This invention relates to an improvement in door operating mechanisms and has for its primary object the purpose of providing an improved combination and relation of parts which are co-operative with the doors of a garage for opening and closing the doors upon the approach of an automobile in which the weight of the forward moving part of the automobile will operate the doors to open from either side.

Another object of the invention is in providing an improved form of mechanism in connection with the hinges of the doors for turning the hinges and the doors which are mounted on the hinges.

Other and further objects will appear in the specification and be specifically pointed out in the appended claims, reference being had to the accompanying drawings, exemplifying the invention, and in which:

Figure 1 is a front elevation of a garage having a fragmentary portion thereof broken away and showing this improved door-operating mechanism applied thereto.

Figure 2 is a fragmentary vertical section taken approximately on the line II—II of Fig. 1.

Figure 3 is a fragmentary horizontal section taken on the line III—III of Fig. 1.

With reference to the accompanying drawings, the garage 1 is provided with a pair of relatable swinging doors 2 and 3 and secured to each door on the hinging end thereof by a vertically disposed strap 4 each being provided at its upper end with a vertically disposed pintle 5 and formed in the lower end of each strap is a pintle 6, each pintle 5 being journaled in a bearing 7, said bearings being secured to the front wall of the garage 1.

Formed on the lower end of the strap 4 of the door 2 above the pintle 6 is a left hand driving spiral portion 8 and formed on the lower end of the strap 4 of the door 3 above the pintle 6 is a right hand driving spiral portion 9, and mounted over each of said spiral portions is a coil spring 10.

Mounted on the upper end of each of the springs 10 is a respective bifurcated plate 11 each being horizontally extended from a horizontally disposed beam 12, the height of each of said springs 10 being such wherein the beam 12 will be normally disposed at the upper end of each of the respective spiral portions 8 and 9.

The doors 2 and 3 are adapted to swing outwardly, as shown in Fig. 2, and leading to the doors from the outside of the garage is an approach platform 13 which is supported upon a pair of longitudinally disposed sills 14, said platform 13 being upwardly inclined towards the doors 2 and 3, the lower disposed end of each of the sills being provided with a shoe 15 each of which is swingingly secured to a respective U-bolt 16 which are secured to a transversely disposed sill 17, the opposite ends of said sills 13 resting upon the beam 12.

Disposed interiorly of the garage and leading upwardly to the doors is an inclined platform 18 mounted upon a pair of longitudinally disposed sills 19 each having a hinging bracket 20 secured at its lower end, each of said brackets being loosely secured to a U-bolt 21, said U-bolts being mounted to the cross sill 22, the opposite end of each of the sills 19 each having a bracket 23 secured thereto, each of said brackets being provided with a slot 24 and borne by each of the sills 14 at their upper arranged ends is a pin or bolt 25 each bolt being engaged in a respective slot 24 of a respective bracket 23 of each of the sills 19 of the platform 18.

Thus such as the beam 12 is normally held in an elevated position by the coil springs 10, in consequence thereof the platform 13 and 18 are normally inclined upwardly towards each other as disclosed in Fig. 2 of the drawings and upon the approach of a vehicle along the driveway 26 the forwardly approaching wheels of the vehicle upon engaging the lower inclined end of the platform 18 will cause the platform to swing downwardly in which the upper inclined ends of the sills 14 will bear downwardly on the beam 12, the weight of the automobile traveling upwardly on the platform continuing to force the platform and beam 12 downwardly against the pressure of the coil springs 10. This downward action of the bifurcated plates 11 of the beam 12 upon the respective spiral portions 8 and 9 will cause the strap 4 of the door 2 to turn in a left hand direction whereas the strap 4 of the door 3 will be turned in a right hand direction thereby simultaneously swinging both of said doors outwardly as the beam 12 is pressed further downwardly by the upward travel of the vehicle upon the platform 13. It is obvious that as the leverage of the platform 13 increases as the vehicle approaches the higher end of the plat-
form the compression of the springs 19 will also be increased; therefore compressing of said springs will be comparatively slow and as the spiral portions 8 and 9 are designed so that but an approximate one-quarter turn will only be given to each of the doors 2 and 3, when the beam 12 has reached the traveling length of each of the spiral portions, said beam will engage and rest upon the supporting blocks 27 of which there are a pair as shown by dotted lines in Fig. 2.

