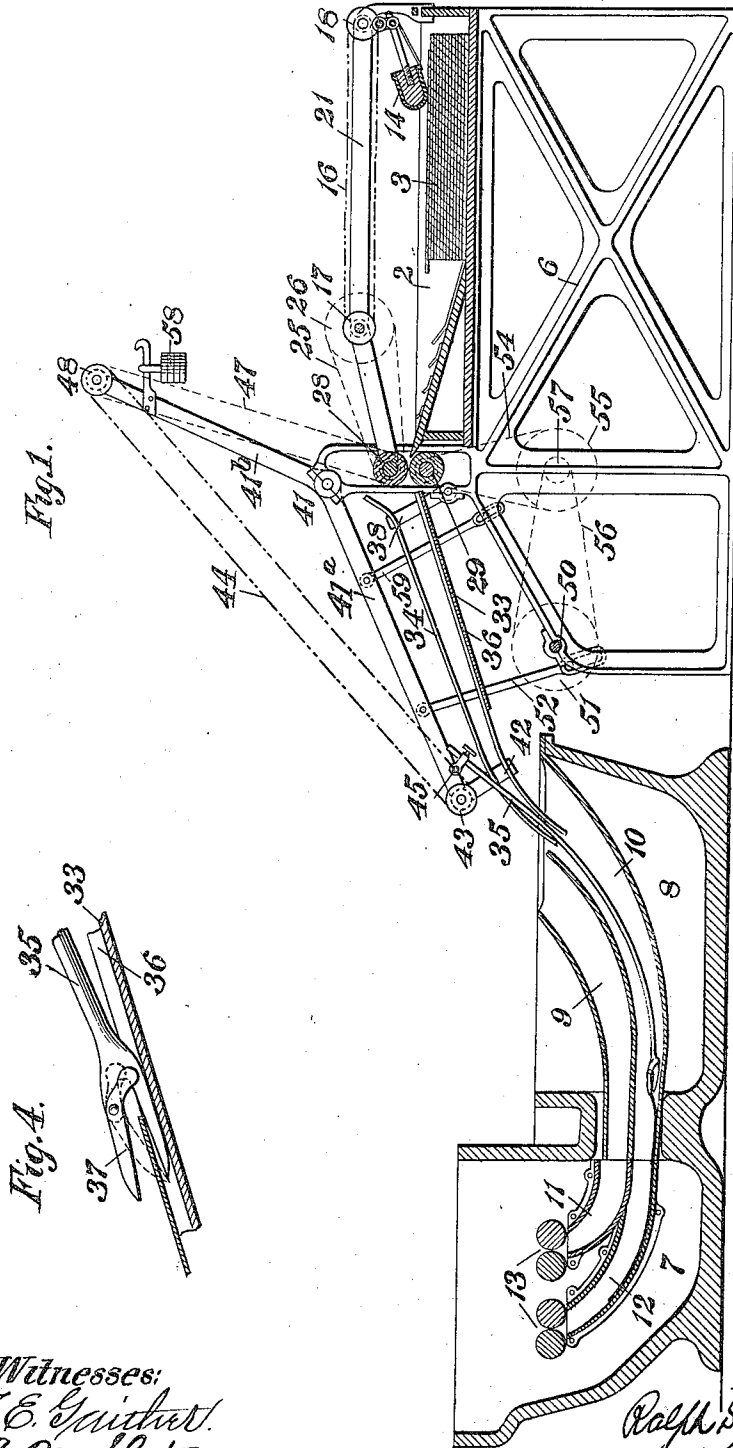


R. S. SCHRUMN.
 AUTOMATIC FEEDING MECHANISM FOR TINNING APPARATUS.
 APPLICATION FILED OCT. 22, 1909.

1,064,780.

Patented June 17, 1913.

