R. B. SHRYOCK.

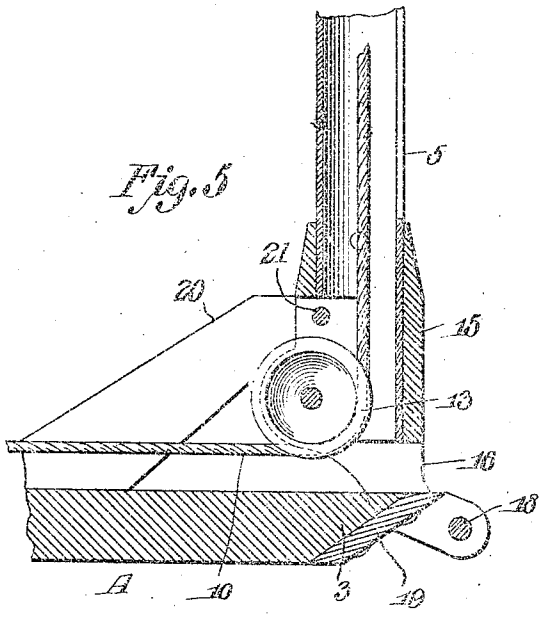
MACHINE FOR WASHING WINDOWS.

APPLICATION FILED MAR. 16, 1910.

988,215. Patented Mar. 28, 1911.

2 SHEETS—SHEET 1.

Fig. 5



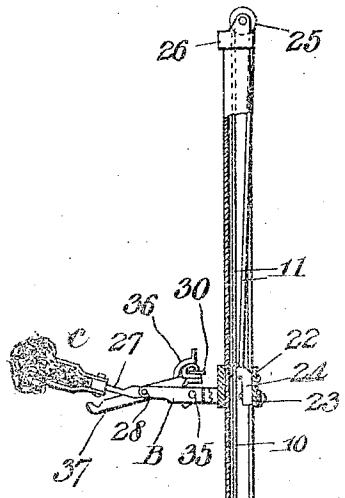


Fig. 1.

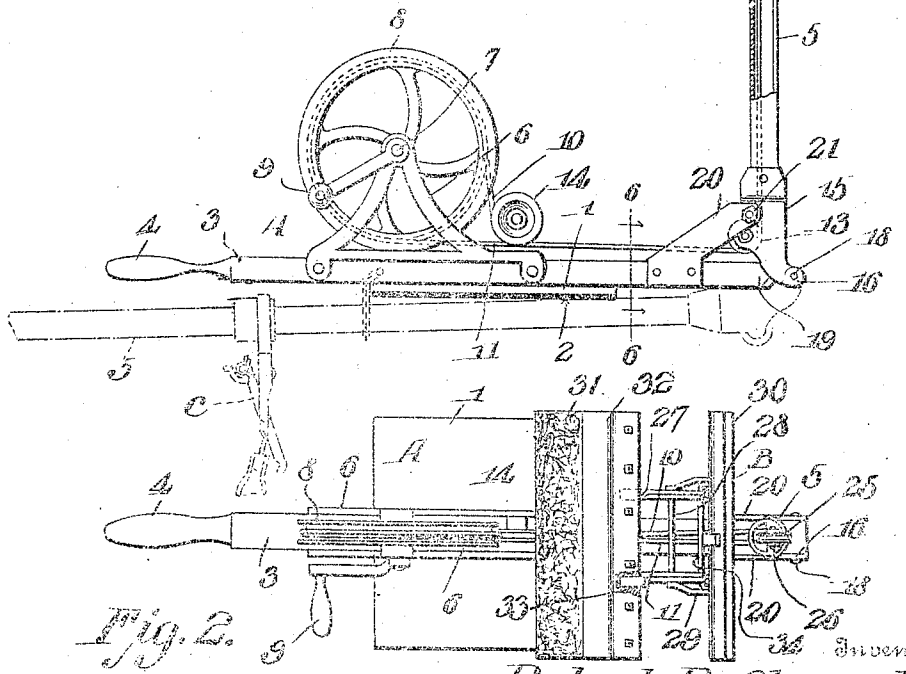


Fig. 2.

Witnesses

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Fig. 6.

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2 SHEETS—SHEET 2.

Fig. 3.

