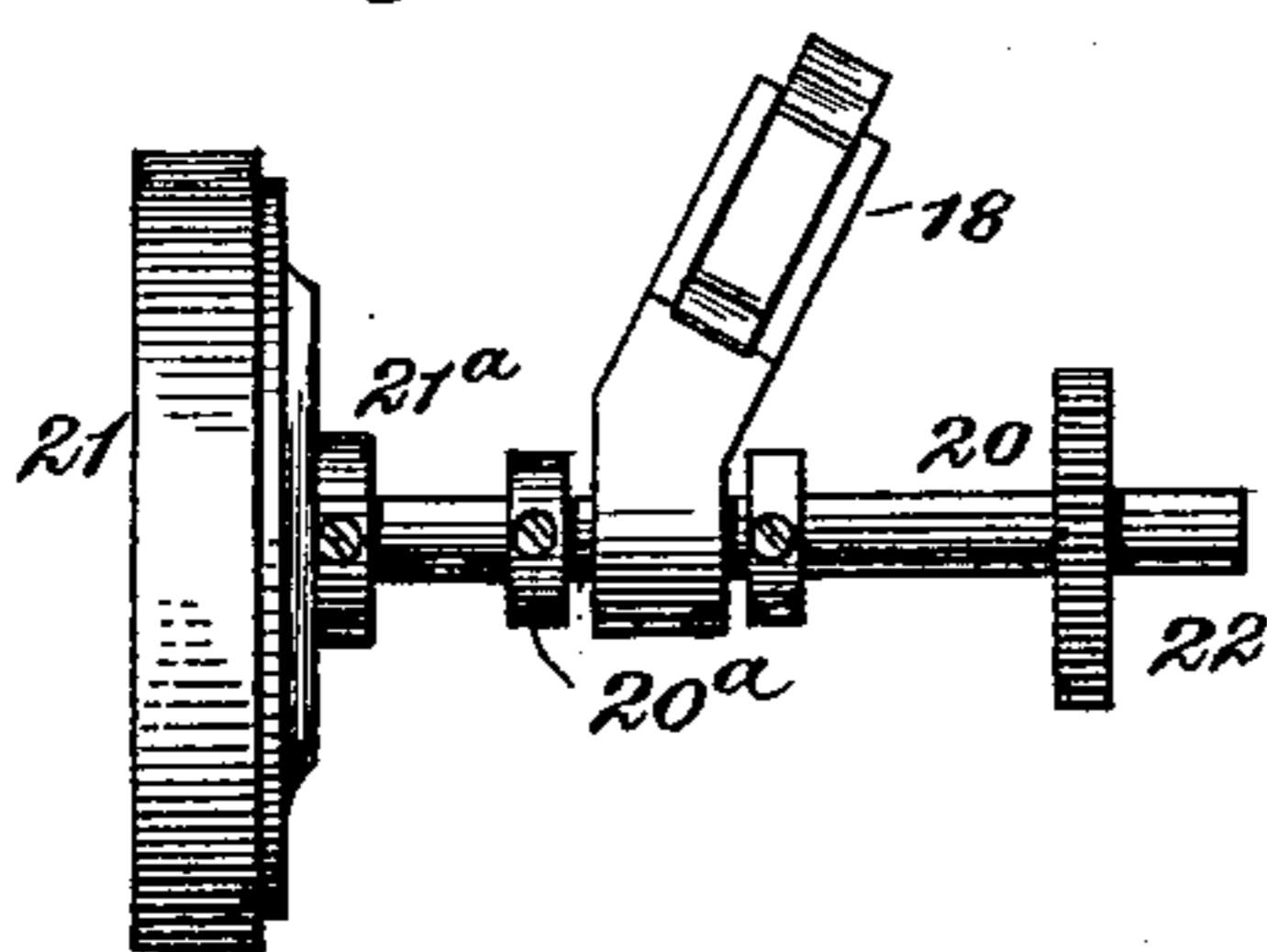
Patented Apr. 12, 1898.