3 SHEETS-SHEET 1.



Witnesses:
 F. E. Gaither
 A. M. Slater

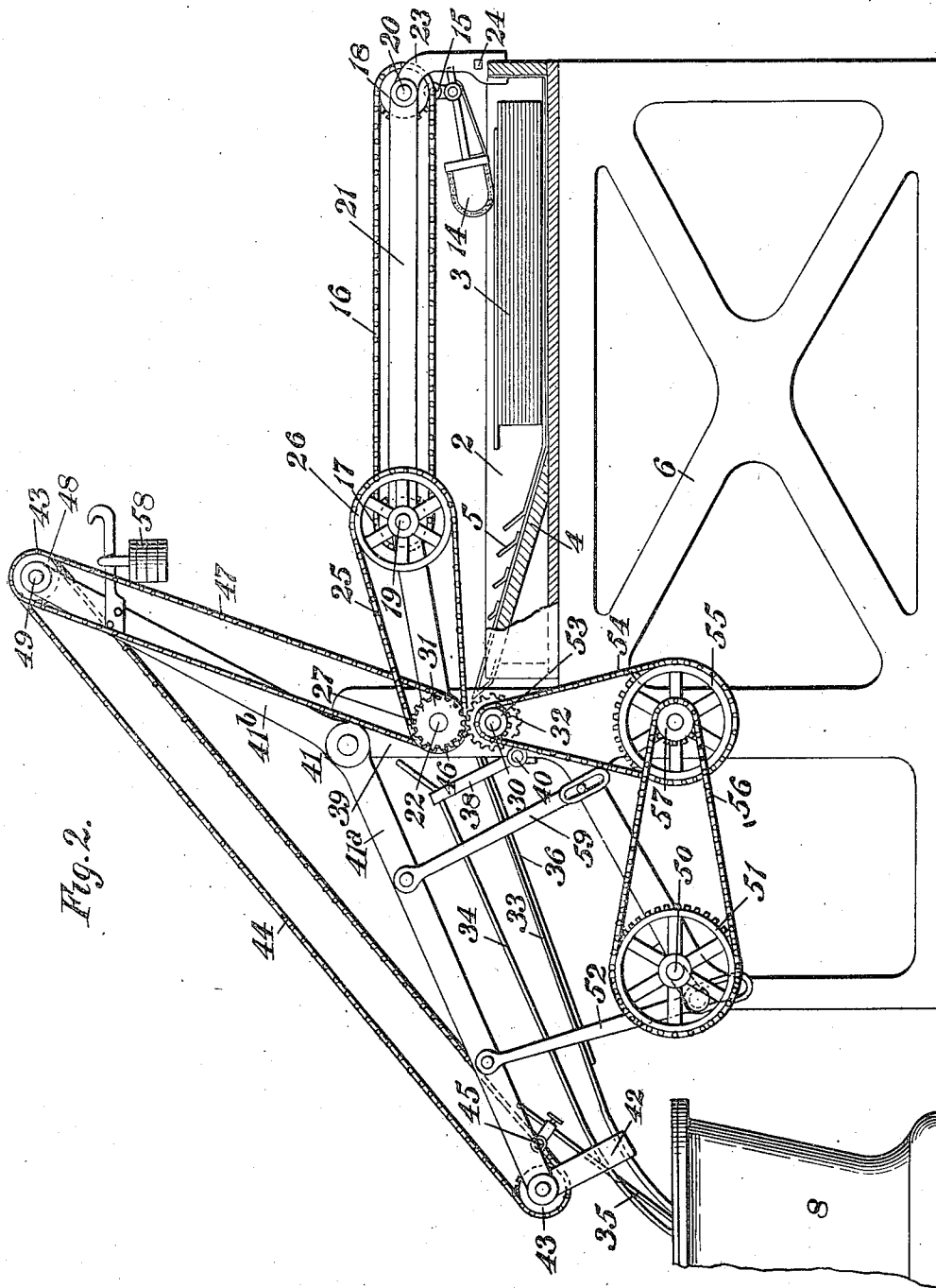
Inventor,
 Ralph S. Schrumn
 by W. C. Doolittle
 Attorney.

