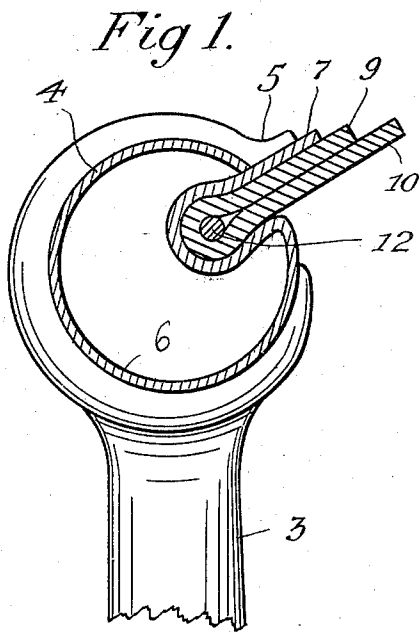
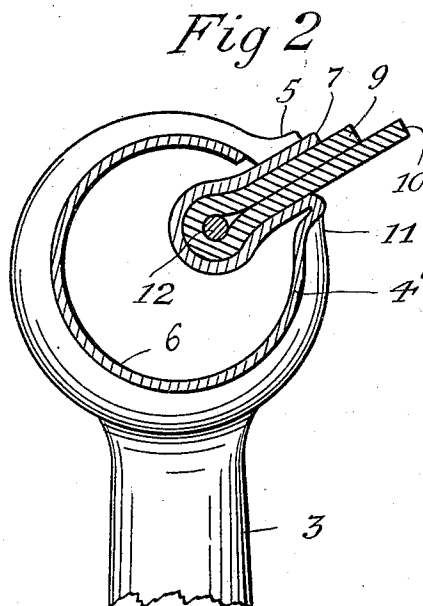
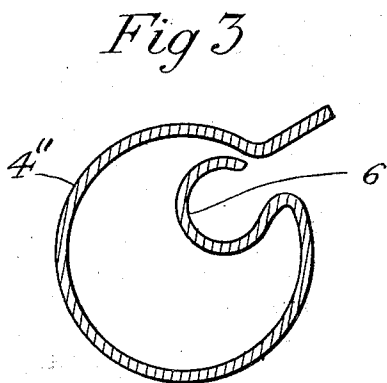
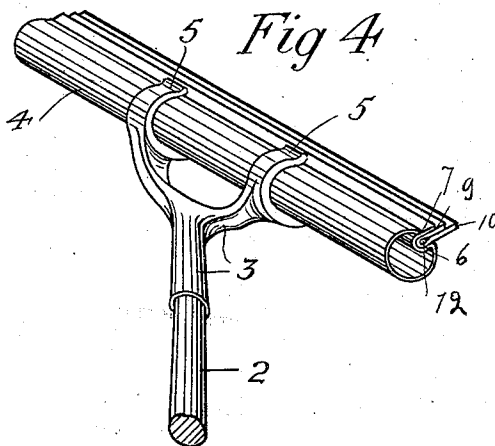


G. W. WARNER.
WINDOW CLEANER.

(Application filed Mar. 7, 1901.)

(No Model.)



Witnesses

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T. W. Bunglehaus

Inventor

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By

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UNITED STATES PATENT OFFICE.

GEORGE W. WARNER, OF BEATRICE, NEBRASKA.

WINDOW-CLEANER.

SPECIFICATION forming part of Letters Patent No. 695,183, dated March 11, 1902.

Application filed March 7, 1901. Serial No. 50,200. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. WARNER, a citizen of the United States of America, residing in the city of Beatrice, in the county of Gage and State of Nebraska, have invented certain new and useful Improvements in Window-Cleaners, of which the following is a specification.

My invention relates to window-cleaners, and especially to means designed to hold in suitable position for application to window-glass a rubber cleaner-strip and adapting such means to ready adjustment in connection with a pole or handle.

The object of my invention is to provide a device of this class in simple, cheap, and durable form in which the amount of material required in the rubber cleaner-strip is minimized and the means for holding such strip in position and supporting the same on the pole or handle is simplified and rendered capable of ready adjustment.

To these ends my invention consists in the provision of a suitable pole or handle of wood or other material, a retaining-head provided on the end of said pole, a recess or cavity provided in said head, a cleaner-holder composed of a single piece of sheet metal shaped in cylindrical form to be inserted into said cavity or seat and adapted to be retained therein by its own spring, said holder provided with an inner cylindrical recess or seat, a strip of rubber or other cleaning material adapted to be folded and its folded portion inserted into said cylindrical seat with its edges extending out from said holder and head, and a wire adapted to be inserted between the folds of said rubber strip in said seat and retain the rubber strip therein.

The invention consists, further, in a cleaner-strip holder made from one piece of metal and comprising two cylinders, one within the other, the inner cylinder adapted to receive and hold the cleaner-strip and the outer cylinder adapted to be inserted into a suitable head provided therefor on the pole or handle in combination with the rubber cleaner-strip.

