Oct. 3, 1950 W. M. McCOY 2,524,459

SELECTIVE GLASS OR SCREEN RAISING MECHANISM

Filed May 14, 1945

3 Sheets-Sheet 1

Fig. 1

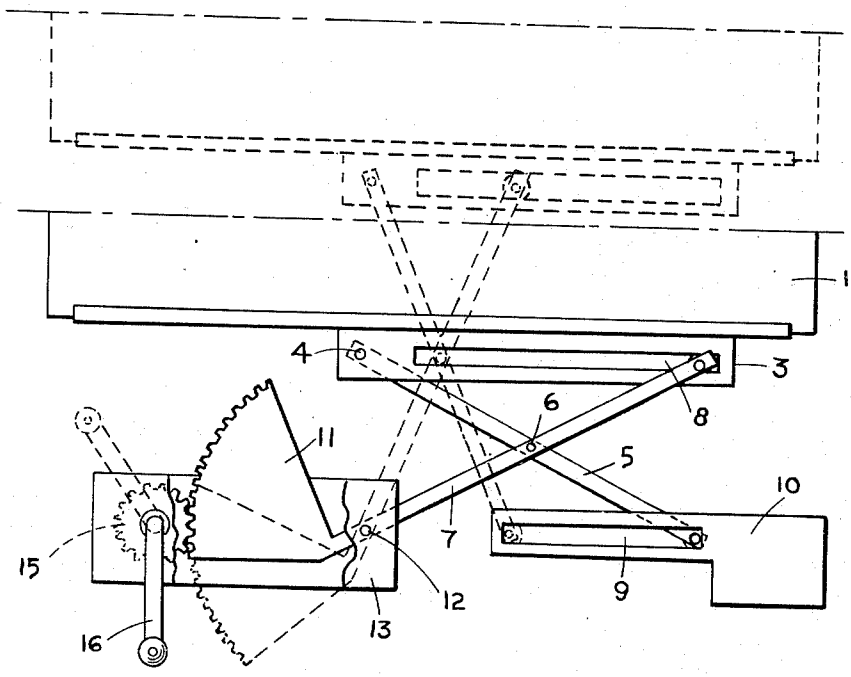
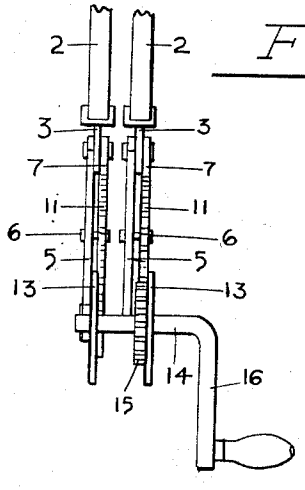


