No. 775,790. PATENTED NOV. 22, 1904.

R. Y. YEOMANS.

ROTARY BRUSH MACHINE.

APPLICATION FILED AUG. 3, 1904.

NO MODEL. 2 SHEETS—SHEET 1.

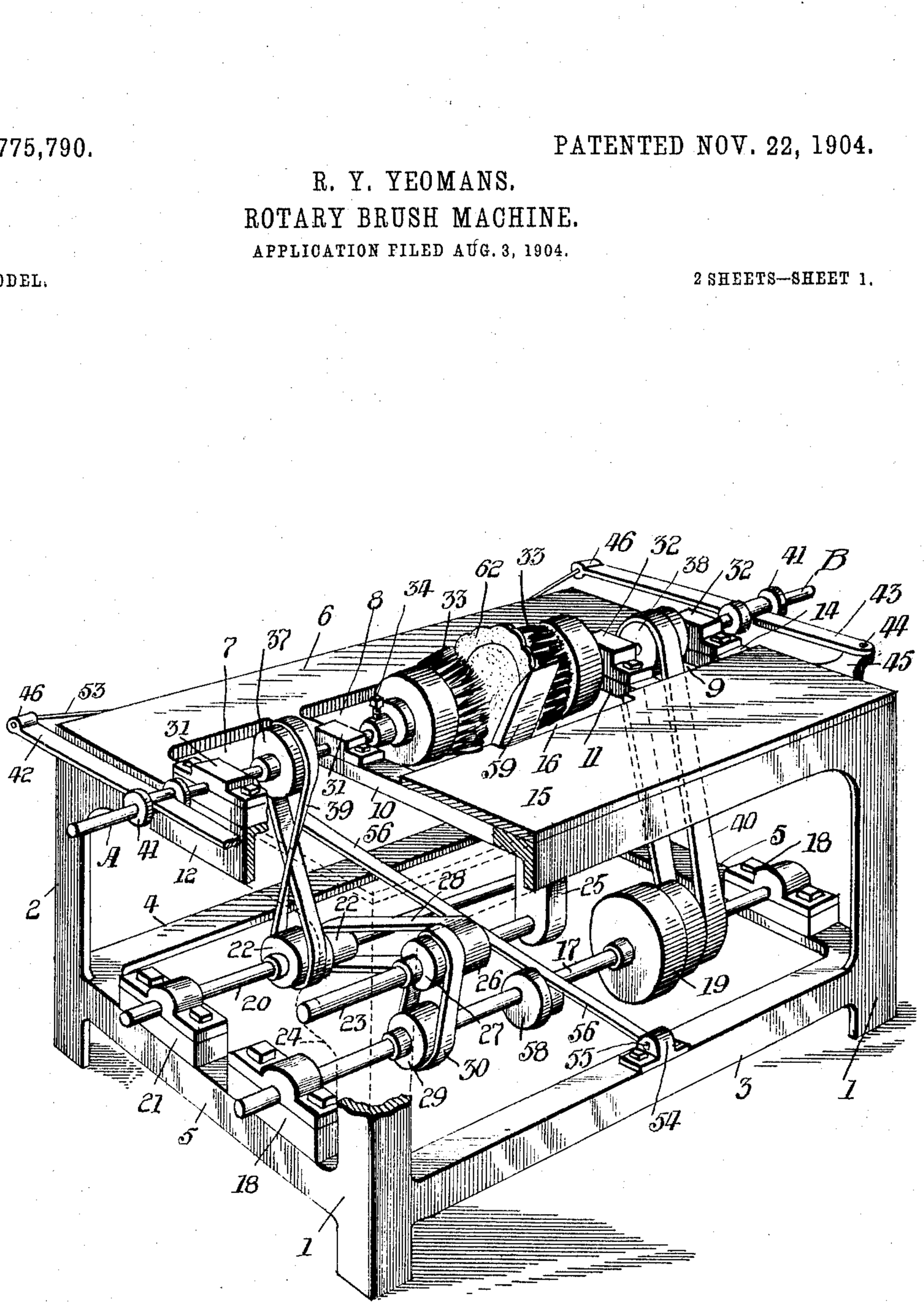

Fig. 1.

Witnesses:
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E. E. Potter.

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NO MODEL. 2 SHEETS—SHEET 2.

