J. F. LEARY.

CLEANER FOR WIND SHIELDS.

APPLICATION FILED DEC. 29, 1915.

1,208,801. Patented Dec. 19, 1916.

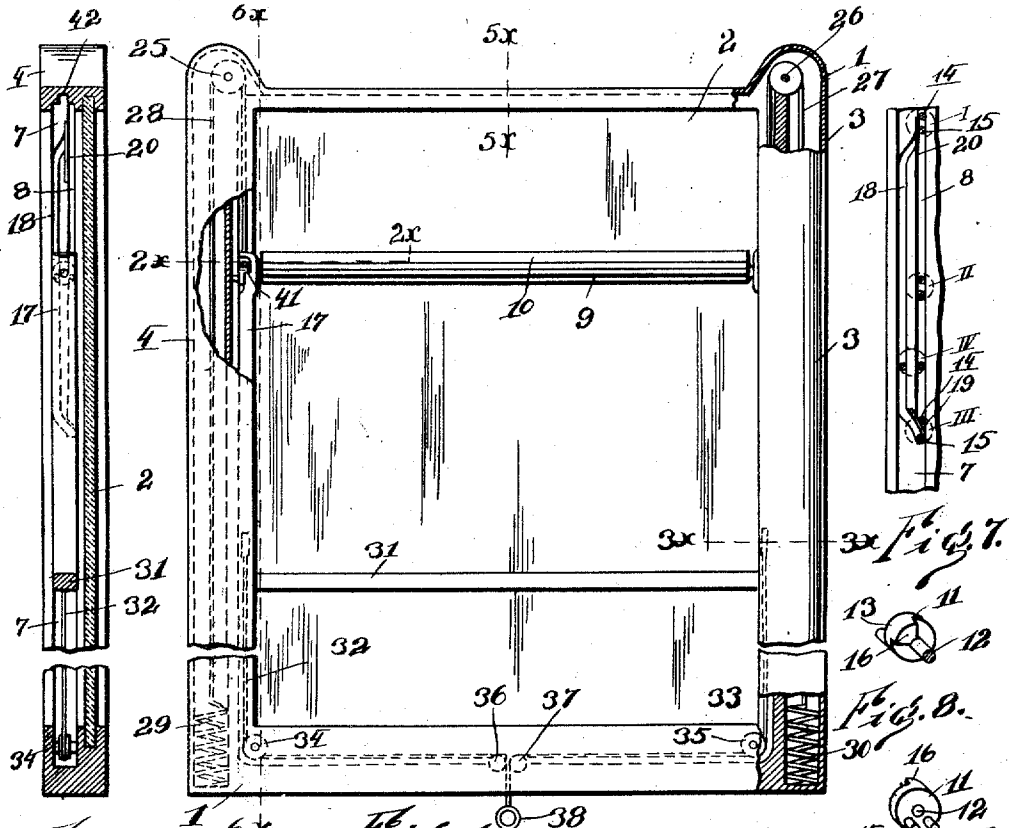


Fig. 6. Fig. 1. Fig. 7.

Fig. 8.

Fig. 9.

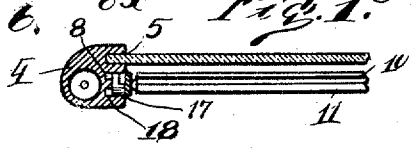


Fig. 2

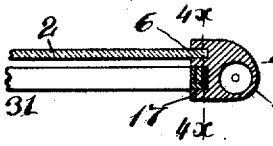


Fig. 3.

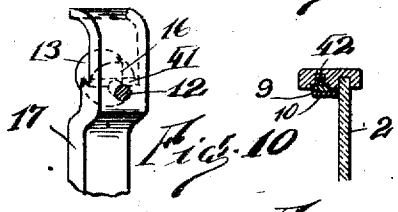


Fig. 10 Fig. 5.

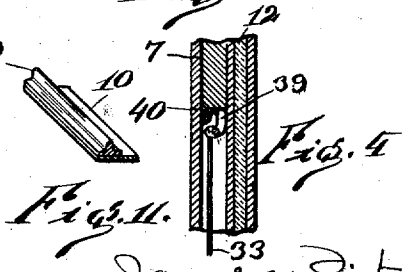


Fig. 11. Fig. 4

Witnesses

Eric Schinger.

Edna K. Boolt.

Inventor

James F. Leary

By Frank Keiper

Attorney

UNITED STATES PATENT OFFICE.

JAMES F. LEARY, OF ROCHESTER, NEW YORK.

CLEANER FOR WIND-SHIELDS.

1,208,801. Specification of Letters Patent. Patented Dec. 19, 1916.

Application filed December 29, 1915. Serial No. 69,259.

