March 22, 1927. 1,622,130

C. BOYD

WASHING MACHINE

Filed Nov. 18, 1922, 4 Sheets-Sheet 1

Fig. 1.

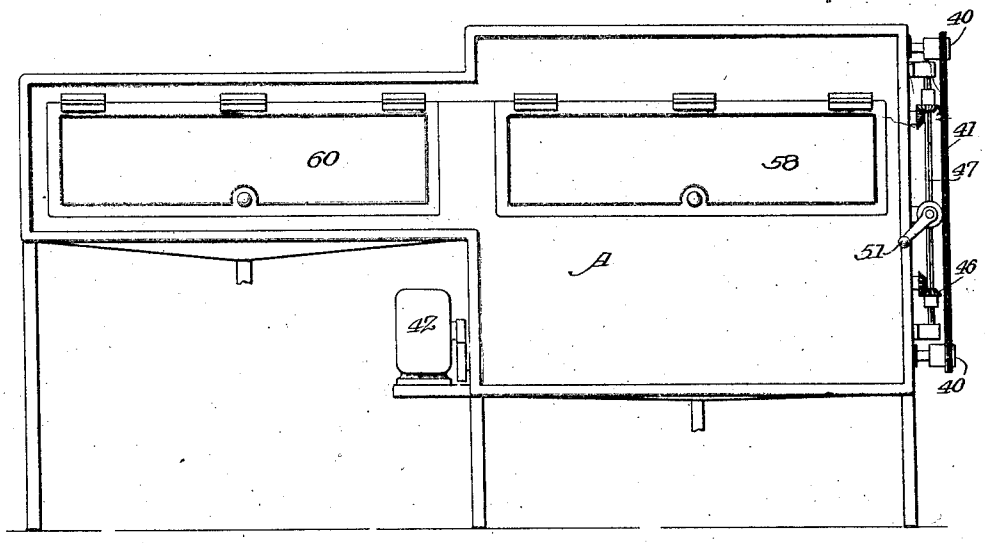
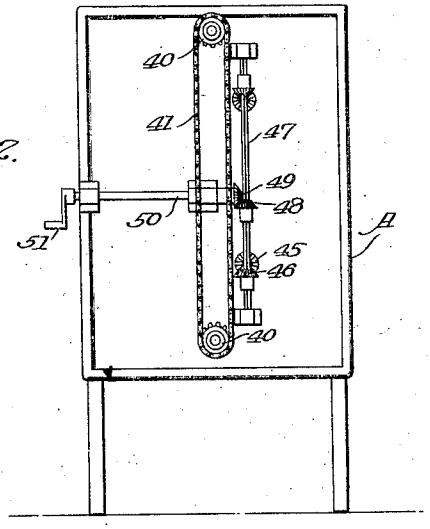


Fig. 2.



