Oct. 7, 1930. W. D. FERRIS 1,777,485

GARAGE DOOR CONSTRUCTION

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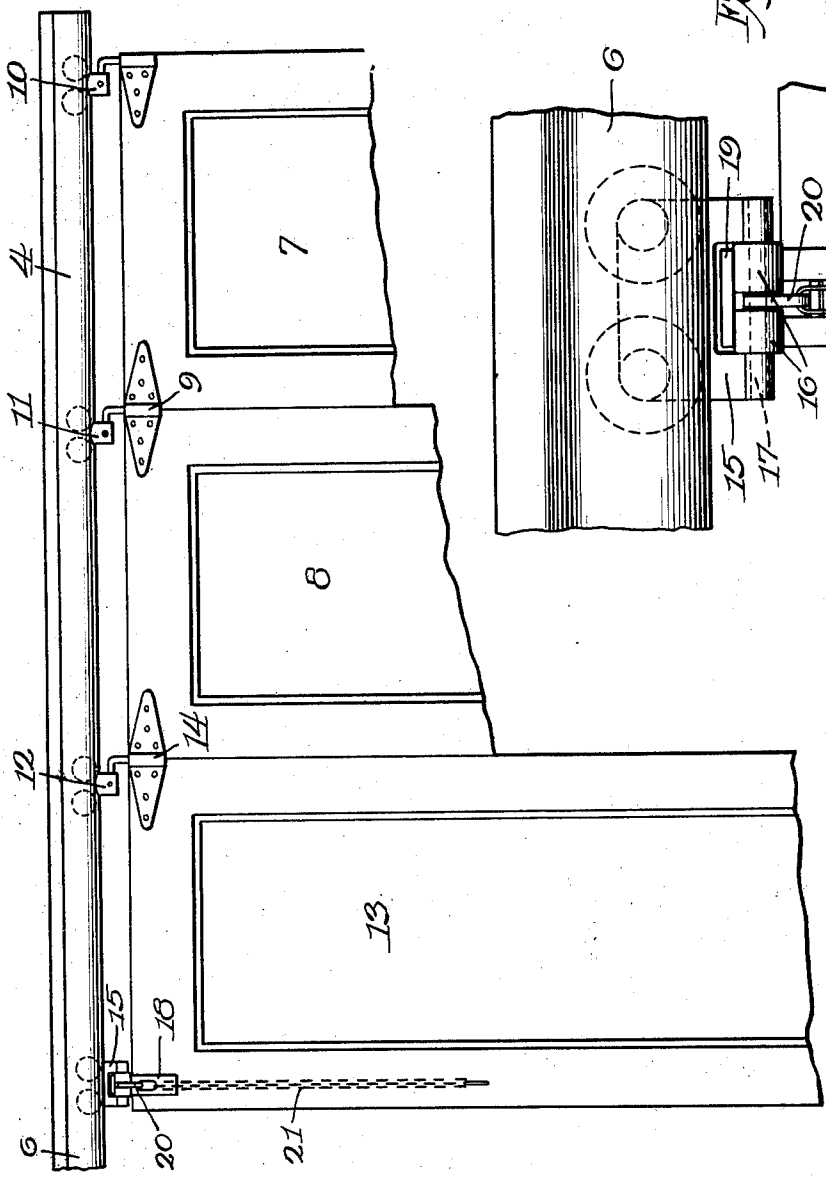

