

April 23, 1929.

G. E. GRIMM
WINDOW REGULATOR

1,710,091

Filed Nov. 22, 1922

2 Sheets-Sheet 1

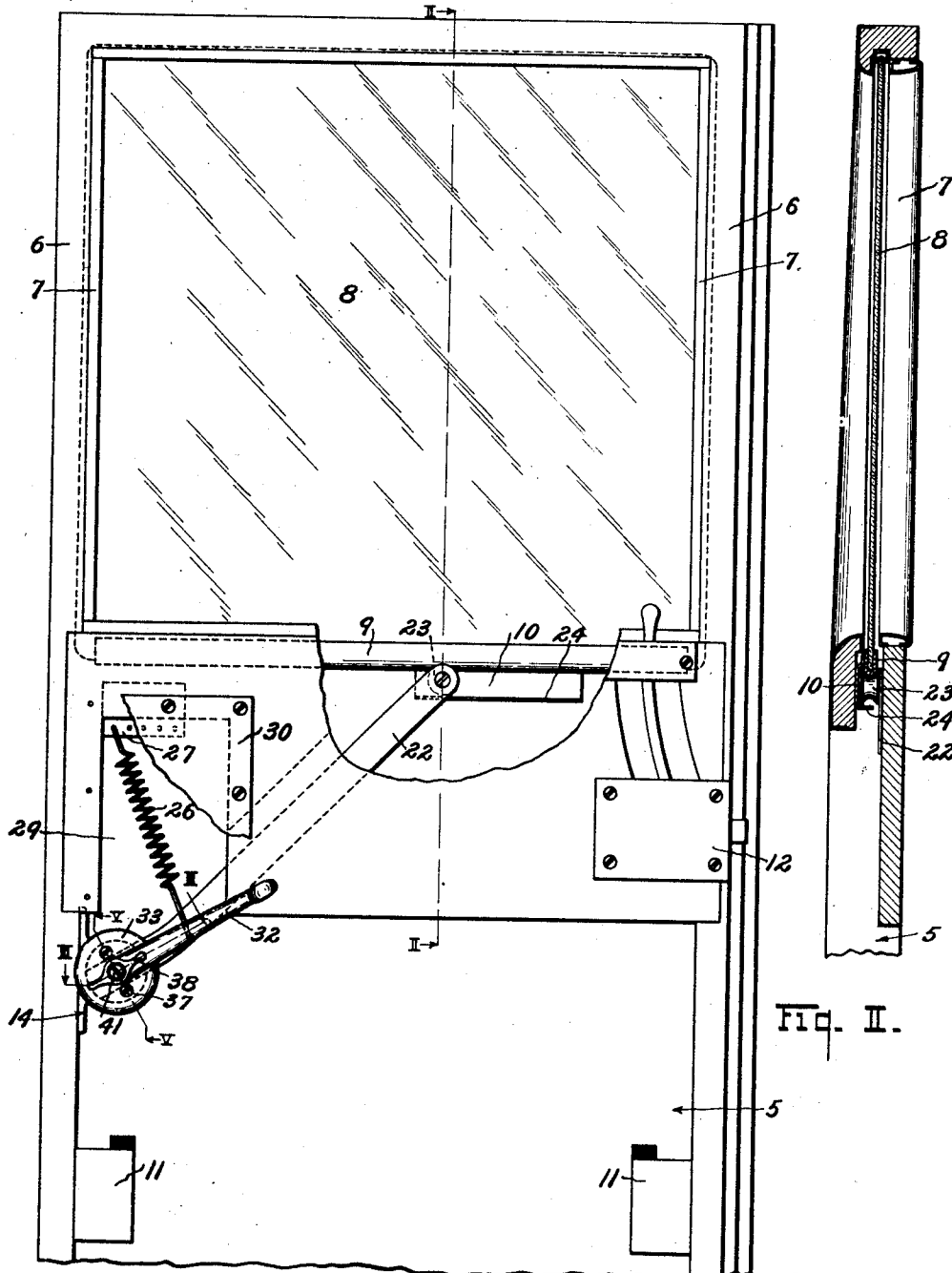


Fig. I.

