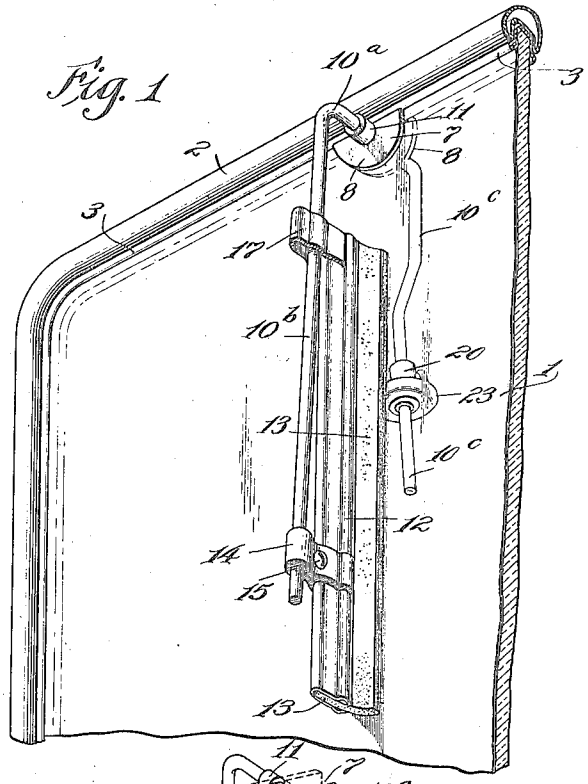
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CLEANING DEVICE.

APPLICATION FILED APR. 15, 1916.

1,248,795. Patented Dec. 4, 1917.

Fig. 1



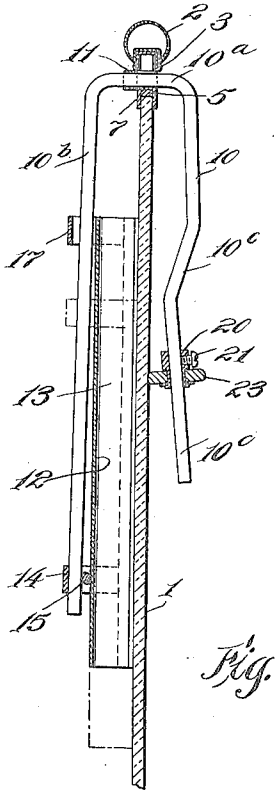


Fig. 2

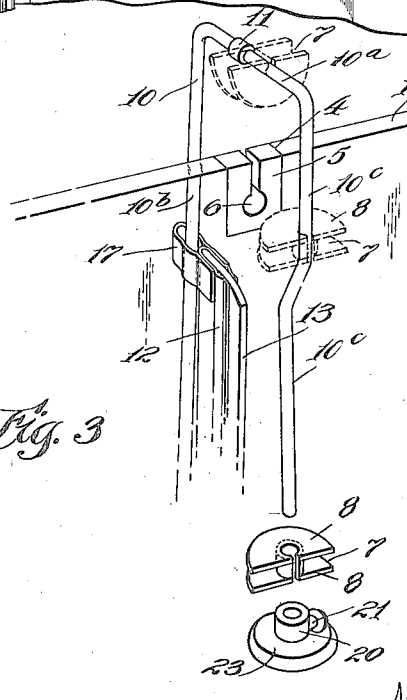


Fig. 3

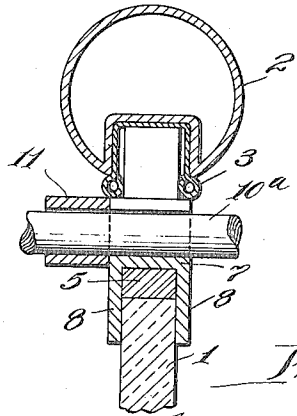


Fig. 4

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ALBERT B. BEITMAN, OF EAST CLEVELAND, OHIO.

CLEANING DEVICE.

1,248,795. Specification of Letters Patent. Patented Dec. 4, 1917.

Application filed April 15, 1916. Serial No. 91,291.

To all whom it may concern:

Be it known that I, ALBERT B. BEITMAN, a citizen of the United States, residing at East Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Cleaning Devices, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

This invention relates to wind-shield cleaning devices, the same being adaptable to analogous uses, such as the cleaning of street car or carriage windows or panes of various sorts.

The invention has for its object the attainment of efficiency, simplicity of construction and design, durability, adjustability, and ease and convenience of operation, in devices of the aforesaid character.

The embodiment of my invention illustrated in the accompanying drawing and hereinafter described in detail is primarily intended for incorporation in automobile wind-shields or the like at the time of their manufacture. Therefore, a further object of the invention is the production of a cleaning device through which this end may be economically and in all respects satisfactorily realized.