*Fig. 2.*

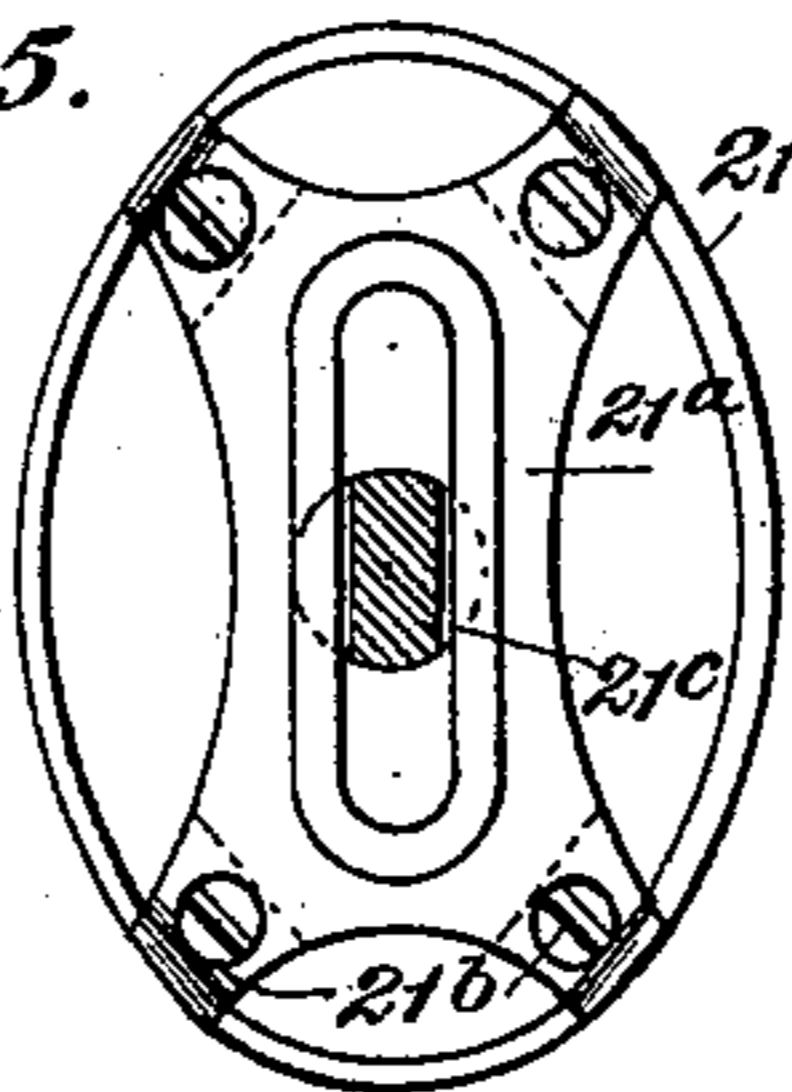


*Fig. 3.*

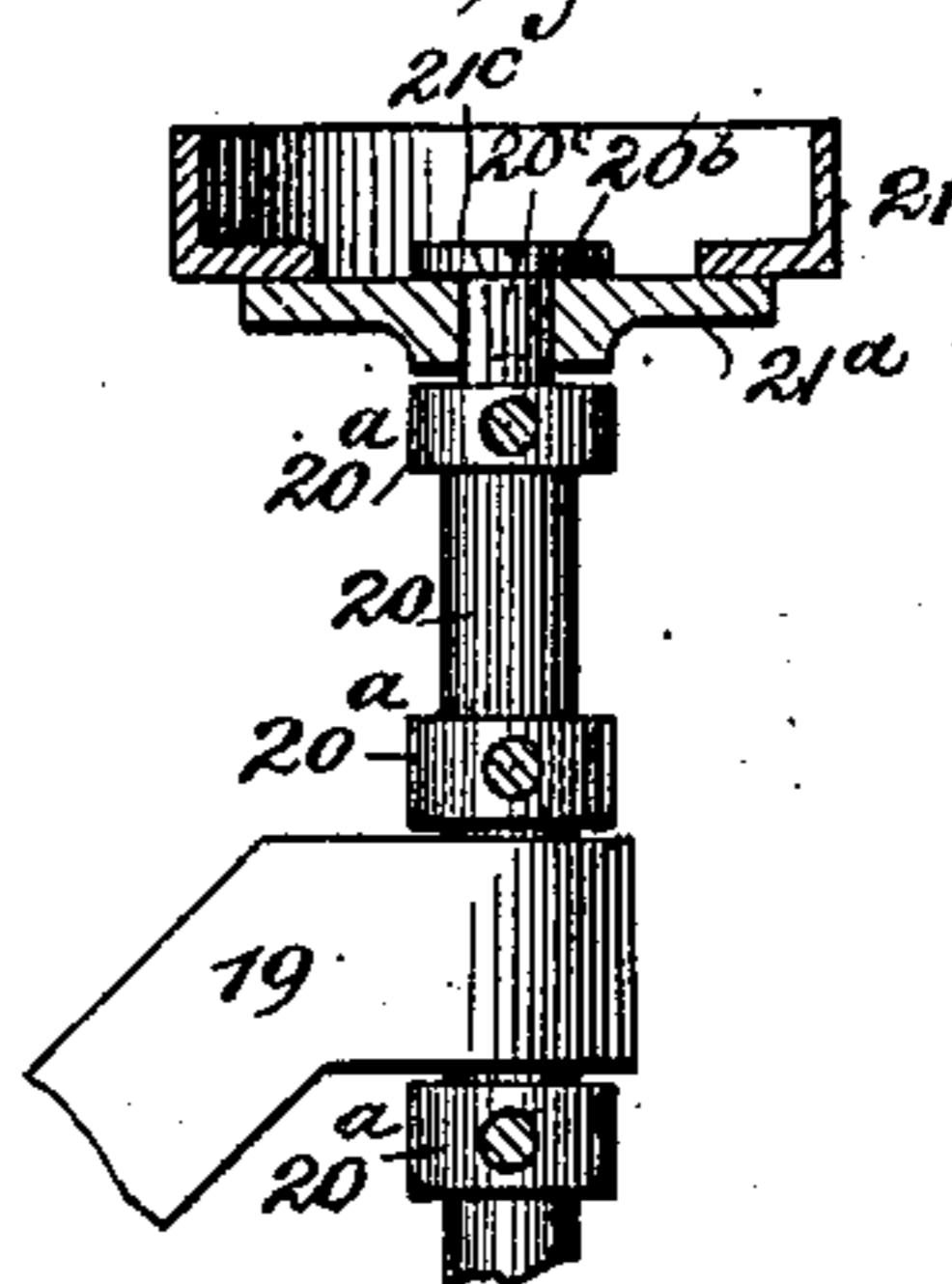
*Fig. 4.*



*Fig.5.*



*Fig. 6.*



A. E. Dietrich  
E. McCormick

*B.H.Short*

BY

Fred G. Dutovich  
ATTORNEY.

# UNITED STATES PATENT OFFICE.

BERTRAND H. SHORT, OF VANCOUVER, CANADA.

## SOLDERING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 602,368, dated April 12, 1898.

Application filed June 1, 1897. Serial No. 639,018. (No model.)

*To all whom it may concern:*

Be it known that I, BERTRAND H. SHORT, a citizen of the Dominion of Canada, residing at Vancouver, in the Province of British Columbia, Canada, have invented a new and useful Soldering-Machine, of which the following is a specification.

