Sept. 13, 1932. C. J. THOMAN ET AL 1,877,620

GLASS CHANNEL REMOVER

Filed March 16, 1931 2 Sheets-Sheet 1

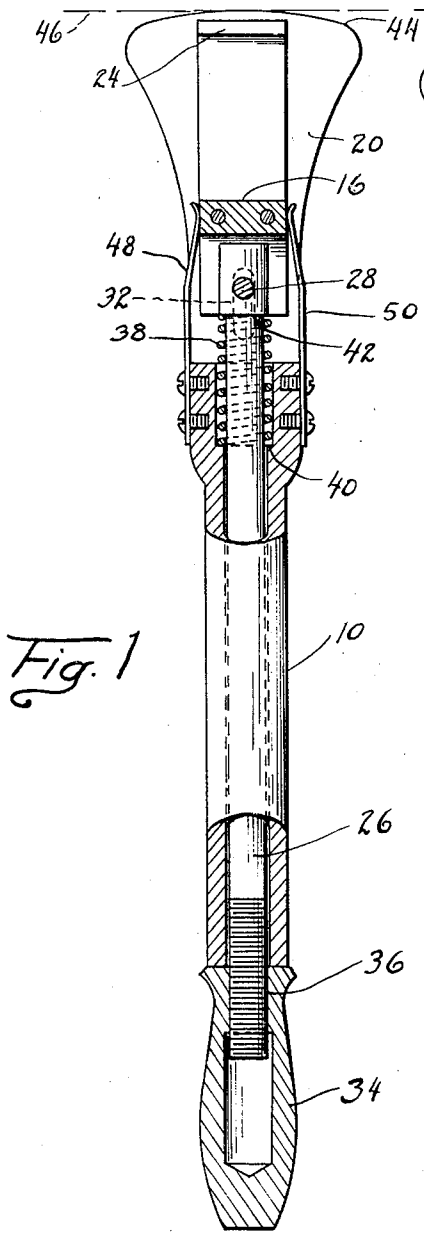


Fig. 1

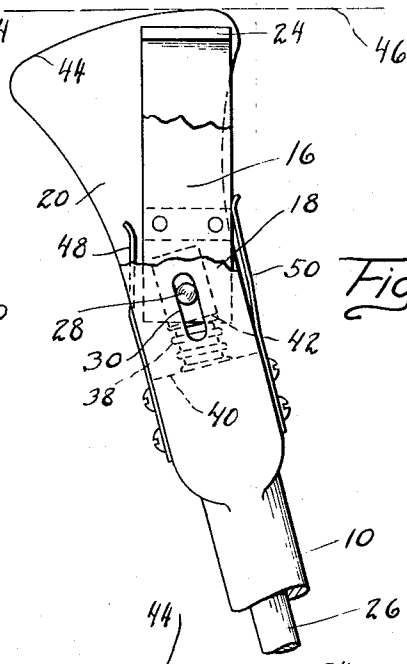


Fig. 3

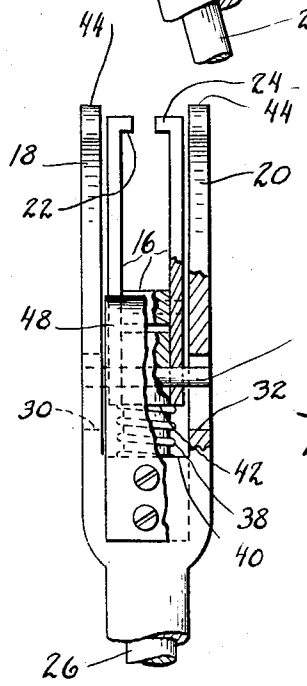


Fig. 2

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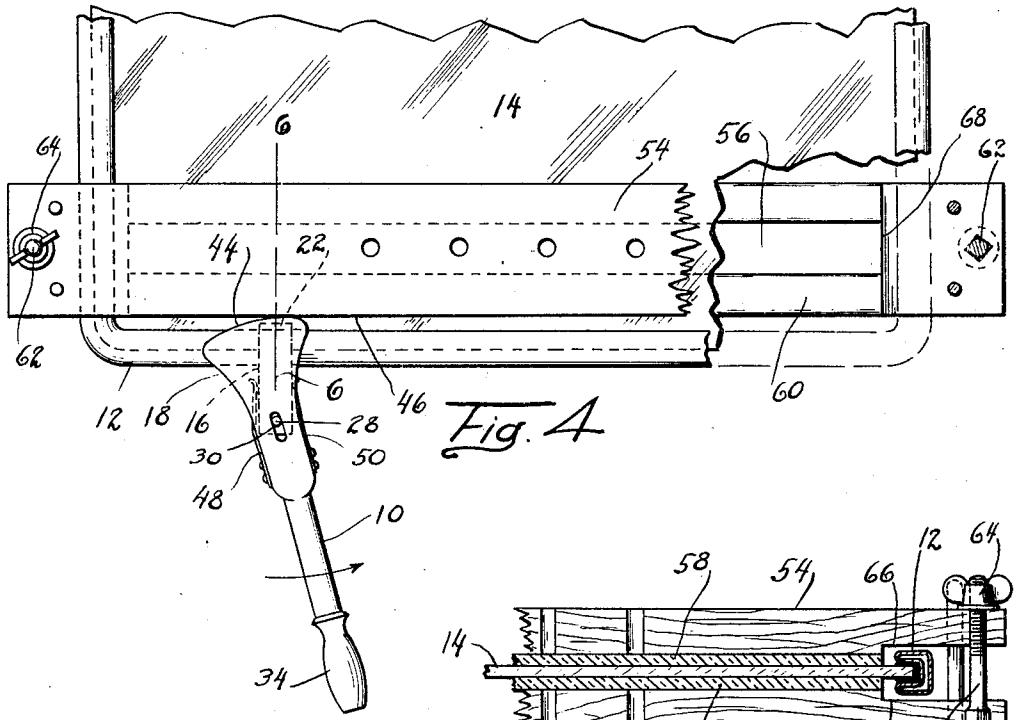


Fig. 4

Fig. 5

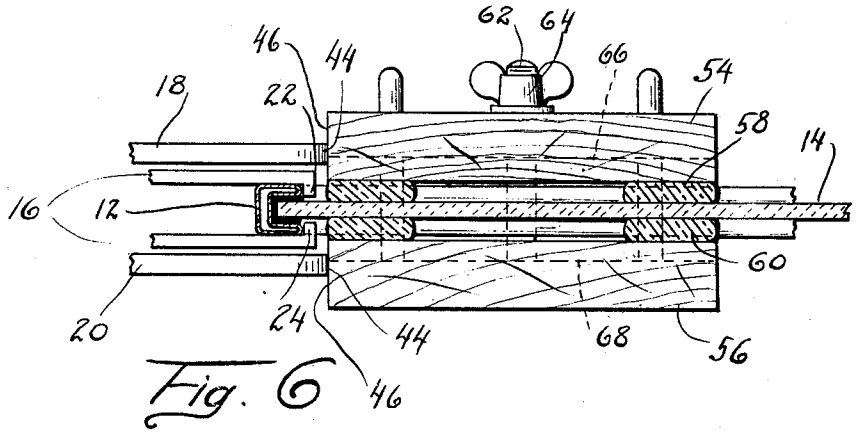


Fig. 6

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UNITED STATES PATENT OFFICE

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GLASS CHANNEL REMOVER

Application filed March 16, 1931. Serial No. 522,928.

This invention relates to the removal of window sash channels from the glass pane upon which the channels are mounted and has particular reference to mechanism such as a tool adapted to be employed to remove metal channels or the like from glass panes. It is particularly intended for use in removing metal window sash such as is used on the glass panes of closed automobile bodies in the doors, windows, or windshields of such bodies.

An object of the invention is to facilitate the removal above specified by the provision of a tool which is simple in construction, rapid in operation, and automatically adapted to adjust itself to the work in hand.

Various other meritorious features reside in the particular combination and arrangement of parts to be hereinafter more clearly described in conjunction with the accompanying drawings wherein:

