Sept. 30, 1924. 1,510,106

J. L. ROBB

DOOR OPENER

Filed May 14, 1923

Fig. 1.

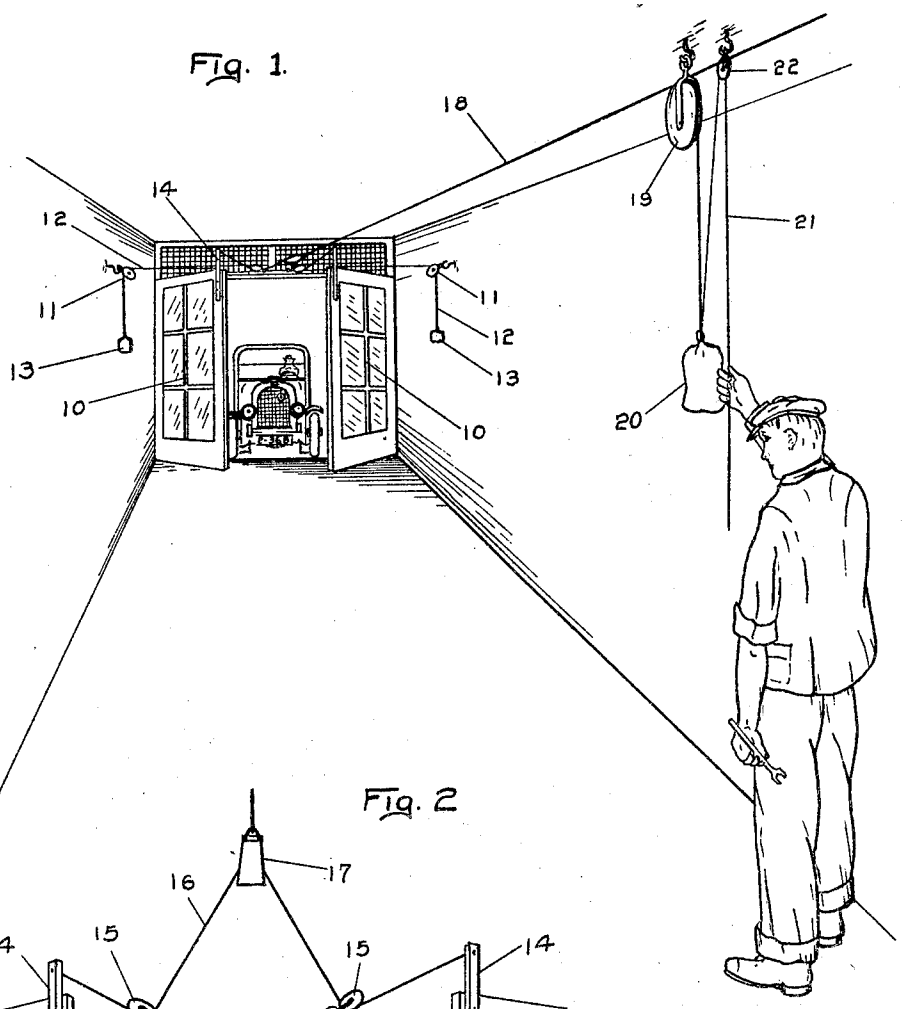


Fig. 2.

J. LAWSON ROBB *INVENTOR.*

BY

Emil F. Lange *ATTORNEY.*

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UNITED STATES PATENT OFFICE.

JAMES LAWSON ROBB, OF LINCOLN, NEBRASKA.

DOOR OPENER.

Application filed May 14, 1923. Serial No. 638,980.

To all whom it may concern:

Be it known that I, JAMES LAWSON ROBB, a citizen of the United States, residing at Lincoln, in the county of Lancaster and State of Nebraska, have invented certain new and useful Improvements in Door Openers, of which the following is a specification.

Public garages and and service stations are usually provided with double doors of the swinging type, and without any special means for opening and closing them. The driver wishing to enter the garage with his automobile announces his presence, whereupon one of the mechanics in the garage opens the doors and then closes them after the automobile is inside. The mechanic's work bench is usually located at some distance from the door, so that the time and energy which he is compelled to waste in walking to and from the door often becomes a serious matter. Added to this however is the time lost in waiting for the automobile to pass through the door and the still more serious loss due to the interruption of the work on which the mechanic is engaged. The money loss to the proprietor is especially great where competent and high priced help is employed in a busy garage where such interruptions are frequent. The object of my invention is the provision of an attachment for swinging garage doors whereby the mechanic at his bench can open and close the doors at will without interruption to his work.