My invention relates to machines for fluxing or soldering cans; and its object is to provide such an apparatus that will conveniently solder flat oval cans of almost any form so long as the peripheries of the same are of roundish form and to do the work with rapidity and despatch. I attain this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 shows an elevation of my machine, which illustrates its general arrangement when in use. Fig. 2 shows a plan view in detail of one of the adjustable support-frames in which the can-conveying mechanism is mounted. Fig. 3 shows a vertical intersection of the machine, taken at line *a a* of Fig. 1. Fig. 4 shows one of the can receptacles or sockets with its relative parts. Fig. 5 is an inverted plan view of one of the said can-sockets; and Fig. 6 is an intersection of the same, taken through its center.

In the drawings similar numerals designate corresponding parts throughout the several views.

10 indicates sprocket-wheels mounted on shafts 11, which are suitably arranged in forked bearings 12, as shown in Fig. 2. One of these bearings 12 is adjustably mounted on a suitable frame 13, whose center portion projects and fits between the vertical sides of the standard 15 and is kept in place by the plate 14, which is secured on the projecting side of the same, and the projecting shoulders of the plate rest against the vertical outer sides of the standard. By reason of the bolts 12<sup>b</sup> passing through slots in the projecting ends of the frame 13 and the wheel-screw 17 taking through a lateral projecting portion of the frame 12, as 12<sup>a</sup>, it will be seen that the sprocket-wheels may be adjusted and set at various distances apart, and by the wheel-screw 16 the said wheels may be set at the desired elevations. It being necessary to use but the one wheel-screw 17 for setting the said wheels 10 apart, this is dispensed with on the

other standard 15, (see Fig. 1,) and the frame 13 is dispensed with also, but the projection which lies between the vertical sides of the said standard 15 being a lateral extending portion of the frame 11, which is similar at its bifurcations to the frame 12.

18 indicates a sprocket-belt taking round the wheels 10. This belt 18 is provided at regular intervals with inverted shackle-links 19, having perforations therein placed at an angle of about twenty degrees to the plane of the chain or belt. Suitably arranged in the perforations are spindles 20, which are retained in their proper position by collars 20<sup>a</sup>, and on the ends describing the greater radius are fixed can-receiving sockets 21, and, as better shown in Figs. 4, 5, and 6, these sockets are secured to spider-castings 21<sup>a</sup> by screws or bolts 21<sup>b</sup>, and they are self-adjusting by reason of the spindle 20 loosely passing through a slot 21<sup>c</sup> therein, and by reason of a collar 20<sup>a</sup>, secured to the spindle 20 and lying in close proximity to the said casting 21<sup>a</sup> and a flange 20<sup>b</sup>, secured to the flat end of the spindle by a screw 20<sup>c</sup>, it will be seen that the can sockets or receptacles are self-adjusting and that as the cans are conveyed along a common runway at the angle above mentioned their lower edges will find a common radii by the shank of the spindle 20 oscillating in the slot 21<sup>c</sup>, and therefore cans of various shapes may be rolled along without undue vibration upon such runway, and by reason of the pinions 22 near the opposite ends of these spindles engaging in the rack 23 the cans in the sockets 21 will be rolled along at a uniform pace without fluctuatory movement.

As better illustrated in Fig. 3, to prevent the pinions while engaging the rack 23 from dropping below their proper line I provide a projecting flange adjacent to the rack, as 23<sup>a</sup>, and on the opposite side of the path of the said pinion is arranged a guide-bar 24, which is supported in close proximity to and above the axis of the pinions by extending brackets 24<sup>a</sup>, suitably secured to the bed of the rack. This guide-bar 24 effectually prevents the pinions from rising from the rack, and thus allow the cans to slide and escape the work.

As shown in Fig. 2, 25 indicates a hood for

the purpose of preventing the cans, which are placed by hand or otherwise into the inverted sockets 21 before entering this covering, from dropping therefrom until the said sockets  
5 shall have passed beneath, and the lower sides of the cans will rest on and be supported by the beveled guide-bar 26, (see Fig. 3,) when the lower rims of the cans will be submerged in the solder, which is in a trough 27, suitably  
10 arranged above a furnace.

