May 3, 1927. 1,627,112

A. PARODI

APPARATUS FOR CLEANING POTTERIES AND THE LIKE

Filed April 7, 1924 2 Sheets-Sheet 1

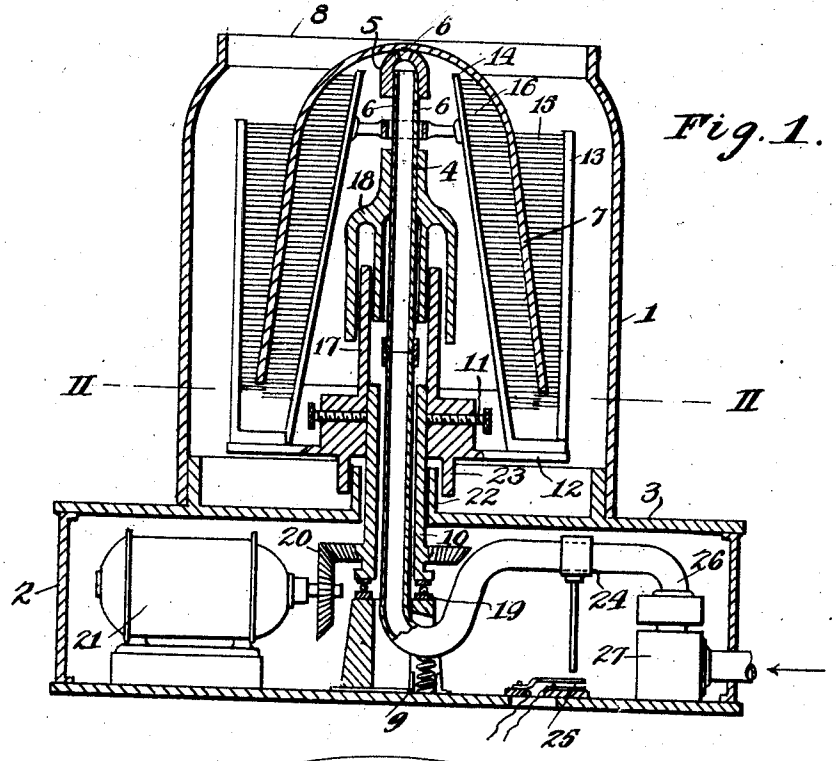


Fig. 1.

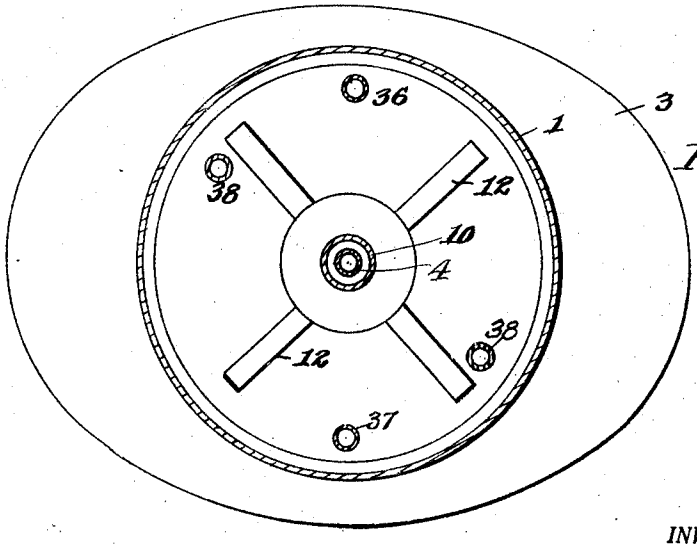


Fig. 2.

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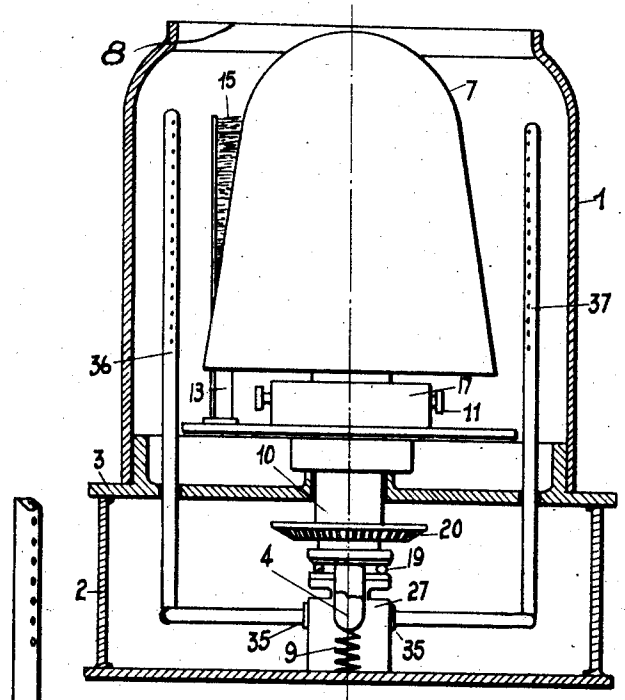


Fig. 4.

