June 18, 1929. J. R. MITCHELL 1,717,577

CLEANING MACHINE

Filed Sept. 23, 1927

FIG. 1.

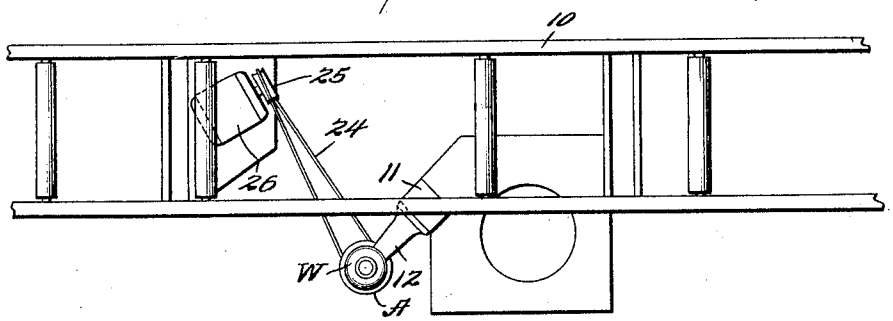


FIG. 2.

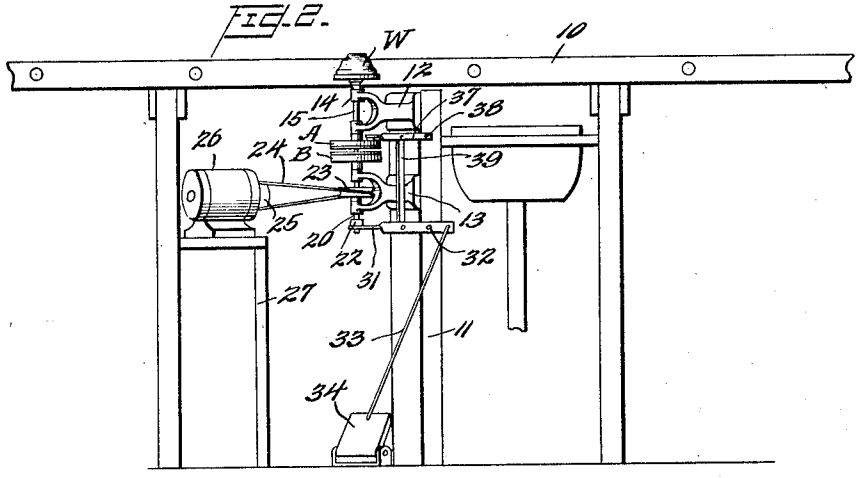


FIG. 3.

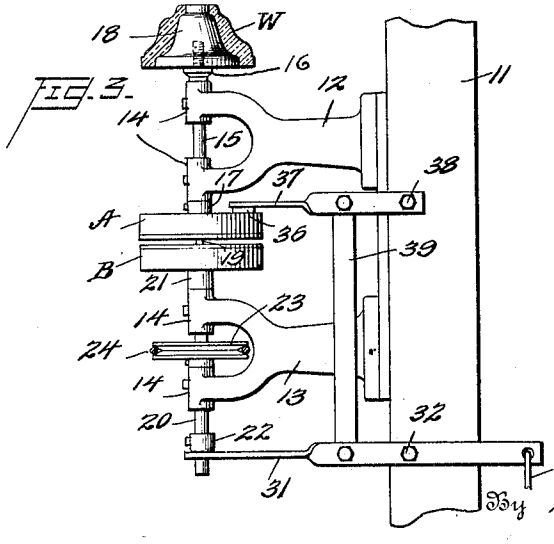
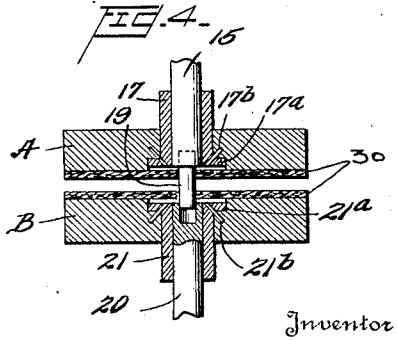


FIG. 4.



