

No. 708,854.

H. BAIRD.

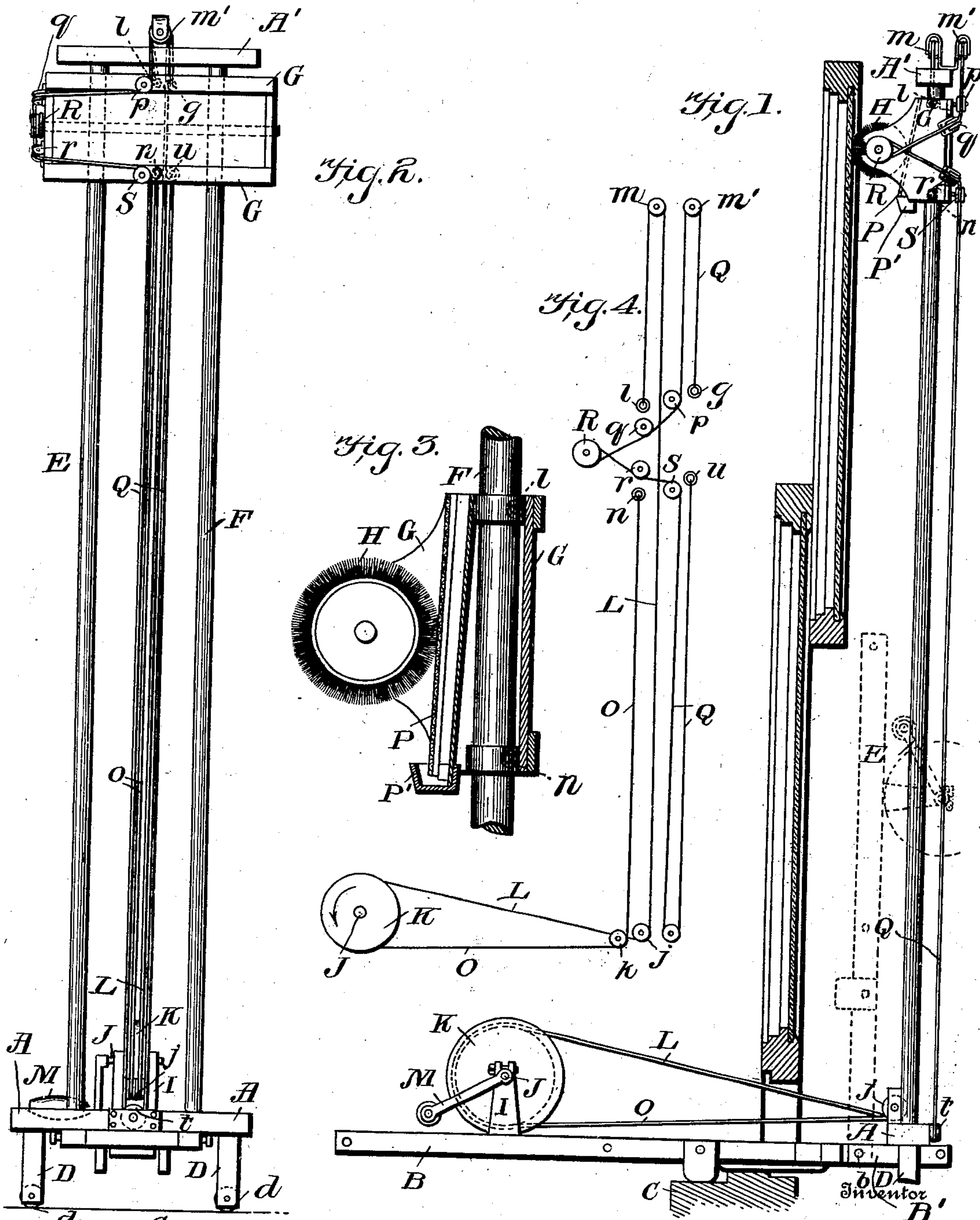
Patented Sept. 9, 1902.

