

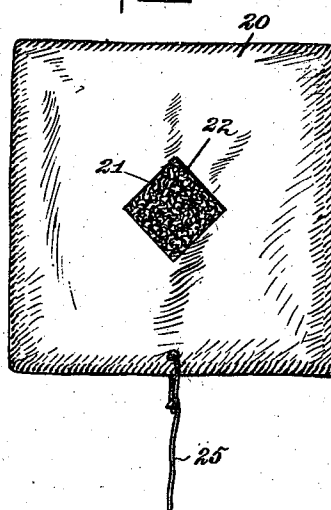
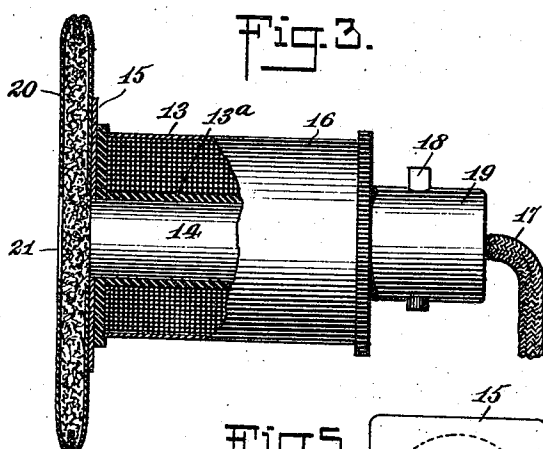
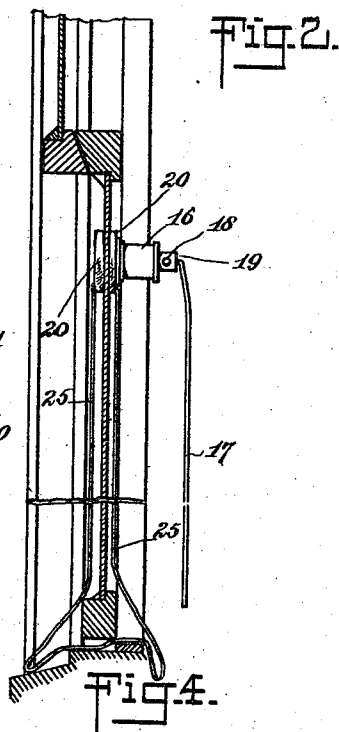
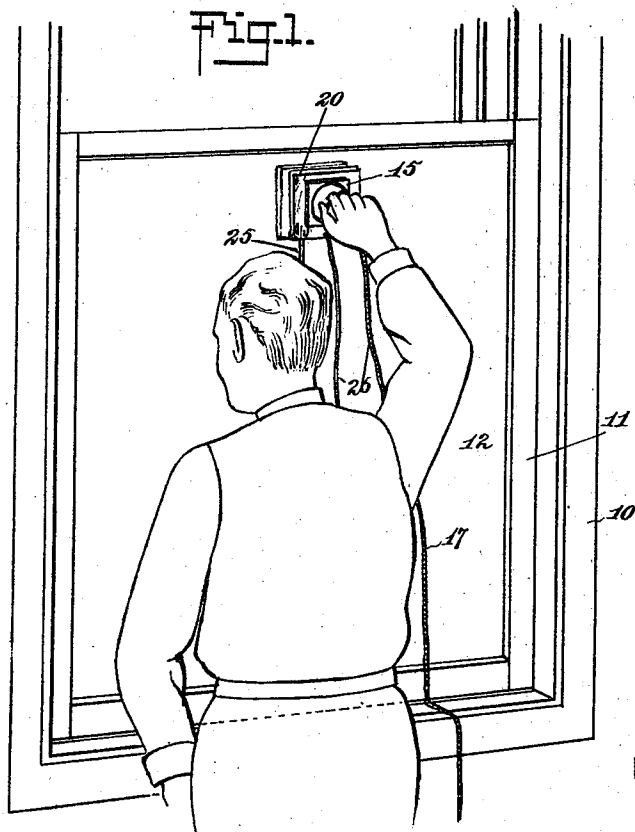
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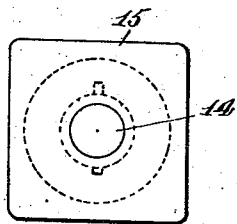
D. WEISZ

ELECTRIC WINDOW CLEANER

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FIGS.



