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1,783,378

GARAGE DOOR CONSTRUCTION

Filed Sept. 27, 1929

2 Sheets-Sheet 1

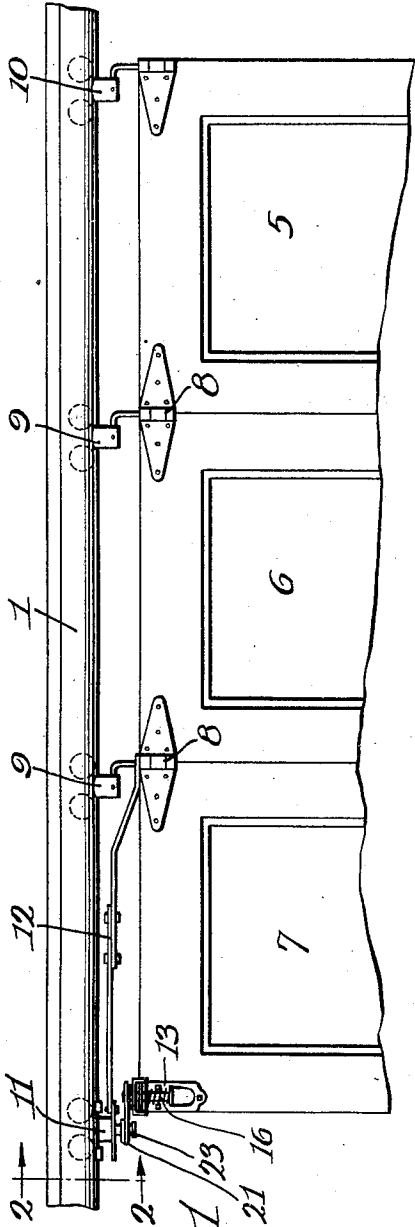


FIG. 1

FIG. 3

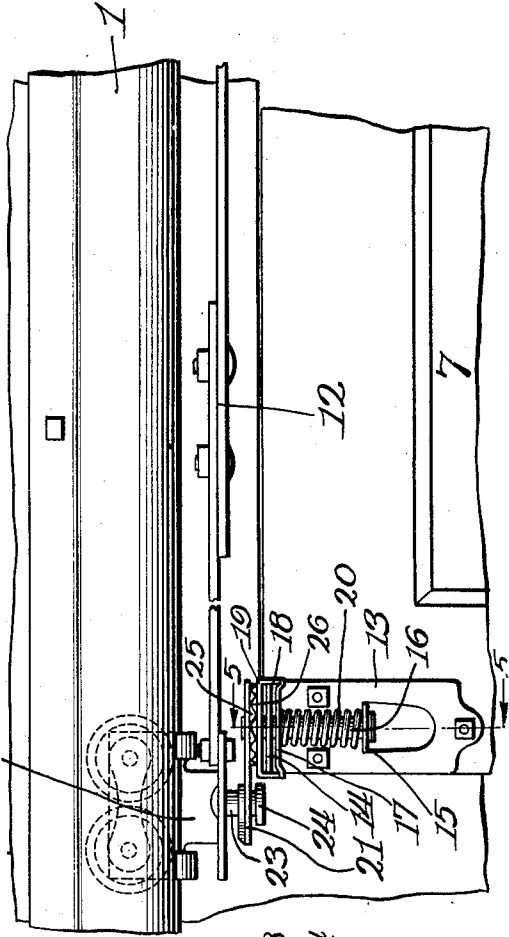
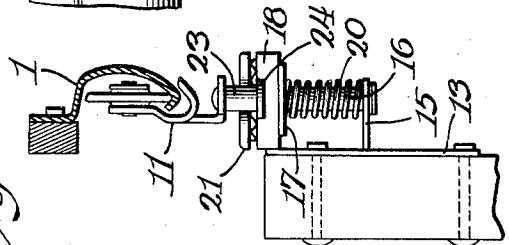