Fig. 1 is an elevation for our improved tool, partly broken away and in section.

Fig. 2 is an elevation at right angles to that of Fig. 1, partly broken away and in section, of the operating end of the tool,

Fig. 3 illustrates one position in the operation of removal,

Fig. 4 is a plan view showing one means of holding the glass during the removal of the channel.

Fig. 5 is a section through the glass clamping vise, and

Fig. 6 is a section on 6—6 of Fig. 4.

This tool comprises a lever 10 which includes means for clutching the metal channel 12 in which glass pane 14 is customarily mounted. It is so designed that upon application of power in a horizontal direction the channel is loosened and withdrawn from the glass 14.

The lever 10 is provided with a movable member 16 pivotally disposed between the bifurcated rigid ends 18 and 20 of the lever. The member 16 includes a pair of fingers 22 and 24 which are pivotally connected to a draw bar 26 which extends through the bore of the lever 10. This pivotal connection is by means of the pin 28 which seats in the longitudinal guide slots 30 and 32 provided in the bifurcated lever arms 18 and 20. One purpose of these guide slots is to limit the axial movement of the drawbar 26 as it is adjusted for various glass and channel combinations by means of the knob 34 which threads over the externally threaded upper end 36 of the draw bar 26, and which bears against the end of the handle 10 and constitutes an extension thereof.

