

A. J. BERG.
 CLEANING DEVICE FOR CARBOYS.
 APPLICATION FILED APR. 30, 1910.

982,566.

Patented Jan. 24, 1911.

Fig. 3.

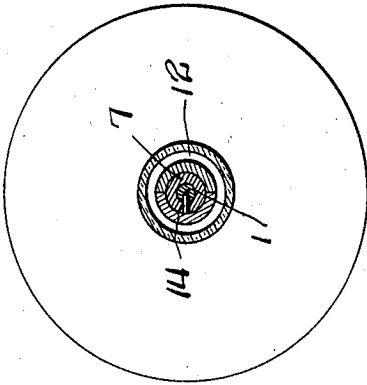


Fig. 4.

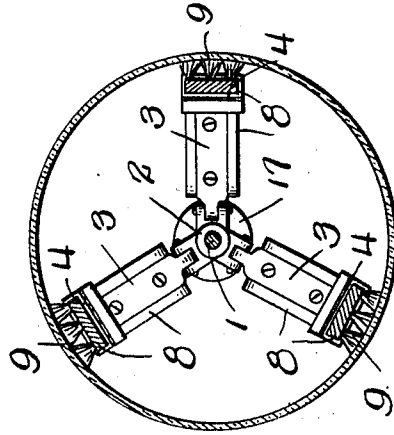


Fig. 2.

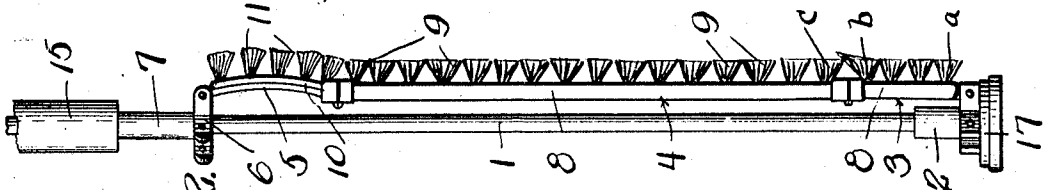


Fig. 1.

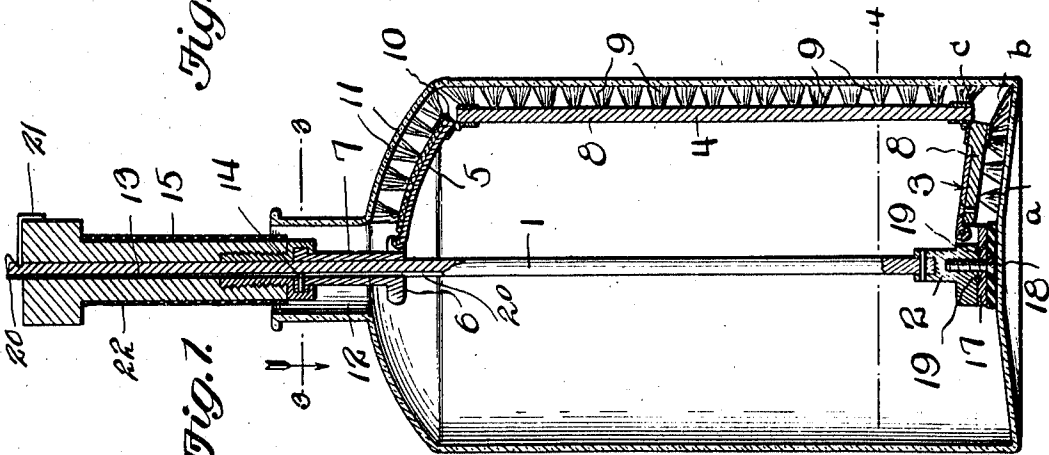
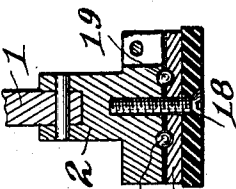


Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

ALFRED J. BERG, OF KITTERY, MAINE, ASSIGNOR OF ONE-HALF TO ARTHUR C. BARR,
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CLEANING DEVICE FOR CARBOYS.

982,566.

Specification of Letters Patent.

Patented Jan. 24, 1911.

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To all whom it may concern:

Be it known that I, ALFRED J. BERG, a citizen of the United States, residing at Kittery, in the county of York and State of Maine, have invented new and useful Improvements in Cleaning Devices for Carboys, of which the following is a specification.

This invention relates to bottle cleaners and particularly to cleaners adapted for use in carboys.

The object of the invention is the provision of a simple, cheap and efficient device which when in collapsed position will freely enter the neck of the bottle and can be expanded so as to bring its cleaning bristles in engagement with the bottom, sides and top of the bottle so that every portion of its inner surface is properly cleansed.

A still further object of the invention is to provide a device of this character which may be conveniently applied to a bottle and rotated therein and whereby the parts may be interchanged for repairs.

