July 17, 1923. 1,461,947

P. SPORER

WINDOW CLEANING DEVICE

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Fig. 1

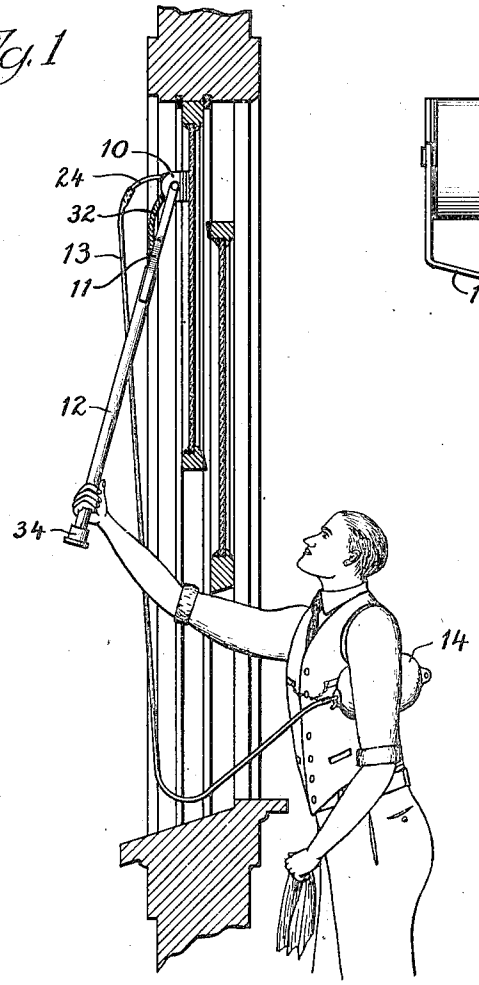


Fig. 2

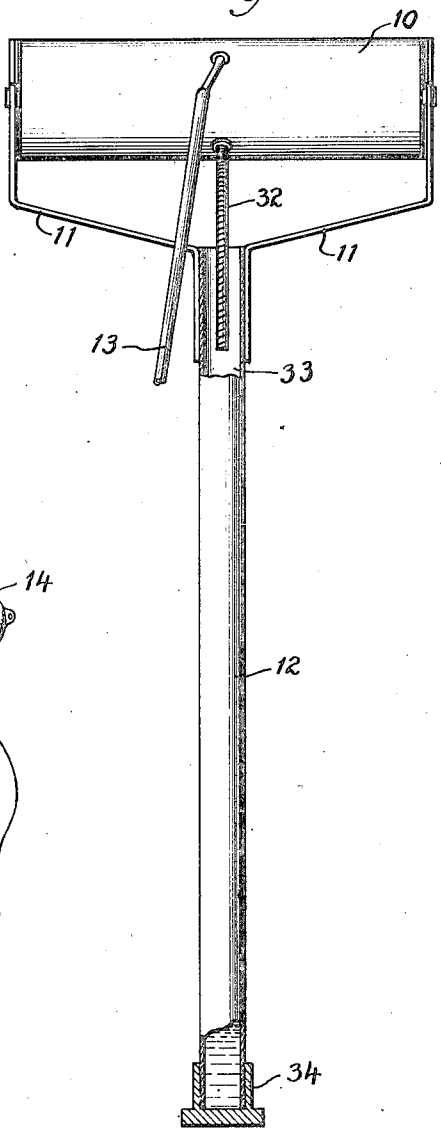
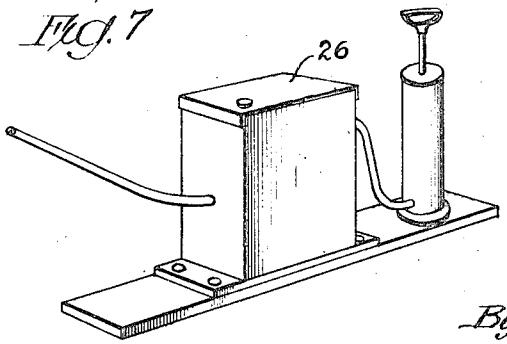


