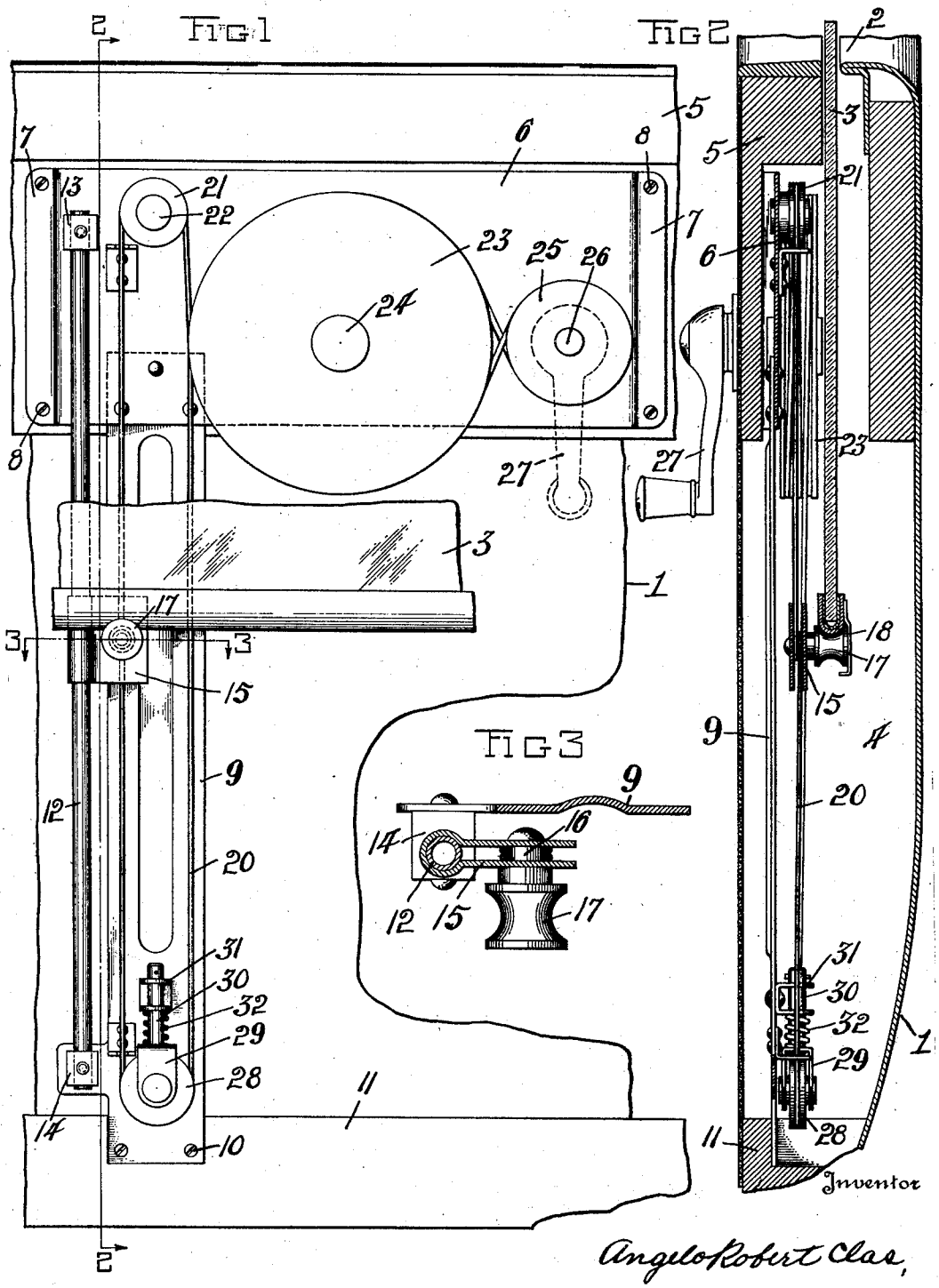
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A. R. CLAS

WINDOW CONTROL MEANS

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UNITED STATES PATENT OFFICE.

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WINDOW-CONTROL MEANS.

Application filed May 5, 1924. Serial No. 710,973.

To all whom it may concern:

Be it known that I, ANGELO ROBERT CLAS, a citizen of the United States, and a resident of Toledo, in the county of Lucas and State of Ohio, have invented a new and useful Window-Control Means, which invention is fully set forth in the following specification.

This invention relates to window raising and lowering mechanisms, and particularly to those of the cable type adapted for use in connection with the windows of closed automobiles or the like.

The object of the invention is the provision of a mechanism of the class described, which is simple, efficient and inexpensive in construction, is capable of being easily operated to raise or lower an associated window, and adapted to be inserted in or removed as a unit from the window casing with which associated.

Further objects and advantages of the invention will be apparent from the following detailed description thereof.

