(No Model.)

# S. GOLDNER.

## WINDOW CLEANING DEVICE.

No. 551,186. Patented Dec. 10, 1895.

Fig: 1.

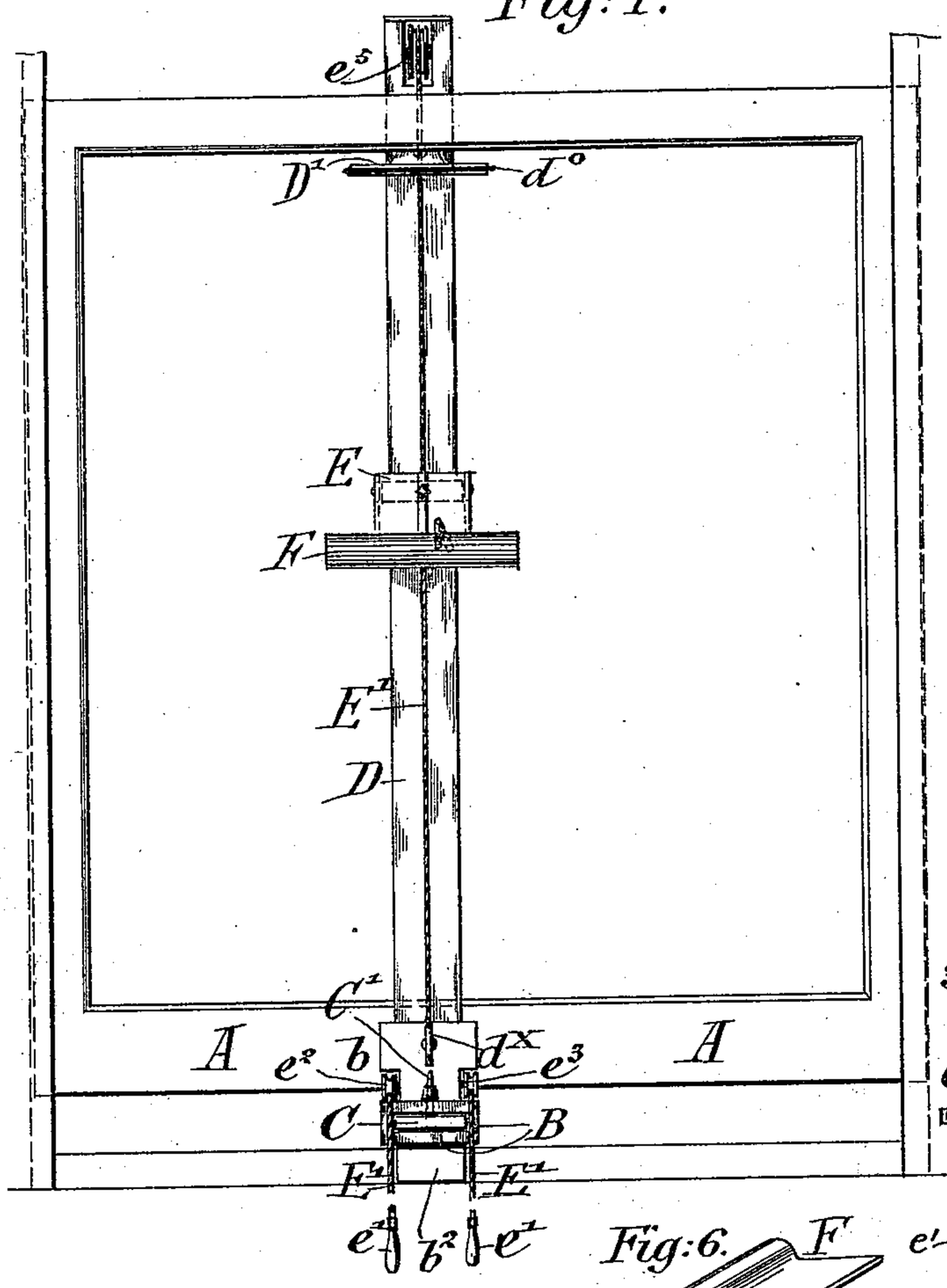



Fig: 2.

