

J. EDMAN.
 DEVICE FOR CLEANING THE OUTSIDE OF WINDOWS.
 APPLICATION FILED JULY 27, 1908.

940,135.

Patented Nov. 16, 1909.

Fig. 1

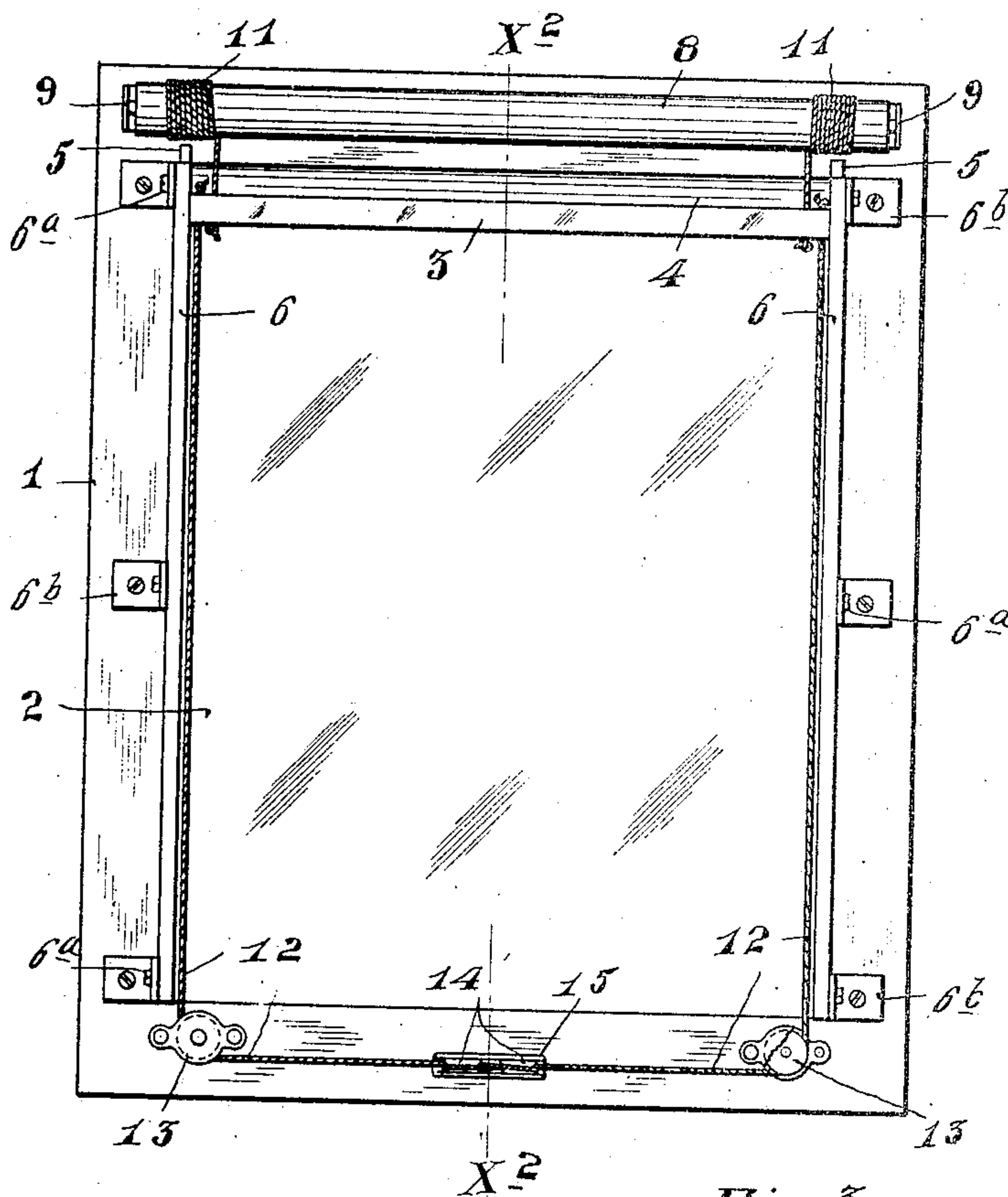


Fig. 2

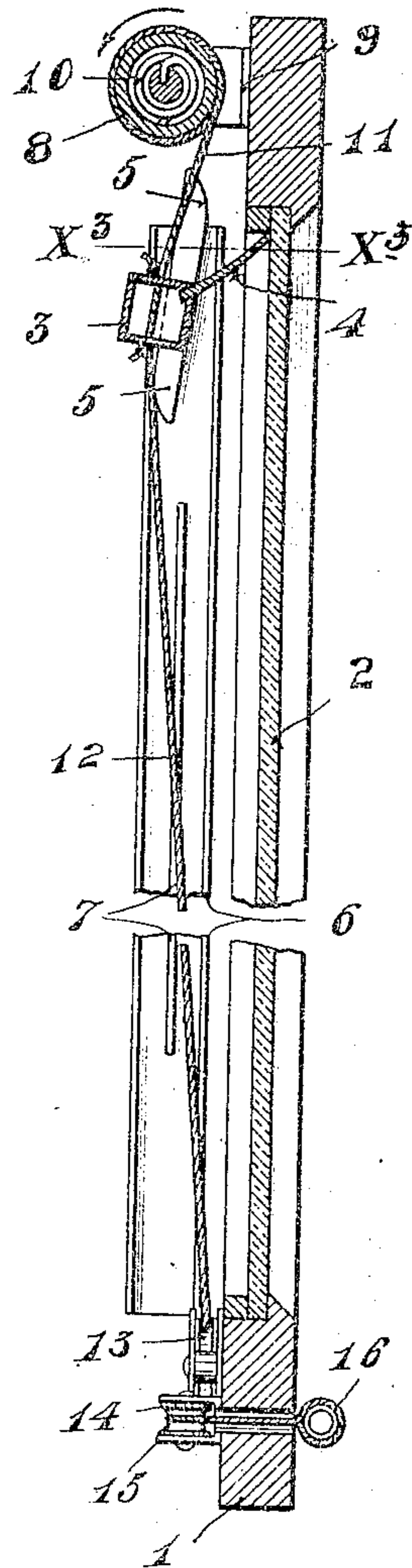
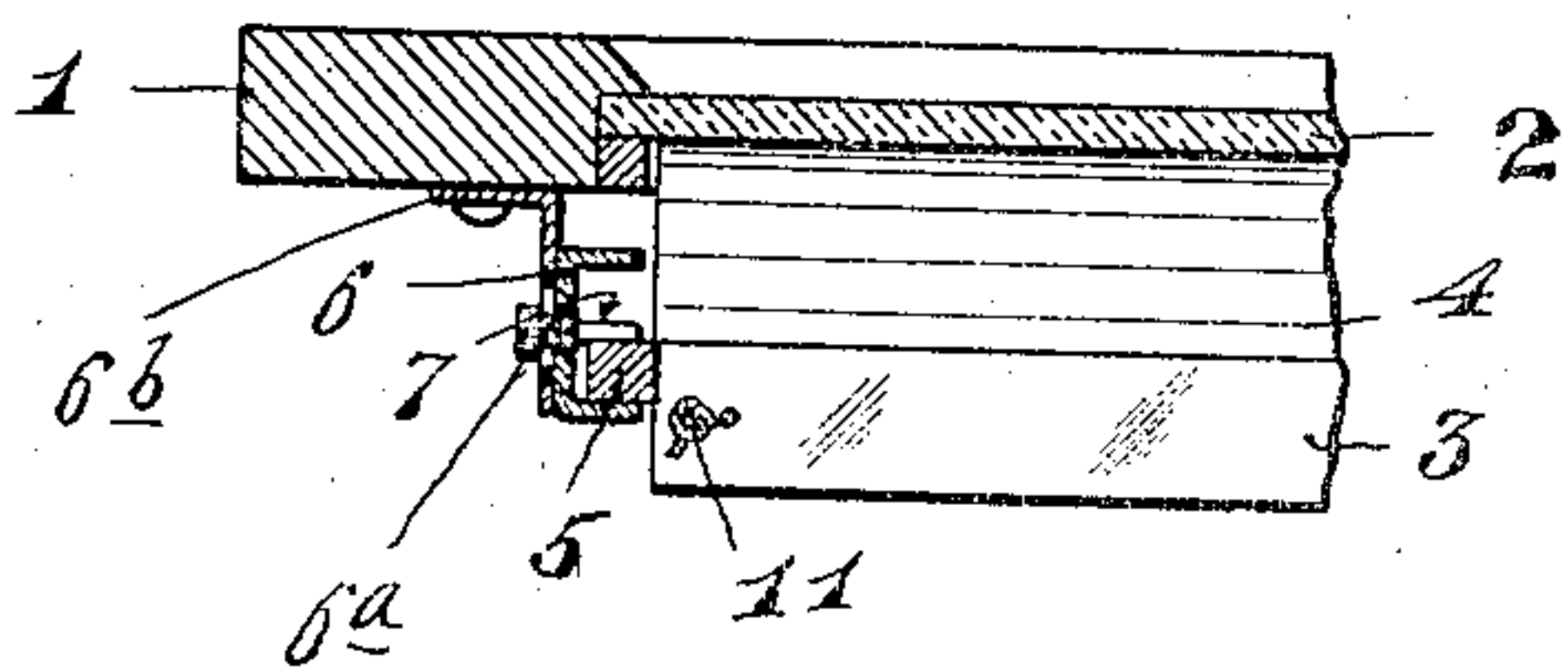