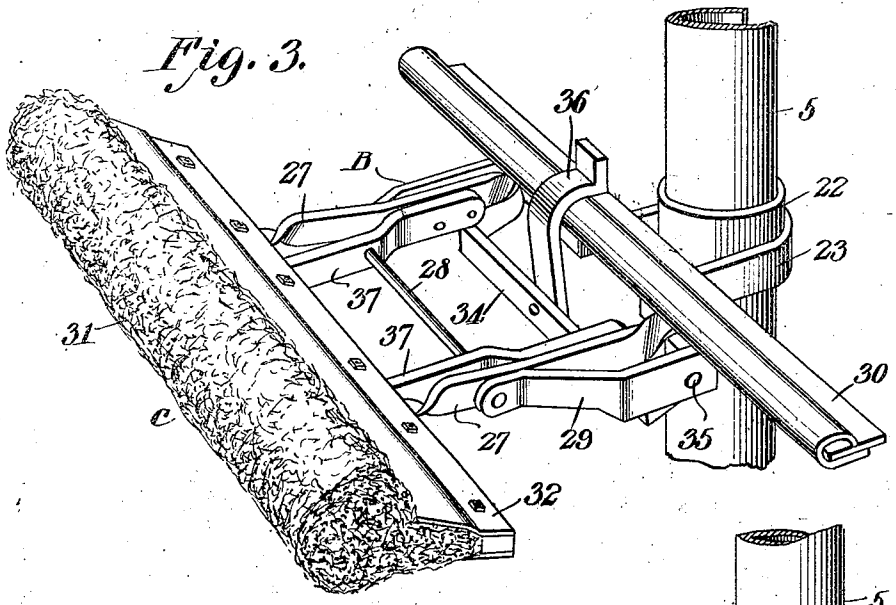
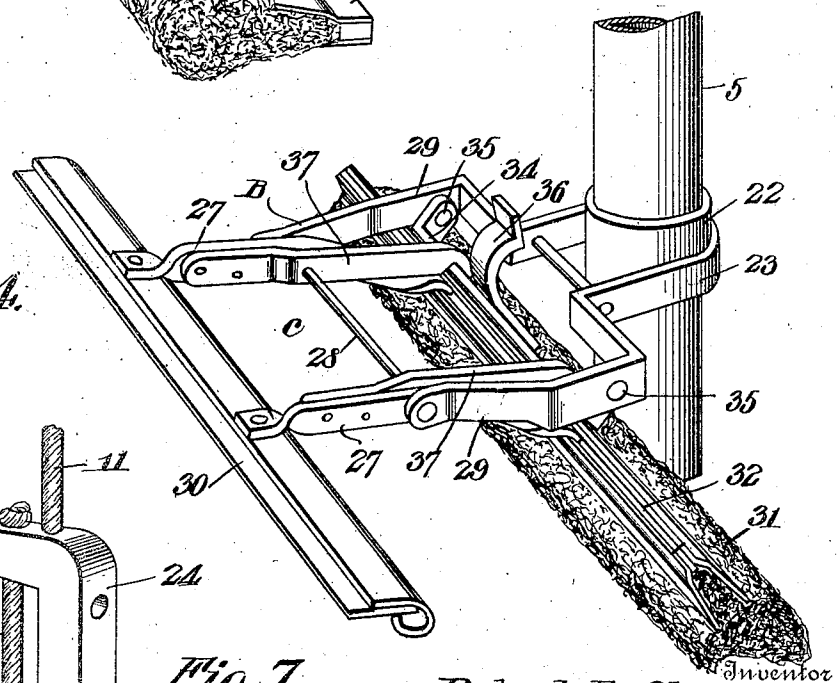


Fig. 4.



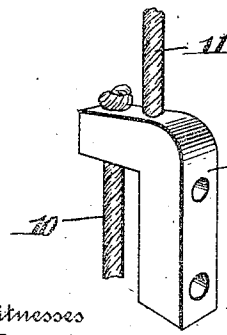


Fig. 7.

Witnesses

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UNITED STATES PATENT OFFICE.

ROBERT B. SHRYOCK, OF KANSAS CITY, MISSOURI.

MACHINE FOR WASHING WINDOWS.

988,215. Specification of Letters Patent. Patented Mar. 28, 1911.

Application filed March 16, 1910. Serial No. 549,660.

To all whom it may concern:

Be it known that I, ROBERT B. SHRYOCK, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented new and useful Improvements in Machines for Washing Windows, of which the following is a specification.

This invention relates to window washing machines of that type whereby the outside surfaces of window panes can be cleaned from a point within a room without having to reach out of a window.