Fig. 7



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Fig. 3

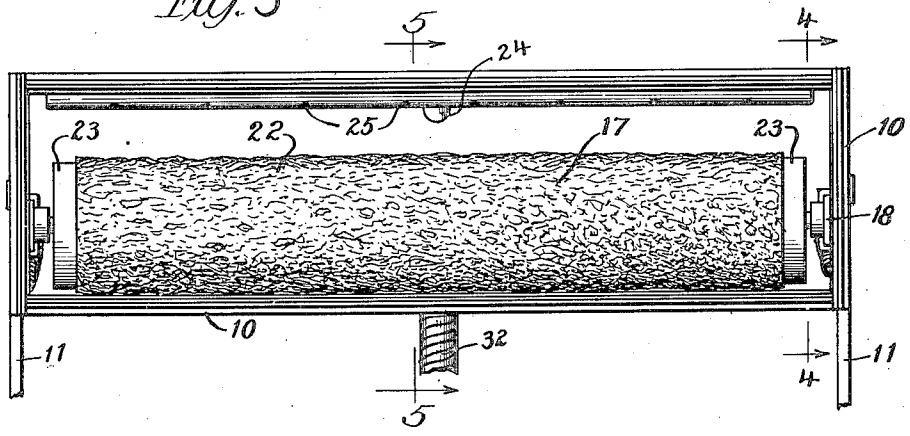


Fig. 5

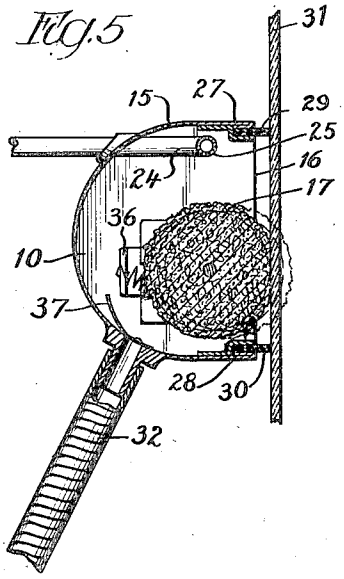


Fig. 4

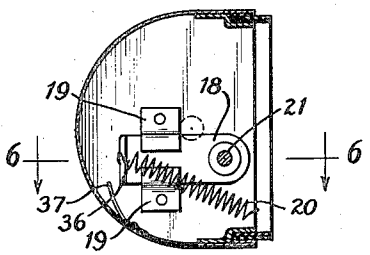


Fig. 6.

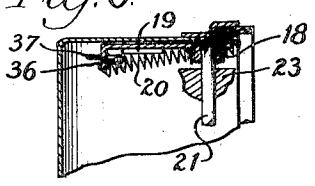
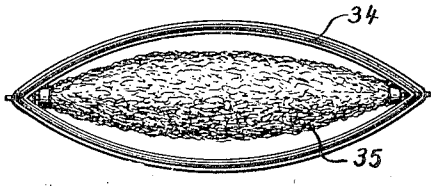


Fig. 8.



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UNITED STATES PATENT OFFICE.

PAUL SPORER, OF CHICAGO, ILLINOIS.

WINDOW-CLEANING DEVICE.

Application filed May 13, 1920. Serial No. 380,969.

To all whom it may concern:

Be it known that I, PAUL SPORER, a citizen of Yugoslavia, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Window-Cleaning Devices, of which the following is a specification.

This invention relates to window cleaning devices and more particularly to the fountain type in which fluid is supplied in the required quantity to a cleaning member and the waste fluid conducted therefrom to a temporary storage receptacle.

One object of the present invention is to provide a window cleaning device which is self contained and readily portable from window to window without the necessity of moving buckets, tanks or other bulky articles. Another object is to provide combined means for washing, scrubbing and wiping the window.

Further objects are to provide a structure which will efficiently clean the window and collect the dirty water thereon before it can run down upon the portions already cleaned or the woodwork adjacent thereto; to provide a receptacle to contain the washing fluid which may be carried by the operator while cleaning the windows and operated by him to secure the desired flow of fluid to the washer while the washing is proceeding; to permit the washing means to be maintained out of operative position during the wiping operation; to provide a convenient receptacle for the dirty water; to provide a washing element in which the wear is distributed evenly over the entire operating surface thereof; to enable the washing to be accomplished with a small amount of fluid; and to feed the water to the washing element in the desired quantity while the same is operating.

My invention and its numerous objects and advantages will be better understood by reference to the following specification when read in connection with the accompanying drawings in which—

Fig. 1 is a side elevation of the invention, the window being shown in section,

Fig. 2 is a rear elevation of a portion of the invention, partly in section,

Fig. 3 is a front elevation of the cleaning member,

Fig. 4 is a detail sectional view on the line 4—4 of Fig. 3,

Fig. 5 is a detail sectional view on the line 5—5 of Fig. 3,

Fig. 6 is a detail sectional view on the line 6—6 of Fig. 4,

Figs. 7 and 8 show modified forms of parts of the invention.

Referring to the drawings, the device comprises the cleaning member 10 which is trunnioned in oppositely disposed arms 11 mounted on the operating handle 12. This cleaning member is connected by a flexible hose 13 with a receptacle 14 containing cleaning fluid of any desired consistency.

The cleaning member comprises a casing 15 having an open face 16 and a washing element 17 revolubly mounted in slidable bearing plates 18 in the end walls thereof. These slidable plates are supported by lugs 19 or other suitable means to permit the plate to move to and from the open face of the casing, and springs 20 yieldingly maintain the washing element in its advanced or projected position.

