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APPARATUS FOR CLEANSING MEDICAL SPITTOONS.

APPLICATION FILED JAN. 8, 1909.

962,931. **Patented June 28, 1910.**

Fig. 1

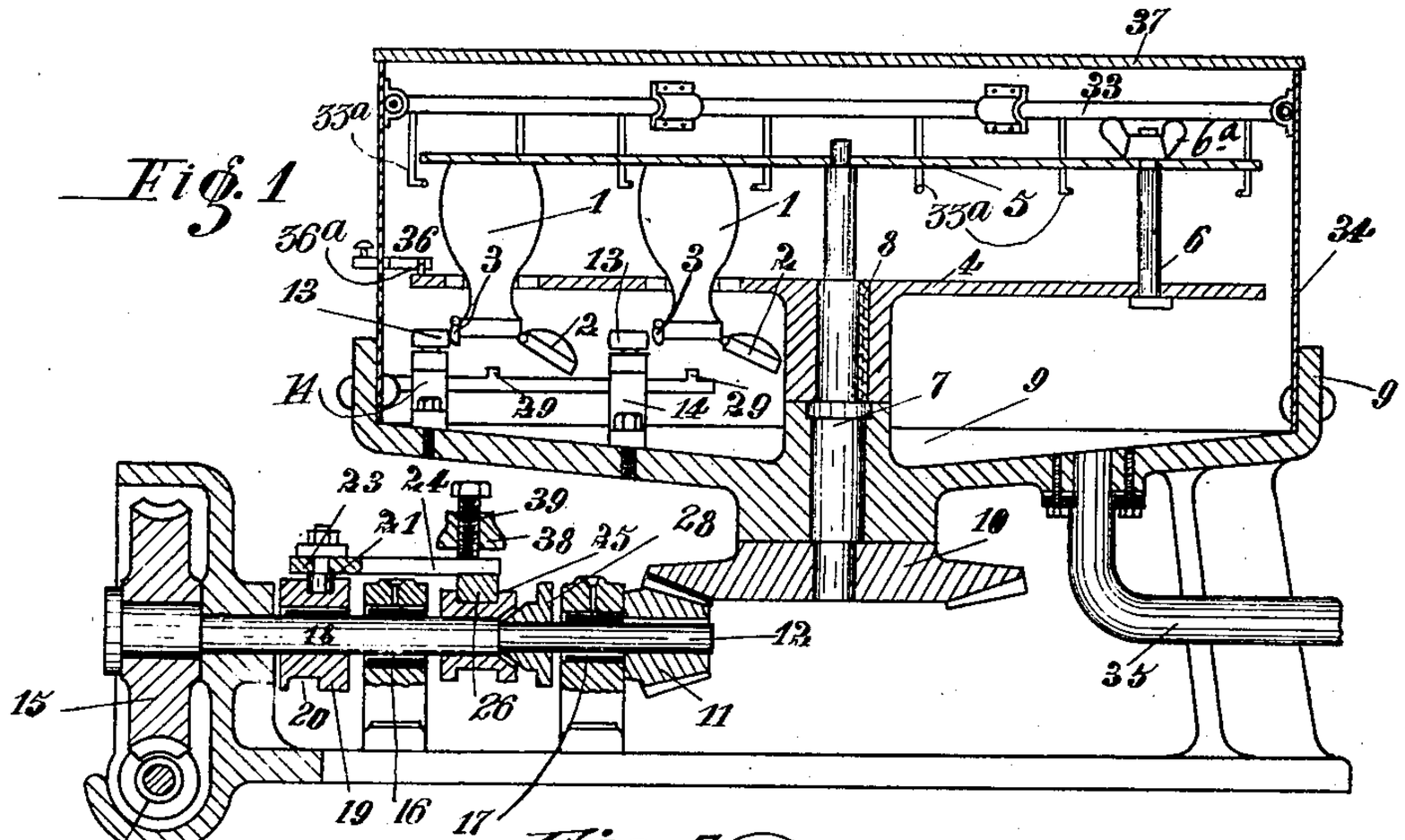
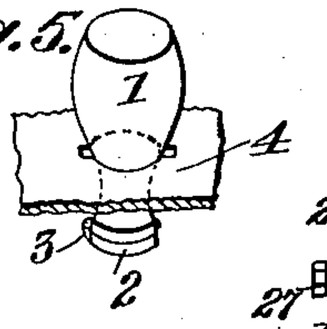


Fig. 5.