Fig. 2



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Fig. 3

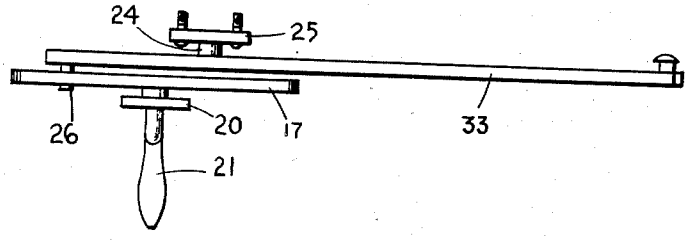


Fig. 4

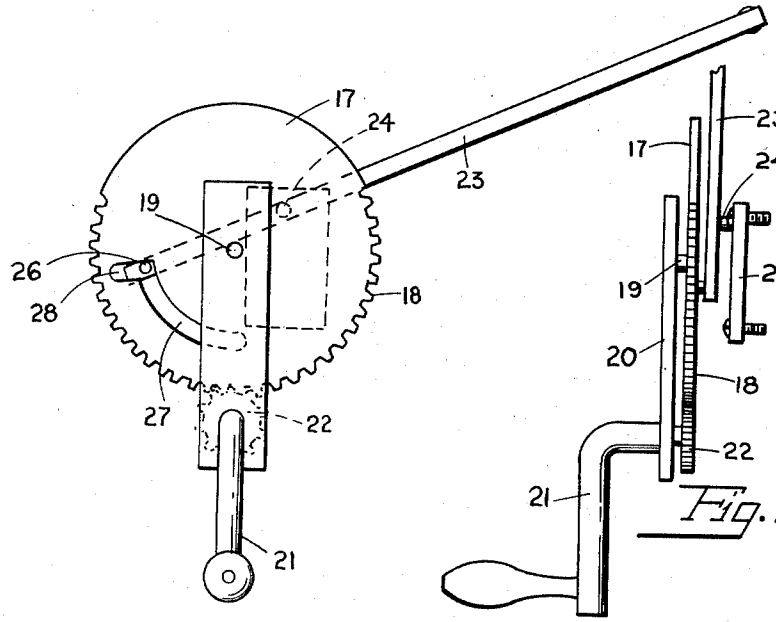


Fig. 5

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Fig. 6

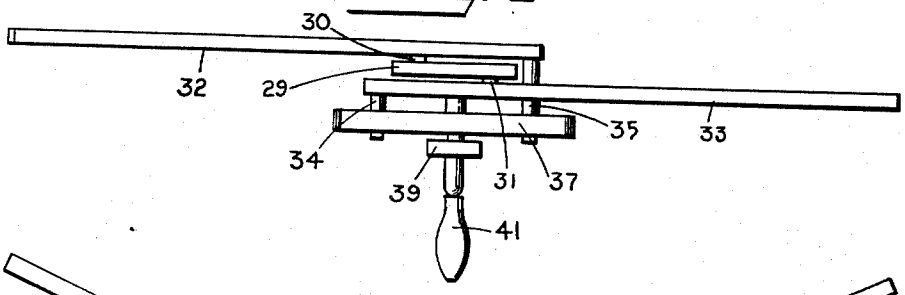


Fig. 7

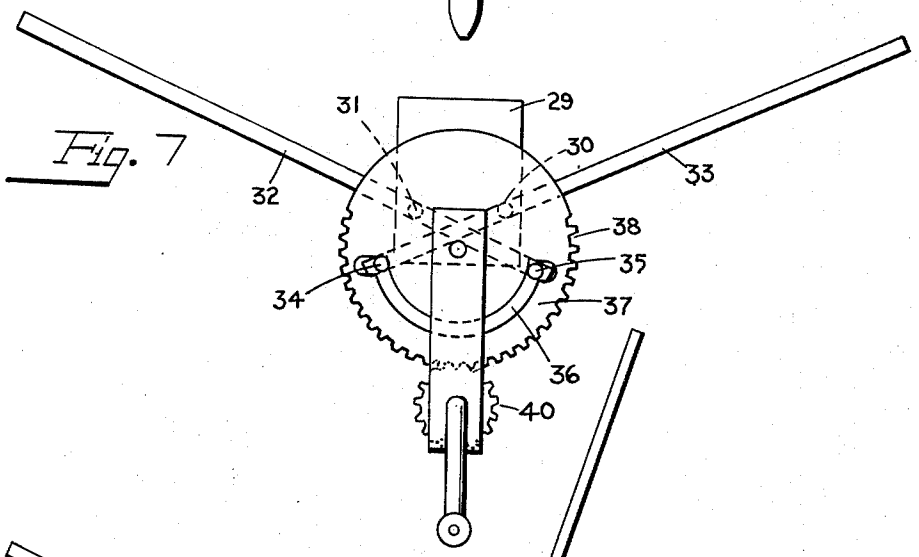
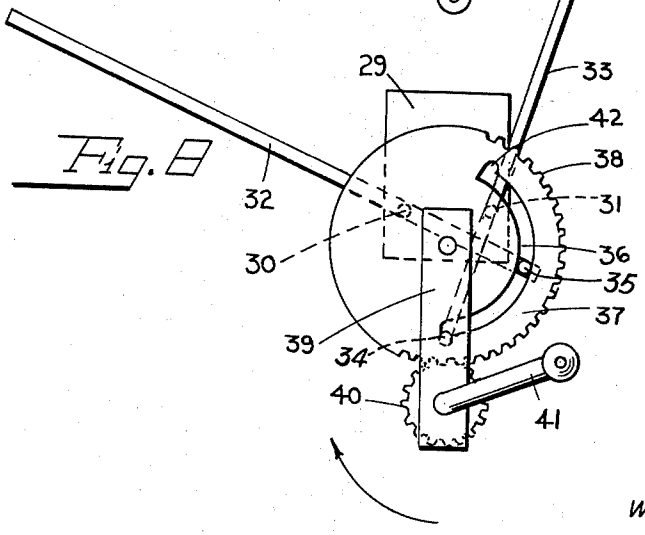