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WASHING MACHINE

Filed Nov. 18, 1922 4 Sheets-Sheet 2

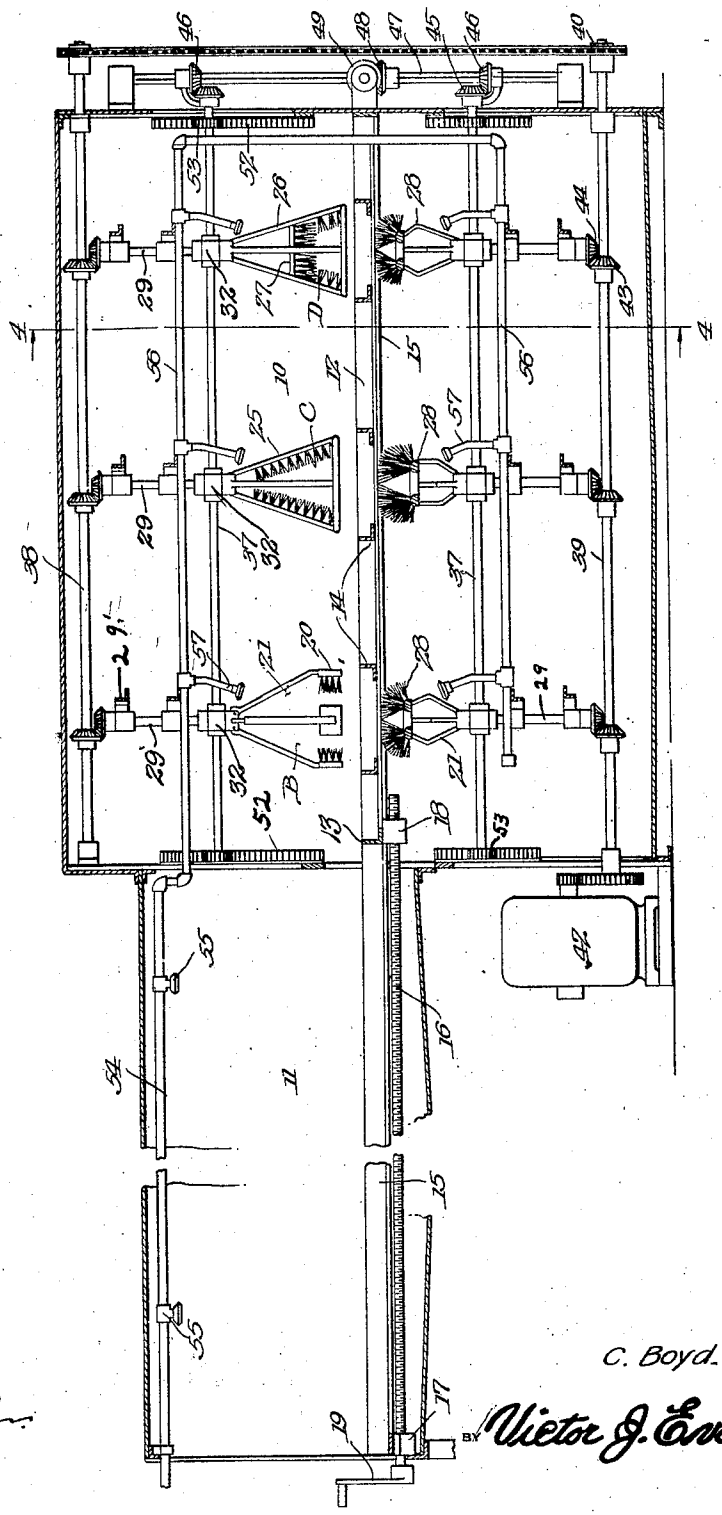


Fig. 3.

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WASHING MACHINE

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Fig. 5.

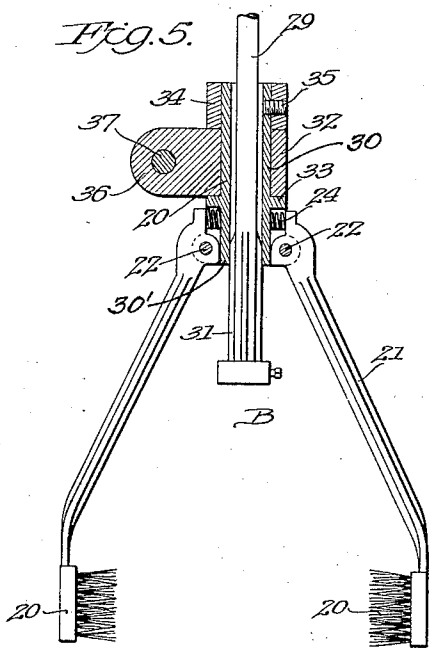


Fig. 6.