R. S. SCHRUMN.
 AUTOMATIC FEEDING MECHANISM FOR TINNING APPARATUS.
 APPLICATION FILED OCT. 22, 1909.

1,064,780.

Patented June 17, 1913.

3 SHEETS—SHEET 2.



Witnesses:
 J. E. Gaither
 A. M. Slater

Inventor:
 Ralph S. Schrumn
 by W. G. Doolittle
 Attorney.

R. S. SCHRUMN.
 AUTOMATIC FEEDING MECHANISM FOR TINNING APPARATUS.
 APPLICATION FILED OCT. 22, 1909.

1,064,780.

Patented June 17, 1913

3 SHEETS-SHEET 3.

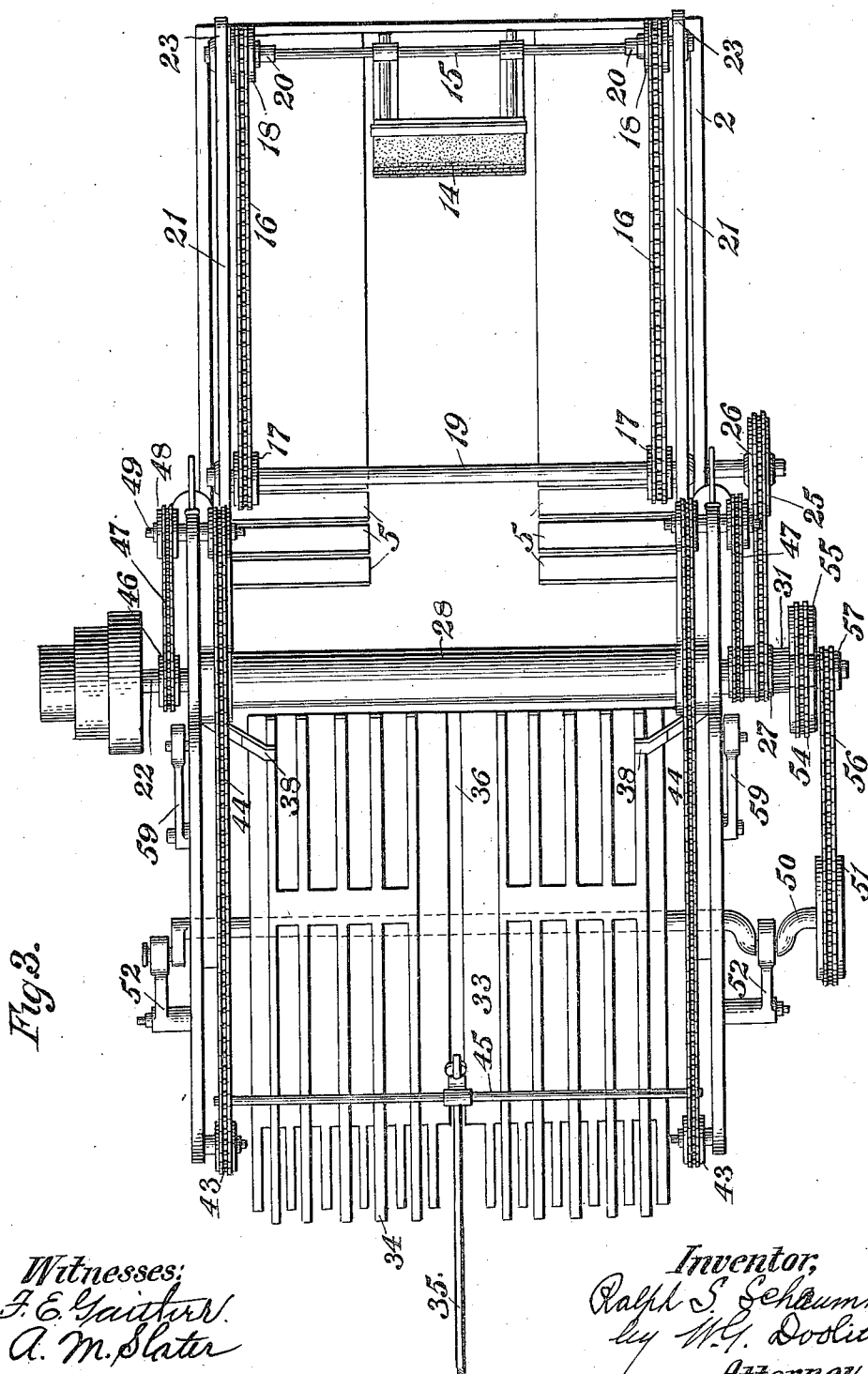


Fig. 3.

Witnesses:
 F. E. Gaither.
 A. M. Slater

Inventor,
 Ralph S. Schrumn
 by W. G. Doolittle
 Attorney.

UNITED STATES PATENT OFFICE.

RALPH S. SCHRUMN, OF TARENTUM, PENNSYLVANIA.

AUTOMATIC FEEDING MECHANISM FOR TINNING APPARATUS.

1,064,780.

Specification of Letters Patent.

Patented June 17, 1913.

Application filed October 22, 1909. Serial No. 524,034.

To all whom it may concern:

Be it known that I, RALPH S. SCHRUMN, of Tarentum, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Automatic Feeding Mechanism for Tinning Apparatus, of which the following is a specification.

My invention relates to improvements in tinning apparatus and more particularly to automatic feeding mechanism for tinning apparatus.

An object of the present invention is to do away with hand labor in feeding plates or sheets to the tinning-pot of tinning apparatus.

A further object of my invention is to provide a feeding mechanism that will entirely dispense with the use of rolls in the flux-box of the apparatus.

