J. W. BRODERICK.

WINDOW CLEANER.

APPLICATION FILED FEB. 28, 1910.

1,011,022. Patented Dec. 5, 1911.

FIG. 1.

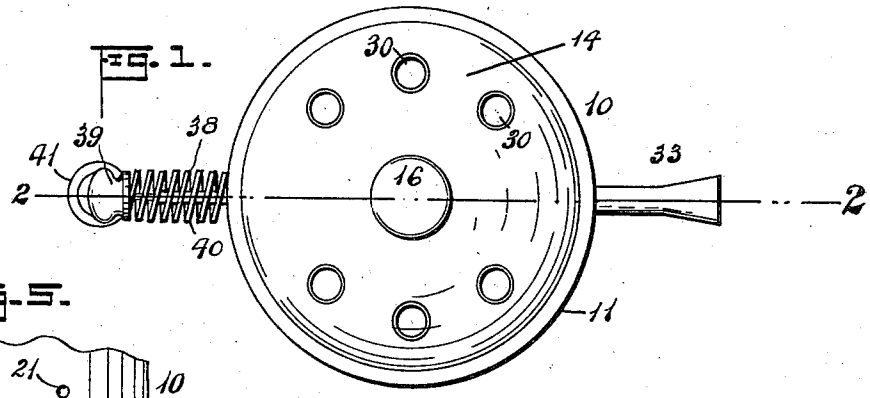


FIG. 5.

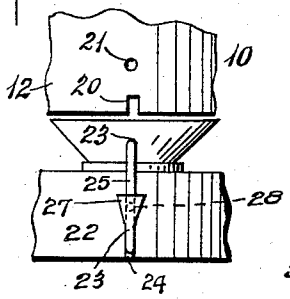


FIG. 3.



FIG. 2.

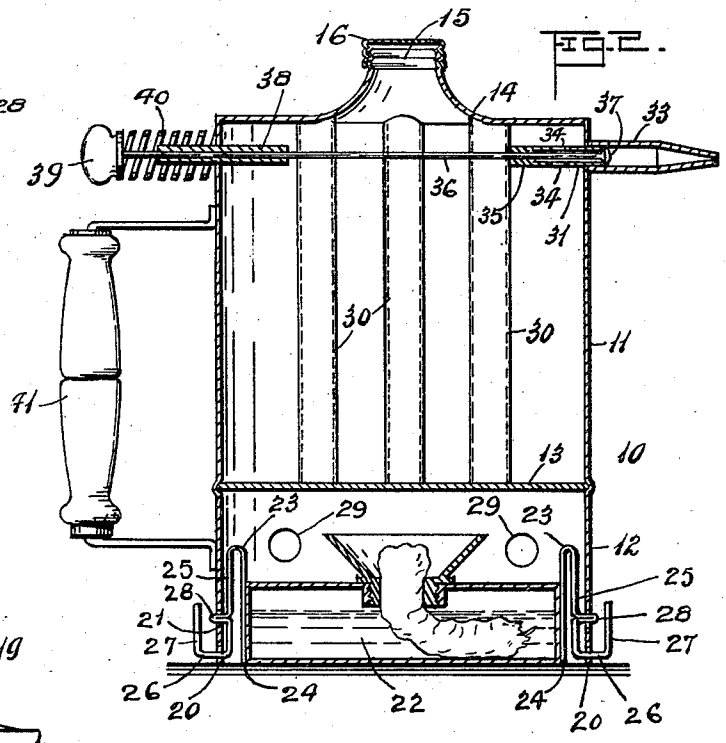


FIG. 4.

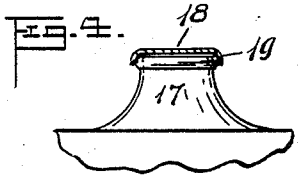
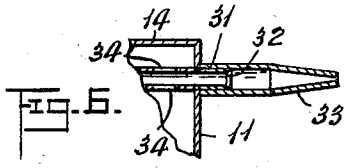


FIG. 6.



WITNESSES

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WINDOW-CLEANER.

1,011,022. Specification of Letters Patent. Patented Dec. 5, 1911.

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To all whom it may concern:

Be it known that I, JOHN W. BRODERICK, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain Improvements in Window-Cleaners, of which the following is a specification.

This invention relates to that class of devices which are adapted to be held in the hand and generate steam to be directed upon window panes or other surfaces to moisten the same and enable them to be cleaned.

The objects of the invention are to control the jet of steam which issues from the device, and enable the same to be shut off at pleasure; to thus avoid waste of the steam, and injury to the surface being cleaned by its receiving too much steam or to other objects by their receiving steam when not intended to be so treated; to provide a simple construction of such control means; to enable the control means to be conveniently operated by the hand holding the device; to combine with said control means the functions of a safety valve, and to obtain other advantages and results as may be brought out in the following description.

Referring to the accompanying drawings, in which like numerals of reference indicate corresponding parts in each of the several figures, Figure 1 is a plan of my improved window cleaner; Fig. 2 is a central vertical section of the same, taken on line 2—2 of Fig. 6; Fig. 3 is an end view of the steam-discharge nozzle; Fig. 4 is a detail side view of the preferred form of filling plug for the cleaner, showing the closure for said plug in central vertical section; Fig. 5 is a view of the burner supporting means, partly separated for greater clearness, and Fig. 6 is a detail view of the steam-discharge, as shown in Fig. 2, with the control valve removed and illustrating the seat therefor.

