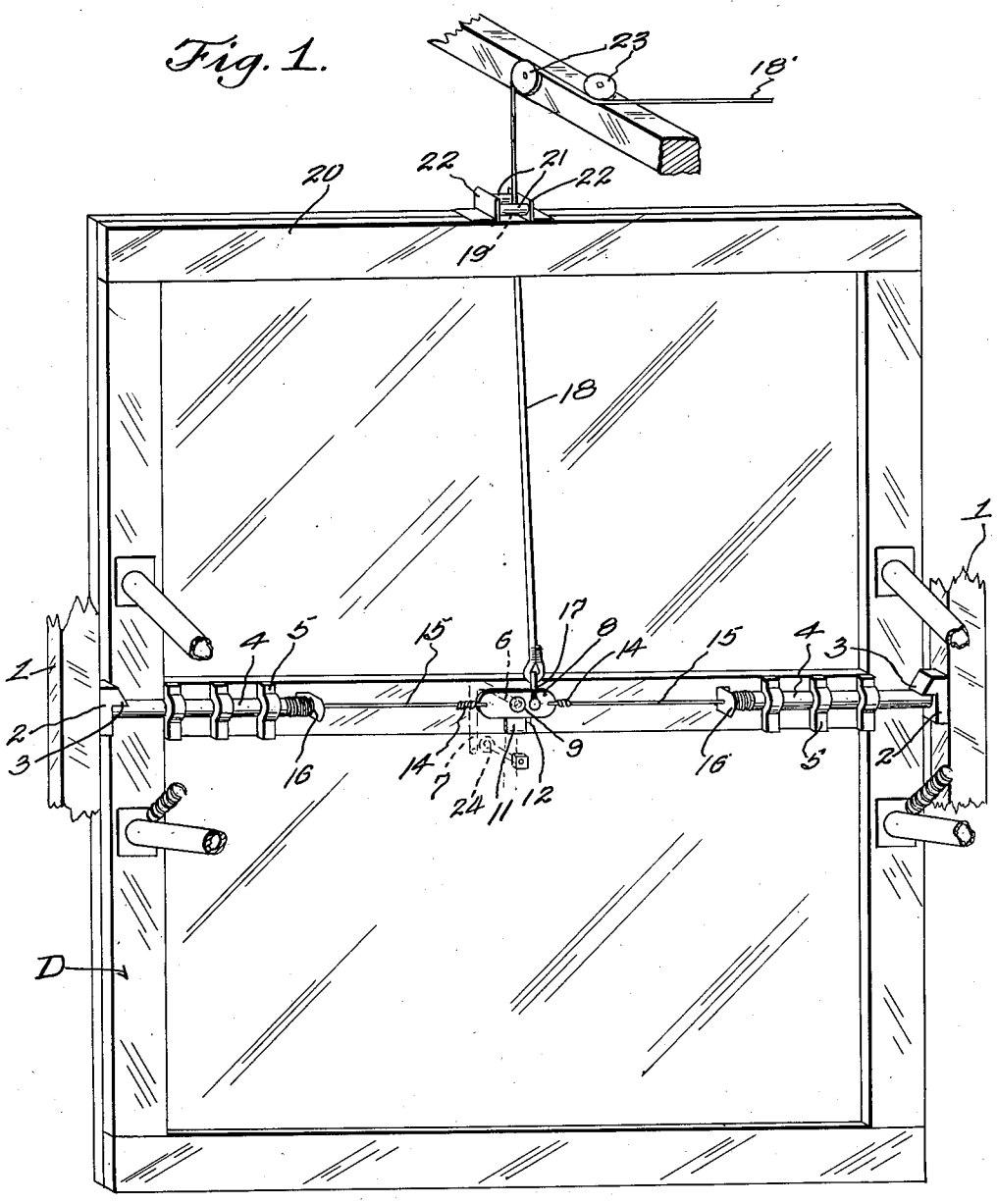
Dec. 4, 1951 K. P. McLAUGHLIN 2,577,348

DOOR LIFT

Filed July 11, 1946 2 SHEETS—SHEET 1

Fig. 1.