Fig. 1

Fig. 2

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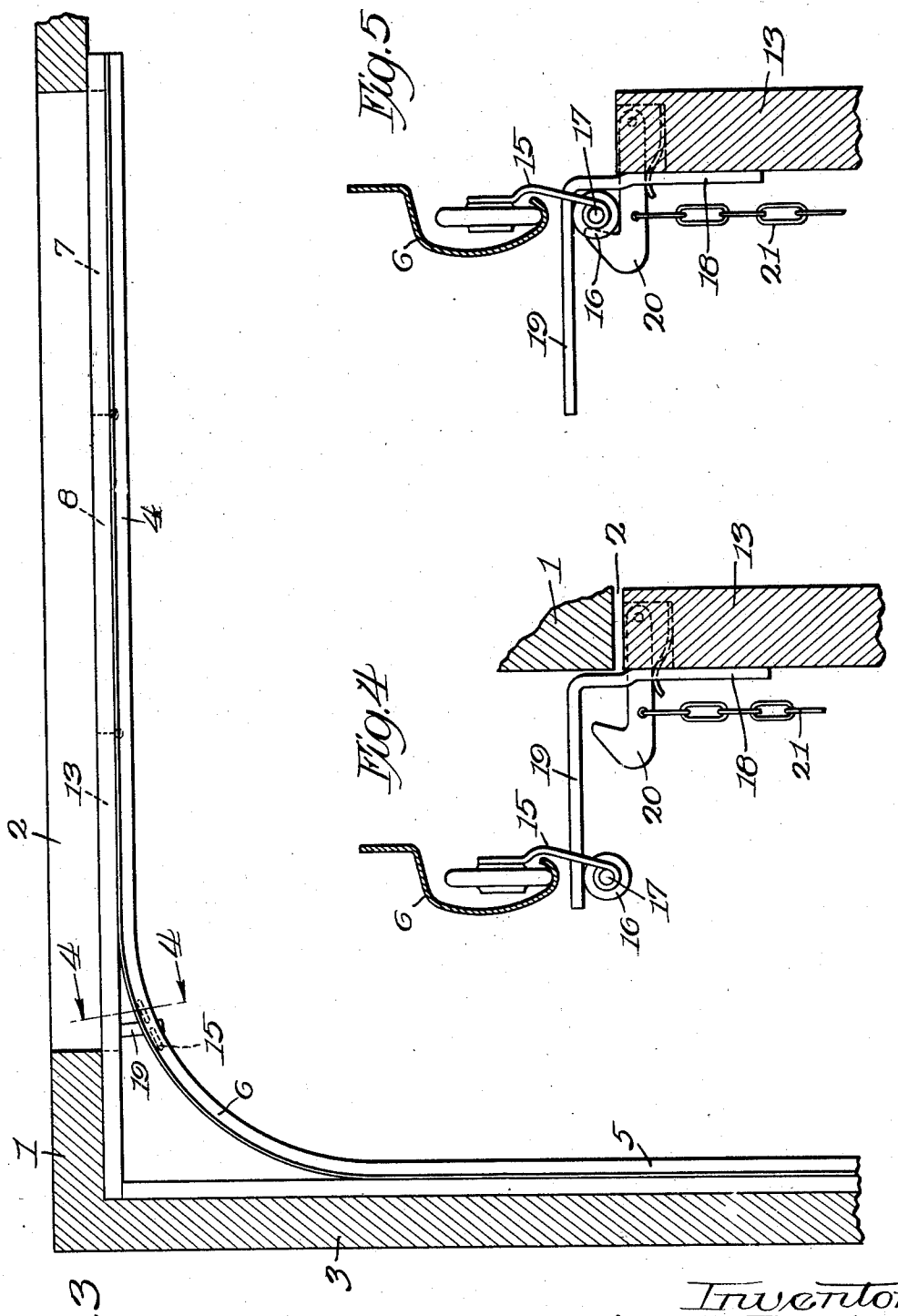

Fig. 3

Fig. 4

Fig. 5

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UNITED STATES PATENT OFFICE

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GARAGE-DOOR CONSTRUCTION

Application filed May 21, 1928. Serial No. 279,345.

This invention relates to garage doors, or doors for other buildings, of the kind in which the door structure is composed of a plurality of sections, there usually being one or more sliding sections hinged together, and a swinging section hinged to one of the sliding sections, the swinging section being ordinarily unsupported except by its hinges, and the entire door structure being supported on an overhead track having two right-angled sections connected by a curved section, whereby when the swinging door section is opened a distance under the curved section of the track, the entire door structure is then free to slide out of the doorway and around the cruve to a position close to and parallel with the side of the building.