In said drawings, 10 indicates the body portion of my improved window cleaner, comprising at its upper part a cylindrical boiler 11 and at its lower part a cylindrical skirt or flange 12 depending from said boiler and preferably formed by a continuation of the side walls of said boiler. The boiler has a bottom 13 and a top 14, said top being provided with a filling neck 15 which is shown in Fig. 2 as adapted to be closed by a screw cap 16. In Fig. 4 the filling neck 17 is provided with a closure 18 whose depending edges 19 simply spring over the top of the filling neck 17, so that said closure is fractionally retained and will blow off in case the pressure becomes too high. The said skirt 12 has at diametrically opposite points notches 20, 20 in its lower edge, and vertically above each of said notches is an aperture or perforation 21. A lamp or burner 22 of any suitable construction adapted to furnish heat to the boiler 11 is inclosed by the said skirt 12 and provided at opposite sides of itself with springs 23, 23 adapted to engage with said skirt at the notches and perforations above mentioned. Preferably each spring 23 comprises an upright portion 24 fastened to the outside of the burner and extending above the same and then bent downward parallel to the portion 24, as at 25, then outward through the notch 20, as at 26, and then bent upward again to form a finger or pressure piece 27 outside of the skirt or flange 12. Each portion 25 has an outward projection 28 adapted to enter one of the perforations 21 of the skirt under normal conditions, as shown in Fig. 2. At the same time, by pressing inwardly upon the finger-pieces 27, 27, the arms 25 of the springs may be swung toward the burner and the projections 28 withdrawn from the perforations 21 so that the burner can be removed downwardly. The notches 20 enable the burner when in place in the body portion, or skirt 12 thereof, to be readily brought into such position that the projections 28 enter the perforations 21.

The skirt 12 may have perforations or openings 29 for draft purposes, and preferably draft tubes 30 extend vertically through the boiler, including its top and bottom 13 and 14.

At one side of the boiler 11, and preferably near its top, a tube 31 projects through the wall of the boiler and provides at its outer end a valve seat 32. A nozzle 33, of any suitable form adapted to discharge the steam, slips telescopically and removably onto said projecting end of the tube 31. Within the boiler 11 the tube 31 has holes 34, 34 in its sides, and has its walls at the extreme inner end interiorly thickened, as at 35, to provide a bearing for the stem 36 of a valve 37 within the nozzle 33. Said stem 36 extends diametrically across the boiler 11 and out through its opposite wall, a long bushing 38 being preferably provided

to give said stem a bearing in which it can slide without getting out of alinement. Outside the boiler the stem 36 had a head 39 beyond the bearing 38, and between said head and side of the boiler a helical spring 40 is wrapped around said stem and bearing. Obviously said spring 40 seats the valve 37, and said spring is strong enough to retain the desired pressure of steam in the boiler 11, but under abnormal pressure it will yield and allow the valve to open and permit steam to escape before the danger point is reached.

Beneath the knob or head 39 a handle 41 is affixed to the body portion of my improved device, in vertical position, for carrying the device or holding it while in use, and the relation of said handle and knob is such that the thumb of the hand grasping said handle 41 can press upon the knob 39 to open the valve 37 against the power of the spring 40.

In use, the burner having been lighted and water within the boiler 11 having commenced to turn to steam, the device is held in one hand by means of the handle 41 and steam allowed to discharge from the nozzle 33 upon the window-pane or other surface, as desired, by means of the thumb controlling the knob 39. The other hand can manipulate a cloth or brush upon the window pane, and thus rapid progress in cleaning can be made. No steam escapes unless needed for use, and thus not only is the steam not wasted, but furthermore an excess of steam upon the surface being cleaned is avoided, and likewise all danger of the escaping steam striking the other hand or similar places where it will do harm, through trying to direct it away from the surface being cleaned.

Having thus described the invention, what I claim is—

1. In a device of the character described, the combination of a burner, a body portion having a boiler and a support for said burner, said boiler having in its wall an aperture providing an outwardly-facing valve seat, a valve for said valve seat having a stem extending through said aperture and the boiler to the outside of the same, means normally seating said valve, and a nozzle inclosing said valve and valve seat.

2. In a device of the character described, the combination of a burner, a body portion having a boiler and a support for said burner, said boiler having in its wall an aperture providing an outwardly-facing valve seat, a valve for said valve seat having a stem extending through the boiler and out at its opposite side, a head on said outer end of the stem, a spring between said head and the boiler, and a nozzle inclosing said valve and valve seat.

3. In a device of the character described, the combination of a burner, a body portion providing a boiler and a support for said burner, a tube in the wall of said boiler providing an outwardly-facing valve seat, a valve for said valve seat having a stem extending through said tube into the boiler, said tube having a lateral opening inside the boiler and being closed at its inner end around the valve stem to form a bearing therefor, means normally seating said valve, other means connected to the valve stem for opening said valve, and a nozzle on the outer end of said tube inclosing the said valve.

4. In a device of the character described, the combination of a burner, a body portion providing a boiler and a support for said burner, said boiler having in its wall an aperture providing an outwardly-facing valve seat, a valve for said valve seat having a stem extending through said aperture and the boiler to the outside of the same, a handle upon the outside of the body portion adjacent to said projecting end of the valve stem and in such relation thereto that the thumb of a hand grasping said handle can engage said end of the valve stem, means normally seating said valve, and a nozzle inclosing said valve and valve seat.

5. In a device of the character described, the combination of a body portion providing a boiler and a depending flange having notches in its lower edge at diametrically opposite points and perforations above said notches in alinement therewith longitudinally of the body portion, a burner adapted to be inclosed by said flange, springs upon said burner having portions adapted to lie between said flange and the burner and other portions adapted to extend outward through the said notches in the lower edge of the flange, projections upon said spring portions between the flange and burner adapted to normally project into the said perforations of the flange, and upturned fingerpieces upon the outer ends of the springs for compressing them against the burner.

JOHN W. BRODERICK.

In the presence of—
RUSSELL M. EVERETT,
FRANCES E. BLODGETT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."