To all whom it may concern:

Be it known that I, JAMES F. LEARY, citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Cleaners for Wind-Shields, of which the following is a specification.

The object of this invention is to provide a new and improved form of cleaner for windshields, or an apparatus by which the snow or drops of rain may be removed from the glass of the windshield repeatedly during storms as fast as they accumulate thereon and while the car is running. This and other objects of the invention will be fully illustrated in the drawings, described in the specification and pointed out in the claims at the end thereof.

In the drawings, Figure 1 is a front elevation of my improved windshield. Fig. 2 is a horizontal section on the line $2^{\times}$—$2^{\times}$ of Fig. 1. Fig. 3 is a horizontal section on the line $3^{\times}$—$3^{\times}$ of Fig. 1. Fig. 4 is a vertical section on the line $4^{\times}$—$4^{\times}$ of Fig. 3. Fig. 5 is a vertical section on the line $5^{\times}$—$5^{\times}$ of Fig. 1. Fig. 6 is a vertical section on the line $6^{\times}$—$6^{\times}$ of Fig. 1. Fig. 7 is a side elevation of the cam in the frame for controlling the movement of the windshield cleaner. Fig. 8 is a perspective detail view of the rocker arm which is used in each end of the cleaner to coöperate with the cams in the frame. Fig. 9 is a perspective view of the rocker arm viewed from the side opposite that shown in Fig. 8. Fig. 10 is a detail perspective view of the upper portion of one of the sliding mounts that carries the windshield cleaner. Fig. 11 is a perspective view of a portion of the cleaner itself.

In the accompanying drawings like reference numerals indicate like parts.

In the drawings reference numeral 1 indicates the frame by which the glass of the windshield is supported and 2 indicates the glass of the windshield, it being understood that the glass is preferably in a single piece that extends continuously from the top to the bottom of the frame. The upright sides of this frame indicated by reference numerals 3 and 4 are grooved at 5 and 6 to hold the glass and are grooved at 7 to hold the sliding mount for the cleaner and its rocker arm and are grooved at 8 and 18 to engage with the pins on the rocker arm by which the cleaner rubber is oscillated and held in a retracted position during its upward movement and held in its normal position during its downward movement.

Reference numeral 9 indicates the support or backing for the cleaner or rubber and 10 indicates the rubber strip carried thereon by which contact is made with the glass for the purpose of wiping the glass. On each end of the support is attached a rocker arm 11 by which the oscillation of the support and rubber is controlled. This rocker arm has a pin 12 thereon which engages with the cylindrical piece 13 thereon on which are carried the pins 14 and 15. The cylindrical piece 13 is cut away to leave a segmental shoulder 16 substantially a quadrant in shape. The pin 12 of the rocker arm engages with the sliding mount 17 and travels up and down with it. This sliding mount 17 engages with the large groove 7 formed on each side of the frame which groove extends from the top to the bottom thereof.

The large groove 7 is a wide shallow groove and has extending therefrom at the upper end thereof the narrow grooves 8 and 18, the groove 8 running straight and parallel to the glass and the groove 18 lying parallel to the groove 8 for the most of its length and being connected to the groove 8 by curved portions at the top and bottom thereof, the whole of the groove 18 constituting a cam.

When the wiper is at the top of the frame the pins 14 and 15 will both be in engagement with the groove 8 and will remain in engagement therewith as the wiper with the slides 17 travel down until the pin 15 passes the end of the groove 18. At the end of the groove 18 and normally separating it from the groove 8 is a flat spring 19 past which the pin 14 readily travels. This spring will snap in behind the pin 15 and as the wiper travels up carrying with it the rocker arm the pin 15 will pass into the cam groove 18 and will travel upwardly therein causing the rocker arm to rock from the position marked IV in Fig. 7, in which position the wiper will be held withdrawn from the glass as is indicated in Fig. 2. As the wiper moves up it will be held in this position until it reaches the top of the cam slot 18, when it will be rocked to the position indicated by I in Fig. 7. At the top of the groove 8 is a flat spring 20 which the pin 15 can readily pass which spring closes in behind the pin and shuts it off from the groove

18 compelling it when it moves down in the reverse direction to follow the slot 8. This causes the rocker arm and rocker to swing and bring the wiper forward in contact with the glass, the position of the parts at the top of the glass being shown in Fig. 5.

It will be understood that the sides of the frame 3 and 4 are duplicates of each other except that the position of the parts therein are reversed from right to left as will be necessary owing to the fact that the sides set opposite to and facing each other so that the rocker arm, sliding mount, large and small grooves that have been heretofore described in connection with the side 4 are equally present in the same construction and operation in the side 3.