A still further object of my invention is the provision of feeding means whereby sheets or plates deposited in a pile in a liquid-containing-vessel, may be singly and successively fed automatically to the flux-box of the apparatus.

In the accompanying drawings which illustrate an application of my invention, Figure 1 is a part side elevational and a part vertical longitudinal sectional view of an apparatus embodying my invention; Fig. 2 an enlarged side elevational view particularly showing the sheet-feeding-mechanism; Fig. 3 a top plan; and Fig. 4 a detail view of a sheet-gripping-jaw.

Referring to the drawings, 2 designates a feed-box or liquid-containing-receptacle designed to hold a pile of sheets or plates as shown by the numeral 3. This box or receptacle may be of any desired form suitable for receiving a pile of sheets to be passed through the tinning-pot. As illustrated, I provide the box with an inclined wall 4, and secured thereto are two rows of spring-strips 5, the latter being designed to prevent more than one sheet being passed forward at a time. Box 2 is supported on a frame 6, which frame is also utilized for supporting various parts of the feeding mechanism hereinafter described.

7 and 8 respectively designate the tinning-pot and flux-box of the apparatus and, as illustrated, the flux-box is provided with guide-ways 9 and 10 and the tinning-pot with corresponding guide-ways 11 and 12.

Located within the tinning-pot 7 adjacent to each guide-way 11 and 12 is a set of rolls 13 adapted to receive the sheets as they are passed from the flux-box.