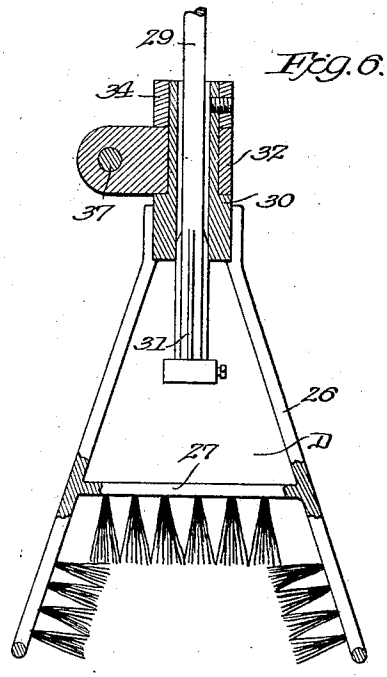
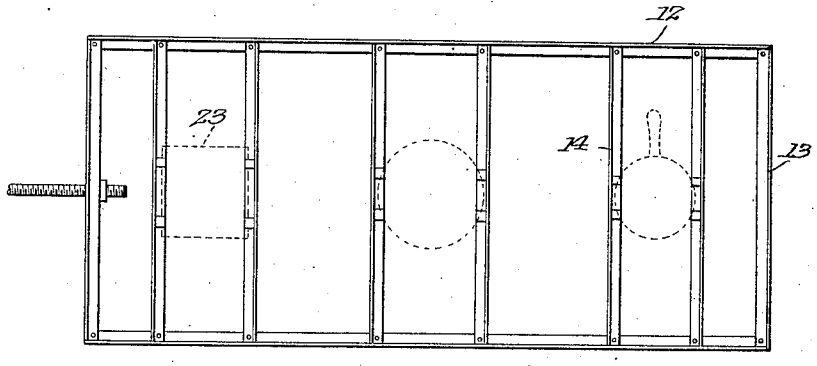


Fig. 7.



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WASHING MACHINE

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Fig. 4.

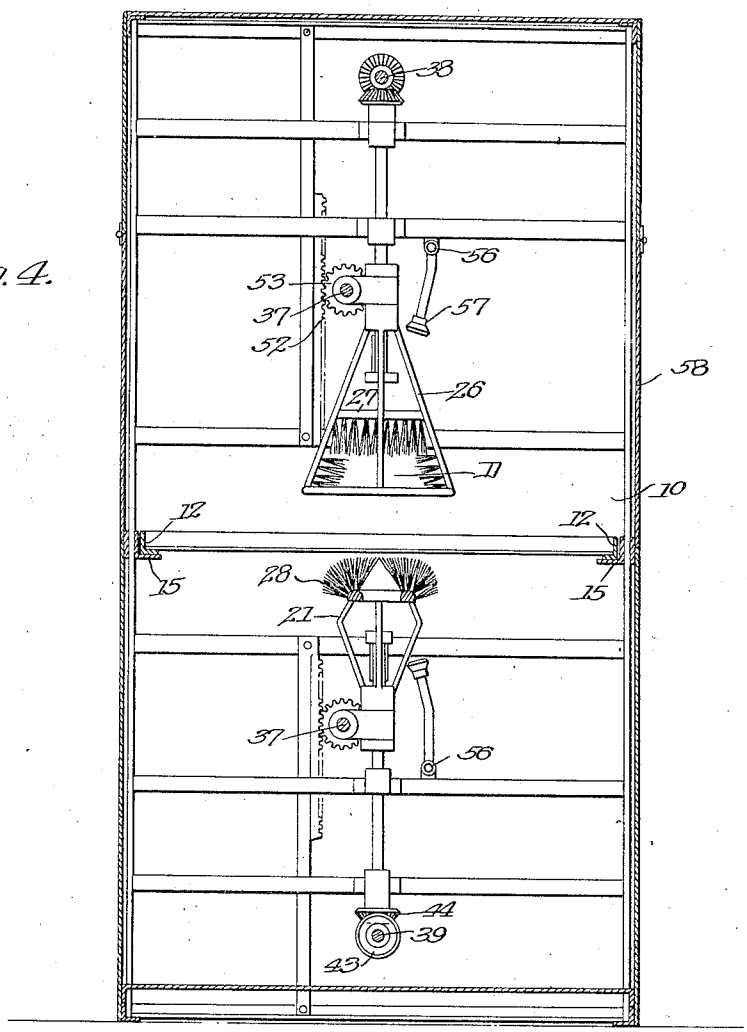
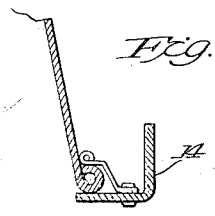


Fig. 8.