Fig. 8



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UNITED STATES PATENT OFFICE

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SELECTIVE GLASS OR SCREEN RAISING MECHANISM

William M. McCoy, Mansfield, Ohio

Application May 14, 1945, Serial No. 593,614

2 Claims. (Cl. 268—126)

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My present invention, in its broad aspect, has to do with improvements in selective means for raising and lowering a glass or a screen in an automobile window, and employs a raising and lowering arrangement for the glass and a similar raising and lowering arrangement for the screen, with slidable operating means for operating the one or the other so that either the screen or the glass may be raised or lowered. My device is characterized by its simplicity, sturdiness and ease of operation, and the fact that there are no fragil or intricate parts likely to get out of order or to become broken or deranged.

Other and equally important objects and advantages of my invention will be apparent from the following description and drawings, and it is pointed out that changes in form, size, shape, materials, and construction and arrangement of parts are permissible and within the purview of my broad inventive concept and the scope of the appended claims.

In the drawings, wherein I have illustrated a preferred form of my invention:

Figure 1 shows a side view of a lazy tong arrangement for operating a screen or window, and the selective mechanism for operating the same;

Figure 2 is an end view;

Figure 3 is a top plan view of a modified form of my invention using a slotted gear and arm arrangement;

Figure 4 is a side view;

Figure 5 is an end view;

Figure 6 is a top plan view of a modified form of my invention using a single slotted gear for operating two arms to raise a window when a screen is lowered;

Figure 7 is a side view looking toward the back, and

Figure 8 is a side view similar to Fig. 7 with one actuator arm in raised position.

In the drawings, wherein like characters of reference are used to designate like or similar parts throughout the several views:

The numeral 1 designates an automobile window, and 2 a screen. An elongated plate 3 is mounted on the bottom edge of each, to one end of each of which is pivoted as at 4 a lazy tong bar 5, which is pivotally attached as at 6 to a lazy tong arm 7, one end of which is pivotally and slidably mounted in the slot 8 of the plate 3. The remaining end of the lazy tong bar 5 is pivotally and slidably mounted in the slot 9 of a fixed plate 10. The arms 7 of the screen and

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the window operating mechanism each have gear segments 11. These segments extend upwardly from the arm at an angle, as shown in Figure 1, and the arms are pivoted, as at 12, to base plates 13. Mounted to slide through the base plate 13 is a shaft 14 carrying a pinion 15, which selectively engages the two gear segments depending upon the position of the shaft, and a crank handle 16 is provided to rotate the shaft and pinion to operate either the screen or the window.

In Figures 3, 4 and 5, I have shown a circular disk 17 with teeth 18 around a part of its periphery. The disk is rotatably mounted on a pin 19 in the base plate 20. A hand lever or crank 21 is pivoted through the base plate and carries a pinion 22 which meshes with the teeth of the disc. An actuator arm 23 of a lazy tong window or screen operating mechanism, such as is shown in Figure 1, is pivotally mounted, as at 24 eccentric to the axis of rotation of the disk 17, on a mounting plate 25 and on its end is carried a pin 26 fitting in the arcuate concentric slot 27 having a keeper notch 28. The arm 23 is similar to either arm 7 of Figures 1 and 2. Thus, the circular disks 17 and the arms 23 are substituted for their equivalents 11 and 7, respectively, of Figures 1 and 2, for operating the lazy tong arrangement of Figures 1 and 2.

In operation, the hand lever or crank 21 is selectively turned either in a clockwise or in a counterclockwise direction to rotate the disk 17 in opposite directions, respectively, to actuate the arm 23 between upper and lower limits. The pin 26, carried by the arm 23 which is oscillatable about the pivot 24 eccentric to the disk pivot 19, rides into the slot 27 and is caused to enter into the keeper notch 28, when the disk 17 moves counterclockwise, to form a positive connection between the arm 23 and the disk 17 to tilt the arm 23, which functions similar to arm 7 in Figures 1 and 2, to raise the window or screen, as the case may be.