In the operation of my machine sockets or can-receptacles are provided to receive the shaped cams that are to be fluxed, and these are secured to the spider-shaped castings 21<sup>a</sup>.  
15 Motion is imparted to the machine by a belt taking round a pulley secured on the extending end of the shaft 11, (see Fig. 2,) and as the sprocket-belt carrying the can-conveying devices is passed in the direction of the arrow the cans (having first their covers put on)  
20 are placed in the sockets 21 before entering the hood 25, and when the carriers reach the point where the rack engages the pinions the cans in the sockets 21 will be revolved in proportion to the speed of the machine and after  
25 being first damped in acid will be rolled through the hot solder, and consequently will be effectually sealed up, when at the opposite end of the machine they will be dropped from their holdings and be carried away by the belt taking round the pulley 29.

It is shown from the foregoing that my machine is very simple and very effective and will properly solder a large number of flat  
35 oval cans in a short space of time, which is the object of my efforts.

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

40 1. In combination with a machine for soldering cans of uneven radii, having a solder-trough arranged longitudinally above a furnace and beneath a runway for cans, and sprocket belt-wheels adjustably arranged  
45 above and at either end of the said runway, shackle-links arranged at intervals upon a sprocket-belt taking round the said wheels, spindles 20 arranged to loosely journal in apertures fixed at an angle in said links 19, of  
50 self-adjusting can-receptacles 21 arranged on the depending ends of the spindles 20, and pinions 22 rigidly fixed near the opposite ends of the spindles and made to engage a fixed rack in their track, substantially as set forth.

55 2. In an apparatus for soldering cans of uneven radii, by means of rolling movement over a receptacle of heated solder, the combination of standards 15 having adjustable frames arranged thereon, said frames carrying wheels 10 having a sprocket-belt passing  
60 therearound, shackle-links 19 inserted at regular intervals in said belt, the projecting por-

tions of said links being turned laterally, of pinions or shafts passing through apertures therein, which apertures are at angles of approximately twenty degrees to the plane of the sprocket-belt, of can-receiving sockets 21 adjustably arranged on the ends of the shafts or spindles 20, of means for controlling said  
65 spindles from lateral movement and means for imparting rotary motion to the same while passing over a solder-trough, whereby the can-receptacles will be rolled along a common runway, as set forth.

3. In an apparatus for can-soldering, having wheels arranged at either side and a sprocket belt or chain passing over a common runway, spindles arranged along said chain, the same being provided with can-receptacles on their depending ends which receptacles are  
75 self-adjusting as to radius, pinions 22 rigidly fixed near the opposite ends of the said spindles, a rack 23 engaging the pinions in their lower path, a guide-rod 24 made to engage the upper portions of the projecting ends of the  
80 spindles 20 in proximity to the pinions, while engaging the rack 23, substantially as set forth.

4. In a machine for soldering cans having sprocket belt-wheels and a belt taking round  
90 the same, and can-conveyers arranged at intervals along said belt, the combination of spindles passing through apertures therein, of can-receptacles adjustably arranged on the ends thereof, and means for revolving the  
95 same at a uniform speed, as set forth.

5. In a machine for soldering cans, can-receptacles 21, spider-castings 21<sup>a</sup> suitably secured thereto, the same having slots therein, spindles 20 having flat shanks passing through  
100 the said slots and collars arranged on either side of the said castings, and means for passing the said can-receptacles over a common runway by a rolling movement, substantially as and for the purposes set forth.

6. In a can-soldering machine having belt-wheels arranged at either side of a fixed trough, a frame adjustably arranged and made to support one of the belt-wheels, a sprocket-belt having can-conveyers thereon  
110 and having a fixed angle to the line of the said wheels, a hood or guide 25 secured to the branches of the frame 12, the same being made to engage and prevent cans from being detached from the conveyer while taking round  
115 the arc of the wheel 10, as and for the purposes hereinbefore set forth.

In testimony whereof I have hereunto affixed my signature in the presence of two witnesses.

BERTRAND H. SHORT.

Witnesses:

W. G. TRETHEWEY,  
JOHN H. JACKSON.