

Oct. 14, 1924.

1,511,697

N. WESTBY

GARAGE DOOR OPERATING DEVICE

Filed March 19, 1923

2 Sheets-Sheet 1

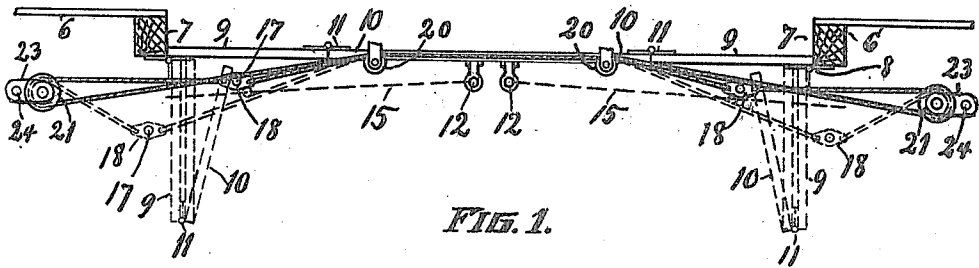


FIG. 1.

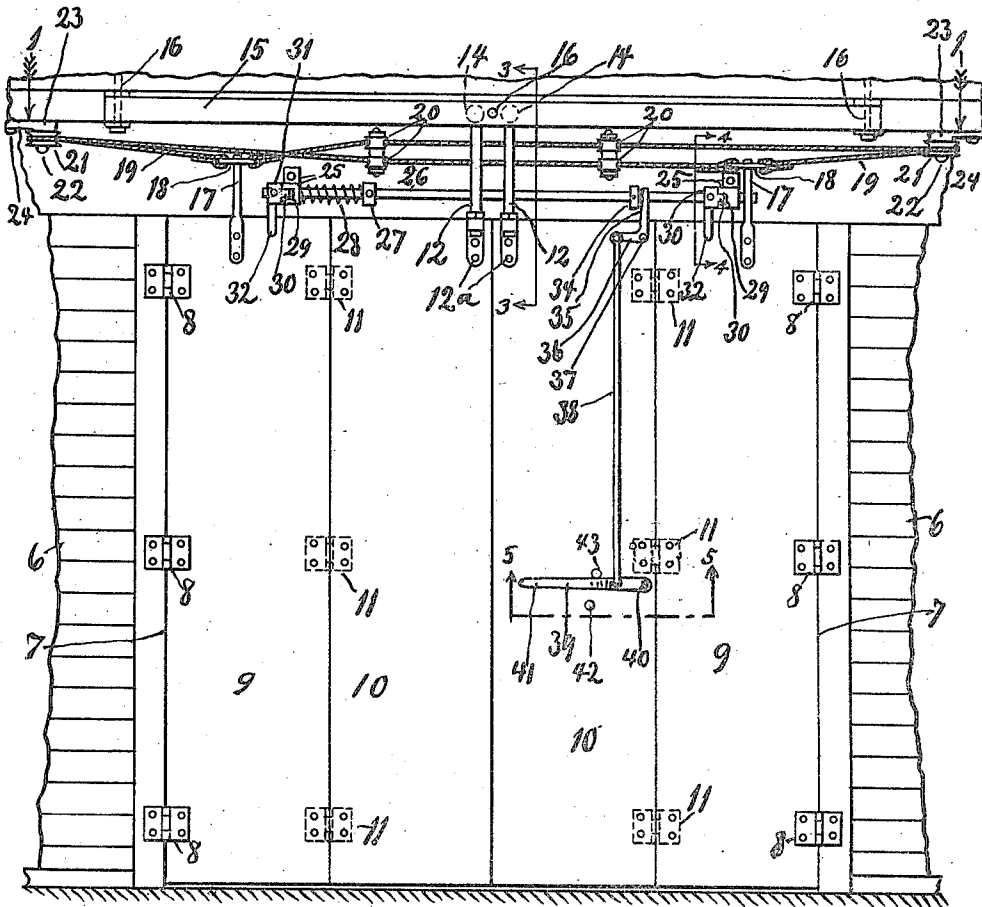


FIG. 2.