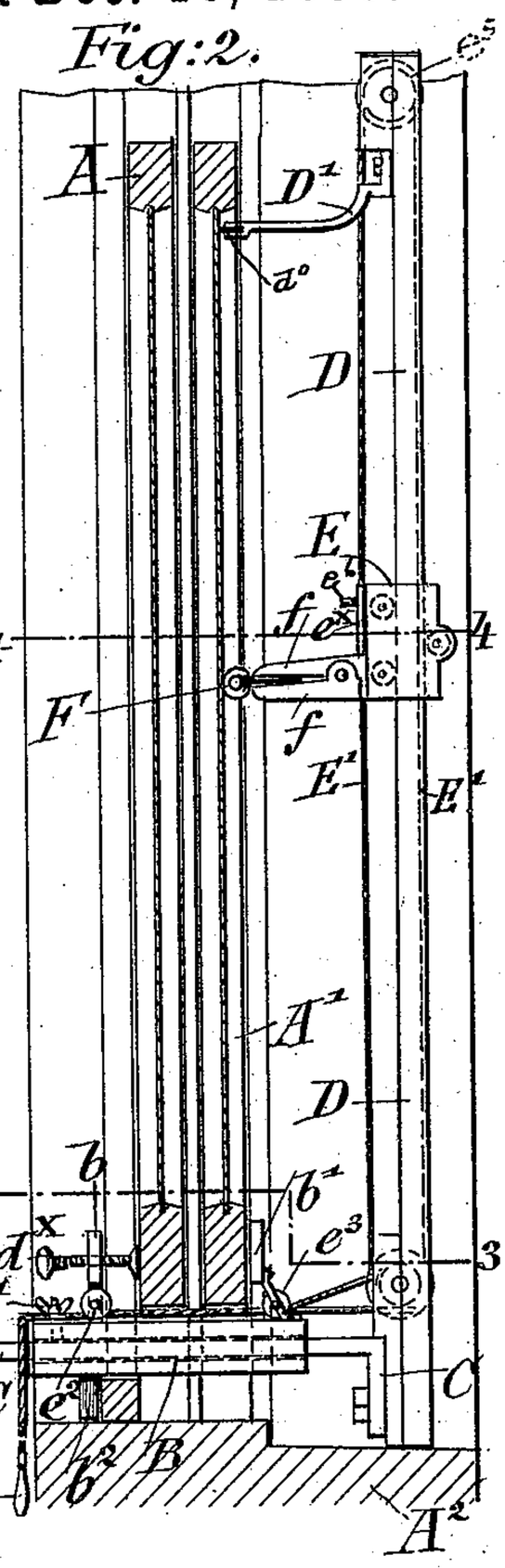



Fig: 6.

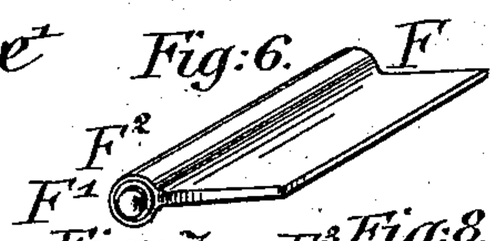



Fig: 4.

