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SQUEEGEE FOR LOUVER WINDOWS

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Fig. 1

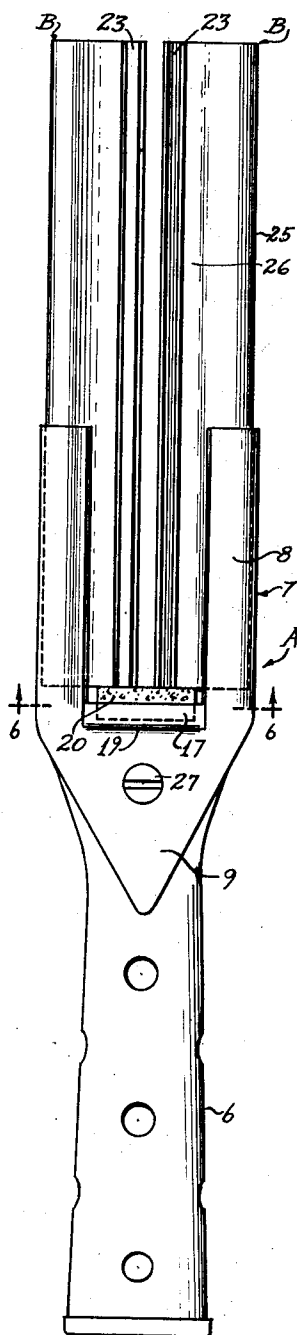


Fig. 4

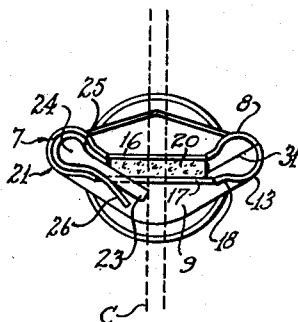


Fig. 5

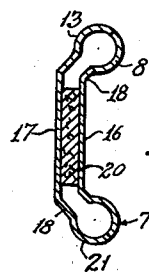
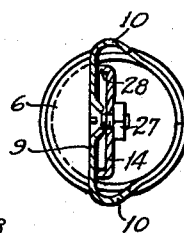


Fig. 6

Fig. 2

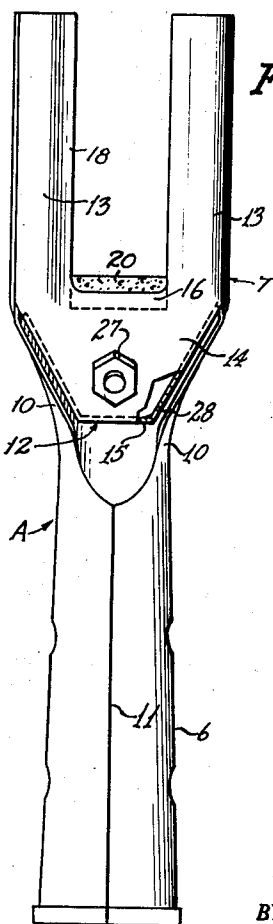
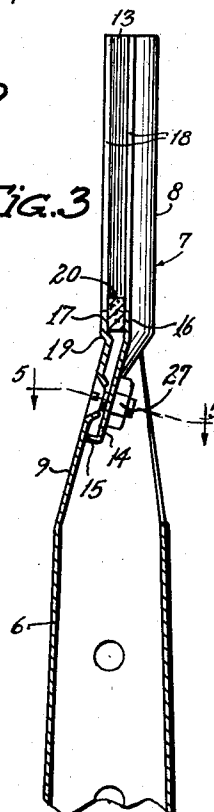


Fig. 3



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## SQUEEGEE FOR LOUVER WINDOWS

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4 Claims. (Cl. 15—121)

This invention relates to the problem of cleaning the glass louvers of a louver window and has as its general object to provide an improved cleaning tool of the squeegee type, for cleaning such louvers. More particularly the invention aims to provide a squeegee that is adapted to simultaneously engage, with a wiping action, both faces and one edge of a glass louver.

Another object is to provide such a squeegee wherein a pair of wiping blades are securely mounted in a holder for easy attachment and detachment.

A further object is to provide such a squeegee, of relatively simple and inexpensive construction.