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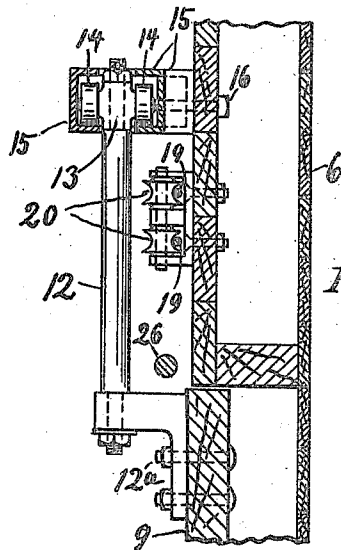


FIG. 3.

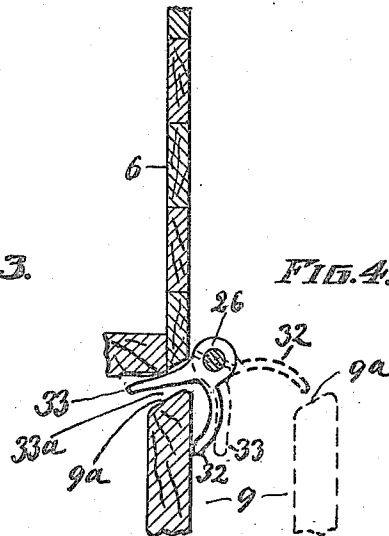


FIG. 4.

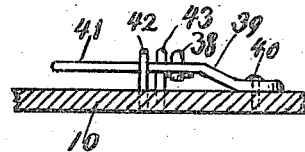


FIG. 5.

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UNITED STATES PATENT OFFICE.

NICKOLAY WESTBY, OF ST. PAUL, MINNESOTA.

GARAGE-DOOR-OPERATING DEVICE.

Application filed March 19, 1923. Serial No. 625,994.

To all whom it may concern:

Be it known that I, NICKOLAY WESTBY, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Garage-Door-Operating Devices, of which the following is a specification.

My invention relates to improvements in doors for garages or any other structures having a door opening closed by two doors hinged one to each door post and closing together near the middle of the door, and means by which manipulation of one of the doors will close both of them simultaneously.

In the accompanying drawings:—

Fig. 1 is a horizontal section on the line 1—1 in Fig. 2.

Fig. 2 is an inside elevation of a wall of a structure having a door provided with my operating mechanism.

Fig. 3 is an enlarged section on the line 3—3 in Fig. 2.

Fig. 4 is an enlarged section on the line 4—4 in Fig. 2.

Fig. 5 is an enlarged section on the line 5—5 in Fig. 2.

Referring to the drawings by reference numerals, 6 designates the wall of a garage, stable, boat-house or other building having a door opening 7 closed by two doors at 8, and each composed of two members 9—10 hinged at 11 to fold inward as in the dotted position in Fig. 1. To cause the door members to fold and unfold properly at their hinges, I provide each member 10 with an upright rigid arm 12 fixed at 12^a and having its upper end journaled in a block 13 (see Fig. 3) which is provided with side wheels or rollers 14 running on a channel track 15 fixed at 16 to the wall above the door opening. The members 9 have their upper ends provided with vertically fixed arms 17, the upper ends of which are pivotally engaged in metal bearings 18 secured in an endless cable 19, which is guided by pulleys 20 and 21, the latter pulleys serving to hold the cable stretched and are mounted on studs 22 fixed in flat metal arms 23 which are pivoted at 24 so as to swing with the cable 19 to some extent toward and away from the wall during the opening and closing movement of the doors.

Journaled in bearings 25 fixed above the

door opening is a horizontal shaft 26 having a fixed collar 27 engaged by one end of a pushing and twisting coil spring 28, whose other end is engaged in the adjacent bearing 25.