APPARATUS FOR CLEANING WINDOWS.

(Application filed Dec. 4, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses  
Geo. H. Seyne.  
Stephen Kusta

Hugh Baird.  
By Wickinson & Fisher  
Attorneys

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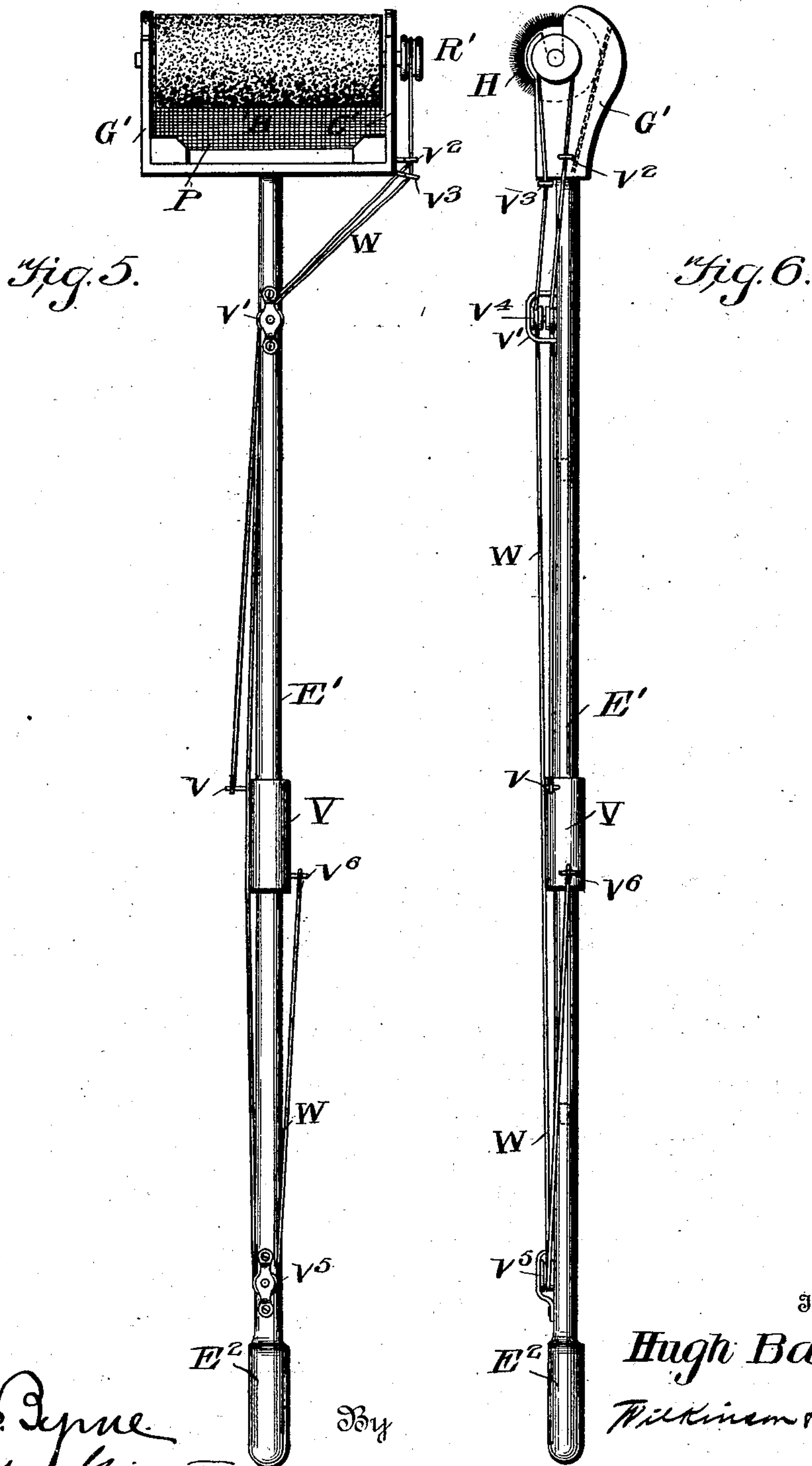
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2 Sheets—Sheet 2.