Fig. 3



Witnesses:

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UNITED STATES PATENT OFFICE.

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DEVICE FOR CLEANING THE OUTSIDE OF WINDOWS.

940,135.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN EDMAN, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Devices for Cleaning the Outside of 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.

My present invention has for its object to provide a simple and efficient device for cleaning the outside of windows, by manipulation of a part located at the inner side of the window, and to the above end the invention consists of the novel devices and combination of devices hereinafter described and defined in the claims. The said invention is specially designed as an improvement on the device set forth and claimed broadly in application for Letters Patent of United States No. 441,938, filed of date July 6, 1908, by myself, John Edmund and one Alfred T. Lidholm, and entitled devices for cleaning outside of windows.

The present invention is directed particularly to improved means for causing the scraper blade to tightly press against the window pane under its operative movement, and to be released from the window pane and hence freely moved while making its return or idle movement.

In the accompanying drawings like characters indicate like parts throughout the several views.

Referring to the drawings: Figure 1 is a view in elevation, looking at the outer side of a window, such, for instance, as the front window of an engineer's cab or of a motor-man's vestibule, and showing my improved scraper applied thereto. Fig. 2 is a vertical section taken on the line $x^2 x^2$ of Fig. 1; and Fig. 3 is a horizontal section taken on the line $x^3 x^3$ of Fig. 2, some parts being broken away.

The numeral 1 indicates the sash and the numeral 2 the pane of the window to which the improved device is shown as applied. At the outside of the window a horizontal extended bar 3 is provided with a scraper blade 4, preferably of rubber, which scraper is arranged to work over the outer surface of the window pane 2. To the opposite ends

of the bar 3 guide shoes 5 are rigidly secured and are arranged to slide vertically in parallel channel shaped guides 6. As shown, said guide strips 6 are adjustably secured by slot and screw connections 6^a to brackets 6^b, which latter are directly secured to the sides of the sash 1. By lateral adjustments of the guide strips 6 toward and from the sash 1, the flexible blade 4 may be arranged to engage the window pane 2 under outward pressure, and wear of the said blade may be thus also compensated for. These channel shaped guides 6 are provided with intermediate ribs 7 that extend considerably less than from top to bottom of the respective guide channels.

