July 3, 1928. 1,675,541

F. FRANZ

TREATMENT OF CONTAINERS

Filed Aug. 1, 1925

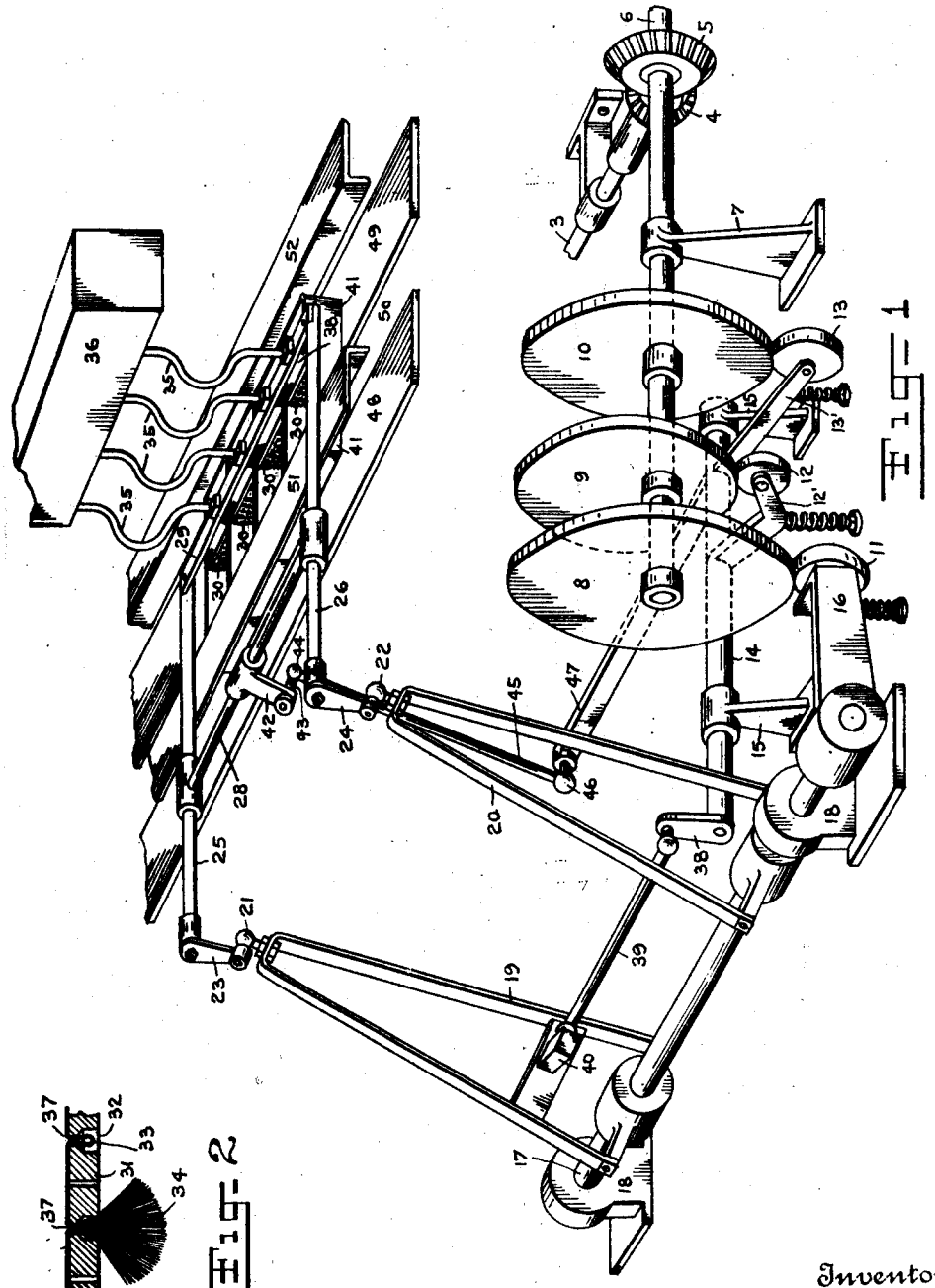


Fig. 1



Fig. 2

Inventor
Frederick Franz.

By his Attorney
Thomas A. Hill.

Patented July 3, 1928. 1,675,541

# UNITED STATES PATENT OFFICE.

FREDERICK FRANZ, OF WOODHAVEN, NEW YORK.

## TREATMENT OF CONTAINERS.

Application filed August 1, 1925. Serial No. 47,458.

My invention relates to improvements in the treatment of containers, and more particularly has reference to, and is illustrated in the accompanying drawings in its application to, an apparatus in the form of an attachment for greasing the insides of baking pans particularly adapted for use in combination with a pan feeding conveyor such as used in combination with baking ovens.

Referring to the accompanying drawings, I have illustrated in Fig. 1 in perspective, parts being broken away, a suitable form of apparatus embodying an application of my invention. Fig. 2 is an enlarged detail of the brush or grease swabber device.

3 indicates the drive shaft of the pan conveyor, such as commonly employed in combination with baking ovens, and is provided at one end with a beveled pinion 4, which meshes with the beveled pinion 5 upon the counter-shaft 6, mounted in suitable brackets 7, and carrying cams 8, 9, and 10. Upon these cams ride the rollers 11, 12, 13, respectively, the latter two being secured to levers 12′, 13′ upon the shaft 14, mounted in the brackets 15, and the former mounted in the end of the lever 16, secured upon the shaft 17, mounted in the bearings 18.