Adapted for operation in the box 2 is a cross-piece or pusher 14, as shown; the pusher comprises a rounded block covered with felt and is loosely hung on a cross-rod 15, said pusher being held in operative engagement with a sheet by its own weight when brought into contact therewith by the travel of the cross rod 15. It will be noted that the cross rod pursues an orbital path and this travel imparts a reciprocatory movement to the pusher. Cross-rod 15 is supported by and carried with two sprocket-chains 16 which are arranged to travel on wheels 17 and 18, the wheels 17 are mounted on and driven by a shaft 19 and the wheels 18 mounted on short axles 20 projecting inwardly from side-bars 21. These bars 21 are bent as shown and each has its forward end engaged with a shaft 22. Shaft 22, as illustrated, is the main drive shaft of the apparatus and extends entirely across and projects from both sides of the apparatus. The rear end of each of the bars 21 is curved downwardly as shown at 23 and are forked adapting them to fit over a wall of the box 2. A rod 24 joins the curved or bent ends 23 of the bars 21. Bars 21, having their forward ends pivotally mounted on the main drive shaft, may, together with the wheels 18, chains 16 and pusher 14, be raised vertically for the purpose of placing a new pile of plates in the box 2; and owing to this construction a new pile may be deposited without stopping the apparatus. Shaft 19 is driven by means of a chain 25 which travels on sprocket-wheel 26 and a sprocket-wheel 27, the latter being mounted on main shaft 22.

Located adjacent to the inclined wall 4 of box 2 is a set of drying rolls preferably covered with rubber or felt. The upper roll 28 is mounted on the main drive shaft 22 and the lower roll 29 on a shaft 30. Shafts 22 and 30 are geared together by gear-wheels 31 and 32.

After passing through the drying-rolls the sheets or plates reach an inclined movable chute or platform 33 which extends from said rolls to the flux-box. Located over the platform 33, I provide skeleton-guide-plates 34; these plates 34 as well as

the platform 33 are curved at their ends adjacent to the flux-box to provide a stop for the sheets thereby preventing the sheets from sliding into the flux-box prior to being engaged by a mechanically operated "fork" or pushing-rod 35. Centrally located in chute 33 in a small trough or groove 36 designed to permit the gripping jaws of the "fork" 35 to grip the end of the sheet. The jaws 37 employed on the end of the "fork" are particularly shown by Fig. 4, one member being a fixed member and the other jaw-member being a pivoted and weighted member. The movable platform or chute 33 together with its guides are secured near one end to movable arms 38 which arms are in turn secured to uprights 39 of the frame by pins 40. The forward end of the platform is connected with rock-arms 41 by means of hangers 42 and said platform is designed to be raised and lowered by the rock-arms. As illustrated, arms 41 are balanced bent arms secured to the uprights 39, and comprise a long member 41^a and a shorter member 41^b. Each of the members 41^a and 41^b of the respective arms carries a sprocket-wheel 43 on which an endless chain 44 is mounted. Connected with these chains 44 and adapted to travel therewith is a cross-rod 45; to this cross-rod, I adjustably secure the "fork" 35. The movement of rod 45 by means of the chains 44 imparts a reciprocatory movement to the fork. Chains 44 are driven by means of sprocket-wheels 46 on shaft 22 and chains 47, which latter lead from wheels 46 to the respective wheels 48 each mounted on a short shaft 49 carried by members 41^b of the rock-arms. After a sheet to be treated has passed the drying rolls and is deposited on the platform 33, the "fork," which is carried into operative position by the endless chains 44, grasps the sheet and forces it down through one of the guide-ways of the flux-box as particularly shown by Fig. 1. The inward movement of the "fork" is continued until the sheet is caught by the rolls of the tinning-pot. A continued travel of chains 44 withdraws the "fork" from the flux-box and carries it upwardly and into position to grasp the next sheet, which, in the meantime, has been passed forward from the pile, through the drying-rolls and onto the platform. This last mentioned sheet should be passed through the flux-box through the upper guide-way in order to be passed to a different set of rolls in the tinning-pot thus necessitating the raising of the movable platform.

The means illustrated for raising and lowering platform 33 comprise a crank-shaft 50, secured to and driven by sprocket-wheel 51, and connecting-arms 52, connecting said shaft with the rock-arms 40. Sprocket-

wheel 51 is driven by means of sprocket-wheel 53 mounted on the shaft of the lower drying-roll, endless chain 54, leading from wheel 53 to a sprocket-wheel 55 and by a sprocket-chain 56, which latter leads from a small sprocket-wheel 57.