By reference to Fig. 2 it will be noted that the upper and lower ends of the shoes 5 are reversely beveled. The importance of this will presently appear.

Suitable yielding means, such as one or more springs, are employed to impart the idle or return movements to the bar 3 and the scraper blade 4; and this inoperative movement is preferably the upward movement of the said parts. The yielding device shown in the drawings is a roller 8, journaled in suitable bearings 9 on the upper portion of the sash and subject to a torsional spring which tends to move said roller in the direction of the arrow marked adjacent thereto, in Fig. 2. This roller 8 is connected by cords or small cables 11, to the end portions of the scraper carrying bar 3. Small operating cords or cables 12 are attached at their upper ends, to the ends of said bar 3, and these cords 12 are passed under guide sheaves 13 on the lower portion of the sash 1 and are extended around guide sheaves mounted in a bracket 15 in the lower portion of the sash and both are attached to a common hand piece 16 that is located at the inner side of the sash.

By reference to Fig. 2 it will be noted when in the normal position of the parts, shown in Fig. 2, the scraper blade strikes the overlying upper shoulder of the sash and acts as a fulcrum over which the bar 13 is swung outward under the upper pull of the torsion spring 10, until the lower portion of the shoes 5 strike the outer flanges of the guide channels 6. It will also be noted that in this position the bar 3 is outward of a straight line drawn from a guide 13 to the inner surface of one end of the roller 8.

Hence, under downward pull on the cords 12 the bar 3 will be caused to swing slightly toward the window pane 2, until the beveled lower ends of the shoes 5 aline with the innermost of the two channels of the guide strips 6. When the shoes are caused to travel through the said innermost channels, by a downward movement of the bar 3, the said inner channels and the shoes 5 will co-
 10 operate to very tightly hold the scraper blade 4 against the window pane that is to be cleaned thereby.

When the bar 3 and scraper blade have been moved downward far enough to carry
 15 the upper ends of the shoes 5 below the partitions or intermediate ribs 7, the elasticity of the blades will be sufficient to slightly rock the beveled upper ends of the shoes 5 outward, so that when bar 3 and the
 20 scraper blade 4 are given their upward or idle movement under the force of the torsional spring 10, the said shoes will pass upward through the outer channels of the guides 6 and the scraper blade will be carried upward out of contact with the win-
 25 dow pane. In this way the upward or idle movement of the scraper blade is insured, even when a yielding device of no great strength is employed.

30 In actual practice the efficiency of the device has been demonstrated.

I claim:

1. The combination with a window and a pair of laterally spaced vertical guides, se-
 35 cured adjacent to the sides thereof, each of which guides has inner and outer channels that run together at upper and lower extremities, of a bar having a scraper blade for action on the window pane and arranged
 40 to engage with the sash, at the limit of its upper movement, shoes rigidly secured to

the ends of said bar and having reversely beveled upper and lower ends, a device op-
 erating to yieldingly hold said bar in its uppermost position, and a downwardly ex-
 15 tended operating connection from the said bar, whereby the said shoes will travel through the inner channels of said guides when moved downward and will travel
 50 through the outer channels of said guides when moved upward.

2. The combination with a window and a pair of laterally spaced vertical guides se-
 cured adjacent to the sides thereof, of a
 55 guide bar having a scraper blade for action on the window pane, the said vertical guides being adjustable toward and from the win-
 dow pane to vary the engagement of said scraper blade with the pane, and means for
 60 moving said blade-equipped bar from the inner side of said window pane, substantially as described.

3. The combination with a window and a pair of laterally spaced vertical guides se-
 cured adjacent to the sides thereof, each of
 65 said guides having inner and outer channels that run together at their upper and lower extremities, of a bar having a scraper blade for action on the window pane, shoes
 applied to the ends of said bar and having
 70 reversely beveled upper and lower ends, a device operating to yieldingly hold said bar in one extreme position, and an operating
 connection from said bar extending to the
 75 inner side of the window, substantially as described.

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

JOHN EDMAN.

Witnesses:

HARRY D. KILGORE,
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