At the top of each of the sides are mounted pulleys 25 and 26. Connected to the slides 7 and 8 at the top are ropes 27 and 28 which pass up over the pulleys and down through the sides of the case and are attached to springs 29 and 30 located at the bottom of the sides. These springs normally draw down on the ropes and are for the purpose of holding the wiper normally at the top of the glass.

At the bottom the slides 17 are connected by the cross bar 31, the cross bar, the wiper and two connecting slides constituting a frame of sufficient rigidity. Connected to the bottom of the slides are the ropes 32 and 33 which pass around pulleys 34 and 35 and extend toward each other in the bottom of the frame, passing around pulleys 36 and 37 and extending out below the frame at 38, the ropes being connected to a ring below the frame by which the wiper may be readily drawn down by hand or they may be connected to a treadle by which the wiper may be drawn down instead. The ropes 32 and 33 are connected to the latches 39 carried on the slides 17 which latches are pivoted and are pushed sidewise against the frame by the springs 40, the springs pushing the slide in one direction and the latches in the other direction thus taking up the lost motion that may exist between the frame and the slide.

In order to compel the wiper to rotate in the right direction and the correct distance, the segmental shoulder 16 is provided, which shoulder engages with the shoulder 41 provided on the slide 17 by which its movement to the right or left is limited, the rocker arm being permitted thereby a movement of 90° and no more. This coöperates with the cam slot 18 to hold the wiper to its correct movement.

As is shown in Fig. 5 the top of the casing of the windshield is recessed at 42 to receive the support 9 for the wiper and conceal it when it is held in its raised position.

The operation of my device is as follows: With the wiper in the position shown in Fig. 5 at the top the operator pulls on the handle 38 and draws the wiper down along the glass removing from the glass the rain or snow that would otherwise obstruct his vision and this downward movement of the wiper continues until the wiper and rocker arm has moved far enough for the pin 15 to pass the spring 19 which guards the opening into the cam slot 18, when the wiper can be released by the operator and the springs 29 and 30 will then operate to draw the wiper up. The pin 15 on each end of the wiper will be deflected by the spring 19 into the cam slot 18 and will cause the wiper to rock away from the glass and hold it away from the glass until the wiper has traveled to the top of the slots 8 and 18 after which the pin 15 will pass through the slot 18 and into the slot 8 and restore the wiper to its normal position shown in Fig. 5. The spring 20 will then close in back of the pin 15, closing the slot 18 and forcing it to travel in the slot 8.

I claim.

1. In a cleaner for windshields the combination of a frame, guides on opposite sides thereof for holding the glass, a cleaning device, guides on opposite sides of the frame for holding the cleaning device, slides mounted to travel in the last named guides, said cleaning device being mounted between said slides, a pair of cam slots cut adjacent to said guides, a pair of pins mounted on said cleaning device engaging with said cam slots by which said cleaning device is held in contact with the glass when said pins engage both of said cam slots and are horizontally in line with each other and hold said cleaning device out of contact when said pins engage but one of said cam slots and are vertically in line with each other.

2. In a cleaner for windshields the combination of a frame, a cleaning device, guides on opposite sides of the frame, slides in said guides, said cleaning device being mounted to swing on said guides, shoulders on said cleaning device engaging with said guides to limit the swinging movement of said cleaning device spring pressed dogs mounted in said frame and being adapted to make frictional contact with said guides to prevent any vibration of said frame and hold said frame stationary.

3. In a cleaner for windshields the combination of a frame, a cleaning device, guides on opposite sides of the frame, slides in said guides, said cleaning device being mounted to swing on said guides, shoulders on said cleaning device engaging with said guides to limit the swinging movement of said cleaning device, pins on said cleaning device, cam slots adjacent to said guides with which said pins engage, said pins coöperating with said slots to rock said cleaning device.

4. In a cleaner for windshields the combination of a frame, a cleaning device, guides on opposite sides of the frame, slides in said guides, latches mounted at the bottom of said slides, springs on said slides pressing said latches against the frame to take up the lost motion between the slides and the frame, ropes attached to said latches to draw the slides down, said ropes also operating to draw the latches back from the frame.

5. In a cleaner for wind shields, the combination of a frame, a cleaning device, guides on opposite sides of the frame, slides in said guides, said cleaning device being mounted to swing on said guides, shoulders on said cleaning device engaging with said guides to limit the swinging movement of said cleaning device, spring pressed dogs mounted in said frame and being adapted to make frictional contact with said guides to prevent any vibration of said frame and hold said frame stationary, a pulling tape for releasing said spring pressed dogs and hold said dogs out of engagement with said guides when operating said cleaner.

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

JAMES F. LEARY.

Witnesses:
ERIC ISCHINGER,
EDNA K. BOOTH.