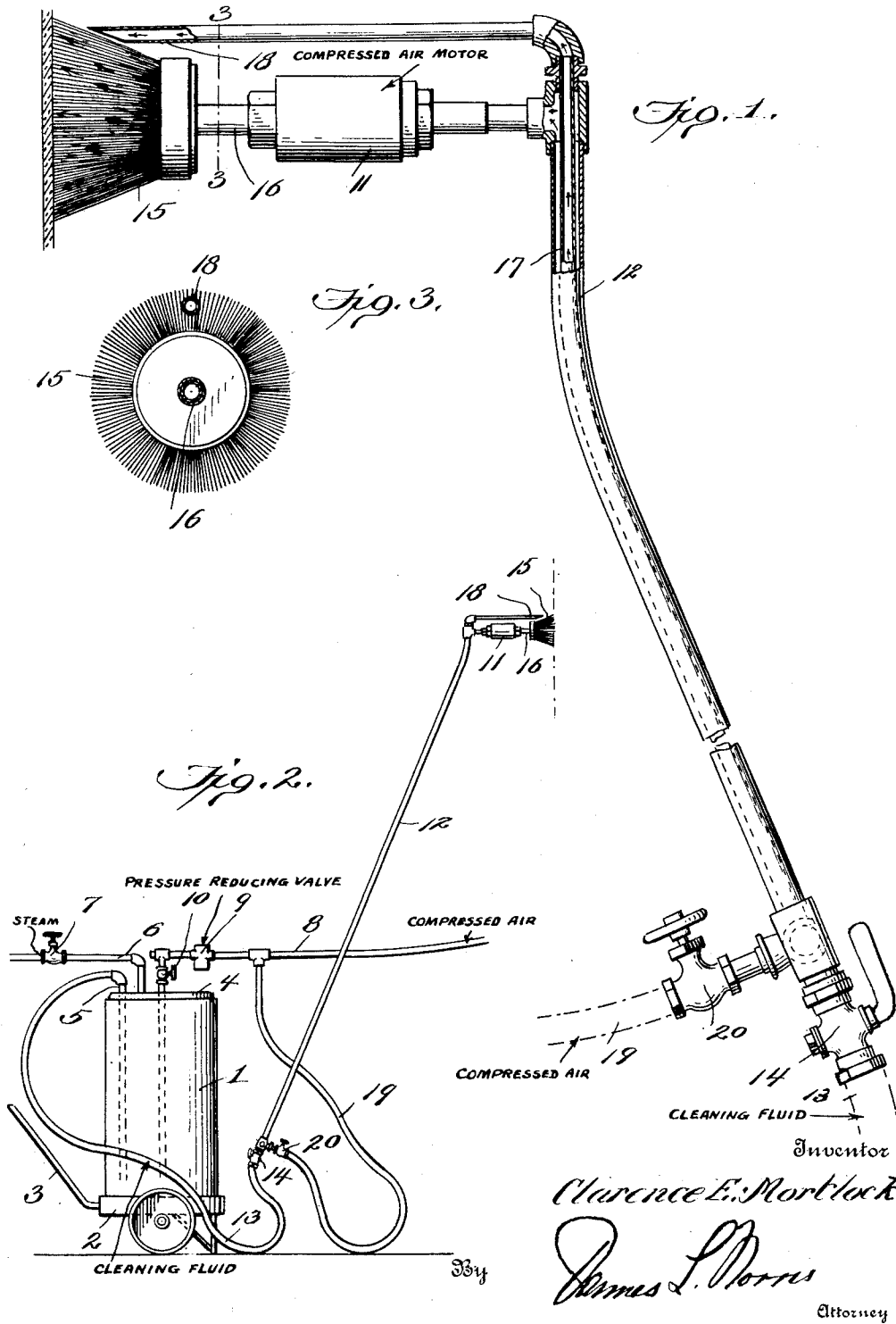


July 31, 1928.

1,679,323

C. E. MORTLOCK
WINDOW CLEANING APPARATUS

Filed March 30, 1927



Patented July 31, 1928.

1,679,323

UNITED STATES PATENT OFFICE.

CLARENCE E. MORTLOCK, OF WILMINGTON, DELAWARE.

WINDOW-CLEANING APPARATUS.

Application filed March 30, 1927. Serial No. 179,618.

This invention relates to improvements in window cleaning apparatus, and more particularly to a rotary fluid operated brush used in conjunction with a stream of cleansing fluid discharged against the window to be cleaned, at a point adjacent the said brush.

An object of the invention is to provide an improved rotary window cleaning apparatus to be connected with a portable mixing tank adapted to be moved from window to window, as desired.

A further object of the invention is to provide a fluid operated rotary window cleaning apparatus for use in conjunction with a stream of cleansing fluid, and embodying manually operable means for controlling the speed of the rotary cleaner and the flow of the cleansing fluid.

Other objects and advantageous features of the invention will appear as the description proceeds.

In the accompanying drawings which form a part of my application,

Figure 1 is a side elevation, partly in section, of my rotary cleaner and supporting handle, showing the valve controls for the same:

Figure 2 is a side elevation of the portable mixing tank having the rotary cleaner attached thereto, and

Figure 3 is a sectional view taken on the line 3—3 of Figure 1.