In the drawing, Figure 1 is a fragmentary perspective view of a wind-shield having the cleaning device of my invention applied thereto; Fig. 2 is a vertical section through the wind-shield and the cleaning device, on the center line of said device; Fig. 3 is a perspective view illustrating the manner of assembling the device and applying it to the pane of the wind-shield; and Fig. 4 is a sectional detail of the upper end of the device and the adjacent portion of the wind-shield, the same constituting an enlargement of the upper end of Fig. 2.

Describing the invention by the use of reference characters, 1 represents a pane (in the present instance, being that of a wind-shield) and 2 a frame or binder therefor. It will be observed that the frame or binder 2 is, in the present case, tubular, and has its inner edge pressed inward to form a groove for the reception of a channel member 3 which, in turn, receives the edge of the pane 1. At a convenient location along one of its edges, the pane 1 is provided with a notch 4 into which a cushion block 5, preferably of rubber, is adapted to fit. This block is provided with a notch 6 of inverted key hole shape, and the sleeve of a bearing member 7 fits sufficiently close within the enlargement of the notch 6 to prevent lateral movement of such member. The bearing member 7 is preferably formed of a single piece of sheet metal and comprises, besides the aforesaid sleeve, opposed end plates 8 which bear upon the opposite sides of the pane. The end plates are substantially semi-circular, and their straight sides are engaged by the inner edges of the channel member 3. This arrangement prevents any appreciable rocking of the bearing member within the notch 6. It will also be seen from the construction thus far described, that the bearing member which constitutes the support of the cleaning device, presently to be described, is held in place by the binder 2 (or more accurately, the channel 3 which may be considered a part of the binder) and without the use of any further means; and that the cushion block 5 is securely confined within the notch 4 by the channel 3 and the bearing member 7. It will be understood also that the cushion block 5 serves as a shock absorbing element to relieve the glass of strains that would otherwise be imposed upon it by the operation of the cleaner (as will be better appreciated further along in this description).

What I will refer to hereinafter as the frame of the device is designated 10, and the same comprises a horizontal portion 10^a, a cleaner carrying branch 10^b, and an operating branch 10^c. A stop collar 11 is secured to the horizontal branch 10^a, and the bearing member 7 may be fed up over the operating branch 10^c and onto the horizontal branch 10^a, until it engages the stop collar 11, such manner of assembling being represented by the dotted line positions of the bearing member in Fig. 3. It being presumed that the cushion block 5 has been applied to the bearing member 7, the assembly may now be applied to the pane by inserting the cushion block into the notch 4 with the end plates 8 occupying positions on opposite sides of the pane, as above explained. The stop collar 11 is located inward from the branch 10^b a sufficient distance to space such branch far enough from the adjacent surface of the pane to accommodate between it and said surface, the cleaner or squeegee 12.

The cleaner or squeegee is herein shown as comprising a metal binder to which the numeral 12 is applied. This binder is substantially U-shaped in cross section and between its branches is clamped a strip 13 of rubber, or similar material, the strip 13 extending some distance beyond the open side of the binder 12 and engaging the surface of the pane with enough force to cause it to satisfactorily perform its function of cleaning the pane, when it is moved across the same. The cleaner or squeegee is attached to the branch 10^b of the frame by a clamp 14, the same being formed to a metal strap that is bent snugly about the branch 10^b, near its lower end, and is clamped thereto against movement by a screw 15 which passes freely through one of the branches of the strap and is threaded into the other, such construction being more or less common. Beyond the screw 15, the ends of the strap are separated and shaped to conform to and embrace, rather snugly, the binder 12, the binder being capable of an adjustment through the clamp when the screw is slightly loosened. A metal loop 17 is attached to the upper end of the binder 12 and embraces the branch 10^b, to hold the cleaner or squeegee in alinement with the branch, such connection permitting the squeegee to rock slightly with respect to the branch and thus adjust itself to differences which may occur in the angular relation between the pane and the branch.

Attention is called to the angular relation of the lower end of the operating branch 10^c, to the adjacent surface of the pane 1. A sleeve 20 is adapted to be clamped at any position along the aforesaid portion, by a screw 21, which is threaded through the wall of the sleeve and bears upon the branch. A roller 23, preferably of fiber, is journaled upon the sleeve 20, and bears against and has rolling contact with the inner surface of the pane 1. It will be explained at this time that the horizontal branch 10^a of the frame 10 fits loosely enough within the sleeve of the bearing member 7 to permit it to rock longitudinally of the sleeve. With this in mind, it will be seen that the pressure with which the squeegee bears upon the outer surface of the pane may be regulated by the adjustment of the roller 23 along the angular portion of the operating branch 10^c of the frame, it being obvious that when the roller occupies an elevated position thereon, that it will force the operating branch of the frame farther away from the pane, consequently swinging the branch 10^b toward the opposite surface thereof; and when the roller occupies a position nearer the lower end of the operating branch, the other branch is permitted to move away from the pane. This adjustment may compensate for any wear in the cleaner strip 13 of the squeegee, any deformation of the frame 10, or panes of various thicknesses.