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UNITED STATES PATENT OFFICE.

JOHN R. MITCHELL, OF TRENTON, NEW JERSEY.

CLEANING MACHINE.

Application filed September 23, 1927. Serial No. 221,551.

This invention relates to a cleaning machine particularly designed and intended for cleaning porcelain ware. As is well-known, ware of this kind, after being molded and dried, has upon it a projecting fin caused by the joint between the two parts of the mold, and the present invention aims to provide a machine by which such projecting fin may be easily trimmed or cleaned off. A further object is to provide a machine for this purpose which is simple in construction and easily operated and which enables the operator to readily and quickly clean a piece of ware. Its still further object is to provide a machine of this kind in which there is a rotating shaft having a support on the end thereof adapted to receive a piece of ware and which can be rotated by throwing in a clutch by means of a treadle or other suitable device and in which the rotation of the shaft carrying the piece of ware will be caused to cease rotation to permit removal of one piece of ware and the placing of another piece on the shaft.

The present invention is intended primarily for use with the table disclosed and claimed in my copending application, Serial No. 220,818, filed September 20, 1927.

In the accompanying drawings:

Fig. 1 illustrates in plan my present invention applied to a table such as that in my former application, only a fragment of the table being shown;

Fig. 2 is a side elevation of the construction shown in Fig. 1;

Fig. 3 is an enlarged longitudinal section of the upper portion of the cleaning machine, and;

Fig. 4 is a detailed sectional view of the clutch construction.

Referring to the drawings in detail, the numeral 10 indicates a portion of the table arrangement with which the present machine is particularly adapted to be used, this table and the operation of the same being fully disclosed in my said copending application.

The machine of present invention includes a vertically arranged support 11 which may be of any desired form and secured to which are laterally extending brackets 12 and 13, each of which is provided with aligned bearing portions 14. Rotatably mounted in the bearing portions 14 of the bracket 12 is a shaft 15, the upper portion of which is surrounded by a collar 16 and the lower portion by a collar 17, each suitably secured to the shaft.

The upper end of the shaft 15 is threaded so as to receive a suitable head or ware support 18 upon which a piece of porcelain ware W is adapted to be placed. It will, of course, be understood that the shape and size of the head or support 18 are varied, depending upon the nature of the porcelain ware which is to be placed thereon. In other words, different heads 18 are used for different kinds of ware.

The lower end of the shaft 15 carries a friction disk A provided with an opening into which the collar 17 is inserted the latter having a flange 17^a which fits into a counterbore in the disk and through which nails or screws 17^b may be driven into the disk. This serves to secure the disk to the shaft 15. A pin 19 is secured in the lower end of the shaft 15 and projects downwardly therefrom.

Arranged below the shaft 15 and in axial alignment therewith is a shaft 20 which is rotatably supported in the bearings 14 of the bracket 13. The shaft 20 is also provided with collars, 21, 22, which are secured to the same. The shaft 20 is driven by means of a belt wheel 23 rigidly secured thereto, this wheel being engaged by a belt 24 passing around the same and around a belt wheel 25 which is driven by means of a motor 26. The motor 26 is preferably supported on a suitable pedestal or support 27 in such position that the belt wheels, 23 and 25, will be in substantially the same horizontal plane. By this means, the shaft 20 is caused to rotate constantly while the motor 26 is in operation.

Arranged upon the upper end of the shaft 20 is a friction disk B which is secured thereto in the same manner as above described in connection with the disk A, that is the collar 21 extends into an opening in the disk B and flanges 21^a receive nails or other fastening devices 21^b which extend into the disk B. The upper end of shaft 20 is provided with a recess to receive the pin 19 on shaft A. By this means any relative lateral movement between the shafts 15 and 20 is prevented. The friction disk B is, of course, adapted to be brought into engagement with the friction disk A on the shaft 15. In other words, the two disks, A and B, constitute in effect a friction clutch. The contact faces of these friction disks are preferably supplied with suitable pads 30 made of leather or other suitable material.