The invention has for one of its objects to improve and simplify the construction and operation of machines of this character so as to be comparatively simple and inexpensive to manufacture, reliable and efficient in use, and so designed that a plurality of cleaning devices can be used for cleaning windows by one machine.

Another object of the invention is the provision of a window washing machine including an upright column or barrel on which reciprocates a carriage that carries a plurality of cleaning devices, such as a washing brush and squeegee, or the like, to be used one at a time in the window cleaning operation.

With these objects in view, and others as will appear as the description proceeds, the invention comprises the various novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawing, which illustrates one embodiment of the invention; Figure 1 is a side view of the machine with portions broken away. Fig. 2 is a plan view thereof. Fig. 3 is a perspective view of the carriage and reversible holder for the cleaning elements. Fig. 4 is a similar view showing the position of the holder reversed. Fig. 5 is a detail sectional view at the base of the column or barrel. Fig. 6 is a sectional view on line 6—6 of Fig. 1. Fig. 7 is a detail view showing the means for connecting the operating cords with the carriage.

Similar reference characters are employed to designate corresponding parts throughout the several views.

Referring to the drawing, A designates the base or frame of the machine which includes a bottom plate 1 that has a rubber or other padding 2 so that the machine will not mar the window sill when it is in operation. On the base plate is a horizontal bar 3 which has its forward end formed into a handle or grip 4 and on the rear end is secured a column or barrel 5. Secured to and rising from the bar 3 are spaced brackets 6 that support the horizontal crank shaft 7 to which is secured a winding wheel 8, a crank 9 being secured to one end of the shaft for turning the wheel. This wheel has fastened to its support cords or flexible elements 10 and 11 so arranged that one is wound on the wheel while the other unwinds, and the cords are connected with a carriage designated generally by B, which reciprocates on the column 5. The column is hollow and the cords enter the bottom thereof and extend upwardly therein to connect with the carriage and where the cords enter the barrel are separate guide pulleys 12 and 13, and one of the cords winds around the wheel from the bottom while the other cord passes under a guide pulley 14 adjacent the wheel and winds around the latter from the top.

The column is normally disposed upright or at right-angles to the bar of the base and it is so connected with the bar that it can fold back under the same when not in use so as to take up very little room. The lower end of the barrel is secured in a socketed foot piece 15 which has spaced lugs 16 pivotally connected at 18 with a bracket 19 on the rear end of the bar 3. The column is held upright by bracing members 20 of the bar 3 and engaging the opposite side of the foot piece 15 and through these bracing members and foot piece is a bolt 21 which can be taken out when it is desired to fold the column backwardly under the base. The carriage B includes a sleeve 22 which surrounds and slides on the column and secured to this sleeve is a frame or yoke 23 extending horizontally and forwardly from the column. Within this sleeve is fastened a block 24 to which the ends of the cords 10 and 11 are connected and the column is longitudinally slotted at its rear for the block to pass into the column and thereby the block has the additional function as serving as a key for preventing the carriage from turning on the column. One of the cords passes the block and continues to the top of the column where it runs over a guide pulley 25 carried by a cap 26 secured to the top of the column and from the pulley the said cord extends down-

wardly in the column to connect with the block of the carriage. Mounted on the frame of the carriage is a reversible holder C for the cleaning elements. This holder consists of spaced parallel bars or members 27 which are secured to a rock shaft 28 mounted in the two side members 29 of the carriage frame so that the holder can have a rocking movement through approximately 180°. On both members 27 at one end thereof is rigidly secured in transverse relation thereto a squeegee 30 and on the opposite ends of the side members or bars 27 is removably mounted a brush 31 or equivalent device, the backing 32 of which has sockets 33 for fitting on the said bars, the brush being removable so that it can be readily washed and moistened when required. The holder is adapted to be locked in either of two positions where the squeegee or brush will be at the front. This locking device consists of a cross bar 34 having bent extremities pivoted at 35 to the side bars of the carriage frame so that the cross bar will have a swinging movement. On the middle of the cross bar is a curved catch or finger 36, which engages over the squeegee when the latter is bearing on the carriage frame. It will thus be seen that the holder C will be prevented from having a swinging movement on the rock shaft and as a consequence the brush will be held rigidly in an outstanding position as the carriage moves up and down. When the squeegee is in operative position, the cross or latch bar 34 engages under stop members 37 on the holder and while thus engaged, the brush is disposed under the carriage frame so that the latter prevents movement of the holder in one direction while the latch bar prevents the movement of the holder in the opposite direction so that the squeegee is held rigidly in outstanding position in engagement with the glass as the carriage moves up and down.