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G. S. Baker
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Patented Mar. 22, 1927. 1,622,130

UNITED STATES PATENT OFFICE.

CHARLES BOYD, OF DENNISON, OHIO.

WASHING MACHINE.

Application filed November 18, 1922. Serial No. 601,837.

This invention provides an apparatus designed for washing pots and pans, and embodies amongst other features a cabinet including a compartment wherein the pans are thoroughly cleaned, and a communicating compartment in which the pans are subsequently positioned to be rinsed.

In carrying out the invention, I provide spaced groups of brushes arranged in the cleaning compartment in a manner to effectively clean both sides of a pan, the brushes being adjustable toward and away from each other to accommodate themselves to pans of different sizes, while the brushes are operated in a simple and novel manner.

The nature and advantages of the invention will be better understood when the following detailed description is read in connection with the accompanying drawings, the invention residing in the construction, combination and arrangement of parts as claimed.

In the drawings forming part of this application, like numerals of reference indicate similar parts in the several views, and wherein:

Figure 1 is a front elevation of the apparatus.

Figure 2 is an end elevation.

Figure 3 is a vertical sectional view.

Figure 4 is a sectional view taken on the line 4—4 of Figure 3, looking in the direction of the arrow.

Figure 5 is a detail view partly in section of one of the brushes.

Figure 6 is a similar view of another of said brushes.

Figure 7 is a plan view of the sliding tray.

Figure 8 is a fragmentary sectional view showing the manner of holding the pan positioned upon the tray.

In carrying out the invention, I provide a cabinet indicated at A and possessing the particular outline or configuration as illustrated in Figures 1 and 3. It will be noted that the cabinet is designed to provide a compartment 10 which contains the brushes for cleaning the pans, the latter being cleaned in the compartment 10 and subsequently shifted or moved into compartment 11 wherein they are rinsed. The pans or the like are supported upon a tray of elongated contour in plan illustrated in Figure 7, this tray including spaced sides and end members indicated at 12 and 13 respectively. The sides are connected by transverse members 14, the latter being arranged in pairs, with the members of the respective pairs spaced different distances apart to support pans, skillets or the like of different sizes, and also different shapes. The tray in its entirety is preferably constructed of angle iron, and slides upon tracks 15 which are coextensive in length with the length of the apparatus. In other words, the tracks 15 extend from one end of the compartment 10 to the end of the compartment 11, inasmuch as a tray is adapted to be moved over the tracks from one compartment into the other for the purpose above mentioned. The tray may be actuated in any suitable manner, but I preferably employ a feed screw 16 journalled in a bearing 17 and threaded into an apertured lug 18 carried by said tray. The outer end of the screw 16 is equipped with a handle 19 by means of which the screw is turned in one or the other direction, this of course, depending upon whether or not the tray is to be moved into or out of the compartment 10.

