No. 836,291. PATENTED NOV. 20, 1906.

E. WEYMAR.

APPARATUS FOR CLEANING BOTTLES.

APPLICATION FILED OCT. 17, 1905.

Fig. 1

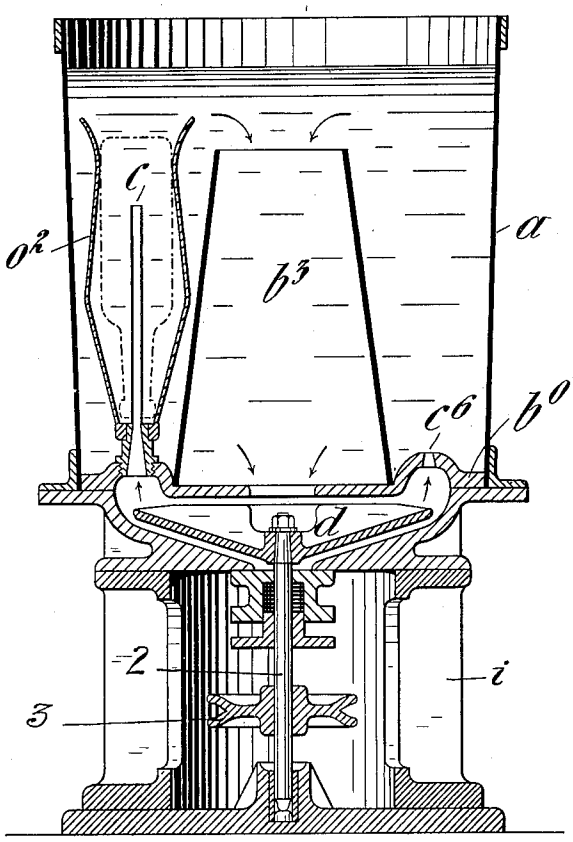
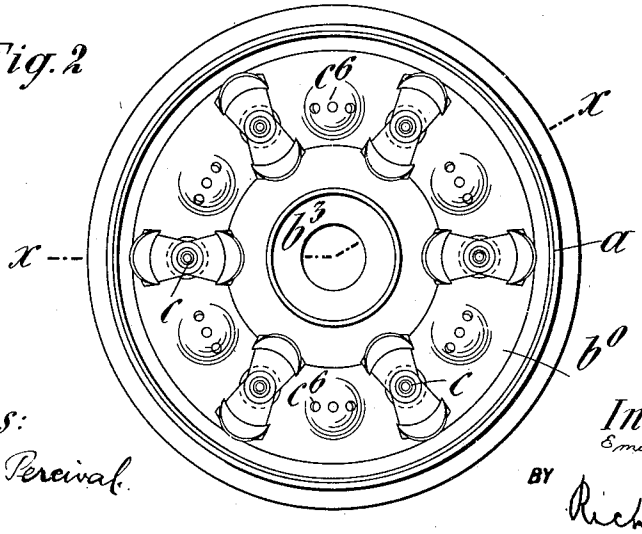


Fig. 2



Witnesses:

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EMIL WEYMAR, OF MÜHLHAUSEN, GERMANY.

APPARATUS FOR CLEANING BOTTLES.

No. 836,291. Specification of Letters Patent. Patented Nov. 20, 1906.

Application filed October 17, 1905. Serial No. 283,188.

To all whom it may concern:

Be it known that I, EMIL WEYMAR, a subject of the King of Prussia, Emperor of Germany, residing at Mühlhausen, Thüringen, Kingdom of Prussia, German Empire, have invented certain new and useful Improvements in Apparatus for Cleaning Bottles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to a device for cleaning and washing bottles and other vessels and is of the kind described in my patent application, Serial No. 231,220, filed November 3, 1904.

According to the process for cleaning and washing bottles and other vessels, as described in my patent application Serial No. 231,220, filed November 3, 1904, the insides of the vessels to be cleaned are washed out in the cleaning liquid by means of liquid which is forced in, this being effected, according to the above-cited patent application, by liquid being supplied under pressure by means of a separate pump from the vessel containing the cleaning liquid to the holder adapted for the reception of the bottles and the like.