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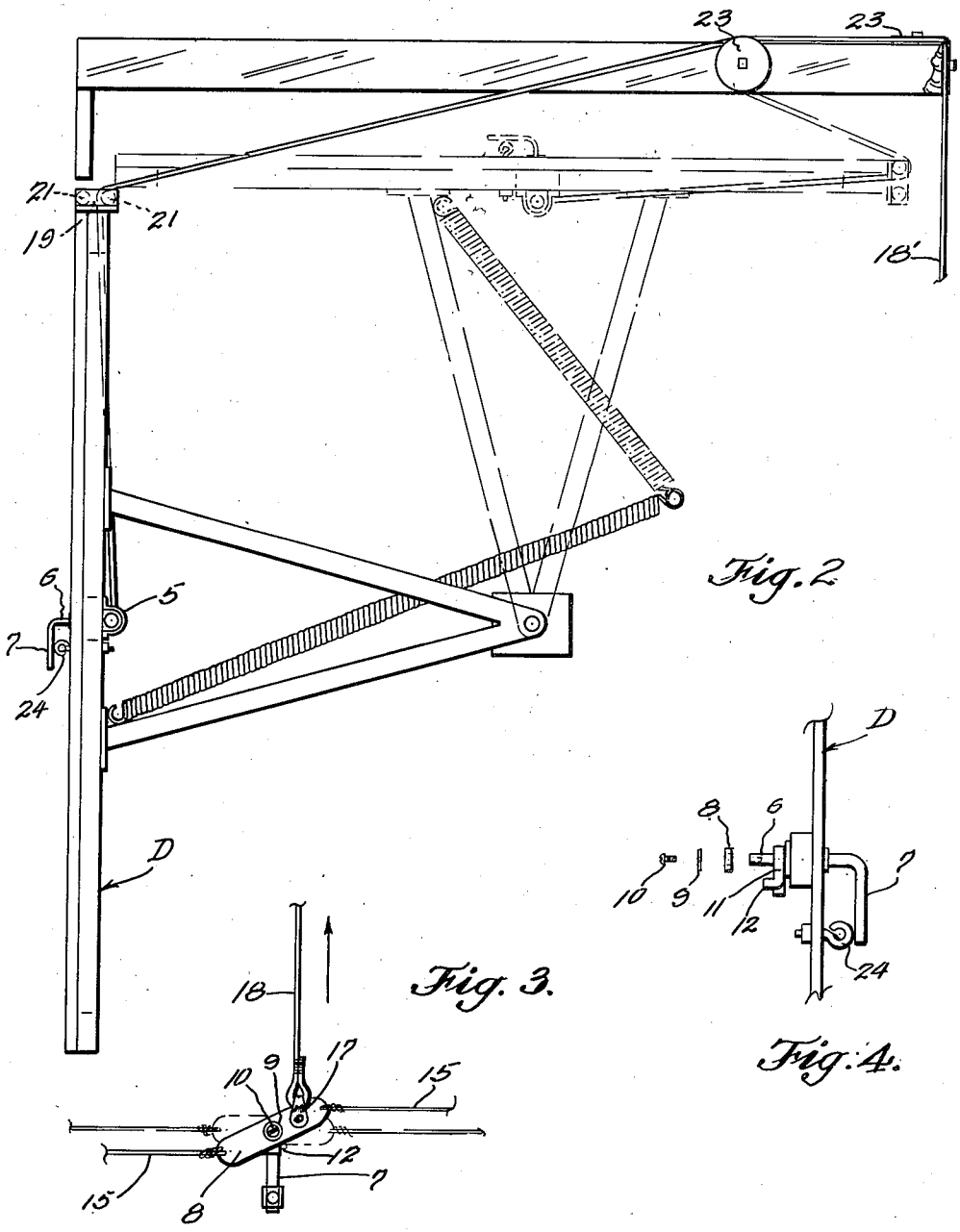


Fig. 2

Fig. 4.

Fig. 3.

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DOOR LIFT

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Application July 11, 1946, Serial No. 682,769

1 Claim. (Cl. 268—58)

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This invention relates to a door lift and has relation more particularly to a mechanism especially designed and adapted for use in connection with a garage.

A particular object of the invention is to provide a mechanism of this kind which, in addition to permitting convenient raising or lifting of a door from within the building structure, operates with equal facility to unlatch the door.

The invention consists in the details of construction and in the combination and arrangement of the several parts of my improved door lift whereby certain important advantages are attained, as well be hereinafter more fully set forth.

In order that my invention may be better understood, I will now proceed to describe the same with reference to the accompanying drawings, wherein:

Figure 1 is a view in perspective and of a diagrammatic character illustrating a door lifting means constructed in accordance with an embodiment of the invention;

Figure 2 is a diagrammatic view in side elevation illustrating in full lines the door in fully raised position, the lower or closed position of the door being indicated by broken lines;

Figure 3 is a fragmentary elevational view of the operator for the latch mechanism; and

Figure 4 is a view in side elevation of Figure 3 with certain of the parts separated.

As disclosed in the accompanying drawings, D denotes a door of a conventional type employed in connection with garages and which is mounted in a well known manner for upward and inward swinging movement.