As before noted, the shaft 20 is axially movable, and such movement is for the purpose of

bringing the friction disk B into contact with the friction disk A. The axial movement of the shaft 20 is effected by means of a lever 31 pivoted at 32 to the support 11. One end of the lever 31 engages beneath the collar 22 on the shaft 20, and to the other end thereof is secured a wire or cable 33, which extends downwardly to a suitable treadle 34. From this it will be apparent that when the treadle 34 is depressed, the shaft 20 will be moved upwardly and the friction disk B raised into contact with the friction disk A, thus causing rotation of the shaft 15. When pressure on the treadle 34 is released, the weight of the parts will cause the shaft 20 to move in the opposite direction, thus separating the friction disks A and B.

It is important that the rotation of the shaft 15 be stopped immediately after the clutch disks are separated, because in a machine of this kind, the ware receiving head must be stationary when the ware is removed therefrom or placed thereon. To effect such quick stopping of the shaft 15, there is provided a brake including a brake pad 36 which is adapted to bear upon the upper surface of the friction disk A. The brake pad 36 is carried at one end of a lever 37, the other end of which is pivoted at 38 to the support 11. A link 39 connects the intermediate portion of the lever 31 with the intermediate portion of the lever 37. It will therefore be seen that when the lever 31 is raised to bring the friction disks in contact, the brake pad 36 will be lifted from the surface of the friction disk A. Likewise, when the shaft 20 moves downwardly and the friction disks A and B are separated, the brake pad 36 will move into engagement with the friction disk A, thus stopping rotation of the shaft 15.

In some cases it may be advantageous to have the shafts 15 and 20 arranged horizontally instead of vertically, but such modification can obviously be effected without any essential change in the mechanism.

Various minor changes may, of course, be made in the construction as above described without departing from the essentials of the invention.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. A machine of the class described comprising a rotatable shaft adapted to carry a support for porcelain thereon, a driving shaft, means for rotating the latter, a clutch disk secured to each of said shafts, means for moving said last named shaft axially, whereby said clutch disks are brought into engagement, a brake associated with said first named shaft and means for rendering said brake inoperative when said clutch disks are engaged and operative when said disks are disengaged.

2. A machine of the class described comprising a rotatable shaft adapted to carry a support for porcelain thereon, a rotatable and axially movable driving shaft, means for rotating the latter, a clutch disk secured to each of said shafts, a lever for moving said driving shaft axially, whereby said clutch disks are caused to engage, a brake for engaging the clutch disk on said first named shaft, to retard rotation thereof, and means operated by said lever for moving said brake out of engagement with said last named clutch disk when said driving shaft is moved in the direction to cause engagement of said clutch disks and for moving said brake into engagement with said last named clutch disk upon reverse movement of said driving shaft.

3. A machine of the class described comprising a constantly rotating and axially movable driving shaft, having a friction disk secured to one end, a manually operable lever for moving said shaft axially, a driven shaft arranged coaxially with said driving shaft and having a friction disk secured thereto adjacent said first named disk, whereby said driven shaft is caused to rotate when said first named disk is moved into engagement with the other disk, a brake for said disk on the driven shaft, and mechanism operated by said lever for moving said brake in opposite directions.

4. A machine of the class described, comprising a rotatable shaft adapted to carry a support for porcelain ware, said shaft having a friction disk secured to one end thereof, a driving shaft arranged in alignment with said rotatable shaft and having a friction disk for cooperating with said first named friction disk, means for moving said disks into engagement whereby said rotatable shaft is caused to rotate, means carried by one of said shafts and engaging the other to prevent lateral movement between the same, and a brake for stopping rotation of said rotatable shaft when said disks are disengaged.

5. A machine of the class described comprising a rotatable shaft adapted to carry a support for porcelain thereon, a driving shaft arranged in line with said driven shaft, means for rotating the latter, a clutch disk secured to each of said shafts, means for moving said last named shaft axially whereby said clutch disks are brought into engagement, a brake normally engaging the disk on said first named shaft when said disks are separated, and means for moving said brake out of engagement with said disk when said disks are brought into engagement.

In testimony whereof I hereunto affix my signature.

JOHN R. MITCHELL.