Sept. 2, 1924. 1,507,349

J. M. FRANZ

WINDOW WASHING DEVICE

Filed June 7, 1922

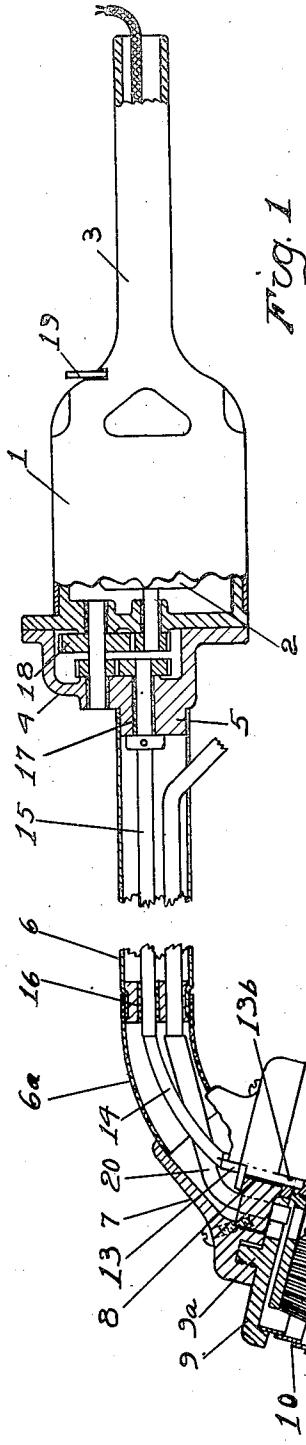


Fig. 1

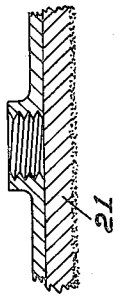


Fig. 4

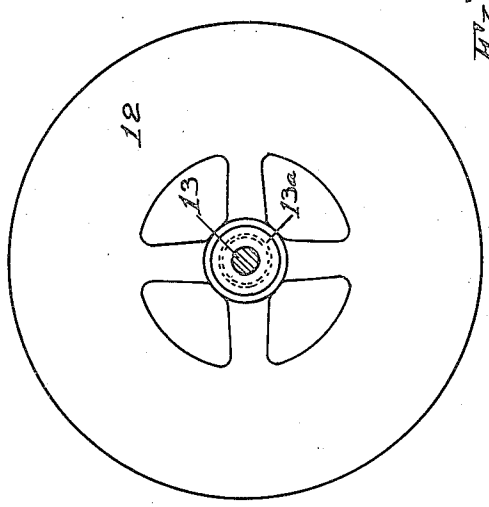


Fig. 2

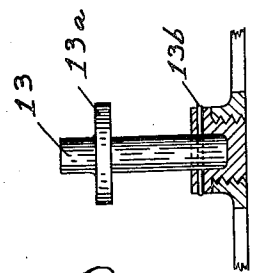


Fig. 3

John M. Franz

INVENTOR

BY

Geo. B. Willcox

ATTORNEY

Patented Sept. 2, 1924. 1,507,349

UNITED STATES PATENT OFFICE.

JOHN M. FRANZ, OF SAGINAW, MICHIGAN.

WINDOW-WASHING DEVICE.

Application filed June 7, 1922. Serial No. 566,525.

To all whom it may concern:

Be it known that I, JOHN M. FRANZ, a citizen of the United States, residing at Saginaw, in the county of Saginaw and State of Michigan, have invented certain new and useful Improvements in Window-Washing Devices; 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.

This invention relates to window cleaners and the like and pertains more particularly to window cleaners having means for supplying water to the cleaning surface, for revolving the cleaning element and for preventing spattering.

The objects of my invention are to produce a simple and compact cleaning machine that is strong in construction, of attractive appearance and adapted to be produced in quantities at relatively small cost. A further object is to enable the cleaning brush to be removed and a sand papering or buffing disk to be quickly substituted therefor.

With these and certain other objects in view which will appear later in the specification, my invention consists in the devices described and claimed and the equivalents thereof.

In the drawings, Fig. 1 is a longitutinal section, broken away in part, showing my invention.

Fig. 2 is an enlarged plan view of the back of the revolving brush.