The invention consists, further, in details of construction and combinations of parts, all as hereinafter described, and particularly pointed out in the claims, and will be more readily understood by reference to the accom-

panying drawings, forming a part of this specification, in which—

Figure 1 is a sectional view of a device embodying my invention, a portion of the head being broken away. Fig. 2 is a similar view of a slightly-modified form. Fig. 3 is an end view of the cleaner-holder of a modified form. Fig. 4 is a perspective view of the cleaner.

As shown in the drawings, 2 represents a handle or pole, which may be of wood or any preferred material.

3 represents a head, preferably of cast metal. This head is cored out and adapted to fit over the end of the pole, being secured thereon in any suitable manner. This head is provided with a cylindrical recess or cavity to form a seat for the cleaner-holder 4. The head 3 is provided with an opening near its top and slightly to one side, and a lip or lug 5 is formed integral thereon at the upper side of this opening for the purpose herein-after mentioned.

The cleaner-holder 4 is made of a single piece of spring metal, being bent or formed into the cylindrical form shown, so as to be inserted into the cavity or seat of the head and retained longitudinally therein by its own spring. The portion of the holder 4 which registers with the opening in the head 3 is bent or formed within itself, as shown, to provide a cylindrical retaining seat or bearing 6 for the cleaner-strip and is extended out, as shown in Figs. 1 and 2 at 7, to bear against the lug or lip 5 to prevent turning. This extension 7 forms at the same time on its other side a bearing for the lip 9 of the cleaner-strip. The holder 4 may also be adapted to bear against the opposite side of the opening, as shown in Fig. 2 at 11. A strip of rubber or other suitable cleaning material is doubled over the wire cord 12 and then inserted into the seat 6, with the two edges of the cleaner-strip projecting to form the cleaner-lips 9 and 10. The cleaner-strip is thus securely held in the seat 6.

It is obvious that by this construction the cleaner holder and strip may be readily removed from the head and pole and that the amount of rubber or material required in the cleaner-strip is reduced to a minimum and a device provided which is simple, cheap, and durable, easy of operation and adjustment,

and in which substantially all of the surface of the rubber strip may be utilized.

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

1. A window-cleaner, comprising a cleaner-strip, a cleaner-strip holder comprising two cylinders, one within the other, the inner one adapted to receive said cleaner-strip and the outer one adapted to be attached to a head, in combination with a cleaner-strip and a head provided with a stop to keep said cleaner-strip holder in position, substantially as described.

2. In a device of the class described, the combination, with a cleaner-holder composed of a single piece of sheet metal bent to form two cylinders, one within the other, and provided with an extension or lip, of a cleaner-strip, a wire core, said cleaner-strip adapted to be folded over said wire core and inserted into said inner cylinder and its projecting lip adapted to bear against the lip or extension of said holder, substantially as described.

3. In a window-cleaner, the combination, with a pole or handle, of a retaining-head provided on the end thereof, a recess or cavity provided in said head, a cleaner-holder composed of a single piece of sheet metal shaped to be inserted into said cavity or seat and adapted to be retained therein by its own spring, said holder provided with a cylindrical recess or seat provided with an opening registering with an opening in said head, a strip of cleaning material adapted to be folded and its folded portion inserted into said seat in said holder with its edges extending out from said holder and head, and a wire adapted to be inserted between the folds of said cleaner-strip and retain the cleaner-strip therein, substantially as described.

4. In a window-cleaner, the combination, with a pole or handle, of a retaining-head provided on the end thereof, a recess or cavity provided in said head, a cleaner-holder composed of a single piece of metal shaped to be inserted into said cavity or seat and adapted to be retained therein by its own spring, said holder provided with a cylindrical recess or seat provided with an opening registering with an opening in said head, a strip of cleaning material adapted to be folded and its folded portion extending out from said holder and head, the extending edges of said holder adapted to bear against a lip or lug provided on said head, and a wire adapted to be inserted between the folds of said cleaner-strip in said seat and retain the same therein, substantially as described.

5. In a device of the class described, the combination with a pole 2, of a head 3, provided with a lip 5, of a cleaner-holder 4 formed of a single sheet of metal adapted to be inserted into a cavity in said head and retained therein by the spring of said holder, a seat 6 provided in said holder, said seat being open and registering with an opening in said head, said holder 4 having an outwardly-extending lip adapted to rest against said lip 5, a single strip of cleaning material having its folded portion inserted into said seat 6, and a retaining-wire adapted to be inserted between the folds thereof in said seat, substantially as described.

In testimony whereof I have hereunto set my hand, in presence of two witnesses, at the city of Beatrice, Gage county, Nebraska, this 24th day of December, A. D. 1900.

GEORGE W. WARNER.

In presence of—

WALTER D. HILL,
A. W. MAYER.