In the device hereinafter described the cleaning liquid surrounding the bottles or other vessels is driven or forced directly into or against the bottles or vessels for the purpose of cleaning them within and without. Below the containing vessel I arrange a holder constructed as a hollow body, and the top of this holder forms the bottom of the vessel for the liquid, and a forcing device (for example, the centrifuge) is arranged within it, by means of which the cleaning liquid flowing to it is driven back from the interior of the holder directly into the bottles or vessels situated above the said holder or also through special nozzles between these bottles or vessels and against their outside surfaces, and so effectively cleans said bottles or vessels all over their surfaces.

Such a device, which can be used very readily and conveniently, is represented in the accompanying drawings, in which—

Figure 1 is a vertical section on the line $x\,x$ of Fig. 2, and in which Fig. 2 is a plan of the device.

a indicates the vessel for holding the cleaning liquid, under the bottom or bottom plate b^0 of which there is a space in which the centrifuge d runs.

i indicates a base for the vessel in which is supported a rotating shaft 2, having a pulley 3 thereon, over which the driving-belt passes. The shaft 2 carries the member d.

The bottom plate b^0 possesses a suitable number of nozzles—namely, the jet-tubes c—adapted to receive the bottles and provided for the internal cleaning of the same, and the openings, passages, or injection-nozzles c^6 for causing the liquid in the vessel a to be set in rapid rotation or swirling motion whereby it cleans the bottles or other vessels on their outside surfaces. Above the central opening of the bottom plate b^0 the suction-tube b^3 is arranged, through which the centrifuge d draws the liquid from the vessel a in order to drive it back into the same through the tubes or the like c and nozzles c^6 in order to clean the bottles or other vessels within and without. The passages or nozzles c^6 may be inclined at various angles or be vertically arranged in or on the bottom plate b^0 for the purpose of more effectively causing the liquid to be set in rapid rotation or swirling motion, or they can be so arranged that the water-jets are injected in a tangential direction into the vessel a, where they make the liquid therein circulate rapidly. The part of the vessel a in which the bottles or other vessels are washed is advantageously shaped like a funnel or the like in a suitable manner or is so constructed as to taper or become narrower towasd the bottom, so that the scouring or like material, (sand, shot, and the like,) which is mixed with the liquid and tends to sink to the bottom, is constantly whirled up again.

The bottles or other vessels to be cleaned are in the case of the present device placed by hand upon the jet-tubes c and may be firmly held on the latter by means of springs o^2 or in other suitable manner.

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

1. A device for cleaning vessels comprising in combination a vessel for containing the cleaning liquid and the vessels to be cleaned immersed therein, a hollow holder, said holder forming the bottom of the containing vessel and having an opening through which the cleaning liquid can flow from the containing vessel into the holder, and having jet-tubes c adapted to pass inside the vessels to be cleaned and nozzles c^6 opening outside

the vessels to be cleaned, and means for forcing the cleaning liquid from the holder directly against the surfaces of the vessels to be cleaned.

2. A device for cleaning vessels comprising in combination a vessel for containing the cleaning liquid and the vessels to be cleaned immersed therein, a hollow holder, said holder forming the bottom of the containing vessel and having an opening through which the cleaning liquid can flow from the containing vessel into the holder, and having jet-tubes *c* adapted to pass inside the vessels to be cleaned and nozzles c^6 opening outside the vessels to be cleaned, and a centrifuge inside the hollow holder for forcing the cleaning liquid from the holder through said jet-tubes *c* and nozzles c^6 directly against the surfaces of the vessels to be cleaned in order that they may be cleaned simultaneously within and without.

3. A device for cleaning vessels comprising a vessel, a holder arranged below the same, nozzles leading from the holder to the vessel said nozzles being arranged in a circle, a central passage leading from the vessel to the holder and means in the holder for forcing the liquid through the nozzles and drawing it in through the central passage.

4. A device for cleaning vessels comprising a vessel, a holder arranged below the same, nozzles leading from the holder to the vessel said nozzles being arranged in a circle, a central passage leading from the vessel to the holder, a tube surrounding said passage and separating the same from the nozzles and means in the holder for forcing the liquid through the nozzles and drawing it in through the central passage.

In witness whereof I have hereunto set my hand in presence of two witnesses.

EMIL WEYMAR.

Witnesses:
C. BÓLUR,
RISFORRD WIENRICH.