Fig. II.

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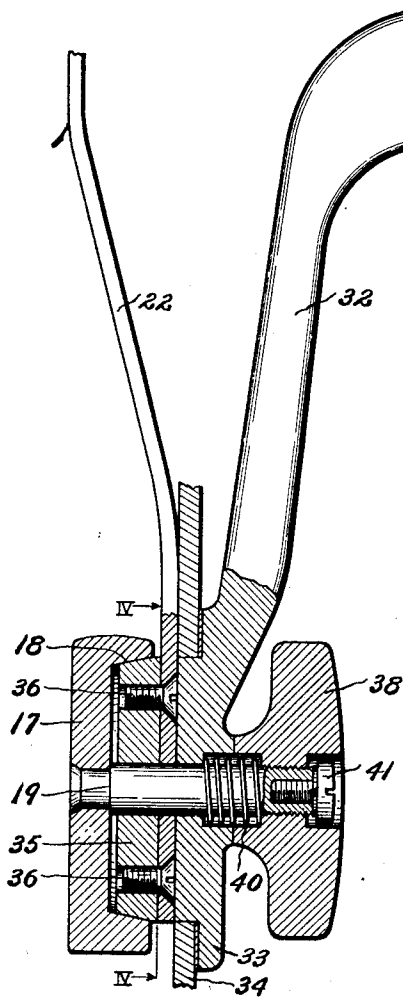


Fig. III.

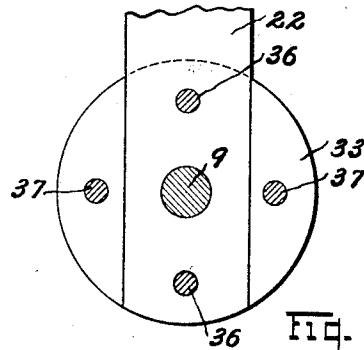


Fig. IV.

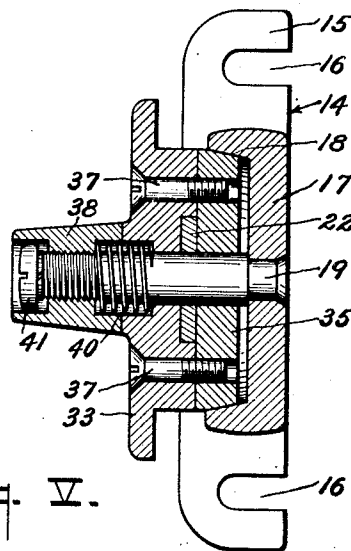


Fig. V.

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UNITED STATES PATENT OFFICE.

GEORGE E. GRIMM, OF TOLEDO, OHIO, ASSIGNOR TO THE WILLYS-OVERLAND COMPANY, OF TOLEDO, OHIO, A CORPORATION OF OHIO.

WINDOW REGULATOR.

Application filed November 22, 1922. Serial No. 602,524.

This invention relates to window control mechanisms, and particularly to the mechanisms for raising and lowering the vertically slidable windows of automobiles.

5 An object of the invention is to provide a simple, efficient and conveniently operable means for raising and lowering such a window, and for retaining the same in any desired position of adjustment.

10 In the accompanying drawings forming a part hereof,

Figure I is an inside view of an automobile door with the inner covering removed, and with parts broken away to better show my invention applied thereto.

15 Fig. II is a vertical cross-sectional view taken on the line II—II of Figure I.

20 Fig. III is a cross-sectional view on a larger scale, taken on the line III—III of Figure I.

Fig. IV is a cross-sectional view taken on the line IV—IV of Fig. III, and

25 Fig. V—V is a cross-sectional view on a larger scale, taken on the line V—V of Figure I.

Referring to the drawings, reference number 5 denotes as a whole, an automobile door having its stiles 6 provided with guides 7 for a sliding glass 8. The lower edge of the glass has a binder strip 9 secured thereto, and attached to this strip is a bracket 10, the purpose of which will be described hereinafter. Buffers 11 serve to limit the downward movement of the glass.