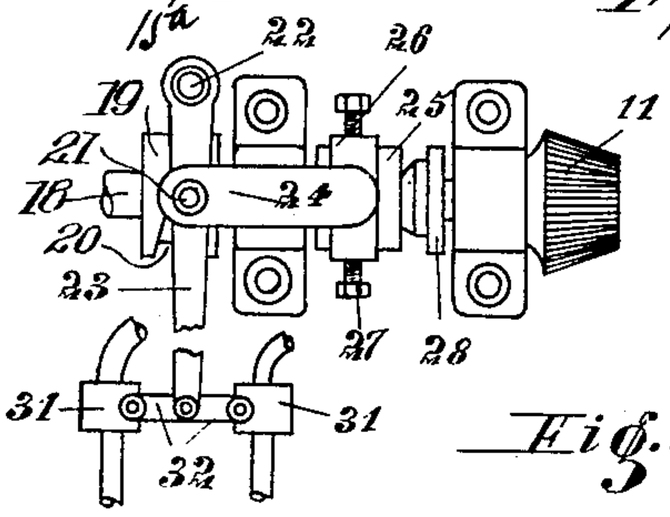


Fig. 3

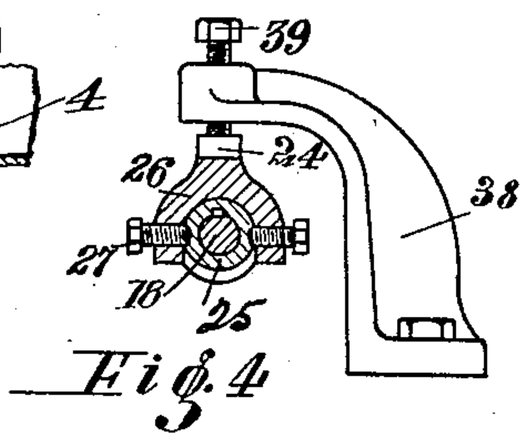


Fig. 4

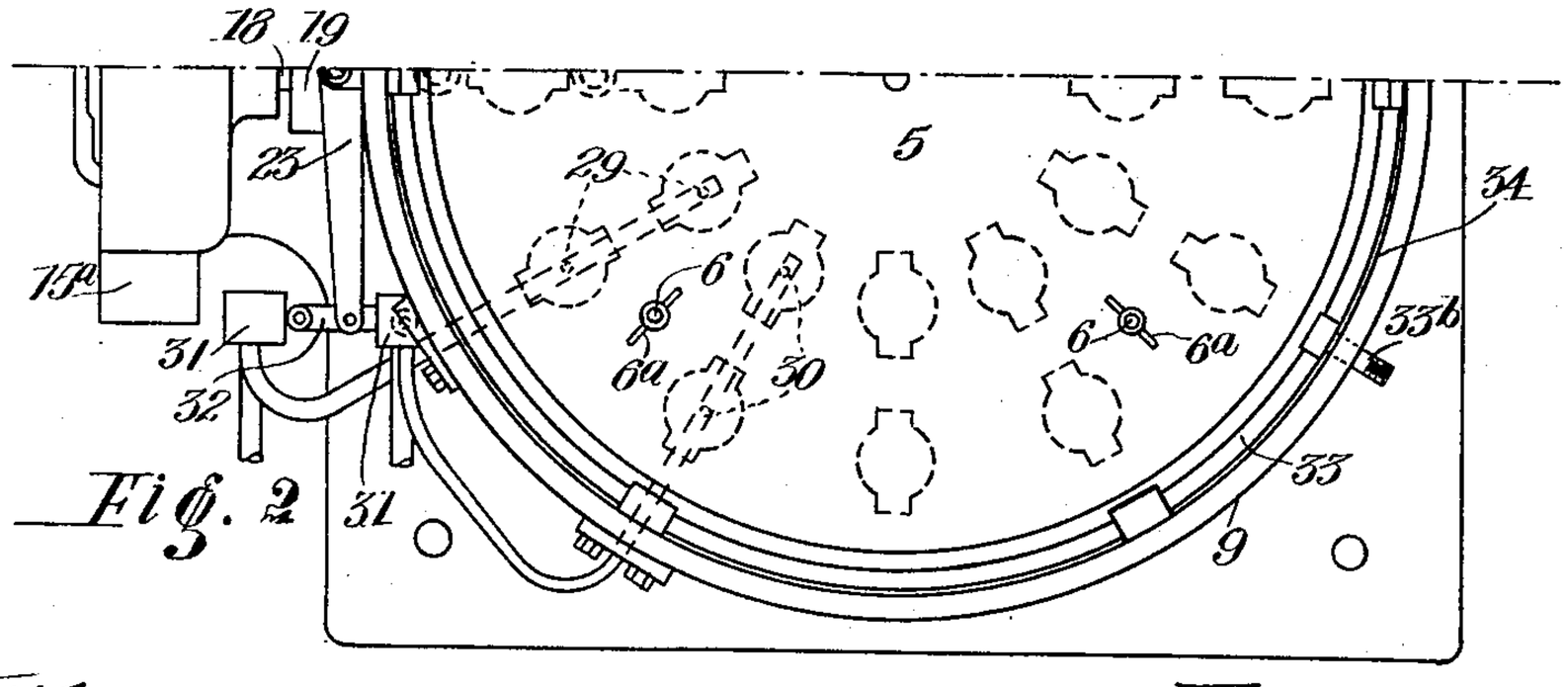


Fig. 2

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UNITED STATES PATENT OFFICE.