The jambs 1 of the doorway between which the door D operates are provided in the lower portions thereof with the inwardly facing keepers 2 provided with downwardly facing lugs 3 under which are adapted to engage the sliding bolts 4, carried by the door D, when the door is in its lowermost position. When the bolts 4 are engaged below the lugs 3, it is obvious that the door D cannot be lifted or raised.

The bolts 4 are at opposite sides of the door D and in longitudinal alignment and are slidably held by the guide straps 5. These bolts 4 are upon the inner side of the door D.

Disposed through the door D substantially midway between the bolts 4 is a shaft 6, the outer extremity of which carries an operating crank or handle 7 while the inner extremity of the shaft 6 is disposed centrally through an operating bar 8. This bar 8 is mounted upon the shaft 6 for free rotation.

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The opposite end portions of the bar 8 have secured thereto, as at 14, the extremities of the pull members 15 which may be of wire or other material and the opposite end portions of said members 15 are secured, as at 16, to the inner extremities of the bolts 4.

As is believed to be obvious, turning movement of the shaft 6 in one direction will result in a rocking of the bar 8 in a direction to retract the bolts 4 sufficiently to free the same from the lugs 2, so that the desired lifting or raising of the door D may be accomplished.

The bar 8 is held against displacement from upon the shaft 6 by a washer or disk 9 held against the outer end of the shaft 6 by the headed bolt 10 which threads through the center of the washer or disk 9 into the adjacent extremity of the shaft 6.

Fixed to the shaft 6 upon the inner side of the door D and closely adjacent to the door is a depending arm 11 press-fitted or otherwise so applied to the shaft 6 to rotate therewith. The lower extremity of this arm 11 is provided with an outwardly directed lug 12 which engages the bar 8 from below at either side of the shaft 6 dependent upon the direction of rotation of the shaft 6.

The bar 8 to one side of the shaft 6 has operatively engaged therewith an upstanding shackle 17 with which is engaged an extremity of a pull cable 18. This cable 18 is disposed upwardly along the inner side of the door D and is freely disposed through an opening 19 provided in the top cross member 20 of the door which is disposed at the inner side thereof.

On the top of the door D and fore and aft of this opening 19 are the rollers 21 rotatably supported between the upstanding brackets 22 rigidly secured upon the top of the door D. The cable 18 passes up between these rollers 21 which provide antifriction guide means and said cable 18 is continued over suitably positioned guide rollers 23 carried by the top structure of the building, such as a garage, and terminates in a depending cable length 18' which is adapted to be grasped by a person within the garage whereby, upon pull being imposed upon the cable 18, the door D will be lifted or raised.

This operation can be readily performed by an occupant of a car within the garage structure.

It is to be noted that the arrangement of the cable 18 is such that as pull is imposed thereon, the door, after being raised a predetermined distance, will be swung backwardly sufficient to permit the same to assume a substantially horizontal position by gravity.

When the shaft 6 is rotated from without by the crank or handle 7, the contact of the lug 12 from below with the arm 8 will rock the arm in a direction resulting in the retraction of the bolts 4. By having the arm or bar 8 freely mounted on the shaft 6, a person within the building structure can readily retract the bolts 4 by the independent rocking of the arm or bar 8 on the shaft 6.

When the door is in its closed and locked position, the crank or handle member 7 is substantially vertically disposed and the door D adjacent to this position of the crank or handle member 7 is provided with an outstanding eye member 24 to permit the use of a padlock or the like for positively holding the shaft 6 against rotation.

From the foregoing description it is thought to be obvious that a door lift constructed in accordance with my invention is particularly well adapted for use by reason of the convenience and facility with which it may be assembled and operated.

I claim:

In a door construction of the type comprising a one piece door body and pivot means supporting the door body to swing on a horizontal axis from a vertical closed position to an overhead horizontal open position; a latch releasing and door shifting mechanism comprising a long horizontally disposed plate pivotally supported intermediate its ends on the inner side of the door body to turn on a horizontal axis perpendicular to the face of the the door, means for coupling each end of the plate with door latching means whereby oscillation of the plate actuates said

means, a pull cable connected at one end to the plate between the pivot therefor and a coupling means by which pull on the cable will effect the oscillation of the plate and actuation of door latching means connected therewith, a pair of guides at the top of the door above said plate between which said cable extends, a guide pulley over the top of which said cable passes, said guide pulley being supported at an elevation above the horizontal position of the door and at such position inwardly from the door opening that the said guides move rearwardly beneath and past the pulley position in the movement of the door to the said horizontal open position carrying a part of the cable across the underside of the pulley, and guide pulleys for the cable supported at the elevation of the first pulley and rearwardly therefrom with respect to the said door opening.

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