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GARAGE DOOR OPENING DEVICE

Original Filed Oct. 10, 1930

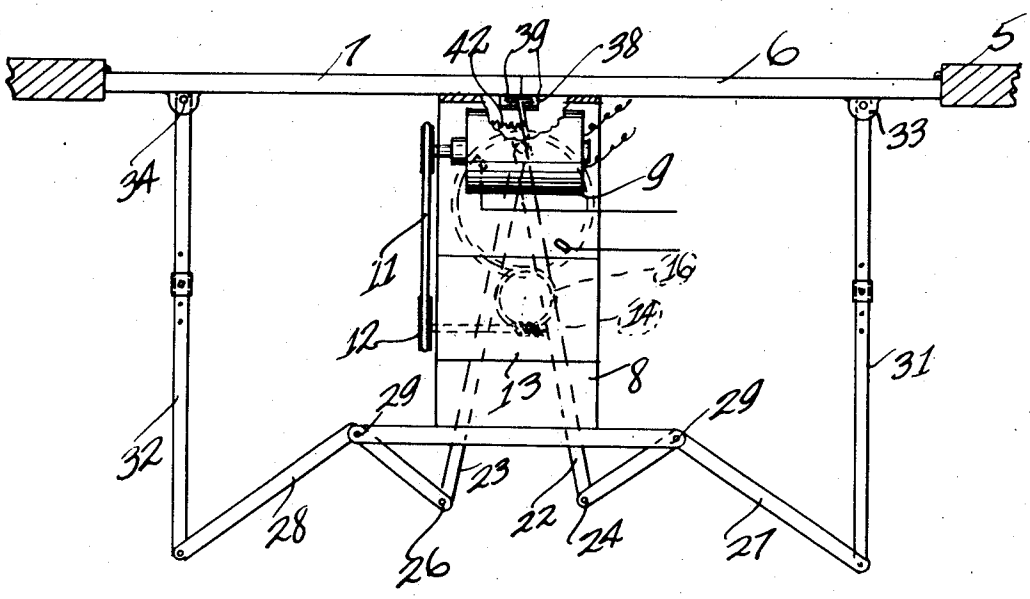


FIG. I.

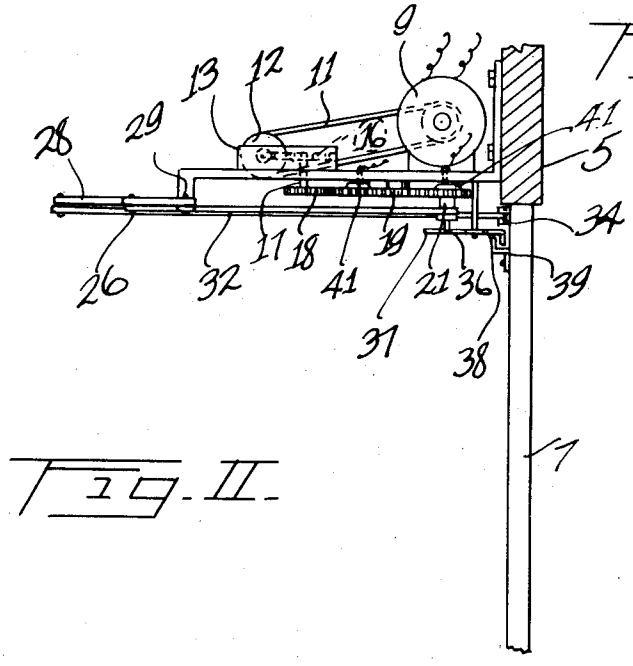


FIG. II.

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GARAGE DOOR OPENING DEVICE

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Renewed December 13, 1932

1 Claim. (Cl. 268—63)

This invention relates to improvements in garage door opening devices.

The principal object of this invention is to provide simple means whereby a garage door may be opened and closed mechanically and from a remote point if desired.

Another object is to produce a device which is simple in construction and therefore economical to install.

A further object is to produce a device wherein the doors will be mechanically locked after being closed.

A still further object is to produce a device which will not interfere with the head room of the garage.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawing forming a part of this specification and in which like numerals are employed to designate like parts throughout the same,

Figure I is a top plan view of a pair of garage doors having my device attached thereto and partly broken away in order to show the locking mechanism, and

Figure II is a side elevation of my device.

It is my intention to employ my garage door opening and closing device in connection with a remotely positioned switch which may be either manually actuated as by a key or automatically actuated when the wheels of a vehicle pass over a trip at a distance away from the door.

In the accompanying drawing wherein for the purpose of illustration is shown a preferred embodiment of my invention, the numerals 5 designate the garage structure to which doors 6 and 7 are pivoted. Secured to the garage is an angle iron support 8 upon which a motor 9 is positioned. This motor 9 drives through the medium of a belt 11, a pulley 12 which pulley is mounted upon a shaft journaled in a block 13 and having a worm 14 which meshes with a worm gear 16. This worm gear in turn drives a shaft 17 to which is secured a gear 18. This gear 18 meshes with a gear 19 supported from the underside of the angle iron bracket 8.

A crank pin 21 has connected thereto rods 22 and 23 which are pivoted as at 24 and 26 respectively to the ends of the bell crank levers 27 and 28 respectively. These bell crank levers are pivoted as at 29 to the arms formed upon the angle iron member 8. Pivoted to the outer ends of the bell crank levers 27 and 28 are adjustable rods 31 and 32 respectively, which have their free ends pivoted as at 33 and 34 to the doors 6 and 7 respectively. The crank pin 21 has a downwardly projecting pin 36 which is in alignment with the end 37 of a pivoted latch member 38. This latch member is adapted to move behind brackets 39 carried upon the door sections 6 and 7. Cams 41 are formed upon the upper surface of the gear 19 and are spaced 180° apart so that at each half revolution these cams will actuate three-way switches thereby stopping the motor after the doors have been opened or closed as the case may be, from a switch locked at a remote point. This remote point may be either within the garage or at a distance down the drive-way from the garage.

It will thus be seen that when a remote three-way switch is actuated, current will cause the motor 9 to transmit motion through the belt 11, to the pulley 12 thence through the worm 14 and worm gear 16 to the gear 18 and gear 19. The first action would be, and assuming that the doors are in closed position, to cause the pin 36 to move the end of the lever 37 against the tension of the spring 42 and thus move the latch out of the path of the brackets 39. Continued movement of the gear 19 will cause the rods 22 and 23 to impart motion to the bell crank levers 27 and 28 and to the adjustable bars 31 and 32, thus causing the doors to open. The opening movement of the doors will first be very slow, which movement will increase during the major portion of the swing and will then decrease during the latter portion of the swing. When the door has reached full open position one of the cams 41 will engage a three-way switch and shut the power off from the motor. As soon as the switch is again operated continued rotation of the motor and gear 19 will act to cause the doors to move to a closed position.

It is to be understood that the form of my invention herewith shown and described is to be taken as a preferred example of the same and that various changes relative to the material, size, shape and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claim.

Having thus described my invention, I claim:—

In a garage door actuating mechanism, a pair of pivoted doors, a support positioned adjacent said doors, a motor positioned on said support, a gear positioned beneath said support, driving means interposed between said motor and said gear, a pair of arms pivotedly secured to said gear, adjustable bars secured to said door and bell crank levers interposed between said adjustable bars and said arms for the purpose specified.

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