FIG. 2



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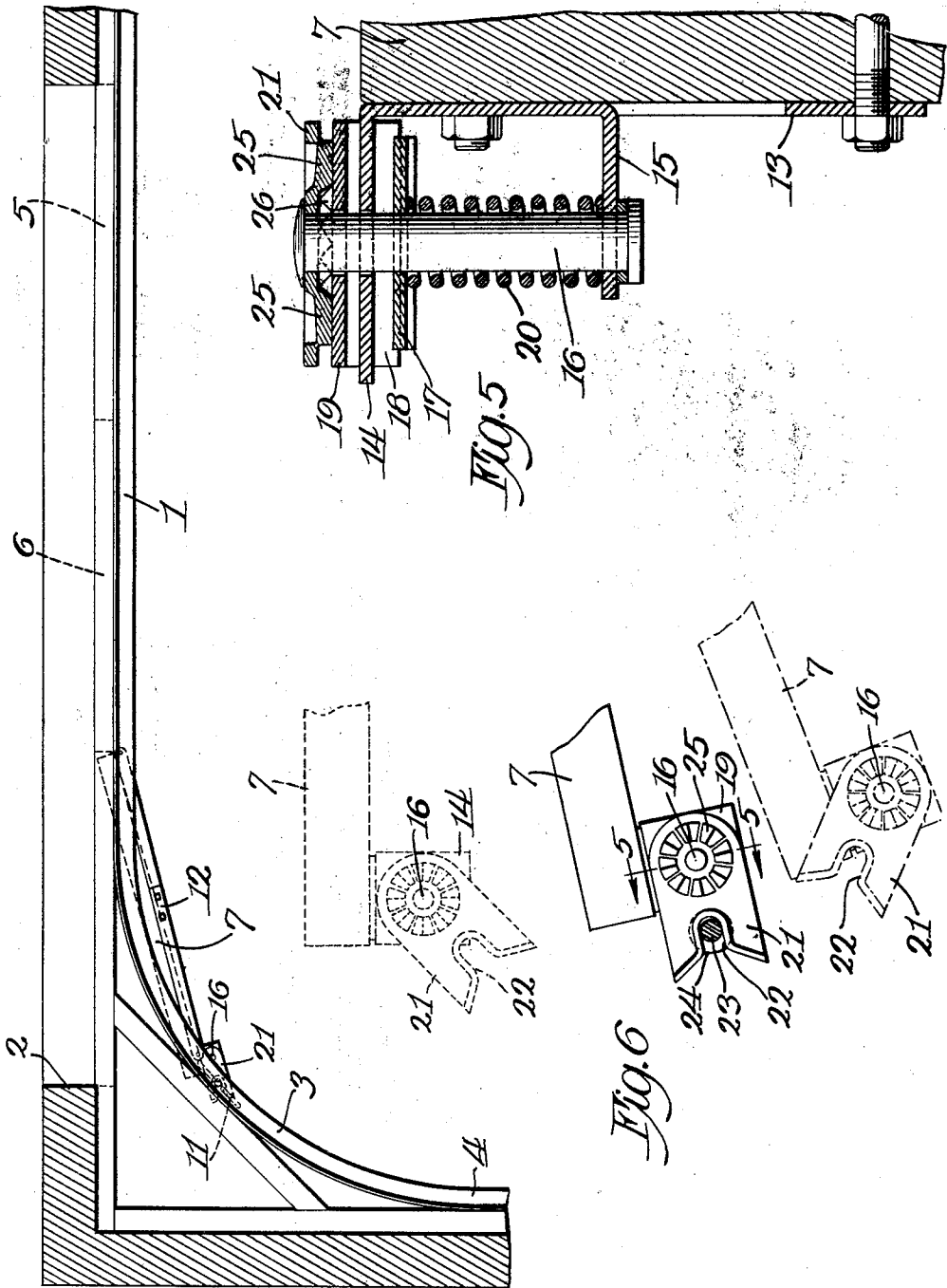


Fig. 4

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UNITED STATES PATENT OFFICE

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GARAGE-DOOR CONSTRUCTION

Application filed September 27, 1929. Serial No. 395,503.

This invention relates to garage doors, and more particularly to garage doors of that class in which a plurality of door sections are hinged together to swing about vertical axes, and are hung or supported upon hangers that travel on a track arranged over the doorway and along the adjacent side of the building, whereby the hinged door sections can be moved out of the doorway and around into a fully open position at the side of the building.

This is an improvement on the construction disclosed and covered broadly in application No. 273,168, filed April 27, 1928.

Generally stated, the object of the invention is to provide a novel and improved construction and arrangement for connecting the end or leading door section, when the door structure is opened, with a hanger that travels on said track, whereby this door section will be held against swinging around and getting in the way or striking the side wall of the building, while permitting disengagement from said hanger when it is desired to fully close the door, this end or leading door section being used as an ordinary swinging door by which to enter and leave the garage or other building, without disturbing the position of the other door sections in the doorway.

It is also an object to provide certain details and features of construction and combinations tending to increase the general efficiency and the desirability of a garage door construction of this particular character.

To the foregoing and other useful ends, the invention consists in the matters hereinafter set forth and claimed, and shown in the accompanying drawings, in which,—

Fig. 1 is an inside elevation of the upper portion of a sectional and sliding door embodying the principles of the invention, showing a portion of the overhead track upon which the door hangers travel, and showing the improved engaging and disengaging means on the left-hand or leading door section, for engaging and disengaging the hanger shown at the extreme left in this view.

Fig. 2 is an enlarged vertical section on line 2—2 in Fig. 1.

Fig. 3 is an inside elevation of the structure shown in Fig. 2.

Fig. 4 is a plan of the structure shown in Fig. 1, showing also a portion of the side wall of the garage or other building, and illustrating how the sectional sliding door structure is moved out of the doorway and around the curve of the track while passing the corner of the building, before occupying a fully open position parallel with the side wall of the building.

Fig. 5 is an enlarged vertical section on line 5—5 in Fig. 3 of the drawings.

Fig. 6 is a diagrammatic view, showing the said engaging and disengaging devices in different positions, illustrating its mode of operation in automatically engaging and disengaging the hanger by which the swinging door section is supported while the door structure is being opened or closed.