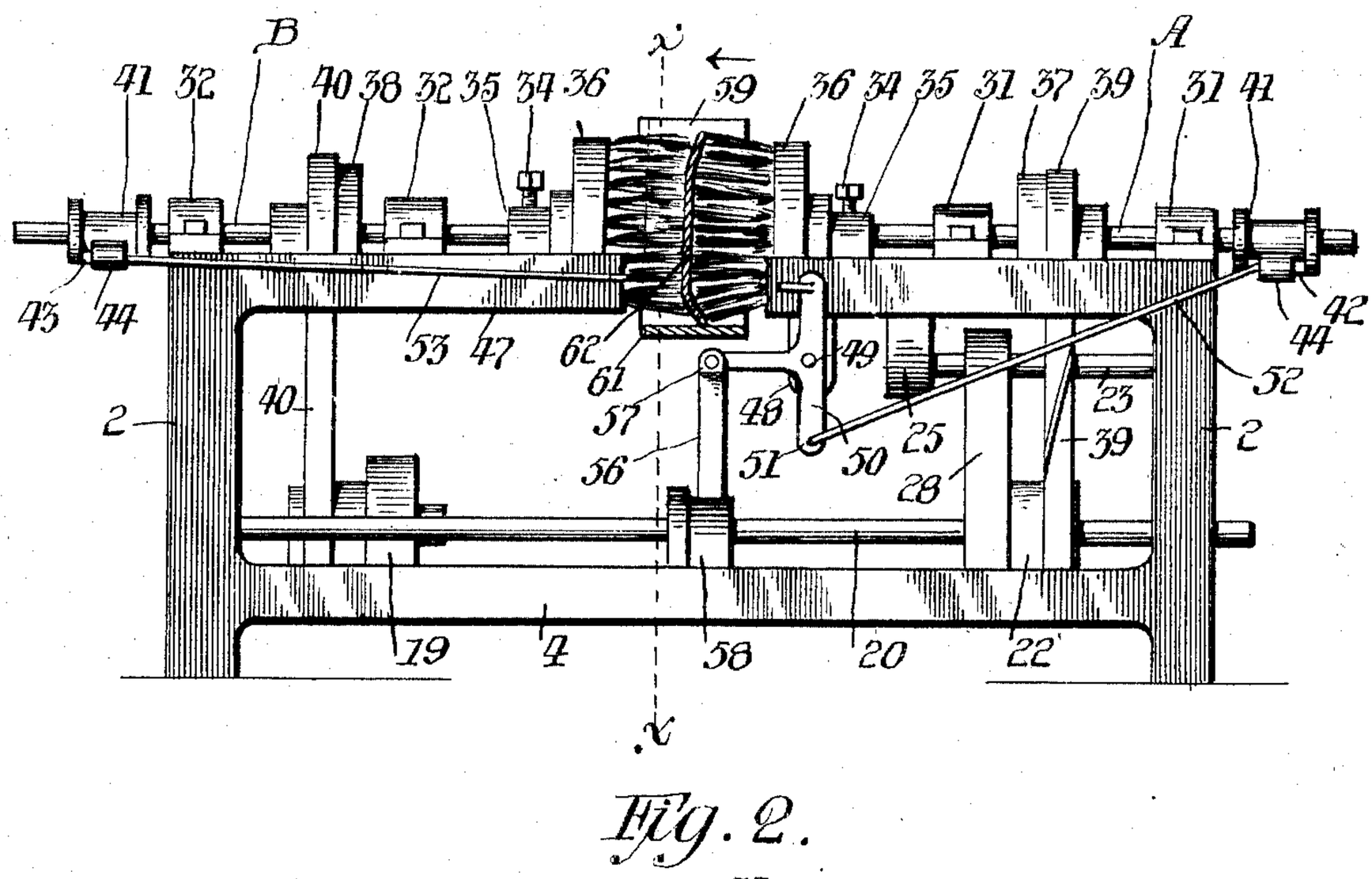

Fig. 2.