In the present embodiment the washing element 17 comprises a shaft 21 about which is wrapped or otherwise formed the washing element preferably comprising sponge material 22 arranged between hub plates 23. Above this washing element in the casing 15 is the distributing pipe 24 provided with a plurality of perforations 25 communicating with the interior thereof above the washing element to permit cleaning fluid to be supplied to such element. This tube 24 has connected thereto the flexible hose 13.

In order to make the device readily transportable and operable by one man I have found it advantageous to use as a cleaning fluid container an ordinary rubber hot water bottle provided with suitable cap connection which may be held under the arm of the operator in the manner shown in Fig. 1 of the drawing and sufficient fluid forced therefrom by a slight compression of the container. Such a container would hold sufficient supply of cleaning fluid for a considerable number of windows as only enough is preferably supplied to keep the washing element wet. A pressure tank 26 such as is shown in Fig. 7 of the drawing or other suitable means may be substituted for the flexible bag 14 when the device is to be used on large show windows and the like.

The casing 15 is provided at its upper and

lower free edges 27 and 28 with squeegees 29 and 30 respectively which are adapted to be pressed against the window 31 in the manner shown in Fig. 5. The bearing plates 18 for the cleaning element 17 are preferably so constructed and arranged that the washing element normally projects beyond the plane of the outer edges of the squeegees in the manner indicated in dotted lines in Fig. 5, so that when the device is pressed against the window in the manner shown in such figure, the washing element will be firmly pressed against the glass at all times by the action of the springs 20. The waste water collected by the squeegees 29 and 30 passes through the flexible tube 32 into the chamber 33 within the handle 12 which forms a receptacle therefor. A cap 34 or other suitable means is provided to permit this waste water to be withdrawn from the chamber 33. The rear portions of each of the plates 18 are preferably provided with inwardly projecting flanges or lugs 36 which are adapted to be engaged by spring arms 37 secured upon the inside wall of the casing 15 to hold the washing member 17 rearwardly out of operative position in said casing. The washing element is merely pressed rearwardly by the operator until the arms 37 engage. This is partcularly important when it is desired to wipe the window without applying water thereto. To release the washing element from this inoperative position, this element is merely grasped by the fingers and drawn forward until the spring arms 37 have been forced downwardly and pass beneath the flanges 36.

To clean windows having curved upper or lower frames, it is advantageous to use the form of casing 34 and washing element 35 shown in Fig. 8 of the drawings.

It will be apparent that various changes may be made in the form, construction and arrangement of the parts without departing from the spirit and scope of the invention or sacrificing any of its material advantages, the forms hereinbefore described being merely preferred embodiments thereof.

I claim:

1. In a device of the class described, a cleaning member comprising a casing having an open face, a revoluble washing element, bearing plates for said element mounted in said casing and movable toward and from said open face, means for limiting the advance of said plates toward said open face, springs normally maintaining said plates in their advanced position, and means for supplying fluid to said washing element.

2. In a device of the class described, a cleaning member comprising a casing having an open face, a washing element revolubly mounted in said casing and yieldingly projecting through said open face, means for supplying fluid to said element, a tubular operating handle connected to said casing and forming a receptacle for the waste fluid from said casing, and means for conducting the waste fluid from said casing to said receptacle.

3. In a device of the class described, a cleaning member comprising a casing having an open face, a supporting handle therefor, a washing element mounted in said casing and projecting through said open face, a flexible fluid supply container adapted to be carried by the operator, and means for conducting fluid from said container to and communicating with the interior of said casing.

4. In a device of the class described, a cleaning member comprising a casing having an open face, squeegees mounted on said casing in front of the open face, a revoluble washing element mounted in said casing and normally projecting through said open face, and a fluid supply pipe discharging in the top of said casing upon the washing element.

5. In a device of the class described, a cleaning member comprising a casing having an open face, squeegees formed on said casing, a washing element mounted in said casing and normally projecting through said open face, means for maintaining said washing element wholly within said casing, an operating handle pivotally connected to said casing and having a fluid receptacle formed therein, means for providing a supply of fluid to said washing element, and means for conducting waste fluid from said casing to said receptacle.

6. In a device of the class described, a casing having an opening therein, a washing element mounted in the casing and adapted to operate through said opening, a distributing pipe for supplying washing fluid to the washing element, and means for supplying washing fluid to the distributing pipe comprising a compressible supply receptacle adapted to be carried by the operator and a tube connecting the receptacle to the pipe.

7. In a device of the class described, a casing having an opening therein, a washing element mounted in the casing and adapted to operate through said opening, a distributing pipe for supplying washing fluid to the washing element, and means for supplying washing fluid to the distributing pipe comprising a compressible supply receptacle adapted to be carried under the arm of the operator and a tubular handle for the device connected to said receptacle and to said pipe.

PAUL SPORER.