Generally stated, the object of the invention is to provide a novel and improved construction whereby the swinging door section is supported by a hanger on said track, upon which latter the sliding door sections are also supported by suitable hangers, the additional hanger for the swinging door section preventing this door section from swinging around or interfering with the opening movement of the door structure, and the said swinging door section being supported at all times by its said hanger, but the latter permitting some swinging motion of the said swinging door section while the other portions of the door structure remain stationary in closed position.

Another object is to provide a novel and improved construction of this general character in which the swinging door section does not open or swing in far enough to permit entrance at this side of the doorway, but simply far enough to place this door section in position to slide around the curved portion of the track, with the other door section or sections following, thus opening the door structure sufficiently to permit entrance at the other side of the doorway, if the door structure is only partially opened, or through any portion of the doorway if the entire door structure is moved around to its fully open position at the side of the building.

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 sliding and swinging garage door 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 a sliding and swinging garage door construction embodying the principles of the invention, with certain portions shown broken away for convenience of illustration.

Fig. 2 is an enlarged front elevation of a portion of the track upon which the door sections are supported, and of the special hanger employed for the swinging door section.

Fig. 3 is a horizontal section of the front and side walls of the garage, on a line above the track on which the doors are supported, showing the door sections in closed position.

Fig. 4 is an enlarged vertical section on line 4—4 in Fig. 3.

Fig. 5 is a similar vertical section showing the swinging door in partially open position.

As thus illustrated, the garage or other building 1 has a wide doorway 2 in the front wall thereof, and has a side wall 3 at right angles thereto. The track for supporting the hangers of the door sections may be of any suitable character, and has a long straight section 4 over the doorway, a long straight section 5 at the side of the building, and a curved section 6 connecting together the two straight sections.

As shown, the entire sliding and swinging door structure comprises the two sliding sections 7 and 8, connected together by upper and lower hinges 9 (the lower hinges not being shown) and supported by hangers 10, 11 and 12, of any suitable character, on the said track. The swinging door section 13 is connected to the sliding door section 8 by upper and lower hinges 14 (the lower hinges not being shown), and is supported by a special hanger 15 on the track. This hanger has its lower end provided with a pair of rollers 16 on the horizontal pin or rod 17, as shown, said pin or rod being suitably supported by the

lower end portions of the body of the hanger. The swinging door section 13 is provided on the inner side thereof with a bracket 18 having an upper horizontal and inwardly projecting portion 19 adapted to rest on the rollers 16 at all times. This door section 13 is also provided with a spring-pressed pivoted catch 20 adapted to slide under the middle portion of the pin or rod 17, and to then spring upwardly into latching position, as shown in Fig. 5 of the drawings. This holds the swinging door section in partially open position.

To enter the building, the door will be unlocked or unlatched, it being understood that any suitable or desired means can be employed for locking or latching the swinging door section in closed position. When the swinging door section 13 is then pushed inward, the catch 20 springs under the pin or rod 17, as shown in Fig. 5, and latches the upper corner portion of the door section 13 in place on the special hanger 15, which supports the weight of the swinging door section at all times. Handles of any suitable character (not shown) can be placed on the outer side of the door structure, and by grasping one of these handles, after the swinging door section 13 has been swung inwardly to the position shown in Fig. 5, the entire door structure can then be caused to slide along on the track and around the curve, and into fully open position at the side of the building, thus opening the doorway for the full width thereof; or if, after thus partially opening the swinging door section 13, it is merely desired to enter the building, the door structure may be moved over just far enough to permit entrance to the garage or other building between the door section 7 and the left-hand side of the doorway.

When it is desired to close the door structure, a pull may be given the chain or other connection 21 to disengage the catch 20 from the pin or rod 17, and this door section 13 can then be swung outward into fully closed position in the same vertical plane as the other door sections.

It will be understood, of course, that the garage or other building may have an ordinary rear door (not shown) for entrance into the building, when it is not desired to open the sliding door structure.

It will be understood that the track sections 4, 5 and 6 can be supported in proper position inside the building and on the walls thereof by any suitable known or approved means, a sheet-metal track and housing construction of the kind shown being common and well known.