58 designates counter-balancing weights secured to the rock-arms; and 59 rods for limiting the upward and downward movement of the rock-arms.

In operation, the sheets from the pile in the box 2 are fed from the top of the pile singly and successively to the drying-rolls by the pusher acting frictionally upon the uppermost sheet. The sheet is then passed through the drying-rolls and onto the movable inclined platform down which it slides until it is stopped by the curved lower portions of said platform and overhead guide. In this position the rear edge of the sheet is grasped by the "fork" and moved forward through the flux-box as above described.

By means of the construction herein described I do away with rolls in or near the flux-box and provide simple and efficient means for automatically and rapidly feeding the sheets to the tinning-pot.

What I claim is:

1. In a tinning apparatus, a flux-box, means for automatically and successively feeding sheets from a pile to the flux-box comprising a cross rod, means for moving said rod in an orbital path, a frictionally engaging pusher carried by the cross rod and arranged to travel over the pile of sheets and to frictionally engage the top sheet, and mechanically operative means for grasping a sheet and passing it through the flux-box.
2. In a tinning apparatus having a flux-box and a tinning-pot, means for automatically feeding sheets to the tinning-pot comprising a traveling pusher, a traveling rod on which the pusher is loosely hung and adapted to impart a reciprocatory movement to the pusher, an inclined platform, and an automatically operative fork adapted to engage a sheet on the platform and pass it through the flux-box.
3. In a tinning apparatus having a flux-box and a tinning-pot, means for automatically feeding sheets to the tinning-pot comprising a traveling frictionally engaging pusher, an inclined platform, drying-rolls placed between the platform and said pusher, a "fork" adapted to engage a sheet on the platform, and means for moving the "fork" into and out of the flux-box.
4. In a tinning apparatus having a tinning-pot and a flux-box provided with upper and lower guide-ways, of means for automatically feeding sheets to the tinning-pot comprising a pusher, a rocking-platform for directing a sheet to the guide-ways of the flux-box, a "fork" arranged to

engage a sheet on the platform and pass it through the flux-box, and means for moving the platform and "fork."

5 5. In a tinning apparatus having a tinning-pot, and a flux-box provided with upper and lower guide-ways, means for automatically feeding sheets from a pile comprising a traveling pusher arranged to frictionally engage a sheet, an inclined movable
10 platform adapted to direct a sheet to a guide-way of the flux-box, drying-rolls between the platform and the pusher, a movable "fork" arranged to engage a sheet on the platform and adapted to pass the sheet
15 through the flux-box.

6. The combination with a tinning apparatus having a flux-compartment provided with an upper and a lower guide-way, of means for automatically feeding sheets from
20 a pile to the compartment comprising a traveling frictionally engaging pusher, an inclined movable chute, and a movable "fork."

7. The combination with a tinning pot,
25 means for automatically feeding sheets from a pile comprising a frictionally engaging member arranged to engage the outer sheet of the pile and to move the outer sheet, operative means for the sheet engaging member, an inclined movable platform, means for raising and lowering the
30

platform, a set of rolls between the platform and the sheet engaging member, a movable member adapted to engage a sheet on the platform, and means for moving the
35 last mentioned member into and out of the tinning pot.

8. The combination with a tinning pot, means for feeding sheets from a pile comprising a frictionally engaging member arranged to engage the outer sheet of the pile
40 and to move the outer sheet, operative means for the sheet engaging member, a movable platform, means for raising and lowering the platform, and a movable plate engaging member for pushing the plate
45 through the tinning pot.

9. The combination with a tinning pot having upper and lower guide-ways, an inclined movable platform for directing a
50 sheet to the guide-ways, means for raising and lowering the platform, a sheet engaging member operable to engage a sheet on the platform and pass it through the tinning pot, and means for moving the sheet
55 engaging member.

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

RALPH S. SCHRUMN.

Witnesses:

GUY W. BATTLES,
STELLA R. BRILHART.