Upon the shaft 17 is secured the uprights 19, 20, the upper ends of which are provided with ball joints 21, 22, operatively connected with the levers 23, 24, secured to the shafts 25, 26 respectively, said shafts carrying the cross-bar 28, and being secured at their outer extremities to the bar 29 which carries the brush 30. These brushes are hollow chambers, the walls 31 of which are cut away as indicated at 32 having a restricted upper opening 37 through which a loop of wire 33 projects. Bristles or strands of material 34 are looped in said wire loops and drawn taut into the enlarged openings 32, as shown. Grease is pumped into chambers by any suitable means such as the flexible tubes 35, connecting therewith from the reservoir 36, and the grease passes through the restricted openings 37 along the bristles, keeping the brush or swabber constantly lubricated on all five sides, so as to thoroughly grease the interior of the pan as the same is moved therethrough. The top covers 38 of the brush being secured to the bar 29 is moved back and forth, right and left, looking at Fig. 1, as the cam 8 rotates. The longitudinal movement, which takes place as each group of pans is greased, is established through the medium of the roller 12 which oscillates the shaft 14 and crank 38 connected by ball joint to the rod 39, and in turn to the upright 19 by the block 40. This longitudinal movement travels with and against the feed of the pans 41, which for the purpose of illustration are illustrated in groups of four, and as the four pans have been greased, the brushes sweep backwardly to grease the next group of four, feeding forwardly with the same.

During the greasing operation, the brushes descend with the rods 25, 26 secured thereto, the same being raised and lowered by the bracket 42, secured to the rod 28, and connected by the pin 43 and ball joint 44 to the rod 45, connected by ball joint 46 to the lever 47, carrying the roller 13. When the brushes have passed into the pans, smearing the left inside of the same, they move along the bottom of the pan and up the opposite end, at the same time greasing the opposite sides. This transverse movement is provided by the cam 8 against which the roller 11 rides, thereby providing oscillation of the shaft 17, the brackets 19, 20 being pivotally connected to the rods 25, 26, and causing the same to move the brushes transversely, as aforesaid. Thus it will be seen that while the group of pans 41 are moving through the conveyor, a group of brushes automatically lubricated, pass down the left ends into the pans, moving along the same, greasing the ends, both sides, the bottom, and finally lifting out, greasing the opposite ends of the pans before moving in an opposite direction to the feed of the pans to start the greasing of the next group, and so on. This greasing operation continues with each group of pans of predetermined number, according to the number of brushes employed. 48, 49 indicate the slideways or fixed base of the conveyor, the spaces 50 between the same being adapted for engaging and moving the pans, and 51, 52 indicate the side angles or guides between which pans are guided in their passage along the conveyor. Any well known form of pumping mechanism may be employed in the grease box 36, and of course various modifications may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

While I have described the combination of a transverse rectilinear movement with a longitudinal movement, I have found in

some cases that it is preferable to provide a double rectilinear movement to each longitudinal movement, that is to say, as the brushes move longitudinally with the feed of the pans, I have found it preferable in some instances to grease the pans twice, first moving in the direction of the operator, then in the reverse direction, thus insuring a thorough greasing of the pans before the brushes return counter-feedwise for a new application of the grease, but of course the number of greasings may be varied according to the purpose intended. In fact, the device is susceptible of application for coating the interiors of containers with materials other than grease or oil, and likewise may be used for cleaning pans by employing stiffer bristles, such as of fine wire, and for various other purposes.

I claim:—

1. In a device of the class described, means for feeding containers in position to be greased, means for inserting non-rotatable greasing elements therein and for moving the same across the entire interior surface of said containers, and means for withdrawing said greasers and removing said containers.

2. In a device of the class described, means for feeding containers in position to be greased, means for inserting non-rotatable greasing elements therein and for moving the same in contact with all interior sides of each of said containers, and means for withdrawing said elements and removing said containers.

3. In a device of the class described, an applying element, means for moving the same downwardly and forwardly in one direction and then downwardly and rearwardly in the reverse direction in contact with the interior surfaces of a container.

4. In a device of the class described, a conveyor feeding a plurality of pans, greasing mechanism including a plurality of non-rotating greasing members each adapted to be introduced into and moved laterally in each of said pans, and means for greasing the interiors of groups of said pans successively by said members while the same are fed.

5. In a device of the class described, a conveyor feeding a plurality of pans, greasing mechanism including a plurality of greasing members each adapted to be introduced into and moved about each of said pans, and means for greasing the interiors of groups of said pans successively by said members while the same are fed, said mechanism having a rectilinear movement transverse of the line of feed, and a movement parallel thereto.

6. In a device of the class described, non-rotating means for applying material to the insides of a container and means for moving said first mentioned means downwardly into and forwardly and upwardly out of said container.

7. In a device of the class described, a conveyor and pans thereon, a greasing device, and means for raising and lowering the same and for laterally and transversely moving the same in one of said pans, and in combination therewith means for moving successive pans in position for the introduction and movement of said greasing device.

In testimony whereof I hereunto affix my signature.

FREDERICK FRANZ.