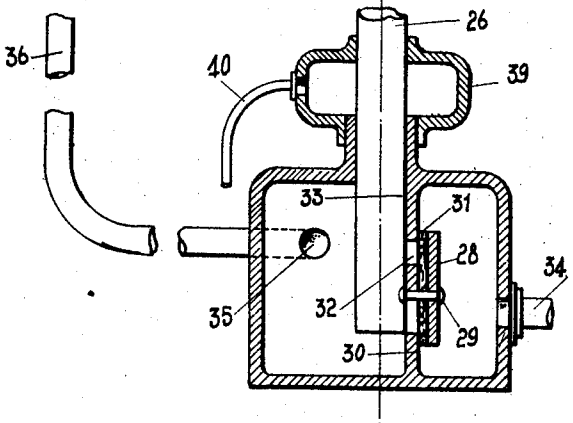


Fig. 3.

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Patented May 3, 1927. 1,627,112

UNITED STATES PATENT OFFICE.

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APPARATUS FOR CLEANING POTTERIES AND THE LIKE.

Application filed April 7, 1924. Serial No. 704,869.

The present invention relates to an apparatus for cleaning potteries and the like, the operation of said apparatus being automatically initiated through the medium of the article to be cleaned, and the apparatus being stopped when the object cleaned is removed from the apparatus.

The present invention has for its object the provision of an apparatus constructed to be operated by the attendants of a shop, said apparatus serving for the perfect cleaning of potteries so that the same are again placed in condition for immediate use.

According to the present invention the cleaning operation is executed by means of internal brushes, and of external brushes acting on the article to be cleaned; said brushes moving at a great speed and frictioning as much as possible on the internal and external surfaces of the article itself; while at the same time suitable jets of water or other liquid are forcibly sprinkled against said surfaces for the purpose of removing all the dirty material, the water or suitable liquid aforesaid being then drained off from the apparatus without material damage thereto.

For the purpose of operating the whole mechanism it is only necessary to insert the object in an inverted position into the apparatus and pushing the same downwardly until the inner surface of the bottom contacts with the upper end of a central pipe provided with suitable holes for the sprinkling of the cleaning liquid, and by continuing the movement of the object itself towards the bottom to consequently displace said central pipe. This displacing has for its object the establishing of an electric contact and of opening a valve for admitting the cleaning liquid. The electric contact effects operation of a suitable motor which causes the turning of said brushes, and the valve opens so that the water or other suitable liquid can then enter under a high pressure within the central pipe as well as within other appropriate lateral pipes, said water or liquid being strongly and abundantly sprinkled through suitable holes against the surfaces to be cleaned.

In the annexed sheet of drawings there has been diagrammatically represented, by way of example, a practical embodiment of the invention.

In said drawings:

Fig. 1 shows a vertical longitudinal section of the apparatus;

Fig. 1 shows a vertical longitudinal section apparatus along the line II—II of Fig. 1, the brushes and the object to be cleaned being removed;

Fig. 3 shows an enlarged fragmentary vertical sectional detail of the water admission valve, and

Fig. 4 is a vertical longitudinal section of the arrangement taken in the position of right angles to the sections shown in Fig. 1.

Referring now, more particularly, to the drawing there is provided a casing or housing embodying an upper chamber 1 preferably of transparent material the upper end being opened, said chamber being supported on the lower closed chamber 2 of the same material. A partition plate 3 acts as a cover for the lower chamber and as a bottom for the upper chamber. A central pipe 4 is provided in its upper part with an appropriate cap 5 perforated in its upper end by one or more holes 6 and on which cap the object 7 comes to rest (in the embodiment illustrated in the drawing said object is represented by a glass) it being understood that the object is introduced through the opening 8 located in the upper part 1 of the casing. Said pipe 4 which is provided in its upper end with other liquid sprinkling holes 6', extends almost the height of the apparatus and at its lower end rests upon a spiral spring 9 which normally maintains said pipe in a raised position. Around the lower part of the pipe 4 there is placed a sleeve 10 within which said pipe may be freely displaced in an axial direction. To this sleeve there is fixed by means of pressing screws 11 the hub of a spider the horizontal arms of which 12 are arranged for the fixation of the external and internal standards 13 and 14 respectively bearing the brushes 15 and 16 respectively. The hub of the spider is also provided with another sleeve 17 extending upwardly and entering into a deep groove provided on a collar 18 suitably fixed to said pipe 4.

The sleeve 10 extends beneath the plate 3 and is provided at its lower end with a ball bearing device 19 which allows a rapid rotation of said sleeve. The rotation is imparted to said sleeve 10 by means of a pair

of intermeshing bevel gears 20 which are operated by an appropriate electric motor 21. Around the central hole of the plate 3, through which the sleeve 10 passes, there is arranged a collar 22 extending into a recess located in the lower part of the hub of the spider 12; said recess being formed by a circular rib 23 depending from the hub.

