

(No Model.)

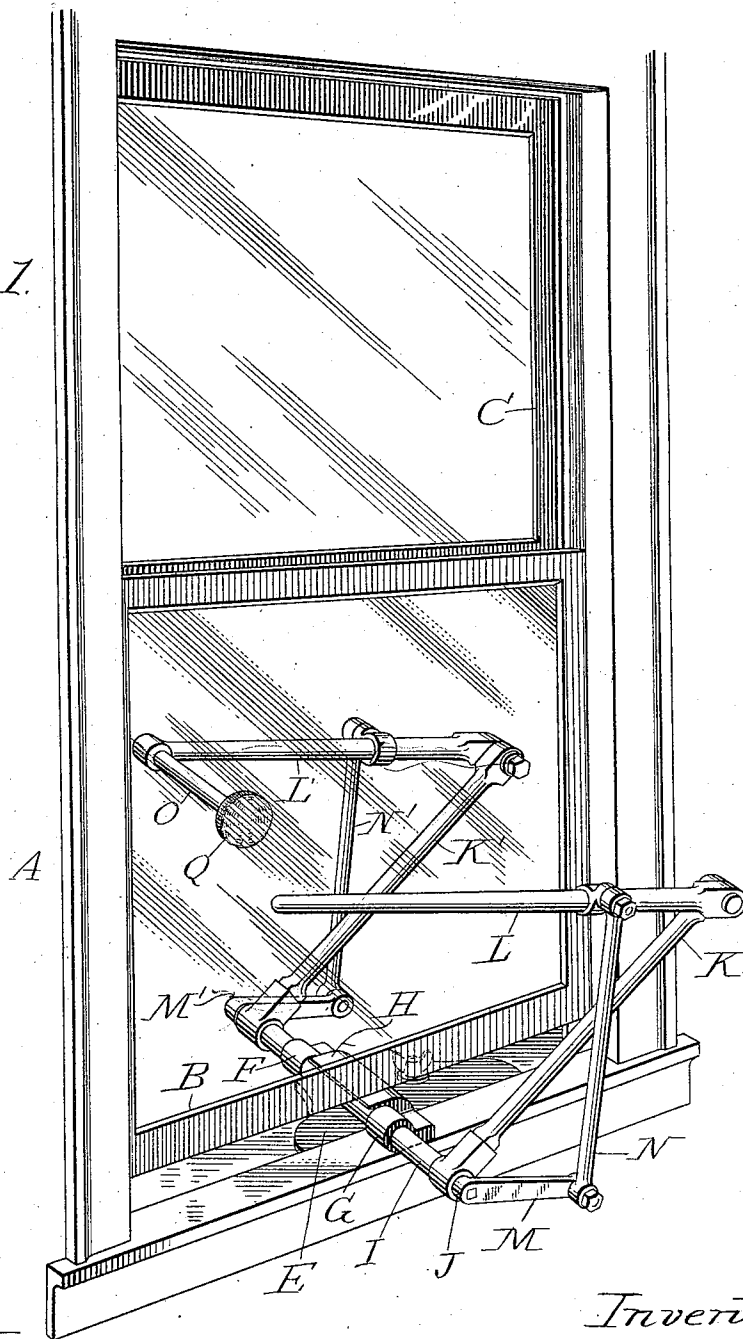
2 Sheets—Sheet 1.

N. O. STARKS.
WINDOW CLEANER.

No. 575,043.

Patented Jan. 12, 1897.

Fig 1.



