April 13, 1937. D. L. CHANDLER 2,076,938

AUTOMATIC AUTOMOBILE WINDOW ELEVATING MECHANISM AND LOCK

Filed Aug. 7, 1935

Fig. 1.

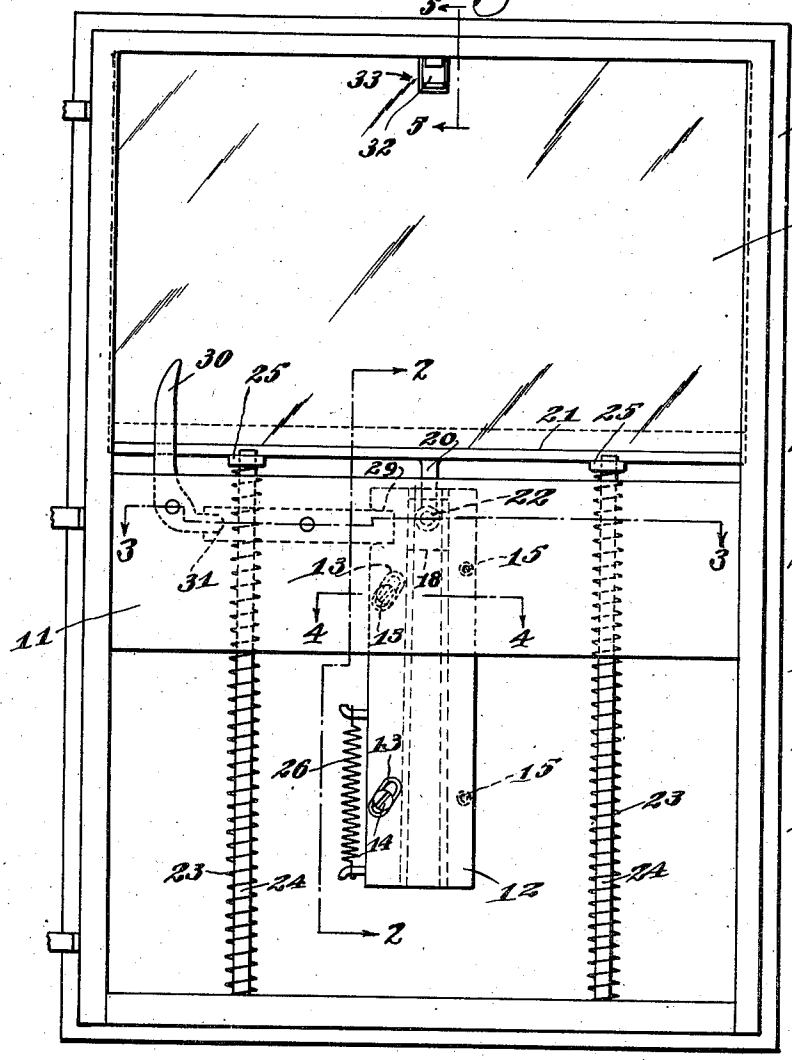


Fig. 2.

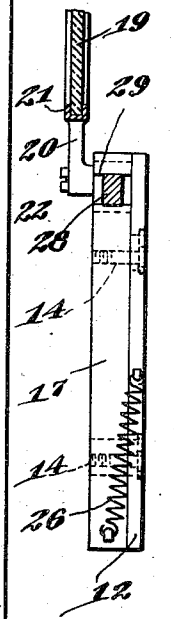


Fig. 3.

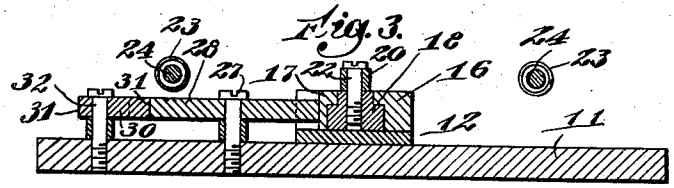
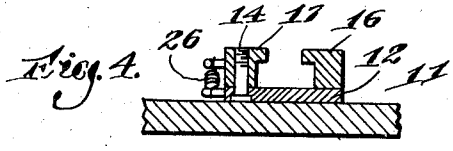


Fig. 4.



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AUTOMATIC AUTOMOBILE WINDOW ELEVATING MECHANISM AND LOCK

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Application August 7, 1935, Serial No. 35,098

3 Claims. (Cl. 188—166)

My present invention relates to elevating mechanism, and more particularly to automatic automobile window elevating mechanism.

In the automobile trade there has been a long felt want for a window sash which can be easily raised without the laborous use of cranks and similar devices generally in use.

In my present invention, I have designed an elevating mechanism which is simple of construction and automatic in operation. My improved mechanism permits the operator to elevate the window sash easily, quickly or slowly as the desire may be by simply pressing a lever on the door frame. The sash may be instantly stopped at any desired opening, or the entire sash may be raised and locked with one motion of the operator's hand and within a second or two of time.

The principal object of my invention is therefore, an automatic window sash elevating mechanism;

Another object is an automatic automobile window sash elevating mechanism operated by means of pressure applied against a release mechanism;

Another object is an elevating mechanism of a window sash which may be operated fast or slow and stopped at any desired point by the simple increase or decrease of pressure applied to a release mechanism located on the window frame remote from the lower limbs of the operator;

Another object is an automatic window sash elevating mechanism which allows the sash to be pulled down easily and which will maintain such sash in any position from which it may be instantly released a short distance or all the way.

Other objects and novel features comprising the construction and operation of my device will be apparent as the description of the same progresses.