As thus illustrated, the invention comprises a track 1 over the doorway 2, inside the building, which track has a curved portion 3 that connects the straight portion 1 with the straight portion 4, which latter is shown partially broken away, to form a track having two right-angle straight portions connected together by a curved portion. The door sections 5, 6 and 7 are connected together by hinges 8, whereby these door sections are free to swing relatively to each other about vertical axes, during the opening and closing of the door structure. These hinges are supported by hangers 9 that travel on said track, and in addition end hangers 10 and 11 are provided, as shown, for the outer upper corners of the two end sections of the door structure. The hanger 11 is spaced from the adjacent hanger 9 by the adjustable link connection 12, whereby these two hangers are always the proper distance apart on the track.

Means are provided for enabling the door section 7 to engage and disengage the hanger 11, as follows: A bracket 13 is secured to the door section 7, in any suitable or desired manner, and is provided with an upper horizontal portion 14, as shown more clearly in Fig. 5 of the drawings. It is also provided with a struck-out horizontal portion 15, and a vertical pivot bolt 16 extends through these two horizontal portions, as shown. A plate 17 engages the downturned flanges 18 of the

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plate 19, these two plates being above and below the portion 14, as shown, and the bolt 16 extending through both plates. A coil spring 20 is disposed between the horizontal portion 15 and the plate 17 on the pivot bolt 16, and a swinging plate 21 is fixed to the upper end of said pivot bolt to swing about a vertical axis. This plate 21 has a notch 22 in the outer end thereof, adapted to receive the depending round portion 23 of the hanger 11, thereby to support the door section 7 on its hanger, the portion 23 having its lower end provided with a head 24 upon which the plate 21 may rest if the door section 7 should tend to sag.

In use, the door section 7 can be opened from the outside, without disturbing the sections 5 and 6, and as it swings inwardly, as shown in Fig. 6, the notch 22 will receive the portion 23 of the hanger 11, the latter having been left in position to accomplish this operation. The door can be swung past this position, as indicated in Fig. 6, permitting the plate 21 to release or disengage the portion 23, so that a person may thus enter the garage or other building. Then the door section 7 can be swung back into the position shown in Fig. 4, into engagement with the hanger 11, and the entire door structure can then be moved out of the doorway, around the corner, and into fully open position at the side of the building. With the door section 7 held against swinging around, by the engagement of the plate 21 with the depending portion 23 of the hanger 11, this door section will not get in the way and will not strike the side wall of the building.

When the door structure is closed, the door section 7 can be swung back into alignment with the other door sections, as such motion will automatically disengage the plate 21 from the portion 23, so that the door section 7 will assume the position shown at the top of Fig. 6 of the drawings. The spring 20, it will be seen, creates sufficient friction between the plate 21 and the plate 19 to hold the plate 21 in any position in which it is left by disengagement thereof from the hanger 11, and to further insure this result, the plate 21 is provided on its under side with teeth 25 which engage similar notches or teeth 26 on the upper side of the plate 19, whereby the plate 21 will rise a little, each time it is partially rotated, as the teeth on the two plates ride over each other, and the spring 20 will yield for this purpose. When the teeth in the plate 21 sink into the notches in the plate 19, the plate 21 will then be held quite firmly against rotation, so that it will always remain in position to receive the depending portion 23 of the hanger 11, in the manner shown and described. In this way, the engagement and disengagement of the door section 7 with the hanger 11 is automatic, so to speak, inasmuch as it is merely necessary to open and close this

door section, by swinging it about its vertical axis, in order to engage and disengage the hanger 11 in the manner explained.

What I claim as my invention is:

1. In sliding and swinging door construction, the combination of a plurality of door sections hinged together to swing relatively about vertical axes, an overhead track comprising two straight portions connected by a rounded corner portion, hangers supporting the door sections on said track, an additional hanger allotted to an end section of the door structure, and mechanism on this end door section for automatically engaging and disengaging said additional hanger, when this end section is opened or closed, providing a support for said end section while the door structure as a whole is being moved around into open position, or back into closed position, preventing said end section from swinging around or getting in the way or striking the side wall of the building.

2. A structure as specified in claim 1, said mechanism comprising a notched member mounted to swing about a vertical axis on the end door section, said additional hanger having a depending portion for engaging the notch of said member, said mechanism comprising frictional means to retain said member in any position on said door in which it is left by disengagement thereof from said depending portion.

3. A structure as specified in claim 1, said additional hanger having means for supporting said mechanism, to sustain the weight of the end door section in case the latter should sag on its hinges.

4. A structure as specified in claim 1, said mechanism comprising a notched member mounted to swing about a vertical axis on the end door section, said additional hanger having a depending portion for engaging the notch of said member, said mechanism comprising frictional means to retain said member in any position on said door in which it is left by disengagement thereof from said depending portion, said frictional means comprising a spring and means held by said spring in frictional engagement with the underside of said swinging member.

Specification signed this 23rd day of September, 1929.

WILLIAM D. FERRIS.