Witnesses

Geo. A. Lynne.  
Stephen Grist.

By

Inventor

Hugh Baird

Wilkinson & Fisher

Attorneys



# UNITED STATES PATENT OFFICE.

HUGH BAIRD, OF GLASGOW, SCOTLAND.

## APPARATUS FOR CLEANING WINDOWS.

SPECIFICATION forming part of Letters Patent No. 708,854, dated September 9, 1902.

Application filed December 4, 1901. Serial No. 84,673. (No model.)

*To all whom it may concern:*

Be it known that I, HUGH BAIRD, a subject of the British King, residing at Glasgow, in the county of Lanark, Scotland, have invented certain new and useful Improvements in Apparatus for Cleaning Windows; 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, which relates to apparatus for cleaning the outsides of window-panes, has for its object to simplify the construction of such apparatus and to render it more efficient.

In order that my invention may be properly understood and readily carried into effect, I have hereunto appended two explanatory sheets of drawings, in the several figures of which corresponding parts are marked with the same letters of reference.

Figure 1 is a side elevation of the apparatus embodying my invention projected through a window and represents the apparatus in the operation of cleaning the panes of the upper sash. Both sashes of the window are shown in section. Fig. 2 is a back view of the same. Fig. 3 is a part-sectional view of the brush, brush-carrier, and guide-rod. Fig. 4 is a diagrammatic view showing the arrangement of the cords for actuating the brush-carrier and imparting rotary motion to the brush. Fig. 5 is a front elevation of an apparatus used for cleaning the inside of windows, walls, carpets, floors, and the like; and Fig. 6 is a side elevation of the same, all hereinafter more fully described.

In carrying my invention into practice with reference to Figs. 1 to 4 I form the frame of the apparatus of two parts A and B, hinged, fixed, or otherwise secured to each other at right angles and, as shown in Fig. 1, provided with a pivotal pin *b*, by which the horizontal part B is capable of being folded up in the direction indicated in dotted lines, the stationary horizontal portion B' forming a table or frame. Above this table rests the frame A, which when in use rests upon the window-sill C by the leg D and antifrictional roller *d*, with which the end thereof is provided, and to the portion A are secured the upwardly-projecting standards or guide-

rods E and F for the box or carrier G, carrying the cylindrical brush or cleaner H, composed of short circumferential pieces of cloth or other soft textile material, which bears against the window-panes, as seen in the last-named figure. The horizontal portion B also carries in suitable bracket-bearings I, Figs. 1 and 2, at that end farthest from the junction of the horizontal and vertical portions A and B aforesaid, a spindle J, on which is fitted a pulley K, around which passes the cord L for raising and lowering the brush box or carrier G, the said spindle being driven by a crank and crank-handle M, fitted on the end thereof. The end of the cord after passing around the pulley to which it is secured in one of its grooves, of which there are two, passes under guide-pulley *j* at the junction of the horizontal and vertical frames A and B, and thereafter being taken up over a pulley *m*, fitted to a cross-bar A', joining the vertical standards constituting the aforesaid brush box or carrier guides E and F at the top thereof, and down to a stud or pin *l*, secured to the brush box or carrier G. The other end of the cord O, secured to the pulley K in like manner to the aforesaid cord L, after passing under the guide-pulley *k*, contiguous to pulley *j*, is fastened to a stud or pin *n*, fastened to the brush box or carrier G. By this arrangement the rotation of the driving-crank M in the direction of the arrow winds one portion of the cord onto the pulley K, and so raises the brush box or carrier G. The reverse action lowers it, as will be understood, and an equal portion of the other end of the cord L being unwound simultaneously. The brush or cleaner H is fitted to rotate against a perforated plate P, formed of wire-cloth and situated behind the brush H, through the meshes of which the dirt is thus forced into a receptacle P'.