A coil spring 38 is seated between a shoulder 40 in the axial bore of the lever 10 and a shouldered portion 42 at the extremity of the drawbar 26 formed by the pivoted ends of the fingers 22 and 24. This spring provides for the return of the finger to normal position after the channel has been removed, or when it becomes necessary to move the lever longitudinally to a point where the channel is still firmly secured to the glass, and it maintains a normal spring tension on the fingers. The spring also serves to permit axial adjustment of the drawbar 26 by rotation of the knob 34 without unscrewing the knob from the threaded extremity 36 of the said drawbar.

The bifurcated arms 18 and 20 of the lever handle are rounded at their tips into the cam shape illustrated at 44, the extremity of the camming surface being adapted to overlie the extremity of the fingers at any point of their axial adjustment. Flat springs 48 and 50 normally maintain the fingers 22 and 24 in axial alinement as illustrated in Fig. 1, and are secured to the sides of the lever 10 as by means of screws 52.

Although it will be apparent that a number of structures for holding the glass and channel which is to be removed therefrom may be devised, we have illustrated in Figs. 4–6 an improved vise well adapted to serve this function. This vise may be made of two laterally extending members 54 and 56 of sufficient length to overlap any glass which may be worked upon. Each of these members may be rubber faced, or cushioned, as by means of the strips 58 and 60 on the side which is adapted to contact the glass. Means for drawing the members together are provided. This may consist of bolts 62 in conjunction with wing nuts 64, the said bolts

being firmly secured in one of the members 56 and having a sliding fit in the other, 54.

Each of the lateral members is cut away as at 66 and 68 on adjacent sides sufficiently to allow clearance for the end sash channels of the glass, if it is considered that it is the side sash channel which is being engaged by the tool, and to insure pressure being exerted entirely across the surface of the glass on clamping movement to avoid possible breakage thereof.

In the operation of the tool to remove a sash channel the bifurcated end of the handle is inserted, as shown in Fig. 4 over the sash channel with the fingers 22 and 24 engaging the channel grippingly on opposite sides of the glass, and the rounded tips of the bifurcated end bearing against the vise members 54 and 56. The longitudinal edges of the members 54 and 56 constitute fulcrum surfaces 46 upon which the camming surfaces 44 of the two arms 18 and 20 of the bifurcated end are adapted to seat. The fingers 22 and 24 grip the metal channel 12, as clearly indicated in Fig. 6, and reciprocal horizontal swinging movement of the lever 10 as shown in Fig. 4 will result in the graduated application of drawing power to pull the channel away from the glass positioned therein.

Having illustrated a preferred form of our invention, various modifications will be apparent to those skilled in the art and for that reason we intend to limit ourselves only within the scope of the appended claims.

What we claim:

1. A pulling device comprising in combination an abutment detachably secured to and extending across a glass pane adjacent to a frame secured about the edge of the pane and a pulling tool provided with means engaging said frame and with a part projecting beyond said means and rockably engaging said abutment whereby upon rockable movement thereof over said abutment said frame engaging means is pulled outwardly.

2. A pulling device of the character described comprising abutment means detachably secured to the opposite sides of a panel adjacent one framed edge thereof and a pulling tool provided with gripping means engageable with the frame on the panel and with a bifurcated thrust portion projecting beyond said gripping means and rockably engageable with the abutment on both sides of the panel.

3. A pulling device of the character described comprising abutment means detachably secured to the opposite sides of a panel adjacent one framed edge thereof and a pulling tool provided with gripping means engageable with the frame on the panel and with a bifurcated thrust portion projecting beyond said gripping means and rockably engageable with the abutment on both sides of the panel, said gripping means and thrust portion being pivotally articulated and said gripping means being adjustable lengthwise with respect to said thrust portion.

4. A pulling device for removing a frame from a panel comprising abutment means adapted to be detachably secured to opposite sides of the panel adjacent said frame to extend along said frame, a pulling tool having gripping fingers adapted to engage said frame and provided with thrust portions extending beyond said gripping fingers on both sides of the pane and rockably engaging said abutment upon both sides of the panel, said gripping fingers pivotally articulated with the thrust portions to permit rockable movement of the thrust portions over the abutment without any corresponding rockable movement of the fingers with respect to the frame.

In testimony whereof, we, CHARLES J. THOMAN and WILLIAM WESTCOTT, sign this specification.

CHARLES J. THOMAN.
WILLIAM WESTCOTT.