Referring now to the drawings which are part of my application, and in which like numerals refer to like parts in the description,

Figure 1 is a view of the interior of a garage, showing the swinging doors in partly opened position, and with my attachment in place.

Figure 2 is a view on a somewhat larger scale than in Figure 1 of a portion of the mechanism shown in Figure 1.

Numeral 10 designates the parts of the double door of a garage. Pulleys 11 are secured to the opposite walls of the garage or to other convenient supports. For reasons which will be apparent, I prefer to position these pulleys at a distance from the hinged edges of the doors which is substantially equal to the width of the doors. To each of the doors 10 I secure the end of a flexible element 12 such as a rope, cable or the like, and I pass these flexible elements through their companion pulleys 11 and provide each with a weight 13 at its lower free end. The flexible elements 12 along with the pulleys 11 and weights 13 constitute the door opening mechanism.

I provide mechanism also for closing the doors and for holding them in closed position. To each of the doors 10 I secure a projecting cleat 14. I also secure pulleys 15 to the door frame adjacent the cleats 14 when the doors 10 are in closed position. The rope or other flexible element 16 passes through both pulleys 15 and is secured at its ends to the cleats 14. At substantially the middle point of the rope 16 I secure a wedge shaped block 17. The block 17 is wedge shaped for the purpose of spreading the diverging parts of the rope 16 for preventing the tangling of the rope. The block is grooved on three of its sides, the rope being secured in the groove.

The rope or other flexible element 18 is secured either to the block 17 or to the middle point of the rope 16. Pulley 19 is suspended from the ceiling at any desirable place in the garage, this place being preferably at or near the work bench or other place which is most convenient for the mechanics when at work. If the distance between the doors and the pulley 19 is too great, one or more guiding pulleys may be attached to the ceiling to prevent sagging and kinking of the rope and to reduce friction. As shown, the rope 18 passes through the pulley 19 and carries at its lower end a weight 20.

While the weights 13 and 20 may be varied between wide limits, there are certain factors which determine the most desirable weights. The weights 13 should of course be just heavy enough to cause the quick opening of the doors without slamming. The weight 20 should be substantially equal to the combined weights 13.

The equipment is completed by securing a pulley 22 to the ceiling and by passing therethrough a rope 21, one end of which hangs freely while the other end is secured to the weight 20 or to the lower end of the rope 18.

When the driver of an automobile announces his presence at the closed garage doors, the mechanic at his bench simply pulls down on the free end of the rope 21. This lifts the weight 20 permitting the weights 13 to act to open the doors 10.

When the automobile has passed through the doorway, the mechanic pulls down on the weight 20 to close the doors. The weights 13 and 20 are ordinarily in equilibrium and will not open or close the doors unless their equilibrium is disturbed.

Having thus described my invention and its uses, what I believe to be new and desire to secure by Letters Patent of the United States is:—

In combination with a pair of swinging garage doors, pulleys secured to the opposite walls of the garage adjacent the doors, a flexible element for each of the doors, said flexible element being secured to the door at a point adjacent the free edge thereof and then passing through its companion pulley, and carrying a weight at its lower free end, projecting lugs secured to the doors at their upper edges, a pair of pulleys secured to the door casing above the doors, a second flexible element passing through said pulleys and having its extremities secured each to one of said projecting lugs, a spreader block secured to said second flexible element at its middle point and between said pair of pulleys, an overhead pulley remote from the doors, a third flexible element passing through said last named pulley, one end thereof being secured to said second flexible element at its middle point and the other end being freely suspended and carrying a weight which balances said first named weights, a pulley adjacent said last named pulley, and a fourth flexible element having one of its ends secured to said last named weight and thence passing through the pulley and having a freely suspended portion whereby the operator may lift said last named weight to permit said first named weights to open the doors.

In testimony whereof I affix my signature.

JAMES LAWSON ROBB.