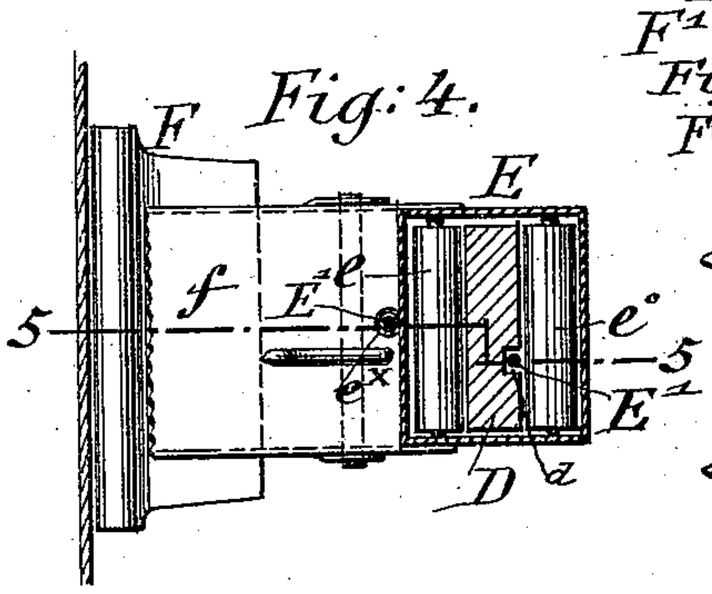



Fig: 7.


Fig: 8.

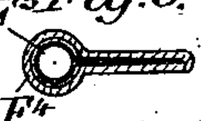
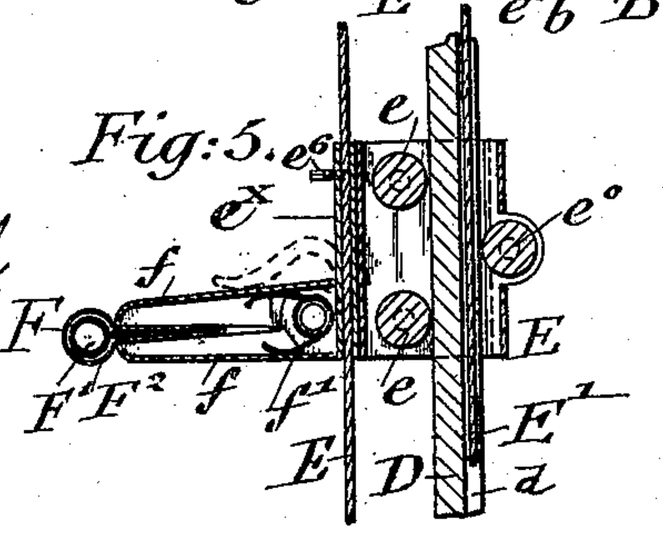



Fig: 3.




Fig: 5.




WITNESSES:

George Wiegel.
Harry Patch

INVENTOR
Simon Goldner

BY Goepel & Raegener
ATTORNEYS.

# UNITED STATES PATENT OFFICE.

SIMON GOLDNER, OF NEW YORK, N. Y., ASSIGNOR TO BERNHARD KUPFERMANN, OF SAME PLACE.

## WINDOW-CLEANING DEVICE.

SPECIFICATION forming part of Letters Patent No. 551,186, dated December 10, 1895.

Application filed January 30, 1895. Serial No. 536,730. (No model.)

*To all whom it may concern:*

Be it known that I, SIMON GOLDNER, a citizen of the Kingdom of Roumania, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Window-Cleaning Devices, of which the following is a specification.

This invention has reference to an improved window-cleaning device by which both sashes of a window can be readily cleaned from the outside of the window without necessitating the sitting on the sill and washing the same from the outside, which mode of cleaning windows is connected with considerable danger of injury to life and limb; and the invention consists of certain details of construction, which will be fully described hereinafter, and finally pointed out in the claims.

In the accompanying drawings, Figure 1 represents a front elevation of my improved window-cleaning device, showing the same as applied to a window-frame. Fig. 2 is a side elevation of the same, showing the sashes in vertical transverse section. Fig. 3 is a horizontal section on line 3 3, Fig. 2, drawn on a larger scale. Fig. 4 is a horizontal section on line 4 4, Fig. 2. Fig. 5 is a vertical central section on line 5 5, Fig. 4. Figs. 6 and 7 are details of the device for washing the glass panes of the sashes, and Fig. 8 is a vertical transverse section of the device for drying the same.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A A′ represent the sashes with which my improved window-cleaning device is to be used.