As is obvious to those skilled in the art, although only one set of elements has been illustrated for operating either a window or a screen, these elements are duplicated in actual practice, as shown by Figures 1 and 2, for selectively operating both window and screen. The actuator arm 23 is similar to the arm 7 of the device shown in Figure 1, and the disk and pinion 22 may be substituted for the corresponding unit shown in Figure 1.

In Figures 6, 7 and 8, I have shown a double arm arrangement for operation by a single disk

carrying a rack. The opposite sides of the base plate 29 are pivoted, as at 30 and 31 to lazy tong arms 32 and 33, respectively, such lazy tong arms being a part of the window and screen raising and lowering mechanism, as shown in Figure 1. The ends of the arms 32 and 33 carry pins 34 and 35, one being longer than the other, and each engaging in the arcuate slot 36 in a disk 37 having gear teeth 38 formed in part of its peripheral edge. The disk is rotatably mounted on a base plate 39 and a pinion 40 on the crank handle 41 pivoted to the base plate 39 meshes with the disk teeth to rotate the same, clockwise or counterclockwise, to raise and lower the arms 32 and 33 alternately, and alternately raise and lower the automobile screen and window. Keeper notches 42 are formed at the ends of the slot.

In operation, the pins 34 and 35 slide in the slot 36 and the keeper notches 42 causing the arms 32 and 33 to tilt as in the manner previously explained as to pin 26 and notch 28 of Figure 4. Thus, counterclockwise rotation of disk 37 will result in the pin 34 moving into a notch 42 to tilt the arm 33 to raise, for example, the window while the pin 35 idly slides in the slot 36 resulting in no movement of arm 32, as clearly shown in Figure 8. Clockwise movement of disk 37 will lower arm 33 and raise arm 32, to move upwardly, for example, the screen. It should be obvious to those skilled in the art that each arm 32 and 33 functions identically to arm 7 of Figures 1 and 2.

From the foregoing it is believed that the operation and advantages of my invention will be apparent, but it is again emphasized that interpretation of its scope should only be conclusive when made in the light of the subjoined claims.

I claim:

1. In an actuator for sliding glass plates and screens of windows and the like, the combination which comprises an actuator arm having a pin extended from one side at the outer end thereof and a pin extended from the opposite side on the inner end thereof, a mounting plate on which the actuator arm is pivotally mounted at a point spaced from the inner end of the arm, a toothed disk, a base plate on which the said toothed disk is pivotally mounted at a point spaced from the pivotal mounting point of the said actuator arm, said toothed disk having an arcuate slot therein in which the pin carried by the inner end of the actuator arm is positioned, said arcuate slot described on a radius with the center on the pivotal mounting of the said toothed disk and said disk having a keeper notch at one end of the slot positioned to receive and retain the said pin of the actuator arm providing locking means therefor, a crank pivotally mounted in said base plate, and a pinion on said crank meshing with the said toothed disk for operating the said actuator arm to actuate the said glass plate or screen.

2. In an actuator for sliding glass plates and screens of windows and the like, the combination which comprises a plurality of actuator arms each having a pin extended from one side at the outer end thereof and a pin extended from the opposite side on the inner end thereof, a mounting plate on which the actuator arms are pivotally mounted at a point spaced from the inner ends of the arms, a toothed disk, a base plate on which the said toothed disk is pivotally mounted at a point spaced from the pivotal mounting point of the said actuator arms, said toothed disk having an arcuate slot therein in which the pins carried by the inner ends of the actuator arms are positioned, said arcuate slot described on a radius with the center on the pivotal mounting of the said toothed disk and said disk having radially disposed outwardly extended slots at the ends of the slot positioned to receive and retain the said pins of the actuator arms providing locking means therefor, a crank pivotally mounted in said base plate, and a pinion on said crank meshing with the said toothed disk for operating the said actuator arms to actuate the said glass plate and screen.

WILLIAM M. McCOY.

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