The central pipe 4 is substantially S-shaped and has a portion 24 horizontally disposed in such a way that the end portion opposite the cap is disposed in a vertical direction, that is, parallel to the main vertical portion of the pipe 4. Depending from said pipe portion 24 is an actuating element for an electric interrupter 25 positioned on the bottom of the lower chamber designed to normally maintain the supply circuit of the motor 21 open, but, when the pipe 4 is pushed downwardly, said actuating element closes the circuit in such a way as to start the electric motor. The vertical portion 26 of said pipe extends into a suitable box 27 in which there is placed the admission valve of the liquid serving to facilitate the cleaning operation of the object introduced into the apparatus. Said valve comprises a metallic plate 28 which by means of a suitable pin connection 29 may be displaced up and down by the action of the pipe 26; said plate pressing a packing 31 against an internal wall 30 of the box aforesaid, said packing 31 preferably in the form of a resilient layer or any other suitable material. When the pipe section 26 is lowered, and with it also the plate 28 and the packing 31 there is exposed a hole 32 in the internal wall 30 of the box, and, on account of the fact that the pipe section 26 is also provided with similar holes 33, when the said pipe section is lowered the holes 32 and 33 registered with one another in such a way as to allow the water or other suitable liquid introduced by the external pipe 34 to pass in the inner part of the pipe 26 and thence flows through the entire length of the pipe 4 and is discharged through the holes 6 in the upper part of said pipe 4. At the point where the pipe 4 enters the box 27 there is arranged a suitable chamber 39 adapted to collect the eventual dripping of liquid from said box; said liquid being discharged out of the apparatus by means of a suitable pipe 40 thus avoiding any damage in the mechanisms of the apparatus, said damage being occasioned by the wetting or deterioration of said liquid. The box 27 is provided in each of its lateral walls with a hole 35 to which are connected respectively two pipes 36 and 37 which pass through the plate 3 in the points indicated in Fig. 2 and are arranged in a vertical direction along the wall of the casing and externally of the object to be cleaned. The pipes 36 and 37 are provided with a plurality of little holes which face the object to be cleaned. When the pipe 26 is lowered on the pipe 4 owing to the pressure of the object to be cleaned, the holes 32, as it has previously stated, are made clear and the water or other liquid flowing to the box 27 by means of the pipe 34, enters into the pipe 26 through the holes 33. All of the water or other fluid entering the valve chamber does not pass through the pipe 26 and the excess accumulates within the chamber 27 and subsequently passes through the holes 35 into the pipes 36 and 37 and is discharged in the form of jets through the aforesaid holes, in the vertical portion of the said pipes, so that the liquid is sprinkled against the external walls of the object to be cleaned thus contributing to the washing of the said external walls. Suitable holes 38, finally, are disposed on the plate 3, said holes being connected to appropriated discharging pipes (not shown in the drawings) which allow the discharge of the water or other liquid which has served for the cleaning operation. That section of the casing which contains the brushes and the sprinkling pipes may be constructed of glass or other suitable transparent material in such a way as to render visible the cleaning operation from the exterior of the apparatus. The sleeve 17 and the groove 18 and the collar 22 of the plate 3 have for their purpose to prevent the cleaning water from passing from the upper chamber to the lower one thus wetting and damaging the apparatus and devices contained therein.

It is believed in view of the foregoing that a further detailed description of the operation of the invention is entirely unnecessary. Likewise it is believed that the advantages of the invention will be readily apparent.

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed I declare that what I claim is:

1. An apparatus of the character described including a casing embodying a lower closed chamber and an upper open chamber, a tubular shaft mounted vertically in the two chambers, a brush support carried with the shaft and positioned in the upper chamber, means in the lower chamber for rotating the shaft, valved liquid supply means located in the lower chamber, a pipe including a vertical portion slidably mounted through the shaft and projected into the upper part of the upper chamber and having a horizontal portion continuing from the vertical portion and arranged through the lower chamber and a vertical lower portion continuing from the horizontal portion and forming part of the valve supply means, resilient means for holding the pipe in an elevated and closed position, the pipe being adapted to move downwardly upon the insertion of an object to be cleaned to actuate

the valve supply means to allow liquid to pass through the pipe and to be directed against the inserted object, means for controlling the rotation of the shaft, and means carried with the horizontal portion of the pipe and coacting with the controlling means for rotating the shaft simultaneously with the depression of the pipe so that the brush support will be rotated while the liquid is being directed against the inserted object.

2. An apparatus as claimed in claim 1, wherein other brushes are positioned about the upper vertical portion of the pipe above the shaft and coact with the brush support and the inserted object to facilitate the cleaning of the latter.

3. An apparatus as claimed in claim 1, wherein means is mounted on the upper vertical portion of the pipe for cooperating with the upper edges of the shaft for preventing the passage of liquid into the shaft during operation of the apparatus.

4. An apparatus as claimed in claim 1, wherein a sleeve is mounted in spaced relation about the shaft and extends upwardly therefrom, and a collar mounted on the upper part of the pipe above the sleeve and provided with a relatively deep annular groove on its under surface for accommodating the sleeve whereby to prevent access of water to the shaft during the operation of the apparatus.

In testimony whereof I affix my signature.

ACHILLE PARODI.