Fig. 3 is a sectional detail of the brush spindle bearing.

Fig. 4 is a sectional detail of the polishing disk.

As is clearly shown in the drawings, the device consists in the casing 1 containing a motor 2 and formed with a tubular handle 3. Upon the casing is secured a gear housing 4 formed with a boss 5 which receives a tube 6, upon the outer end of which is secured a length of flexible tubing 6^a, carrying a cleaning element comprising a tubular base 7 secured to the outer end of flexible tube 6^a and carrying a bearing member 8 and also a flanged plate 9. To the outer face of plate 9 is secured a flexible telescopic housing 10 having a wiper 11 of flexible rubber or other suitable material around its edge.

Within the housing 10 is an annular brush 12 revolubly mounted by means of a spindle 13 which projects through the bearing 8.

A flexible shaft 14 is secured at one end to spindle 13 and at its other end to a drive shaft 15 mounted, by means of suitable bearings 16 and 17, within the tube 6 and boss 5 respectively. The drive shaft 15 is actuated by the train of reducing gears 18 enclosed within the gear housing 4, the train of gears being driven by the motor 2, as indicated in Fig. 1.

A suitable switch 19 conveniently located on the tubular handle 3 is employed for starting and stopping the motor and for regulating its speed. When the motor is rotating the drive shaft 15, the flexible shaft 14 and the brush 12, water may be supplied to the inner periphery of the annular brush by means of pipe 20, one end of which may be formed of flexible tubing extending through the bearing 8 and adapted to discharge water into the space within the annular brush. The tube 20 is preferably mounted in bearing 16 and at a point near the gear housing 4 the tube projects out through tube 6, forming an attachment for a hose or other source of water supply.

While the water is being supplied to the interior of the revolving brush it is prevented from spattering by means of the flexible telescopic housing 10 having a rubber wiper 11 upon its rim.

Housing 10 is preferably made of spring metal and is formed by winding a strip of metal in the form of a telescoping spring, as indicated in Fig. 1, thus permitting the working edge of the wiper 11 to bear evenly against the window surface while permitting the handle 3 to be manipulated in various directions.

For convenience in quantity manufacture and for quickness of assembling, I prefer to make the bearing 8 in the form of a metal disk removably received in the outer end of the tubular base 7 and secured by screws, as shown in Fig. 1. The plate 9 is preferably formed with an annular threaded flange 9^a adapted to be screwed into the outer threaded end of base 7, so the threads will be protected from damage. The bearing 8 is formed with an aperture through which the end of water pipe 20 passes.

Spindle 13 is preferably formed with an integral collar 13^a and the base of the brush

12 is secured to the spindle by means of a suitable pinned bushing 13^b screwed into the boss of the brush 12.

By the means above described I have produced a simple, inexpensive, yet effective window washing device that can be used on windows or other surfaces without liability of injuring them and that is capable of being rapidly and economically manufactured. A polishing disk 21 or its equivalent may be quickly substituted for the brush 12 if desired, by first removing the brush from spindle 13, then removing flange 9 with its housing 10 and wiper 11, and then screwing the disk 21 in place on the bushing 13^b.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. In a window cleaner, the combination of a casing, a motor within said casing, a housing on one end of said casing and having a boss formed with a shaft bearing, an inflexible tube secured to the boss of said housing, a short flexible tubular member carried by the outer end of said inflexible tube and forming an extension thereof, a non-flexible drive shaft within said inflexible tube and geared to said motor and revolubly mounted in said bearing, a short flexible shaft extension on said drive shaft and rotatable within said flexible tubular member, a spindle on the end of said flexible shaft, a flat-faced cleaning member removably secured to said spindle whereby said cleaning member is rotated and a tubular handle secured to said casing for directing the cleaner over the window.

2. A window cleaner comprising a handle, a motor within said handle, an inflexible tube on said housing, a revolvable shaft within said tube and operatively connected to said motor, a short flexible tubular extension on said inflexible tube, a flexible shaft rotatable within said flexible extension and connected to said revolvable shaft, a housing on the end of said tubular extension and a cleaning element within said housing and operatively secured to the end of said flexible shaft.

In testimony whereof, I affix my signature,

JOHN M. FRANZ.