Each of said bearings is provided with a lateral notch 29 adapted to receive a lateral tooth 30 of a collar 31 fixed on the shaft and having two radial but preferably curved fingers 32, 33 (see Fig. 4) straddling the top edge of the members 9.

The shaft 26 is slidable in its bearings and has a fixed collar 34 which stands normally slightly clear of the actuating arm 35 of a bell crank lever 36 which is pivotally mounted at 37 on one of the door members 10 and has its lower arm connected by a vertical rod 38 to a hand lever 39, which is pivoted at 40 upon the door and has its handle portion 41 offset from the door (see Fig. 5). The projecting pins 42 and 43 are stops to limit the swinging movement of the lever 39.

In operation, when the door is to be opened the operator takes hold of the handle 41 and by pressing downward the bell-crank lever arm 35, pressing on collar 34 causes spring 28 to yield and the teeth or projections 30 are thereby unlocked or disengaged from the brackets 25. At this moment the operator pulls inward at the lever 41 so as to bring the door sections to the dotted position shown in Fig. 1, the torsional force of the spring 28 and the fingers 33 and cable 19 cause the movement of one door to open both doors. As soon as the door sections 9 get to the dotted position shown in Fig. 4, the fingers 33 stop in the dotted downward position and the fingers 32 will stand about horizontal. The torque in spring 28 holds the shaft 26 with the fingers in said position.

When the doors or door sections are pushed to closed position again each door section 9, moving as from right to left in Fig. 4 takes with it the finger 33 to the full line position and by releasing the hand lever 39 from downward pressure the spring 28 will push the shaft 26 with the clutch or locking teeth 30 into the notches 29 in the brackets 25 and thus lock the doors against pressure from the outside. During the opening and closing of the doors the hanger 12, rollers 14 and track 15 support and guide the sections or members of the doors. To make the fingers 33 operate

more easily the adjacent top edge of the door is given a notch 33^a and beveled as at 9^a in Fig. 4. In Fig. 1 the line 14 indicates the slightly curved form of the rail
5 or track 15.

What I claim is:

1. In a structure having a door opening, two doors hinged one to each vertical edge of the opening and adapted when in closed position to cover the opening, each
10 of said doors composed of two sections hinged together at a vertical line to fold inward into the structure, a horizontal guiding rail secured to the structure, and
15 means secured to the adjacent top corners of the two doors and guidingly engaged by the rail, an endless cable stretched and guided by pulleys above the door opening and a vertical arm on each door attached
20 to the cable to make the two doors open and close in unison, and means on one of the doors to manually operate it, and a horizontal shaft journaled in bearings on the wall above the door and having both sliding and rotary movements in the bearing,
25 two radial fingers fixed on the shaft for engaging the top of each door one finger tend to open the door and the other to hold it closed, interengaging means on the shaft
30 and its bearings to lock the doors against being opened from the outside, a partly compressed torsion spring on the shaft and

having one end secured in one of the bearings and the other to the shaft, the tendency of said spring being to open the doors by
35 its torsion and locking them by pushing the shaft endwise into locked position, a collar fixed on the shaft, a bell-crank lever mounted on one of the doors and engaging the collar to push the shaft against the resistance of the spring and thus unlock the
40 shaft, a hand lever pivoted on the door and operative connection between said lever and the bell-crank lever and means controlling the movement of the hand lever.
45

2. The structure specified in claim 1, in which each of the two doors has its top edge formed with a notch for one of the fingers of the shaft to occupy and reach
50 the outer side of the door, and the door being beveled in the bottom of said notch.

3. The structure specified in claim 1, in which each of the two doors has its top edge formed with a notch for one of the fingers of the shaft to occupy and reach
55 the outer side of the door, and the door being beveled in the bottom of said notch, said fingers engaging the inner sides of the door, arched so as to allow the top edge of the door sufficient play between the outer
60 and the inner fingers.

In testimony whereof I affix my signature.

NICKOLAY WESTBY.