On account of the fact that the upper ends of the sills 19 of the platform 18 are secured to the upper ends of the sills 14 of the platform 13 by the bolts 25 passing through the sills of respective brackets 23 of the sills 19, it is obvious that the upper inclined end of the platform 18 was moved downwardly with the downward movement of the platform 13 therefor when the forwardly traveling wheels of the vehicle reaches the upper inclined end of the platform 18, the platform 18 will be readily engaged by the forwardly traveling wheels so that the vehicle can travel downwardly on the platform 18 to the garage floor 28, the weight of the rearwardly following wheels of the vehicle upon the platform 18 holding both of the platforms down as well as the beam 12 and consequently said beam will hold the straps 4 in their turned positions so that the doors will be kept open until the vehicle has entered the garage. As the rearwardly traveling wheels of the vehicle travels slowly down the platform 18, the weight will be gradually relieved from the upper inclined end of the platform 18 and the coil springs 10 will begin to become active upon the beam 12 thereby forcing the beam slowly upwardly and the respective bifurcated plates 11 will become active upon the door straps 4 thereby turning each of said straps in the opposite direction to which they were turned when the force of the plates 11 was downward upon the spiral portions 8 and 9, said return movement of each of the straps 4 closing the doors 2 and 3.

For locking the doors against an intruder, who might without authority desire to open the doors by driving the unauthorized vehicle upon the platform 13 for the purpose of gaining access to the garage, a reciprocal bolt 29 is disposed upon respective supports 30 which are disposed inferiorly of the garage for the purpose of underengaging respective bifurcated plates 11 of the beam 12 when the beam is in its normal or upper position. These bolts or retaining members when disposed in the path of downward travel of the plates 11 will prevent the beam 12 from being forced downwardly when a vehicle is run upon the approach platform 13.

For operating the bolts or retaining members 29, a horizontally disposed shaft 31 is secured to the supports 30 and rigidly secured to said shaft adjacent each end is a slotted lever 32, the slot of each lever being engaged over a pin 33 which is extended from the rear end of each of the bolts 29 and secured to one end of the shaft 31 is the throw lever 34 having a connecting link 35 secured thereto, the opposite end of the link being secured to a bell crank lever 36. From the disclosure of Fig. 2 when the lever 36 is moved in the direction of the arrow 37 the link 35 will be drawn upwardly thereby rocking the shaft 31 and the levers 32, each of which is secured to a respective bolt 29, will force said bolts outwardly and beneath respective plates 11 of the beam 12. The lever 36 being operated in the reverse direction will withdraw said bolts.

Upon moving the vehicle towards the doors for disposing it outside of the garage, the forwardly traveling wheels of the vehicle upon engaging and upwardly traveling on the platform 18, will force the beam 12 downwardly against the pressure of the coil springs 8 and the door straps 4 will be turned in the same manner as was effected by the vehicle when the vehicle was entering the garage upon the platform 13.

What we claim is:

In a door operating device, a pair of horizontally swingable doors, a metallic strap secured to each door extending the vertical length thereof and above and below respective doors, a pindle formed at each end of said straps, supporting means for each pindle, the portions of said straps which extend below said doors, each being twisted so as to form a spiral portion, a horizontally disposed depressible member having a bifurcated portion at each end for engagement with respective spiral portions of said straps, resilient means underengaging said depressible member, and a pair of oppositely arranged inclined platforms each having one end resting on said depressible member.

GEORGE H. BRIDGEWATER.
CHAS. M. GOBEN.