35 At that side of the door opposite the lock 12, a bracket 14 is secured to the inner face of the adjacent stile, and on this bracket is mounted the window regulating mechanism. The bracket 14 comprises a flat attaching portion having a pair of screw slots 16 through which pass the securing screws, and a circular clamping and post attaching portion 17. This latter portion is provided with a circular beveled edged recess 18, in the center of which is carried a post 19 which may be fixed to the bracket by providing a shoulder to engage the side thereof, and by riveting over the end as illustrated by Fig. V. A counterbalance lever 22 is pivotally mounted at one end on the post 19, and at its free end, carries a roller 23 having a concave face to fit the rounded edge of the strip 9. The aforementioned bracket 10 has a flange 24 along its lower edge, which is engaged by the roller 23 when the window is lowered. A

counterbalance spring 26 is adjustably connected to the lever 22 and to a plate 27 attached to the door frame. To make room for this spring, a portion of the door structure is cut away as at 29, and the opening thus made, covered by a plate 30.

A handle 32, by which the window is shifted, has a flange 33 which overhangs and slides on the inner covering 34 of the door and is pivotally mounted upon the post 19. On its under side, it is provided with a channel to receive the end of the counterbalance lever. A disk 35 having its edge beveled to correspond with the bevel of the recess in the bracket 14 is secured to the counterbalance lever 22 by two screws 36, and is also secured to the handle 32 by two other screws 37 positioned at right angles to the first mentioned screws. The handle, lever and disk are thereby held together as a unit, freely rotatable on the post 19, and also free to move axially thereon. For clamping the lever and handle in any desired position of adjustment, a winged nut 38 is threaded on the outer end of the post 19 so that when the same is turned in one direction, the disk 35 is pressed into wedging engagement with the bracket 14. The adjoining portions of the handle and the nut are shown provided with enlarged bores which receive a coil spring 40, the purpose of which is to resiliently hold the disk and bracket in engagement when the nut is loosened, and to prevent rattling of the parts. A screw 41 threaded into the end of the post 19 and having its head seated in a counter-sink in the nut 38, limits the outward movement of the nut.

To change the adjustment of the window having the above described adjusting or regulating mechanism, it is only necessary to loosen the winged nut 38, move the handle 32 the desired amount in the proper direction, and tighten the nut. The window being counterbalanced, little effort is required in moving the handle, and the angle moved is somewhat less than a right angle with the parts constructed and arranged as illustrated. It will be noted that the above described construction is extremely simple and sturdy, comprises but a few parts, is easily operated, and may be clamped to hold the window precisely in any desired position.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A window-lift support for a vertically slidable window, comprising a lift arm for actuating a window, a bracket having a conical recess mounted adjacent said window, a pivot post fixedly mounted within said recess, a conical member secured to said window-lift arm, said conical member being rotatably mounted on said post and adapted to fit within said recess, clamping means on said post for forcing said conical member into engagement with the conical walls of said recess, and a spring for lightly urging said conical member into said recess when the clamp is loosened.
2. A window-lift support for a vertically slidable window comprising a lift arm for actuating a window, a bracket having a conical recess mounted adjacent said window, a pivot post fixedly mounted within said recess, a conical member secured to said window lift arm, said conical member being rotatably mounted on said post and adapted to fit within said recess, a clamp screw on said post for forcing said conical member into engagement with the walls of said recess, a stop on said post for limiting the outward movement of said clamp screw, and a spring for lightly urging said conical member into said recess when the clamp screw is loosened.

In testimony whereof, I affix my signature.

GEORGE E. GRIMM.