Other objects and advantages will become apparent in the ensuing specifications and appended drawing in which:

Fig. 1 is a plan view of a squeegee embodying my invention;

Fig. 2 is an inverted plan view of the holder thereof;

Fig. 3 is a longitudinal sectional view of the holder;

Fig. 4 is an end view of the holder with one wiper blade installed therein;

Fig. 5 is a transverse sectional view taken on line 5—5 of Fig. 3; and

Fig. 6 is a transverse sectional view taken on line 6—6 of Fig. 1.

Referring now to the drawings in detail, I have shown in Fig. 1 thereof, as an example of one form in which the invention may be embodied, a squeegee which comprises generally a holder A and a pair of blades B which are demountably secured in the holder in appropriate working relation to one another.

The holder A comprises a handle 6 of tubular sheet metal construction, formed as a stamping, and spaced, parallel sockets 7 of sectional structure, including front sections 8 that are formed integrally with the handle 6. Socket sections 8 are joined integrally to handle 6 by a bridge 9 of triangular form. Bridge 9 includes lateral parts that are curled rearwardly from the flat front portion thereof to provide reinforcing channels 10 extending in flared relation from the handle 6 to the outer extremities of socket sections 8. The curvature of channels 10 is gradually broadened to a point where the margins of the metal sheet composing handle 6 come together along the joinder line 11, where said margins are abutted.

The holder A includes a detachable section 12 which comprises a pair of socket sections 13 complementary to the socket sections 8 and having lateral margins in abutting relation to sections 8. Socket sections 13 are joined by a generally flat bridge 14 of isosceles trapezoid form, having at its end a lip 15 bent at right angles to the body thereof and in fulcrumming engagement with the inner face of bridge member 9.

Bridge member 9 is inclined at a low angle relative to the axis of handle 6, to join the socket fingers 7 which have their parallel longitudinal axes disposed in a plane lying substantially on the axis of handle 6. Bridge 14 is inclined, with reference to the socket sections 13, at approximately the same angle so as to lie generally

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parallel to bridge 9, and in spaced relation thereto determined by the depth of lip 15.

At their inner margins, bridge members 9 and 14 have narrow portions thereof constituting jaws 16 and 17 extending transversely between fingers 7 in planes parallel to the handle axis, as continuations of the marginal lips 18 of fingers 7. Jaw 17 is offset slightly outwardly from the inclined portion of bridge 9 to provide a shoulder 19. Defined between jaws 16 and 17 with the shoulder 19 as the back thereof, is a transversely elongated rectangular socket in which is received a short strip 20 of sponge rubber or equivalent yielding wiping material which is adapted to engage the lateral edge of a glass louver C (Fig. 4).

The fingers 7, as indicated in Fig. 4, have a cross section of horseshoe shape, including the spaced lips 18 connected by a channel 21 of segmental cylindrical form, extending somewhat more than 180° of cylindrical configuration. Lips 18 define an opening that is restricted in relation to the space within channel 21. The median planes of socket fingers 7, as determined by the joinder 31 (Fig. 4) are inclined with reference to the common plane of the longitudinal axes of fingers 7, at an angle of approximately 30°, so that the fingers 7 will support a pair of wiper blades B in correspondingly inclined positions.

The wiper blades B each comprise a body of sponge rubber of the like, 23, having a thickened bead 24 along the outer lateral margin thereof, and a back channel 25 of sheet metal including a widened loop portion adapted to snugly fit within a respective socket finger 7 and to be securely grasped thereby, together with a guard flange 26 formed as an extension of one side of the channel 25. The guard flange 26 is broadly curved away from the median plane of the channel 25 so as to back up the resilient blade 23 in a manner such that the latter may flex into supported contact with the guard flange.

Wiper blades B are insertable and removable from the sockets 7 by sliding them lengthwise into and out of the sockets. When fully inserted, the ends of the back channels 25 engage the ends of wiper block 20 to retain the latter securely in its socket.

Wiper block 20 is clamped between the jaws 16 and 17 by the action of a short bolt 27 which extends through registering apertures in bridge members 9 and 14. With lip 15 fulcrumming against bridge element 9, the tightening of bolt 27 causes the jaws 16 and 17 to be drawn toward one another to frictionally engage the wiper block 20. Excess compression of block 20 is avoided by engagement of the lateral margins of socket sections 8 and 13, thus limiting the extent to which the jaws 16 and 17 can be drawn together. With the margins of socket sections 8, 13 thus in abutting engagement, the bolt 27 may be tightened to the point where the bridge parts 9 and 14 are bowed slightly toward one another, setting up a spring load which functions in the manner of a lock washer to oppose the loosening of the nut of bolt 27.