The window-cleaning device consists of a base portion B, which is provided with a stationary piece $b$ near its inner end and with a transverse stationary piece $b'$ at its outer end. In the base-piece B is applied the horizontal portion or shank of an angle-plate or slide C, which is preferably made of wrought-iron or other suitable material, and to which the lower end of an upright guide-post D is applied. To the under side of the base-piece B is likewise applied a transverse strip $b^2$, which rests against the bead on the sill $A^2$ of the window-frame, as shown clearly in Figs. 1 and 2. An adjustable clamping-screw $d^\times$ is arranged on the inner stationary strip $b$, the outer transverse piece $b'$ of the base-piece B being placed against the outer surface of the lower rail of the sash or sashes A A′, while the end of the clamping-screw is tightly screwed up against the inner surface of the lower rail of the sash or sashes A A′, as shown in Figs. 2 and 3. The upright post D is attached by suitable screws or otherwise to the adjustable slide C, the guide-post being further provided at its upper end with an arm D′, which bears by means of an elastic strip or pad $d^0$ against the upper part of the pane of the outer or inner sash, according as the outer or inner sash is to be cleaned.

The horizontal portion of the slide C is clamped in position on the base-piece B by means of a clamping-screw C′ (shown in Figs. 1, 2, and 3) after the slide is adjusted in the proper position in the base-piece B. On the upright post or guide-piece D is guided, by means of inner and outer antifriction rollers $e$ and $e^0$, respectively, a vertically-reciprocating carriage E, which is preferably made of suitable sheet metal. As the carriage is of sleeve form, so as to encircle the post, and as the antifriction-rollers are arranged at the front and rear of the same, there is absolutely no danger of the carriage being accidentally displaced, and the same is always guided on the post without any binding action.

The upright post D is provided with a longitudinal groove $d$ in its outer surface for guiding the actuating-cord E′, which is provided at its inner ends with handles $e'$, and which is guided by pulleys $e^2$ $e^3$, arranged near one side of the base-piece B, then over one half of a double pulley $e^4$, arranged in a recess in the lower part of the upright guide-post D, then in upward direction through the carriage E and over a guide-pulley $e^5$ at the upper end of the guide-post D, then along the groove $d$ of the guide-post, back over the second half of the double pulley $e^4$, and then over the guide-pulleys $e^3$ and $e^2$ at the opposite side of the base-piece to the inside of the room. The cord E′ passes through a guide-tube $e^\times$ of the carriage E and can be firmly clamped in said guide-tube by means of a clamping-screw $e^6$, as shown in Fig. 5, so that the operating-cord E′ is firmly connected to the carriage and the latter thereby compelled

to follow the motion of the cord E′ when the same is operated alternately in one or the opposite direction by the hands.

The carriage E is provided with pivoted and spring-actuated jaws *f f* (the spring being *f′*) which extend from the carriage in forward direction toward the glass pane of the sash, said jaws being preferably serrated at their adjacent edges, so as to engage the shank of a cleaning or drying device F, according as the washing or drying of the glass pane is to be produced. The washing attachment is composed of a hollow tube F′, provided with openings and open at one end for being supplied with water. The shank and tube are surrounded by felt or other covering $F^2$, as shown in Figs. 6 and 7.

The drying attachment is composed of a shanked tube $F^3$ without apertures and of a heavier felt covering $F^4$, extending over the tube and shank, as shown in Fig. 8.