In the device for imparting rotation to the brush or cleaner H, I attach one end of the cord Q to the brush-box G at *g* and take the cord up over the pulley *m'*, mounted on the cross-bar A' aforesaid, and then down under two of the guide-pulleys *p* and *q*, mounted on the back of the brush box or carrier G, and around the pulley R, mounted on the spindle of the brush or cleaner H, thence over a second series of guide-pulleys *r* and *s*,



mounted also upon the back of the brush box or carrier, down under a pulley *t* at the junction and up again to the brush box or carrier, to which it is secured at *u*, the effect of which arrangement is such that upon the brush box or carrier being raised or lowered the brush or cleaner is caused to rotate by frictional contact with the cord *Q*.

In that part of my invention illustrated in Figs. 5 and 6 specially applicable to the cleaning of walls and also applicable to the cleaning of carpets or floors or the inside of windows or the outside of shop, church, or hall windows or for washing paint I dispense with the horizontal frame *B* and with the driving-pulley *K* and cords for raising and lowering the brush-box and secure the box *G'* to the one end of a single vertical frame *E'*, which in such case serves also as a handle for pushing the brush box or carrier *G'* along the floor or up and down a wall or window, one hand, holding the handle *E'*, being employed for this purpose, the other actuating the cord, presently to be described. The brush *H*, contained within the box or carrier *G* aforesaid, is provided at one side with the pulley *R'*, mounted on the brush-spindle, and is rotated by the frictional contact of a moving cord *W*. From the stud *v* of the sliding collar or bush *V* the aforesaid cord is led up to and passed over a pulley *v'*, thence through the guide-eye *v''* and around the pulley *R'* of the brush or cleaner *H*, which it is intended to rotate, back through the eye *v'''*, over the pulley *v''''*, and down to and under the lowermost pulley *v''''''*, and finally up to the stud or pin *v''''''''*, mounted on the aforesaid collar or bush *V*, which to effect the desired rotation of the brush in the cleaning operation is moved up and down the vertical frame by the one hand of the operator. The vertical frame may in some cases be lengthened by ferrule-and-socket joints after the manner of fishing-rods and shown in dotted lines in Fig. 6.

I claim—

1. In a cleaning device, the combination with a rod and a revoluble brush mounted thereon, of a slide operating on said rod, and flexible means connecting said slide and brush for revolving said brush upon operating the slide.

2. In a cleaning device, the combination with a rod and a revoluble brush thereon, of a perforated plate mounted behind said brush for cleaning the same, and a slide operating on said rod for revolving said brush.

3. In a cleaning device, the combination with the rod and brush thereon, of a slide operating on said rod, guides located adjacent said rod on opposite sides of said slide, and a flexible means engaging said brush, thence reeving through said guides and secured at its ends to said slide for operating the brush upon moving the slide.

4. In a window-cleaning device, the combination with a rod and a slide operating thereon, of a revoluble brush mounted on said slide, a perforated plate carried by said slide in engagement with said brush, means for operating said slide, and means operated by said slide for revolving said brush.

5. In a window-cleaning device, the combination with a rod and a slide operating thereon, of a revoluble brush mounted on said slide, means for operating said slide, guides located adjacent said rod, above and below said slide, a flexible cord or tape secured at one end to said slide thence reeving through one of said guides to and around the axis of said brush, thence through the other of said guides and secured again to the opposite side of said slide, for operating the brush upon the upward or downward movement of the slide.

In testimony whereof I affix my signature in presence of two witnesses.

HUGH BAIRD.

Witnesses:

I. H. PEARSON,  
FRED. H. McCORK.