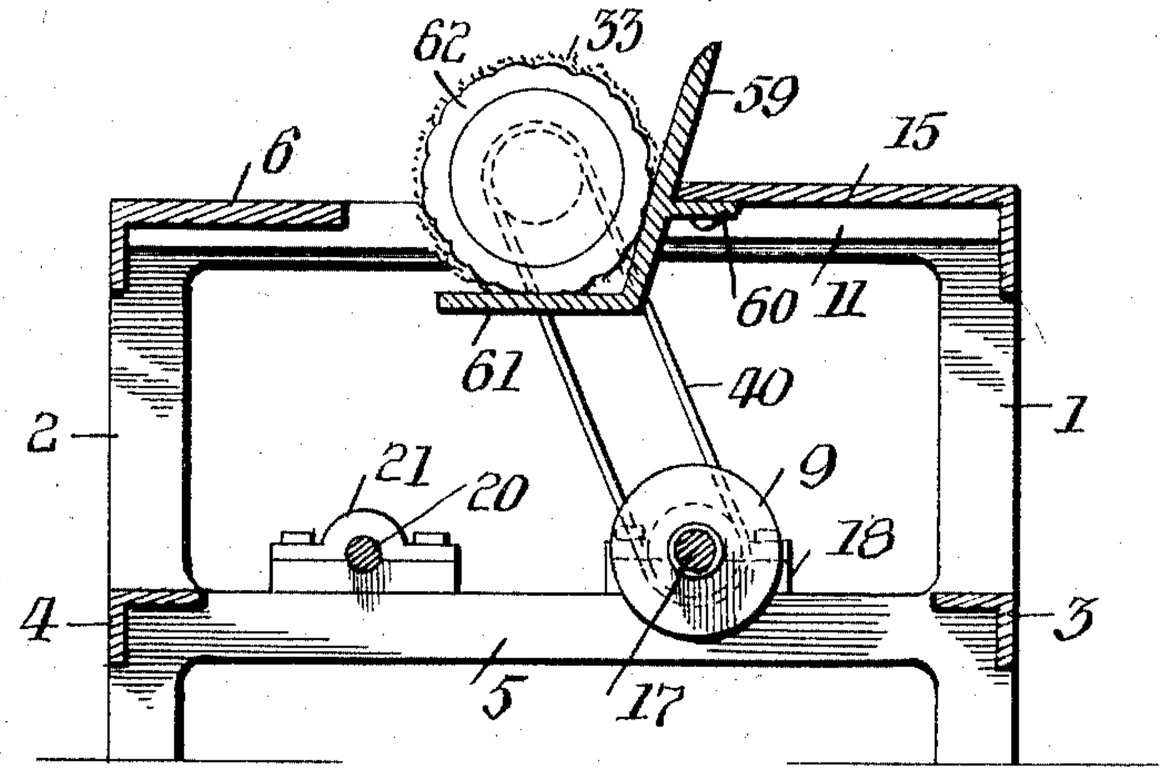

Fig. 3.

Witnesses:
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No. 775,790. Patented November 22, 1904.

UNITED STATES PATENT OFFICE.

RICHARD Y. YEOMANS, OF BEAVERFALLS, PENNSYLVANIA.

ROTARY-BRUSH MACHINE.

SPECIFICATION forming part of Letters Patent No. 775,790, dated November 22, 1904.

Application filed August 3, 1904. Serial No. 219,302. (No model.)

To all whom it may concern:

Be it known that I, RICHARD Y. YEOMANS, a citizen of the United States of America, residing at Beaverfalls, in the county of Beaver and State of Pennsylvania, have invented certain new and useful Improvements in Rotary-Brush Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in rotary-brush machines; and the invention has for its object the provision of novel means whereby two brushes may be revolved independently of one another and in opposite directions.

Another object of this invention is to provide a machine of the above type wherein novel means is employed for automatically moving the brushes at predetermined times, also means whereby said brushes may be adjusted upon their respective shafts.

To this end my invention contemplates a machine which is particularly adapted as a cleansing-machine for removing sand, dirt, and the like from articles that are placed within the machine. The machine as constructed in accordance with my invention is adapted to be used in the manufacture of chinaware and the like, and to facilitate the clear understanding of my invention I will describe the same throughout as being used for removing sand from chinaware.

In the manufacture of chinaware the plates and saucers and the like after they have been subjected to a high degree of heat are cooled, and when they have reached a cool state they have sand and the like adhering to their surfaces, and to remove this sand I have devised the present invention, whereby each plate or saucer may be placed within my improved machine and the sand cleansed therefrom.

With the above and other objects in view, which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts, which will be more fully described and then specifically pointed out in the appended claims.

Reference will now be had to the drawings accompanying this application, wherein similar reference characters designate corresponding parts.

Figure 1 is a perspective view of my improved machine, a portion of the same being broken away to clearly illustrate the construction of the same. Fig. 2 is a rear elevation of the machine, a portion of the frame of the machine being broken away to illustrate an article being cleansed by the rotary brushes; and Fig. 3 is a vertical sectional view on the line *x x* of Fig. 2 looking in the direction of the arrow of said figure.