LUDWIG THIÈME AND MAX GLÄSER, OF ADORF, GERMANY.

APPARATUS FOR CLEANSING MEDICAL SPITTOONS.

962,931. Specification of Letters Patent. Patented June 28, 1910.

Application filed January 8, 1909. Serial No. 471,358.

To all whom it may concern:

Be it known that we, LUDWIG THIÈME and MAX GLÄSER, subjects of the German Emperor, residing at Adorf, in the Province of Vogtland, in Germany, have invented certain new and useful Improvements in Apparatus for Cleansing Medical Spittoons, of which the following is a specification.

The object of the present invention is an apparatus for automatically emptying and cleansing medical spittoons, such as used in sanatoria or hospitals by the sick for reception of expectoration. Up to the present, the nurses or other officials stood in great danger of contagion when opening, clearing and cleansing said spittoons owing to the expectoration or saliva containing noxious germs. By the present invention this danger is obviated since the spittoons or receptacles are closed by the sick person and placed cover downward on a tray or basket which after being filled is passed into a completely closed mechanically driven device, in which the receptacles are opened in an automatic manner and emptied, cleansed and disinfected.

An embodiment of the invention is represented in the accompanying drawings, of which—

Figure 1 is a vertical section of the apparatus, Fig. 2 a plan view and Figs. 3 and 4 detail views of the driving mechanism. Fig. 5 a perspective view showing a spittoon or receptacle as it is retained on the perforated tray.

1 designates the generally known spittoons or receptacles, the covers 2 of which are under spring pressure and held closed by a snap fastening. The said receptacles are placed by the sick persons with the closed cover downward on a perforated tray 4 and when said tray is filled or charged with the desired number of receptacles a cover-plate 5 is placed over the upwardly directed bases of the receptacles, and secured by means of bolts 6 and wing-nuts 6^a to the tray 4. The bottles may however be secured in any other convenient manner. The tray is thereupon conveyed to the cleansing device, placed upon a spindle or shaft 7, and connected thereto by suitable means such as a key 8. The shaft 7 is mounted in a trough 9 and carries at its lower end below said trough a bevel wheel 10 with which meshes another bevel wheel 11, mounted on the shaft 12. Rotary motion is thus imparted to the tray 4 during which the bottle fasteners 3 are caused to engage rollers 13 disposed in their path, said rollers being mounted on supports 14 located in the trough 9. As shown, the diameter of the spittoons or receptacles at a portion thereof is greater than the diameter of the perforations in tray 4, hence as the spittoons are placed in the perforations a portion of such spittoons will abut against the walls of the perforations and be retained in the perforations, as best shown in Fig. 5. We do not limit our invention to this specific construction of the parts as any suitable means may be employed to accomplish the same result. By such engagement of the fasteners 3 with the rollers 13 (or with pins or the like), said fasteners are acted upon to release the covers 2 which thereupon spring open and the contents of the receptacles flow into the trough 9. At this moment, the rotary movement of the shaft 12 and consequently of the spindle 7 is arrested and a stoppage occurs the duration of which may be for say one half to two minutes more or less. This interruption of the movement and re-starting of same is effected by the following means. The shaft 18 journaled at points 16 and 17 and driven by a worm wheel 15 and worm 15^a loosely carries a sleeve 19 provided with a curved groove 20 extending around its circumference. In said groove engages a pin 21 to which is connected on one hand a lever 23 fulcrumed at 22 (Fig. 3) and on the other hand a bar 24 adapted to actuate a coupling or clutch member 25 connected thereto and slidable on the end of the shaft 18.

The connection of the clutch member 25 with the bar 24 is effected by means of a head 26 at the end of the bar and screws 27 Fig. 4 passing through said head and engaging the clutch member. On the shaft 12 is keyed the other conical clutch or coupling member 28, which forms together with the number 25 the complete friction clutch shown in Fig. 1 in a disengaged condition, so that the shaft 12, spindle 7 and tray 4 are at rest. When the required interval of rest is completed the pin 21 engaging the groove

20 displaces the bar 24, the latter being guided by a screw 39 extending through the bracket 38. The said bar 24 forces the clutch member 25 against the conical member 28 whereby the shaft 12 is put in rotation and drives the spindle 7. By this rotation other closed receptacles are brought in contact with the rollers 13 and are opened as previously explained. The clutch is then again disengaged and a further stoppage occurs. The receptacles first opened have in the meantime passed over nozzles 29, which during the stoppage discharge steam or hot water or a disinfectant into the receptacles. At the next stoppage the receptacles may pass over further nozzles 30, so that repeated injections into the receptacles of the same or different liquids can take place.