With the construction shown and described, which is illustrative of the invention, it will be seen that the swinging door section 13, which, as shown, is the leading section when the entire door structure is opened, is supported at all times, at both upper corners thereof, so that this door section does not tend to sag. Furthermore, in opening the door structure, this leading door section 13 is latched to its special hanger 15, as described, and cannot swing around or get in the way or interfere in any way with the desired opening movement of the door structure. It will be understood, of course, that the track section 5 is long enough to permit all of the door sections to be supported thereon, in order to fully open the door structure in the manner described.

Without disclaiming anything, and without prejudice to any novelty disclosed, what I claim as my invention is:

1. A sliding and swinging door construction comprising a track having two straight sections at an angle to each other, with one track section supported over the doorway of a building, and the other track section supported at the side of the building, a curved track section connecting the two straight sections, one or more sliding door sections supported by hangers to travel on said track sections, a swinging door section forming the leading section when the door structure as a whole is moved out of the doorway and around the curve to a position at the side of the building, an additional hanger mounted to travel on said track, and means on said door always engaging said hanger, whereby the leading portion of said swinging door section is always supported on said additional hanger, said means and hanger having provisions permitting the swinging door section to swing inward a distance from the closed position thereof, without disturbing the sliding section or sections for permitting said swinging door section to lead the other door section or sections around the curve into open position.

2. A structure as specified in claim 1, the said means for supporting the swinging door section on said additional hanger having in association therewith a catch to latch the swinging door section in partially open position on said additional hanger.

3. A structure as specified in claim 1, said additional hanger and said means for supporting the swinging door section thereon preventing the swinging door section from opening far enough to permit entrance between this door section and the adjacent side of the doorway.

4. A structure as specified in claim 1, said additional hanger having a horizontal portion at its lower end, and said means for supporting the swinging door section comprising a horizontally-disposed member resting on said horizontal portion and secured to the swinging door section.

5. A structure as specified in claim 1, said

additional hanger having a horizontal portion at its lower end, and said means for supporting the swinging door section comprising a horizontally-disposed member resting on said horizontal portion and secured to the swinging door section, together with a spring catch on the swinging door section in position to slide under and engage said horizontal portion of the hanger, thereby latching the swinging door section on said additional hanger.

6. A structure as specified in claim 1, comprising means for latching the swinging door section on said additional hanger, thereby preventing the swinging door section from swinging around while leading the other door section or sections into open position.

7. A door structure comprising a track, a hanger thereon, a hinged and swinging door capable of swinging movement while the axis thereof is stationary, and means on said door always engaging said hanger, whereby the swinging side of said door is supported at all times by said hanger, in different positions of the door toward and away from the hanger, preventing the swinging side of the door from sagging, and said means and hanger having provisions for permitting inward swinging movement under and toward the hanger of the door into individual open position from the closed position thereof, providing a variable point of support for the door on the hanger.

8. A structure as specified in claim 7, comprising means whereby said swinging door is also movable edgewise by a sliding movement thereof horizontally.

9. A structure as specified in claim 7, in combination with a sliding door section supported to travel on said track hinged to said swinging door section, said hanger and said means whereby the swinging door section is supported thereon permitting the swinging door to swing inward a distance while said sliding door section remains in closed position.

10. A structure as specified in claim 7, said track having two straight sections connected together by a curved section, and said door also having edgewise movement horizontally around the curve into open position.

11. A sliding and swinging door construction comprising a track having two straight sections at an angle to each other, with one track section supported over the doorway of a building, and the other track section supported at the side of the building, all inside of the building, another track section connecting with the two straight sections, one or more sliding door sections supported by hangers to travel on said track, a hinged swinging door section supported adjacent both side edges thereof on said track and forming the leading section when the door structure as a whole is moved out of the doorway and around to a position at the side of the building, means preventing said swinging door section from opening inwardly far enough to permit entrance between this door section and the adjacent side of the doorway, having provisions operative to permit this swinging section to lead the other section or sections around into open position, said means thereby requiring that the door structure as a whole be opened from the outside to permit entrance between the last or following door section and the other side of the doorway.

Specification signed this 19th day of May, 1928.

WILLIAM D. FERRIS.