Arranged within the compartment 10, which of course is considerably larger than the compartment 11, are spaced groups of brushes, one group being arranged above the tray and one group being arranged beneath the tray. The brushes of the lower group are identical in construction, but the brushes of the upper groups may vary in shape or design to be used on pans or skillets of different shapes. For instance, the brush B of the upper group is made up of a plurality of small brushes 20 having their bristles horizontally disposed and these brushes are carried by arms 21 which are pivoted as at 22 on the bearing for said brush, the brushes 20 being arranged in oppositely disposed pairs so as to brush about the outer surface of a squared pan illustrated by dotted lines 23 in Figure 7. Interposed between the arms 21 and the bearing upon which these arms are pivoted are coiled springs 24 which hold all of the brushes in working relation to effectively brush the outer surface of the pan which they embrace, but at the same time permit said brushes to yield as they pass around the corner of the pan. It is of course to be understood that the brushes of both groups are mounted for rotary motion. The brush C of the upper group is made up of a plurality of obliquely disposed brushes indi-

cated at 25, in contra-distinction to the brushes of the brush B, but otherwise brush C is the same as the brush above described. This is also true of the brush D of the upper group which in addition to including a plurality of obliquely disposed brushes 26, embodies a horizontally disposed brush 27 having its bristles vertically arranged and which is arranged between the brushes 26 and disposed to effectively clean the bottom of the pan. Each brush of the lower group is indicated at 28, these being preferably round brushes which enter the pan to clean the interior thereof, the pans being supported upon the tray in an inverted position for this purpose.

Each brush of the respective groups includes a shaft 29 which is received by a bearing 30 with which the brushes proper are connected as above stated. This bearing is clearly illustrated in Figures 5 and 6, and as shown in Figure 5 includes a sleeve like member 30′ to which the arms 21 of the various brushes are pivoted. This sleeve cooperates with the splined portion 31 of the particular shaft with which it is associated so that the particular brush is rotated with the rotation of said shaft. However the brushes are mounted for sliding movement of the shaft, so that the brushes above and below a particular pan can be adjusted toward and away from said pan as the occasion requires, that is with respect to the positioning of a pan within the compartment 10 or the removal of the pan therefrom. The sleeve rotates within a horizontal bearing 32, the latter reposing upon an annular flange 33 carried by the sleeve, and held positioned thereon by means of a collar 34 which is secured to the sleeve for rotation therewith by means of a suitable fastening element 35. Projecting from each horizontal bearing 32 is an apertured lug 36 which receives a shaft 37 utilized for a purpose to be hereinafter described. As shown in Figures 3 and 4 of the drawings the shafts for the respective brushes are supported by transversely disposed brace members 29′.

Arranged within the compartment 10 above and below the respective groups of brushes are parallel shafts 38 and 39, the corresponding ends of which support sprocket wheels 40 over which is trained an endless chain 41. The shaft 39 is positively driven from a motor 42, the motion being transmitted from the shaft 39 to the shaft 38 by means of the endless chain 41. These shafts carry a plurality of bevelled pinions 43, there being one pinion for each brush, and these pinions mesh with the similar pinion 44 carried by the shafts 29 of the adjacent brushes. In this manner the brushes are rotated, but the arrangement is such that the brushes of the upper group rotate in a direction opposite to that in which the brushes of the lower group rotate.

In addition to rotating, the brushes as above pointed out are mounted for sliding movements upon the respective shafts and it is for this purpose that I make use of the shafts 37, the latter passing through the apertured lugs of the horizontal bearings 32. The shafts 37 are also mounted for rotation, being equipped at corresponding ends with bevelled pinions 45 which mesh with similar pinions 46 which are carried by and slidably mounted on a squared shaft 47. This shaft is provided with an additional pinion 48 which meshes with a pinion 49 associated with a shaft 50, the latter being arranged at a right angle to the shaft 47. The shaft 50 is rotated by means of a handle 51, and this motion is of course imparted to the shaft 47 by reason of the connection between these shafts. Manifestly, as the shaft 47 rotates, similar motion is imparted to the shaft 37, and these shafts are mounted upon the cabinet for vertical movement, which of course, causes the brushes to slide upon their shafts 29. For moving the shafts 37 vertically as just stated, I provide a plurality of rack bars 52, a pair of these bars being arranged adjacent each shaft 37, while the gears 53 carried by said shafts 37 are arranged to mesh with the rack bars. Consequently when the shafts 37 are rotated they move upwardly and downwardly on the rack bars 52 depending upon which direction the shafts 37 are rotated. In this manner the brushes of the respective groups can be adjusted away from the pans when it is desired to slide the tray from the compartment 10 into the compartment 11, and subsequently moved into working relation, with respect to each other and also with respect to the pans to be cleaned after the latter have been positioned within the compartment 10.