Attest
C. C. Burdine
D. C. Burdine

Inventor:
Nils O. Starks,
by *Dodgers & Attys*

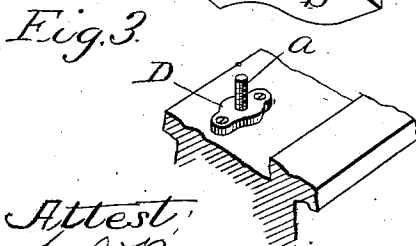
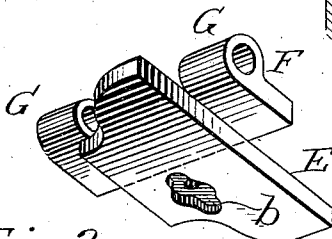
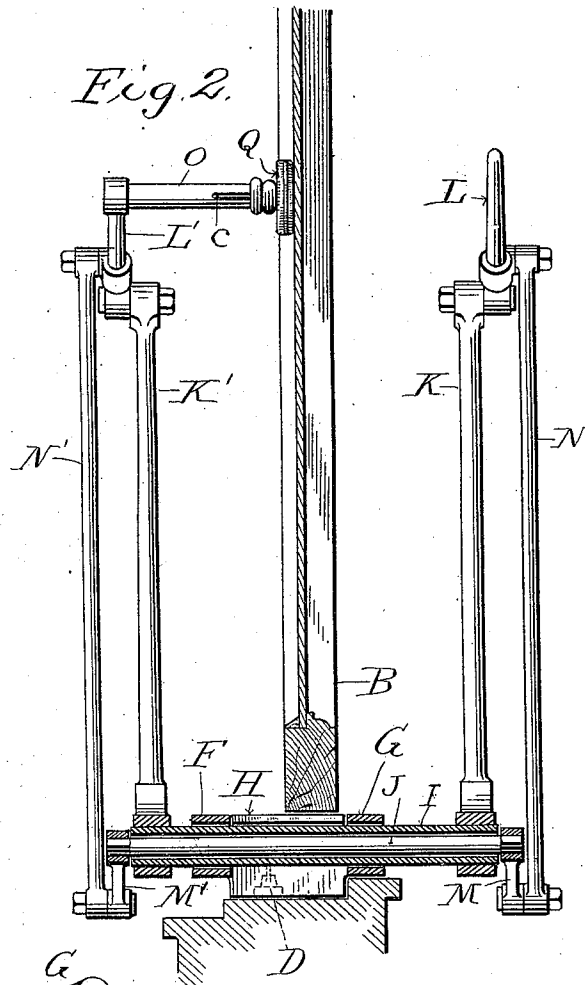
(No Model.)

2 Sheets—Sheet 2.

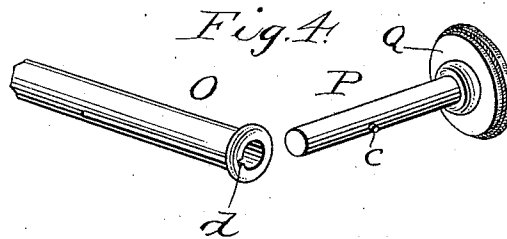
N. O. STARKS.
WINDOW CLEANER.

No. 575,043.

Patented Jan. 12, 1897.



Attest,
W. C. Burdine
D. C. Burdine



Inventor,
Nils O. Starks,
by Dodge & Sons,
Attys.

UNITED STATES PATENT OFFICE.

NILS O. STARKS, OF MADISON, WISCONSIN.

WINDOW-CLEANER.

SPECIFICATION forming part of Letters Patent No. 575,043, dated January 12, 1897.

Application filed May 5, 1896. Serial No. 590,263. (No model.)

To all whom it may concern:

Be it known that I, NILS O. STARKS, a citizen of the United States, residing at Madison, in the county of Dane and State of Wisconsin, have invented certain new and useful Improvements in Window-Cleaners, of which the following is a specification.

My invention relates to window-cleaners, the construction and advantages of which will be hereinafter set forth.

In the accompanying drawings, Figure 1 is a perspective view showing the cleaner in place and ready to be operated; Fig. 2, a vertical sectional view, and Figs. 3 and 4 detail perspective views.

The object of the invention is to produce a simple and efficient window-cleaner, one easy of operation and not liable to get out of order.