To put my invention into practice, I employ a suitable table which consists of a rectangular framework, the framework comprising the legs 1 1 and 2 2, which are braced by the longitudinal beams 3 and 4 and the transverse end beams 5 5. The table is formed with a top 6, which is cut away, as indicated at 7, 8, and 9, to form areaways in which a portion of the mechanism employed in connection with my improved machine is mounted, these areaways forming transverse beams 10 and 11, and upon the rear edge of the table and upon the beams 10 and 11 and the end frames 12 and 14 I secure a plate 15, this plate being cut away, as indicated at 16, the object of which will be hereinafter more fully described.

The main power-shaft 17 of the machine is journaled in suitable bearings 18 18, which are mounted upon the transverse beams 5 5, respectively. The power-shaft 17 has mounted thereon, preferably near one end, a stepped pulley-wheel 19, and to this pulley-wheel 19 is conveyed the power which operates the machine. The reference-numeral 20 designates another shaft which is journaled in bearings 21 21, mounted upon the transverse beams 5 5, respectively, and this shaft has mounted thereon two pulleys 22 22. A counter-shaft 23 is journaled in an enlarged portion 24, that is formed integral with one of the legs 5 of the table, and in a depending arm 25, which is carried by the top of the table. Upon said shaft are mounted pulleys 26 and 27, and over the pulley 26 passes a belt 28, which passes around the pulley 22 of the shaft 20. A pulley 29 is mounted upon the power-shaft 17, and around this pulley and the pulley 27 of the counter-shaft 23 passes a belt 30, whereby

a revoluble motion will be imparted from the power-shaft 17 through the medium of the counter-shaft to the shaft 20.

The main operating-shafts A and B, of which there are two, are journaled in bearings 31 31 and 32 32, mounted upon the transverse beams 10 and 11 and the end frames 12 of the table. The inner ends of the main operating-shafts A and B terminate in the areaway formed by the transverse beams 10 and 11, and upon the inner ends of said shafts are mounted the rotary brushes 33 33, said brushes being secured to said shafts by set-screws 34 34, which pass through the collars 35 35, carried by the brush-heads 36 36. Upon each shaft A and B is mounted a pulley-wheel 37 and 38, and over the pulley-wheel 37 of the shaft A and the pulley-wheel 22 of the shaft 20 passes a cross-belt 39, whereby a reverse motion to that of the shaft 20 is imparted to the main operating-shaft A. Over the pulley 38 and the pulley 19 passes a belt 40, whereby a similar revoluble motion is imparted from the power-shaft 17 to the main operating-shaft B. Upon the outer end of each of the main operating-shafts A and B is mounted a collar 41 41, and connected to said collars are the transverse levers 42 and 43. These levers are each pivoted, as indicated at 44, to an outwardly-extending arm 45, carried by the table, and the rear ends of said levers are formed with enlarged portions 46 46.

Carried by the rear frame 47 of the machine is a depending arm 48, to which is pivotally connected, as indicated at 49, a T-shaped lever 50. To one end 51 of said lever and to the enlargement 46 of the lever 42 is attached a rod 52, and to the other end of the lever 50 and the enlargement 44 of the lever 43 is connected a rod 53. The object of these rods and their connections will be hereinafter more fully described.

Mounted upon the longitudinal beam 3 of the frame is a bracket 54, to which is pivoted, as indicated at 55, a rod 56, which extends at an angle transversely of the machine and has its bent-up end 57 connected to the T-shaped lever 50. Upon the power-shaft 17 is mounted a cam-wheel 58, upon which rests the rod 56, and the cam-wheel is adapted when the shaft revolves to impart a vertical reciprocatory movement to the rod.

To support an article or object between the rotary brushes 33 33, I secure an angular bracket to the plate 15, the vertical portion 59 of the bracket being provided with a rearwardly-extending lug 60, which is secured to the plate 15, and this vertical portion of the bracket is adapted to lie within the cut-away portion 16 of said plate. The horizontal portion 61 of the bracket lies beneath the rotary brushes 33 33, and upon this horizontal portion is adapted to be supported the article or object which is to be cleansed by the brushes, and in the drawings accompanying this application I have shown a plate 62 as resting upon the bracket and in position to be cleansed by the rotary movement of the brushes.