In operation, the machine is set on the window frame and the sash to be cleaned lowered as far as possible. The brush is first used, the same being moistened previously to the lowering of the window sash to be cleaned. The machine is positioned so that the brush will bear against the glass of the sash and then the wheel is turned back and forth so as to reciprocate the carriage and thus cause the brush to pass up and down over the glass and after making one or more strokes, the machine is shifted to operate on another section of the glass and so on until the whole glass is washed. The sash is then raised so that the operator can reach out and reverse the position of the holder C so as to bring the squeegee to the front and again lowering the window, the machine is adjusted to engage the squeegee with the moistened glass. The machine is operated as before so that the squeegee will remove the moisture from the glass and thereby complete the cleaning of it. With a machine of this character, the washing and cleaning of a window can be carried on expeditiously and with perfect safety.

From the foregoing description taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention relates, and while I have described the principle of operation of the invention, together with the device which I now consider to be the best embodiment thereof, I desire to have it understood that the device shown is merely illustrative and that such changes may be made when desired as are within the scope of the claims.

What I claim as new and desire to secure by Letters Patent is:—

1. A machine of the class described, comprising a support, a carriage movable thereon, a rotatable holder mounted on the carriage to swing on an axis transverse to the movement of the latter, a brush secured to the holder, a squeegee secured to the holder, and means located on the carriage between the axis of the holder and the support for locking the holder in a position with either a squeegee or brush in operative position.

2. A machine of the class described, comprising an upright support, a carriage movable on and projecting from one side of the support, a reversible holder secured to the carriage and arranged to turn thereon, a plurality of cleaning devices on the holder, the axis on which the holder turns being disposed between and parallel with the cleaning devices, and a lock on the carriage for locking the holder in different positions for using any of the said devices.

3. A machine of the class described, comprising a column, a carriage slidable on and extending laterally from the column, a horizontal shaft on the carriage, a holder mounted on the shaft to turn about the axis of the latter, a plurality of cleaning elements on the holder, and a locking device pivotally mounted on the carriage arranged to lock the holder in different positions for using any of the said elements.

4. A machine of the class described, comprising a column, a carriage slidably mounted thereon and including spaced members, a reversible holder supported by the members to turn on a horizontal axis, separate cleaning elements on the holder, and a latch device mounted on the said members of the carriage to lock the holder in different positions for using one element at a time.

5. A machine of the class described, comprising a support, a carriage movable of the

support, a holder mounted on the carriage for swinging movement, a swinging latch on the carriage, a cleaning element on the holder, a device on the latch for engaging the said element to lock the holder in a given position, a second cleaning element on the holder disposed in operative position when the said device engages the first mentioned element, and means on the holder with which the latch engages for locking the holder with the first mentioned element in operative position.

6. A machine of the class described, comprising a support, a carriage movable on the support, a swinging holder on the carriage, a squeegee on the holder, a brush on the holder, and a locking device arranged to engage the holder when the squeegee is in operative position and to engage the squeegee when the brush is in operative position.

7. A machine of the class described, comprising a support, a carriage movable on the support, a holder consisting of fixed spaced bars, means for mounting the holder on the carriage for swinging movement, a squeegee secured to the corresponding ends of the bars, a brush secured to the opposite ends of the bars, and a locking device for holding the squeegee against the carriage when the brush is in operative position and for holding the brush against the carriage when the squeegee is in operative position.

8. A machine of the class described, comprising a carriage, a holder mounted on the carriage, a squeegee on the holder, a brush on the holder, and a locking device extending across and pivotally mounted on the carriage arranged to engage the holder to lock the brush against the carriage when the squeegee is in operative position and to engage the squeegee and hold the same against the carriage when the brush is in operative position.

9. A machine of the class described, comprising a carriage consisting of spaced members, a shaft extending from one member to the other and supported thereby, bars on the shaft extending transversely thereto, a squeegee secured to both bars at one end, a removable brush secured to the other ends of the said bars, and means for holding the bars against movement when the brush or squeegee is in operative position.

10. A machine of the class described, comprising a supporting means, a reversible holder mounted thereon, a squeegee rigidly secured to the holder, a brush removably secured to the holder, and means pivotally mounted on the supporting means for locking the holder in different positions for rendering either the squeegee or brush operative.

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

ROBERT B. SHRYOCK.

Witnesses:

FRANK BRADY,

I. A. MORLEY.