Bolt 27 may be loosened to facilitate the insertion and removal of blades B whenever replacement is called for. The tightening of the bolt will bring the finger sections 8, 16 into gripping engagement with the back channels 25 of the blades B, so as to clamp them securely in their working position.

Integral with lip 15 and extending along the flaring side margins of bridge 14 are reinforcing flanges 28 which stiffen the bridge 14 and transmit rigidifying torque into the finger sections 13.

In the use of my improved squeegee, it is placed in a position where the edge of a glass louver is received between the blades B within the dihedral recess defined by the angular inclination of the blades to one side of

the handle axis. The dihedral slant of the blades assists in guiding the louver between the blades. In this initial position of application, the longitudinal axis of the squeegee may be substantially parallel to the side margin of the louver. By rotating the squeegee about a transverse axis lying along the forward edge of wiper block 20, the squeegee may be brought to a position wherein the blades 22 extend transversely of the longitudinal axis of the louver, with the full width of the louver embraced between the blades.

In cleaning a louver, the tool is drawn in the direction corresponding to an upward movement in Fig. 4, the blades 23 flexing rearwardly and engaging the faces of the louver with a light wiping action for removing therefrom any previously applied cleaning liquid. Simultaneously, by maintaining wiper block 20 in contact with the edge of the louver, the liquid may be removed from such edge.

I claim:

1. In a squeegee for cleaning window louvers: a holder comprising two sections of stamped metal, one of said sections including a tubular handle, a pair of blade holding sections disposed in spaced parallel relation on opposite sides of the axis of said handle, and a bridge section joining said sections to said handle and the other section including a pair of socket sections and a bridge section terminating in a lip adapted for fulcrumming engagement with the first mentioned bridge section, said bridge sections cooperatively defining a transverse rectangular socket for supporting a transverse strip of wiper material; a pair of spaced transversely extending jaws formed as the inner marginal portions of said bridge sections; and a securing element extending through said bridge sections for drawing said socket sections of said two sections and jaws together; said socket sections, when thus drawn together, defining sockets in the form of channels opening toward one another and adapted to receive and secure the backs of a pair of wiper blades; said sockets being of horseshoe shaped cross section, each including a tubular back and a pair of lips defining a mouth narrower than the socket space within said back; said jaws being formed as substantially coplanar continuations of said socket lips.

2. A squeegee holder as defined in claim 1, wherein one of said bridge sections has an offset forming a rear margin of its respective jaw and providing a back shoulder extending transversely of the handle axis, for positioning said wiper block.

3. In a squeegee for cleaning the louvers of louver windows, a holder comprising: a pair of formed sheet

metal sections one of which includes at one end a handle, a pair of socket sections at its other end, and a generally flat triangular bridge section integrally joining said socket sections to said handle in spaced parallel relation on respective sides of the handle axis, said bridge section being inclined at a small angle relative to the handle axis so as to dispose said finger sections substantially in a plane of said axis; and a complementary section including a pair of socket sections and a second bridge section of generally isosceles trapezoid form having a small end terminating in a lip bent at right angles to the body thereof and adapted to have fulcrumming engagement with the inner face of said first mentioned bridge section, said socket sections having outer marginal edges in abutting relation and cooperating to define wiper blade sockets of substantially horseshoe cross section including spaced back portions cooperatively defining a channel for receiving the back of a wiper blade and marginal lips defining restricted openings along the sides of said sockets, said second mentioned bridge section being inclined with respect to its socket section, at an angle corresponding to the aforesaid angle whereby the two bridge sections are disposed in substantially parallel spaced relation; said bridge sections having inner marginal portions disposed substantially parallel to the common plane of said sockets and extending transversely of the handle axis to provide clamping jaws for a short strip of wiper material for wiping the edge of a window louver, and a bolt extending through registering apertures in said bridge sections and operative to draw said bridge sections toward one another under flexure so as to spring load said socket sections into abutting engagement so as to maintain the respective sockets closed and to draw said jaws together into clamping engagement with said wiper strip.

4. A holder as defined in claim 3, wherein at least one of said bridge portions includes an offset portion between the body thereof and its respective jaw, providing a transverse shoulder for positioning the inner edge of said wiper strip in its socket.

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