Like characters of reference are used throughout the following specification and the accompanying drawings to designate corresponding parts.

A mixing tank 1 is mounted upon a wheeled support 2, which in turn is provided with a handle 3 for moving the tank from place to place. A head 4, which preferably is removable, seals the upper end of the tank 1, and has a water discharge pipe 5 extending therethrough to a point adjacent the bottom of the said tank. A steam supply pipe 6 extends through the head 4, and is provided with a valve 7 for controlling the admission of steam to the tank for heating the cleansing fluid therein. An air supply pipe 8 extends from a suitable source of compressed air supply through the head 4 into the tank 1, and is further provided with a reducing valve 9 which may be set to permit the pressure on the tank side thereof to rise to, but not beyond, a predetermined degree (say thirty pounds to the square

inch), although the pressure on the inlet side thereof may be much higher. This valve 9 may be of any known form, for example, of the form shown in U. S. Patent No. 478,939, of July 12, 1892, to McDaniel. A manually-operable valve 10 may be provided between the valve 9 and the tank 1 for completely shutting off the supply of compressed air to said tank.

My rotary cleaner comprises a fluid actuated motor 11 supported at the outer end of a hollow handle 12, which handle is connected at its inner end with the air supply line or pipe 8 through the medium of a flexible hose 19. The hose 19 is connected to a manually operable valve 20 carried by the handle 12, preferably at the lower end of the latter, which valve serves to control the air or fluid supply to the motor 11. A brush 15 is mounted on the motor shaft 16, and may be caused to rotate at any desired speed by operating the valve 20 to regulate the flow of compressed air to the motor 11. A cleansing fluid supply pipe or tube 17 extends longitudinally through the handle 12 in spaced relation to the latter, and terminates in a discharge nozzle 18 immediately adjacent the brush 15, and slightly to one side of the same. A flexible hose 13 connects the cleansing-fluid supply pipe 5 to a manually operable valve 14 carried by the handle 12, preferably at the inner end of the latter adjacent the valve 20. The valve 14 is connected to the tube 17 and serves to regulate the flow of cleansing fluid through the tube 17 to the nozzle 18. The handle 12 is preferably of considerable length, so that large windows may readily be cleaned without the necessity of using a ladder.

From the foregoing description it will be apparent that the tank 1 may first be filled with the cleansing fluid which may be a mixture of ammonia and water in the proportion of one quart of ammonia to thirty gallons of water. The percentage of the ammonia and water may be changed, as desired, or any other suitable cleansing agent may be used. Steam is then admitted to the tank through the pipe 6 to heat the mixture, after which the valve 10 is opened to admit air under pressure from the pipe 8 to the tank, and the apparatus is ready for use. When the valve 20 is opened compressed air will be admitted through the hose 19, and hollow handle 12 to the motor 11 and the brush 15 will be caused to rotate against

a window and, when the valve 14 is opened, cleansing fluid will be caused by the air pressure in the tank to pass through the pipe 5, hose 13, tube 17 and nozzle 18 against the window just above the brush. In this manner, the windows to be cleaned will be cleansed better, and more windows may be cleaned than by the use of manual cleaning.

10 The motor 11 may be actuated either by compressed air, water under pressure, or steam.

Many minor changes in detail of construction may be resorted to without departure from the spirit of the invention defined by the claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:—

20 1. A window cleaning apparatus comprising a closed tank to contain cleansing fluid, means for supplying air under pressure to said tank, a brush, a fluid-actuated motor connected with said air supplying means for operating said brush, and a nozzle adjacent said brush and connected with said tank for directing a stream of cleansing fluid at the free end of said brush.

2. A window cleaning apparatus comprising a portable closed tank, means for filling said tank with a cleansing fluid, means for supplying air under a predetermined pressure to said tank, a brush, a fluid-actuated motor connected with said air supplying means for operating said brush, a nozzle connected with said tank adapted to direct a stream of cleansing fluid at the free end of said brush, and means for controlling the

flow of fluid to said motor and means adjacent said last-named means for controlling the flow of fluid to said nozzle. 40

3. A window cleaning apparatus comprising a portable closed tank to contain a cleansing fluid, means for heating the fluid in said tank, means for supplying air under a predetermined pressure to said tank, a handle formed of a pair of spaced inner and outer tubes, a fluid actuated motor carried by said handle and connected to one of said tubes, a brush rotatable by said motor, a nozzle connected to the other tube and supported by said handle adjacent said brush, and flexible tubing connecting said air supply means with one of said tubes and said tank with the other tube. 55

4. A window cleaning apparatus comprising a portable closed tank to contain a cleansing fluid, means for heating the fluid in said tank, means for supplying compressed air under a predetermined pressure to said tank, a hollow handle, a fluid actuated motor carried by and connected to said handle, a brush operated by said motor, a nozzle also carried by said handle and adapted to direct a stream of cleansing fluid adjacent the free end of said brush, flexible tubing connecting said air supply, means with said hollow handle, means including a flexible tube connecting the lower portion of said tank with said nozzle, and valves carried by said handle for controlling the flow of compressed air through said handle and of cleansing fluid through said nozzle. 70

In testimony whereof I have hereunto set my hand.

CLARENCE E. MORTLOCK.