WITNESSES

William R. Goebel.
Franklin J. Foster

INVENTOR
David Weisz.
BY *Mundt*
ATTORNEYS

UNITED STATES PATENT OFFICE.

DAVID WEISZ, OF NEW YORK, N. Y.

ELECTRIC WINDOW CLEANER.

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The present invention is concerned with the provision of an electrically operated window cleaning device which may be used with absolute safety by a workman, and which will prevent the possibility of a window cleaner falling out of a window, inasmuch as the device may be used on any window from the inside of a room.

A further object of the invention is to provide a window cleaning device of simple, practical construction, which may be readily manipulated across the inner face of a conventional type of sliding sash to effect simultaneous cleaning of both the inner and outer faces of the window pane.

Further objects of the invention are to provide a window cleaner of rugged, durable construction, which may be manufactured and operated with comparative economy, and which will be extremely expeditious in use, inasmuch as an entire window may be cleaned in the time ordinarily taken to clean one side thereof.

More specifically the invention in its preferred embodiment includes an electromagnetic device against which, a cleaning element is held and moved over the interior face of a window pane. Co-operating with the inside cleaning element is a similar element at the outside of the pane retained in place by the magnet, and firmly pressed against the window pane by the magnetic force. The outer cleaner will thus be caused to travel over the outer face of the window pane, and follow every movement of the inner cleaner which is mounted on the magnet, and both faces of the pane will be cleaned simultaneously.

With the above noted and other objects in view, the invention consists in certain novel features of construction and combinations and arrangements of parts, as will be more fully hereinafter set forth and pointed out in the claim. The invention may be more fully understood from the following description in connection with the accompanying drawings, wherein—

Fig. 1 is a perspective view illustrating the manner of use of a window cleaner embodying the present invention.

Fig. 2 is a sectional detail through the window of Fig. 1.

Fig. 3 is a view partly in side elevation

and principally in longitudinal section through a cleaning apparatus embodying the present invention.

Fig. 4 is a plan view of one of the cleaning pads.

Fig. 5 is an end view of the magnetic operating device.

In the drawings I have shown a window frame 10 mounting a conventional type of sliding sash 11, the window pane 12 of which is to be cleaned. The cleaning apparatus includes an energizing coil 13 encircling a soft iron core 14 upon which is mounted a plate 15. The core is preferably covered with some suitable material 16, and may be used as a handle for moving the plate 15 over the inner surface of the window pane 12. A flexible electrical conductor 17 connects the energizing coil to any suitable source of current, and the current flow through the coil may be conveniently regulated by a conventional type of pushbutton or other switch 18 mounted in a switch casing 19 at one end of the coil. Preferably the coil is mounted upon a spool 13^a, and one head of the spool is secured to the plate 15 in any suitable manner, the other end of the spool bearing the switch casing.

One form of cleaning element has been indicated in Fig. 4, and as shown consists of a flat bag 20 of cloth or other suitable material filled with steel wool 21 or equivalent soft paramagnetic material. Preferably the bag is formed at each side with a central opening 22, so that the steel wool may rest directly against the end of the core 14 which lies flush with the plate 15. When the magnet is energized it will be evident that it will attract the magnetizable cleaning element, and that the cleaning element may be readily manipulated over the inner face of the window pane. At the same time, a similar cleaning element disposed upon the exterior face of the window will be attracted by the magnet and manipulation of the electromagnet will cause both cleaning elements to act simultaneously upon opposite sides of the window pane.

In order to prevent accidental loss of the outer cleaning element, it is preferably attached by a string or other flexible device to the magnet.

Various changes and alterations might be

made in the general form and arrangement of parts described without departing from the invention. Hence I do not wish to limit myself to the details set forth, but shall
5 consider myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of the appended claim.

I claim:

A window cleaning apparatus including an

electromagnet adapted to be manually ma- 10
nipulated over the inner surface of a window pane, and a pair of cleaning elements adapted to be disposed on opposite sides of the pane and caused to move over the pane surface by manipulation of the magnet, the
15 cleaning elements comprising pads of steel wool covered by polishing cloths.

DAVID WEISZ.