The introduction of the water, steam or the like is regulated by two slides or valves 31, adapted to be operated by an extension of the lever 23, aforesaid, said lever being connected to the slides by links 32 and the operation taking place when the lever 23 is moved by the pin 21 working in the groove 20 before referred to. It is possible by means of a system of tubes 33 provided with differently directed nozzles or jet openings 33^a and provided at the upper part of the casing 34 above the tray 4 to cleanse the exterior of the bottles in such a manner that all parts of the surface are dealt with. Tubes 33 are adapted to be connected at 33^b to any suitable source of water supply (not shown).

The expectoration and the cleansing liquid flow away through a drain pipe 35 and may if desired be passed to boiler or other apparatus in which the germs are destroyed. When the tray 4 has completed a revolution, the attendant is informed thereof by an electric contact device 36 adapted to sound a bell in connection therewith and further the driving power can be simultaneously cut off by a suitable switch device (not shown) which may be operated by contact pin 36^a of the tray striking against the arm of the switch.

If required more than two series of nozzles may be arranged so that each receptacle is washed several times. The tray 4 with the cleaned bottles is then removed and another filled tray placed on the spindle. The casing 34 may be closed by a cover 37.

What we claim as our invention and desire to secure by Letters Patent of the United States is:—

1. Apparatus for the purpose set forth comprising a closable casing, a removable and rotatable tray therein for supporting closed receptacles in inverted condition, means whereby the receptacles are opened during the rotation of the tray and the contents discharged, means for periodically stopping and re-starting the rotary movement of the tray and means for injecting liquids into the opened receptacles during periods of rest thereof.

2. Apparatus for the purpose set forth comprising a closable casing, a removable and rotatable tray therein for supporting closed receptacles in inverted condition, means whereby the receptacles are opened during the rotation of the tray and the contents discharged, means for periodically stopping and re-starting the rotary movement of the tray, means for injecting liquids into the opened receptacles during periods of rest thereof and means located above the tray for directing jets of liquid on to the exterior of the receptacles.

3. Apparatus for the purpose set forth comprising a closable casing with a trough at the base thereof, a discharge from said trough, a rotatable spindle located in the casing, a removable tray adapted to engage and rotate with said spindle and receive closed receptacles in inverted condition, devices disposed in the paths of the receptacles whereby the latter are opened during the rotation of the tray and the contents discharged into the trough, means for periodically stopping and starting the rotary movement of the spindle, means for injecting liquids into the opened receptacles and means controlled by the aforesaid stopping and re-starting means whereby such injection takes place during the periods of rest of the spindle.

4. Apparatus for the purpose set forth comprising a closable casing with a trough at the base thereof, a discharge from said trough, a rotatable spindle located in the casing, a removable tray adapted to engage and rotate with said spindle and receive closed receptacles in inverted condition, devices disposed in the paths of the receptacles whereby the latter are opened during the rotation of the tray and the contents discharged into the trough, means for periodically stopping and starting the rotary movement of the spindle, comprising a two-part driving shaft, clutch members disposed thereon, a sleeve carried by one shaft member and having a curved circumferential groove, a bar connected to one clutch member and a pin thereon engaging the said groove, means for injecting liquids into the opened receptacles and means controlled by the aforesaid stopping and re-starting means whereby such injection takes place during the periods of rest of the spindle.

5. Apparatus for the purpose set forth comprising a closable casing with a trough at the base thereof, a discharge from said trough, a rotatable spindle located in the casing, a removable tray adapted to engage and rotate with said spindle and receive closed receptacles in inverted condition, devices disposed in the paths of the recep-

tacles whereby the latter are opened during the rotation of the tray, and the contents discharged into the trough, means for periodically stopping and starting the rotary movement of the spindle, means for injecting liquids into the opened receptacles, means controlled by the aforesaid stopping and restarting means whereby such injection takes place during the periods of rest of the spindle, means located above the tray for directing jets of liquid onto the exterior of the receptacles and an electric contact engaged on a complete revolution of the tray aforesaid for the purposes set forth.

In witness whereof we have signed this specification in the presence of two witnesses.

LUDWIG THIÈME.
MAX GLÄSER.

Witnesses:
KOTTE,
RUDOLF MARTIN.