In the drawing illustrating the preferred embodiment of my invention:

Fig. 1 is a back elevation of an automobile door to which my invention has been applied, the covering material on the lower half of the door having been removed to show the mechanism more clearly;

Fig. 2 is a cross-section taken on the line 2—2 of Fig. 1 showing a side elevation of the locking mechanism;

Fig. 3 is a plan cross-section taken on the line 3—3 of Fig. 1 showing the release lever and part of the locking mechanism, and

Fig. 4 is another plan cross-section taken on the line 4—4 of Fig. 1 showing further details of the locking mechanism.

Referring more in detail to the drawing and particularly to Fig. 1, 10 indicates the conventional door frame of an automobile door, the lower half of which is closed the sash elevating mechanism being inclosed between the outside sheet metal finish and the inside covering, not shown, 11 indicates a transverse frame member upon the back side of which I have attached my elevating locking members.

Directly behind the frame 11 I have attached a vertical plate 12. On the left side of the plate 12, as viewed in Fig. 1, I have provided slotted openings 13, the top slot of which is shown in dotted lines being hidden by the frame 11. The slots 13 are counterbored on the side of the plate 12 adjacent the frame 11, as shown in Fig. 1 for the purpose of receiving the flat head of a bolt 14 also indicated in Figs. 2 and 4. On the right-hand side of the plate 12, as viewed in Fig. 1, I have attached by means of screws 15 a vertical slide guide 16 which is immovable. On the opposite side of the plate 12 opposed to the guide 16 is a corresponding tapered guide member 17 in which the bolts 14 are firmly set, the two guides 16 and 17 together forming a slide-way. The guide member 17 comprising a part of the said slide-way is provided with an inner slide-way surface which is inclined toward the guide member 16, the space separating the members 16 and 17 being narrower at the top than at the bottom, in which is located a slide 18. The slide 18 is indirectly connected with the glass window sash 19 through a bracket 20 which is attached to a window sash frame 21, the pivoted end being connected with the slide 18 by means of a pin 22 fixed in the said slide. On either side of the slide-way I have provided elevating compression springs 23 which are seated against the under side of the window sash frame 21 and the bottom frame of the door 10. Within the springs 23 I have placed guide rods 24. These rods 24 are firmly fixed to the bottom of the door frame 10 and are slidably entered in the off-set guide brackets 25 attached to the window sash frame 21. When the sash 19 is pushed down the guide brackets 25 compress the springs 23 as they travel down the rods 24 in back of the door frame 11 as indicated in Fig. 3.

The guide 17 of the slide-way in which the slide 18 operates is slidably mounted on the plate 12 as indicated in Fig. 1. The bolts 14 are fixed in the guide 17 and due to the elongated slots 13 in which they are guided the guide 17 moves slightly in an upward and inward direction or in a downward and outward direction as the case may be. A tension spring is anchored to the

plate 12 and the movable guide 17 such that the guide 17 is normally thrust upward and inward against the slide 18 thereby tending to pinch or jam the slide 18 against the fixed guide member 16 and halt the upward movement of the window sash at any point within its normal travel. It is this slide-way mechanism to which I previously referred as "my elevating locking members".

Pivoted to the back side of the door frame 11 by means of the pin 27 is a release lever 28. One end of this release lever 28 engages in a slot 29 located in the upper portion of the movable guide member 17. The other end of the release lever 28 is connected with a handle 30 through the medium of a socket 31, the handle being pivoted at 32 to the door frame 11.

Assuming that the window sash and sash frame is in a lowered position at which time the slide 18 will be down toward the bottom of the slide-way and the movable guide member 17 will be snugly pressed against the slide 18 which in turn is snugly pressed against the immovable guide member 16, and owing to the fact that the spring 26 is holding the adjustable guide member 17 against the slide 18 no upward movement of the sash 19 will occur but, if the hand lever 30 is pushed slightly to the left the release lever throws down against the adjustable guide 17 allowing the slide 18 to move upward together with the sash 19 being propelled by the springs 23. The instant the pressure is relieved from the hand lever 30 the guide 17 snaps back against the slide 18 and brings it to a stop. The guide 17 acts in the nature of a brake shoe on the slide 18 and the movement is so slight that the sash can be raised very slowly or very rapidly as the desire of the operator may be.

Having thus described my invention what I claim as new is:

1. A friction lock for self raising window sashes comprising a tapered slideway located in the frame of said window one side of said slideway being movable in an upward and inward direction and normally being held against a slide block engaged in said slideway by means of a spring member attached to the movable and permanent portions of said slideway, a hand operating lever and link member pivoted in the said window frame adapted to depress said slidable portion of said slideway for the purpose of releasing said slide block, a pivoted link member connecting said block with the bottom of said sash.

2. A friction lock for automobile door window sashes or the like comprising, a tapered slide attached to the bottom of said sash, a tapered slideway adapted to receive said slide, one side of said tapered slideway being slidably mounted on the permanent part of said slideway and being further adapted to maintain an inward and upward thrust against one side of said slide by means of a spring tension member connecting said slidable portion with said permanent portion of said slideway, a hand operating lever and link pivoted to the frame of said window and adapted to release said slidable slideway member for the purpose of permitting said slide to move in said slideway.

3. A friction lock for self raising window sashes comprising a tapered slide attached to said sash and engaged in a tapered slideway, one side of said slideway being movable in an inward and upward direction and normally engaging said slide in a friction manner, spring means attached to said slideway adapted to maintain said movable portion of said slideway in friction contact with said slide, means for releasing said slide connecting said movable slideway member.

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