In the drawing:—Figure 1 is a sectional view of a bottle showing the device applied. Fig. 2 is an elevation showing the device collapsed and ready for entrance into the neck of the body. Fig. 3 is a section on the line 3—3 of Fig. 1 showing the device expanded and removed from the bottle. Fig. 4 is a similar section on the line 4—4 of Fig. 1. Fig. 5 is a detail sectional view of the supporting head.

Referring more especially to the drawing 1 represents the driving shaft which has secured to its lower end a head 2 forming bearings for the bottom arms 3 of which there may be any suitable number. The arms 3 are hinged to the head so that when collapsed are adapted to lie parallel to the shaft 1 and have hinged to their outer ends the vertical or side members 4 which are hinged at their opposite ends to the flexible top members 5 and these in turn are hinged at their opposite ends to the head 6 of the sliding sleeve 7. Each of the bottom members and each of the side members comprise wooden strips apertured at 8 throughout their length to receive the bristles 9 thereby forming the brush. The bristles on the side members and bottom members are made of varying lengths as shown at *a*, *b*, and *c* in order that they may enter the crevices or corners of the bottle. The up-

per flexible members 5 are constructed of a strip of spring steel or any other suitable material and have stretched thereover a canvas covering 10 in which is secured the bristles 11. These members are slightly bowed so as to conform to the curved head of the bottle and are adapted to collapse substantially parallel with the shaft 1 when the device is inserted in the neck 12 of the bottle.

The shaft 1 is provided with a longitudinal key-way 13 in which a key 14 is adapted to move, said key passing through a collar in the sleeve 7. Surrounding the shaft above the sleeve 7 is a cylinder 15 having threaded into its end a two-part bushing which surrounds the collar through which the pin 14 projects. The shaft 1 and sleeve 7 are mounted for free rotation within the cylinder 15 and any suitable driving mechanism may be applied to the shaft 1 to rotate the brush members in the bottle.

In order that the lower end of the shaft may center in the bottle properly and freely rotate, I secure to the head 2 a friction disk 17 by means of a screw 18 on which the disk rotates and interposed between the disk and the head 2 a series of anti-friction balls 19 upon which the disk bears. When the device is pushed into the bottle, the friction disk 17 engages the bottom thereof and sticks to it while the shaft and its brush arms rotate upon the bearings 19. By rotating the shaft rapidly after the device has been placed in the bottle, the sections 3, 4 and 5, spread apart to operative position so as to bring the brushes in engagement with the sides, top and bottom of the bottle.

Located in the shaft 1 is an annular groove 20 in which a spring 21 carried by the cylinder is adapted to engage whereby excessive expansion of the members, 3, 4 and 5 is prevented. This excessive expansion might straighten out the top spring members 5 so as to carry their bristles away from the bottom.

The cylinder 15 is preferably covered with rubber 22 to prevent the metal from coming in contact with the glass bottle and in practice it may be found to be necessary to use more than three rows of brushes. I therefore desire to reserve this right and to make any such changes in the structure shown herein as are found to be within the scope of the appended claims.

Having thus described the invention, what is claimed, is—

1. The combination with a rotating shaft, of a head fixed thereon, a member rotating
5 with the shaft and slidably mounted thereon, brush members hingedly connected to the head and sliding member, and a bearing head rotatably mounted on the fixed head.
- 10 2. The combination of a rotating shaft, of a head fixed thereon, a sliding head on the shaft adapted to rotate therewith, brush members hingedly connected together and
15 mounted upon the fixed head.
3. The combination with a rotating shaft, of a head fixed thereon, a bearing head rotatably mounted upon the fixed head, a head
20 slidably mounted on said shaft, means for causing the rotation of the slidably mounted head with the shaft, sectional brush members having their sections connected together and to the heads, and means rotatably connected to the sliding head and to the
25 shaft adapted to expand said brush sections.
4. The combination with a rotating shaft, of a head fixed thereon, a friction centering

disk rotatably mounted upon the stationary head, a head slidably mounted on the shaft, a key carried by the sliding head for causing rotation thereof with the shaft, a plurality of brush arms, each comprising a pair of rigid sections, and a flexible section, means for connecting said sections together and to the heads whereby they are adapted
35 to be arranged parallel with the shaft for entrance into a bottle neck, and means surrounding the shaft and rotatably connected with the sliding head for expanding the brush arms in a bottle.

5. In combination with a rotating shaft, collapsible brush members connected to the shaft and adapted to be expanded upon rotation of the shaft, a cushioning member
40 rotatably mounted upon the shaft, and means connected to the shaft for preventing excessive expansion of the brush members.

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

ALFRED J. BERG.

Witnesses:

HARRY L. ROSE,
AARON B. COLE.