My improved cleaning device for windows is operated as follows: The base-piece B is placed in position on the window-sill, so that its transverse strip $b^2$ rests on the same, while the guide-post rests on the outer portion of the sill, the lower end of the guide-post being for this purpose extended below the slide C. The outer transverse piece *b′* is placed against the lower rail of the upper sash after it is moved down into the position shown in Fig. 2. The clamping-screw *d* is then applied to the lower rail of the lower sash. The slide C is then adjusted in the base-piece until the upper arm D′ abuts against the upper rail of the sash, as shown in Fig. 2. The slide is then firmly clamped to the base-piece. In this position the washing attachment is placed in the jaws *f f* of the carriage and is then in contact with the outer surface of the pane of the upper sash. The operating-cord E′ is then taken hold of at its handles *e′* and the same pulled alternately to such an extent that a vertically-reciprocating motion is imparted to the carriage of the cleaning device, the same being moved thereby from the upper to the lower rail and back again to the upper rail, and so on alternately. After the washing is completed the washing attachment F is removed from the jaws of the carriage and replaced by the drying attachment $F^3$, which is then moved in the same manner over the outside of the pane of the sash, so that the part just washed is thoroughly dried by the absorbent felt covering of the drying attachment $F^3$. The carriage is then moved laterally sufficiently so that the reciprocating washing attachment can take the next adjoining portion of the pane of the sash, and then this portion is washed and dried in the same manner as before. The washing attachment is then again moved along the sash and operated in the same manner until the surface of the pane of the upper sash is cleaned. The upper sash is then returned to its raised position and the slide C moved forward in the base-piece until the upper supporting-arm D′ and the washing attachment abut against the pane of the lower sash. The outer transverse strip *b′* is then applied to the lower rail of the sash and the clamping device to the opposite side of said rail, so that the washing attachment is again in position for use, The operating-cord is then again pulled alternately by the hands and thereby the carriage and washing attachment moved alternately in upward and downward direction over the portion of the pane of the lower sash, this operation being repeated by moving the washing attachment gradually in transverse direction over the pane of the lower sash until the same is entirely cleaned. The device is then removed and put away, as the inner surfaces of the panes are cleaned in the usual manner from the inside of the room.

The advantages of my improved window-cleaning device are, first, that it takes up but little room and can be quickly and readily applied to sashes for cleaning the same, the operation being performed entirely from the inside of the room, so as to obviate any danger to life and limb, which is incidental to the cleaning of windows when the person is sitting on the window-sill; second, the window-cleaning device is operated with great facility after the same is adjusted to the sash or sashes, as the up-and-down motion of the washing attachment does not require the exertion of great power, while the exchanging of the washing and drying attachments is readily accomplished when the carriage is at its lowermost position on the guide-post; third, the window-cleaning device, owing to its simple construction, is comparatively cheap, while it can be stored away in any closet, as owing to its small width it takes up comparatively little room.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a window-cleaning device, the combination of a base-piece, a pair of transverse strips fixed to the upper part of the base-piece and separated a suitable distance apart, a clamping-screw passing through the inner transverse strip, a transverse strip fixed to the under side of the base-piece, said strips and clamping-screw forming the means for securing the base-piece in position, an upright post provided at its lower end with a slide guided in the base-piece and projecting below the slide at its lower end so as to rest on the window-sill, a carriage guided on the post, a washing attachment applied to the carriage, and means for reciprocating the carriage, substantially as set forth.

2. In a window-cleaning device, the combination, with a base-piece provided with means for clamping the same to the lower rails of the sash or sashes, and to the window-sill, pulleys on the base-piece, an upright guide-post supported on the window-sill and attached to the base-piece, a pulley journaled in the top of the guide-post, and a double pulley mounted in

the lower part of the guide-post, of a carriage guided on the post and provided with clamping-jaws, an attachment held between said jaws for cleaning the window-pane, and an operating-cord attached to the carriage and guided at its midlength over the top pulley of the guide-post, while its outer portions are guided respectively over the end-portions of the double pulley and the pulleys of the base-piece, the ends of said cord being provided with handles for reciprocating the carriage and the cleaning-attachment, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

SIMON GOLDNER.

Witnesses:

PAUL GOEPEL,

GEORGE W. JAEKEL.