A water supply pipe 54 passes through the compartment 11 adjacent the top thereof and is provided with sprinklers 55, this pipe being continued through the compartment 10 and including spaced parallel portions 56 arranged above and below the respective groups of brushes. Carried by each parallel portion of this pipe is a plurality of spraying pipes 57, one of these spraying pipes being arranged adjacent each brush, so that the water is continuously sprayed both within the pan and about the outer surface thereof, while the brushes are in operation thereby effectively cleaning the pans in quick order.

In practice, the tray is initially arranged within the compartment 10, and by opening the door 58 of this compartment, access may be readily had thereto in order to properly arrange the pans upon the sliding tray.

The pans are also arranged in an inverted position, and the brushes subsequently adjusted by turning the handle 51, in order to position the brushes of the lower group within the pans and to bring the brushes of the upper group to position thereto effectively contact the entire outer surface of said pans. Of course the pinions 45 being fixed to the shaft 37, will be adjusted therewith and move the pinions 46 on the shaft 47 accordingly. The water is then sprayed upon the pans in the manner described, the pipe 54 being coupled to a suitable source of water supply. After the pans have been thoroughly cleaned the tray is moved from within the compartment 10 into the compartment 11, this being accomplished by simply turning the handle 19 which subsequently moves the feed screw 15. Prior to sliding the tray from within the compartment 10 into the compartment 11, the brushes of the respective groups are moved away from the pans, by sliding the brushes upon their respective shafts. When the brushes are thus positioned, and are spaced from the splined portions 31 of said shafts, it of course permits the shafts 29 to continue rotating without imparting any movement to the brushes. Thus it is not necessary to stop and start the apparatus incident to the removal of the cleaned pans, and the placing of dirty pans within the apparatus to be cleaned. After the tray has been arranged within the compartment 11 the pans are thoroughly rinsed by the water passing from the sprays 55 and the pans can be easily removed from this compartment by opening the door 60.

While it is believed that from the foregoing description, the nature and advantages of the invention will be readily apparent, I desire to have it understood that I do not limit myself to what is herein shown and described and that such changes may be resorted to when desired as fall within the scope of what is claimed.

Having thus described the invention, I claim:

1. A washing apparatus of the character described, a cabinet, upper and lower groups of rotary brushes arranged in the cabinet, means for simultaneously rotating the brushes of one group in an opposite direction to that of the other group, a pan supporting frame slidably mounted within the cabinet and adapted when slid to one extreme position to bring the trays into working relation to said brushes.

2. In a washing apparatus of the character described, a cabinet, tracks arranged in said cabinet, a tray slidable on said tracks, a feed screw operatively connected with said tray and utilized to shift the latter on said tracks, rotary brushes arranged in groups above and below the tray, and means for rotating the brushes simultaneously.

3. In a washing apparatus of the character described, a cabinet, a tray slidably arranged within the cabinet, upper and lower groups of brushes disposed in the cabinet, a drive shaft for each brush, means for simultaneously rotating said shafts, said brushes being slidably keyed to their respective shafts and means for simultaneously adjusting all of said brushes on their respective shafts for the purpose specified.

4. In a washing apparatus of the character described, a cabinet, a door for the cabinet, a tray slidably mounted within said cabinet for movement in a horizontal plane, upper and lower groups of brushes rotatably mounted in said cabinet, each brush including a bearing, a plurality of brush carrying arms pivoted on said bearings, yieldable means for urging the brush carrying arms into working relation and means for simultaneously rotating the brushes of one group in opposite direction to the rotation of the brushes of the other group.

In testimony whereof I affix my signature.

CHARLES BOYD.