Referring to the drawings, A indicates the window casing or framing, B the lower sash, and C the upper sash. Secured to the sill out of line with the lower sash is a casting D, provided with an upwardly-extending screw-threaded lug *a*.

E denotes a frame or plate provided on its under face with a socket or recess *b* of such form as to fit over the casting D, and so located that the inner edge of the frame or plate will fit against the raised portion of the sill when the frame is in position. A thumb-nut is secured upon the stud *a* and secures the frame to the sill. The upper face of the frame is provided with two bearings or seats F and G, while intermediate of these bearings is a raised portion H. Mounted loosely in these bearings F and G is a hollow shaft I, in which is mounted a second shaft or arm J. The shaft I is free to turn in the bearings F and G and also to slide lengthwise therein, while the shaft or arm J is free to turn in the shaft or arm I. Secured to the ends of the shaft I are arms or levers K and K', to the outer ends of which are pivoted arms or levers L and L'. Short arms M and M' are fastened to the ends of shaft J, and the outer ends of the arms are pivotally connected with the arm L and L' through links N and N'. The outer end of the lever L' is provided with a laterally-extending arm O, said arm being formed with a socket into which is inserted a short arm P.

A cloth-holder Q is pivotally mounted upon the end of this arm. A pin *c*, secured in the arm P, enters a slot *d*, formed in the arm O, and prevents the arm P from turning. The cloth or other cleaning-surface is removably secured upon the holder Q.

The sash being raised the cleaning device is secured in place, after which the sash is lowered and rests upon the enlargement or shoulder H, which of course holds it out of contact with the shaft I.

The arrangement of the arms and levers being the same on both sides of the pane a movement of the lever or arm L will cause a corresponding movement of the arm L', and consequently cause the cleaning device to traverse the pane in a line corresponding to the movement of the end of lever L.

The sliding of the shafts through the bearings permits the cleaning device to be drawn against the pane with any desired pressure at the same time it is traversed thereover. By depressing or raising the levers K and K' the cleaning-surface may be made to act upon different portions of the pane, the entire surface of which comes within reach of said cleaning-surfaces.

When it is desired to clean the outer face of the upper pane, the shaft I is pushed outwardly through the bearings and the upper sash lowered. Then by drawing the shaft inwardly the cleaner is caused to bear against the pane, when it may be traversed thereover and the pane cleaned.

I do not wish to restrict myself to the precise arrangement of levers herein shown and described, nor do I wish to restrict myself to the exact details of pivoting the levers to the window-frame.

Each sill in the house would be provided with a plate or casting D, such part being a fixture, so that the cleaning device could be readily and securely attached to each window without loss of time.

Having thus described my invention, what I claim is—

1. A window-cleaner, comprising two shafts; means for securing the shafts upon the window-casing so as to permit rotation and longitudinal movement thereof, a series of

levers or arms secured upon each end of the shafts, and a cleaning device secured to one set of levers.

2. In combination with two shafts revolubly
5 and slidably mounted upon a window-frame, a series of levers attached to each end of said shafts; and a cleaning device carried by one set of levers.

3. In combination with a plate provided
10 with bearings, a hollow shaft mounted therein; a second shaft mounted within the first shaft; a series of levers connected to each end of the shafts; and a cleaning device carried by one set of levers.

15 4. In combination with the plate provided with bearings; a hollow shaft mounted therein; a second shaft mounted within the first shaft; a series of levers connected to each end

of the shafts; a cleaning device carried by one set of levers; and a stop to prevent the sash 20 from resting on the shaft.

5. In combination with the casting D; a plate provided with a recess adapted to fit over said casting; bearings on the plate; a hollow shaft mounted within said bearings, a second 25 shaft journaled within said hollow shaft; a series of levers secured upon each end of the shafts; and a cleaning device carried by one set of levers.

In witness whereof I hereunto set my hand 30 in the presence of two witnesses.

NILS O. STARKS.

Witnesses:

JOHN OLLIS,

G. S. MICKELSON.