While the invention in its broader aspect is capable of embodiment in numerous forms, a preferred embodiment thereof is illustrated in the accompanying drawings, in which,—

Figure 1 is an elevation of a mechanism embodying the invention and associated with a door and slidable window member of a closed vehicle, the door and window member being fragmentarily shown with the window member partly lowered. Figure 2 is a vertical fragmentary section of the door and associated window member taken on the line 2—2 in Fig. 1, with the mechanism embodying the invention in operative relation thereto, and Fig. 3 is an enlarged section of the mechanism on the line 3—3.

Referring to the drawings, 1 designates a frame or casing, in the present instance the door of a closed automobile, which is provided in its upper portion with a window opening 2 adapted to be closed by a slidable glass or window member 3, and forming a chamber 4 in its lower portion into which the window member may be lowered and in which the control means embodying the invention is disposed. The door or casing 1 is provided in the upper portion of the chamber 4 at the inner side thereof with the customary lock-board 5.

The mechanism embodying the invention includes a frame plate 6, which is secured to the inner side of the lock-board 5, preferably in spaced relation thereto by reason of the end edges of the plate being laterally flanged and having feet 7 resting against the lock-board. The plate feet 7 are rigidly secured to the lock-board by screws 8. One end of the frame plate 6 is disposed near the horizontal center of the window member 3 and is provided at such end with a downwardly projecting extension arm 9 that is braced at its lower end by being secured by screws 10, or in any other suitable manner, to the lower cross-bar 11 of the door 1.

A vertical guide bar 12 is disposed adjacent to one side edge of the frame arm 9 and extends from near the upper edge of the plate 6 to near the lower end of the extension arm 9 in inwardly spaced relation thereto. This guide bar is secured at its upper end to a boss 13 projecting from the plate 6 and at its lower end to a boss 14 projecting from a side extension or ear on the lower end portion of the arm 9. A slide 15 is guided by the bar 12 for reciprocatory movements longitudinally thereof and has a stub shaft 16 projecting laterally therefrom, and such shaft has a roller or enlargement 17 on its outer end on which the lower edge of the window member 3 is adapted to rest near its central portion. A hook finger 18 (Fig. 2) is secured to the lower edge of the window member and extends down under the member 17 to retain the edge of the window member in engagement therewith.

The operating means for imparting raising or lowering movements to the window member includes a cable 20, which is fixedly connected to the slide 15, in the present instance to the stub shaft 16 thereof, and extends upward therefrom to near the upper edge of the plate 6, thence passes over a guide sheave 21 carried by a stub shaft 22 projecting from the plate, and thence passes down and under a drum 23, which is disposed at the same side of the plate 6 with the sheave 21 and is mounted on a stub shaft 24 projecting from the plate. The cable passes one or more times around the drum 23, and thence over, and one or more times around, an operating drum or sheave 25. This drum is preferably smaller than the drum 23 and is carried by a drive shaft 26 journalled in the plate 6 and lock-board 5, and is provided at the inner side of the door or casing 1 with an operating crank or member 27. The cable 20 after passing from

the operating drum 25 extends over the drum 23 and then down to the lower end of the extension arm 9 around a guide sheave 28 and then up to the slide 15, attaching shaft 17 thereof. The guide sheave 28 is yieldingly mounted to maintain the cable taut and for such purpose is carried by a fork 29 having a stem 30 projecting upward therefrom and slidingly mounted in a bracket 31 on the extension arm 9. A coiled expansion spring 32 encircles the stem between the bracket and fork to normally retain the sheave in outwardly extended position.

It is evident that a turning of the operating crank 27 will impart movement to the cable 20 to effect a raising or lowering of the slide 15, and with it the window member 3, the slide 15 being guided in its movements by the guide rod 12. It is found in practice that in window raising and lowering mechanisms of the cable type it is quite important for satisfactory operation to have the member which connects the cable with the window member guided for true vertical sliding movements, instead of being free to swing in and out with the cable between the upper and lower guiding points thereof. This guiding means also prevents a tipping of the window engaging member due to the window weight being applied thereto in laterally spaced relation to the cable.

It is evident that I have provided a simple construction of window raising and lowering mechanism which is composed of a few parts and is adapted to be inserted in or removed as a unit from the door or casing with which associated.

I wish it understood that my invention is not limited to any specific construction, arrangement or form of the parts as it is capable of numerous modifications and changes without departing from the spirit of the claim.

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

The combination with a casing, and a member mounted for sliding movement in said casing, of a frame plate secured to the casing at one side of said member and having an arm extending therefrom in a direction parallel to the movement of said member, a cylindrical guide rod fixed at its ends to said plate and arm respectively and extending parallel to the movement of the slide member at a side thereof, a slide having a curved portion engaging said cylindrical guide rod for movement thereon, thereby to permit slight lateral movement between the slide and rod, means on said slide to support said slide member, a plurality of guide sheaves carried by said plate and arm, one of which acts as an operating sheave, operating means connected to said operating sheave, and a cable guided for movements by said sheaves and actuated by a rotation of the operating sheave, said cable having a flight portion parallel to and co-extensive with the permissible movements of the slide member and attached to said slide to move it therewith.

In testimony whereof I have hereunto signed my name to this specification.

ANGELO ROBERT CLAS.