The operation of the machine when it is desired to cleanse the plate is as follows: A revoluble motion is imparted to the power-shaft 17 from any suitable source of power by placing a belt over the pulley 19. When the power-shaft 17 revolves, a similar movement is imparted to the main operating-shaft B by the belt 40, which travels over a portion of the pulley 19 and over a pulley 38, carried by said operating-shaft. A revoluble motion is imparted to the counter-shaft 23 through the medium of the belt 30 and the pulleys 29 and 27, and from the counter-shaft this movement is imparted to the shaft 20 by the belt 28 and the pulleys 26 and 22. From the shaft 20 the motion is imparted in a reverse direction to the main operating-shaft A, this being accomplished by crossing the belt 39, as clearly shown in Fig. 1 of the drawings. The brushes revolve in opposite directions and thoroughly cleanse both sides of the plate of all sand or dirt that is upon the same, and to provide means whereby the plate may be removed and another plate inserted I have employed the following mechanism, reference being had to Figs. 1 and 2 of the drawings: It will be seen by the construction of the top of the table and the areaways that a longitudinal movement in respect to the table is permitted of the main operating-shafts A and B, the areaways being of sufficient width to permit a longitudinal movement of the pulleys 37 and 38, also of the rotary brushes 33 33. To automatically perform this movement of the rotary brushes at predetermined times, the cam-wheel 58 is mounted upon the power-shaft 17, and through the medium of the pivoted rod 56 an oscillating movement is imparted to the T-shaped lever 50, and as this lever oscillates upon its pivot the levers 42 and 43 will receive a like movement, owing to the same being pivoted upon the outwardly-extending arms 45 of the table. As these levers are connected to the collars 41 41, which are secured to the main operating-shafts A and B, these shafts will be reciprocated longitudinally of the table, the levers being so connected to the T-shaped lever 50 that the main operating-shafts A and B will be moved outwardly and inwardly, permitting a sufficient space to exist at predetermined times between the rotary brushes, whereby a plate may be removed and another plate inserted between the brushes and placed upon the bracket carried by the plate 15 of the machine.

It will be observed that the rotary brushes as they become worm may be removed by loosening said screws 34 34 and removing the same from the main operating-shafts A and B, and these rotary brushes may be adjusted upon the main operating-shafts, as will be permitted by the length of the collars 35 35.

It will also be noted that the counter-shaft 23 of the machine may be entirely dispensed with and the revoluble motion of the power-shaft 17 imparted direct to the shaft 20.

The cam-wheel 58, which I have mounted upon the shaft 17, may be formed a part of the pulley 19 by moving the rod 56 and the T-shaped lever 50, whereby they will be actuated by the cam-wheel 58. In the present construction, as illustrated in the accompanying drawings, the weight of the rod 56 is adapted to return the T-shaped lever and the brushes to their normal position, and if it is desired to insure a more positive return movement of said levers and brushes a spiral spring may be connected to the T-shaped lever 50 and to the frame of the table, whereby the contraction of said spring will return the parts to their normal position.

While I have herein described and shown the machine as being adapted for cleansing china, porcelain, and the like substances, I wish it to be understood that the machine may be readily employed in other arts than the one enumerated. The machine may be used for cleansing or polishing articles placed therein, and while I have herein shown the essential mechanism that is necessary to accomplish the desired results I do not care to limit myself to the specific means shown, but may employ other mechanism than that to accomplish the same results, and other such changes may be made without departing from the spirit of the invention.

What I claim, and desire to secure by Letters Patent, is—

1. A machine of the character described comprising a table, brushes mounted upon said table, means for revolving said brushes independently of one another and in opposite directions, means for automatically moving said brushes inwardly and outwardly, and means for supporting an article between said brushes.

2. A machine of the type set forth, comprising a table, two brushes slidably mounted upon said table, means for imparting a revoluble motion to said brushes, and means for automatically moving said brushes inwardly and outwardly.

3. The combination with a table, of brushes mounted thereon, means for revolving said brushes independently of one another and in opposite directions, means carried by said table for supporting an article between said brushes, means actuated by the first-named means to move said brushes outwardly and inwardly in respect to one another, substantially as described.

4. A machine of the type set forth comprising a table, brushes slidably mounted upon said table, a power-shaft journaled on said table, means for imparting a revoluble motion to said brushes from said power-shaft, means for revolving said brushes independently of one another and in opposite directions, means actuated by said power-shaft to move said brushes inwardly and outwardly, substantially as described.

5. In a machine of the type set forth, the combination with a table, of brushes slidably mounted upon said table, a power-shaft mounted upon said table, means for imparting a revoluble motion to said brushes, means to rotate said brushes independently of one another and in opposite directions, means to adjust said brushes, means actuated by said power-shaft to move said brushes inwardly and outwardly and means carried by said table to support an article between said brushes, substantially as described.

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

his
RICHARD Y. × YEOMANS.
mark

Witnesses:
W. E. REMLEY,
JAMES HILL.