From the foregoing description it will be seen that my invention provides a cleaning device that is peculiarly adapted for incorporation in wind-shields at the time of their manufacture; and attention is particularly called to the fact that, when the device is not in use, it may occupy a position along and parallel to the frame or binder of the wind-shield, where it is entirely out of the way and presents a neat appearance.

A further decided advantage in my present construction, over former constructions which were mounted upon the frame of the wind-shield, is the absence of any protuberance above the frame to interfere with the fit between the upper edge of the wind-shield and the front of the vehicle top.

While I have herein described the present embodiment of my invention in detail, I wish to be understood as not limiting myself to the structural details thereof further than is required by the terms of the appended claims, and is rendered necessary by the state of the prior art.

Having thus described my invention, what I claim is:—

1. The combination with a pane having a notch in its edge and a binder extending along such edge and closing the open side of the notch, of a cleaning device for movement across the outer surface of the pane and having a supporting portion within the aforesaid notch.

2. The combination with a pane having a notch in its edge and a binder extending along such edge and closing the open side of the notch, of a bearing member within said notch, and a cleaning device for movement across the outer surface of the pane and having a portion journaled within the aforesaid bearing member.

3. The combination with a pane, of a frame comprising an outer branch, an inner branch, and a portion connecting said branches, said portion being supported transversely of the edge of the pane, and said inner branch being angularly disposed to the inner surface of the pane, a cleaner carried by the outer branch and adapted to bear upon the adjacent surface of the pane, and a roller carried by and adjustable along the inner branch.

4. The combination with a pane having a through-opening, of a cushion element within said opening and having an aperture, a bearing member comprising a sleeve that is located within said aperture and a plate upon each end of the sleeve which covers the adjacent end of the cushion element and extends beyond the edge of the opening of the pane, and a cleaning device for movement across the outer surface of the pane

and having a portion journaled within said bearing member and operable through said portion from the inner side of the pane.

5. The combination with a pane having a through-opening, a cushion element within said opening, said cushion element having an aperture, and a cleaning device for movement across the outer surface of the pane and having a portion supported within the aperture of the cushion element.

6. The combination with a pane having a through-opening, of a cushion element within said opening and having an aperture, a bearing member within said aperture, and a cleaning device for movement across the outer surface of the pane and having a portion journaled within said bearing member and operable, through said portion, from the inner side of the pane.

7. The combination with a pane having a notch in its edge and a binder which extends along said edge and closes the open side of the notch, a bearing member comprising a sleeve which extends through the notch and a plate upon each end of the sleeve which overlies the adjacent portion of the pane, each plate having a substantially straight edge which engages the aforesaid binder thereby to prevent the bearing member from turning, and a cleaning device for operation on the outer side of the pane and having a portion journaled within said sleeve and operable, through the aforesaid portion, from the inner side of the pane.

8. The combination with a pane having a notch in its edge and a binder extending along such edge and closing the open side of the notch, of a cushion element within said notch, and a cleaning device for movement across the outer surface of the pane and having a supporting portion journaled within the cushion element.

9. The combination with a pane having a notch in its edge and a binder which extends along such edge and closes the open side of the notch, of a cushion element within said notch, said element having an aperture, a bearing member within said aperture, and a cleaning device for operation on the outer side of the pane and having a portion journaled within said bearing member and operable, through the aforesaid portion, from the inner side of the pane.

10. The combination with a pane, of a cleaning device comprising a frame having a portion that extends transversely of the edge of the pane, said frame having also an outer branch, and an inner branch having a portion that is angularly disposed to the inner surface of the pane, a cleaner carried by the outer branch for movement across the adjacent surface of the pane, and an element adjustable along the angular branch of the frame and adapted to bear upon the inner surface of the pane.

11. The combination with a pane, of a frame comprising an outer branch, an inner branch, and a portion connecting said branches, said portion being supported transversely of the edge of the pane, and said inner branch having a portion that is angularly disposed to the inner surface of the pane, a cleaner carried by the outer branch and adapted to bear upon the adjacent surface of the pane, a member adjustable along the inner branch of the frame, means for securing said member in any adjusted position along the branch, and a roller journaled upon said member and bearing upon the pane, as and for the purpose specified.

In testimony whereof, I hereunto affix my signature.

ALBERT B. BEITMAN.