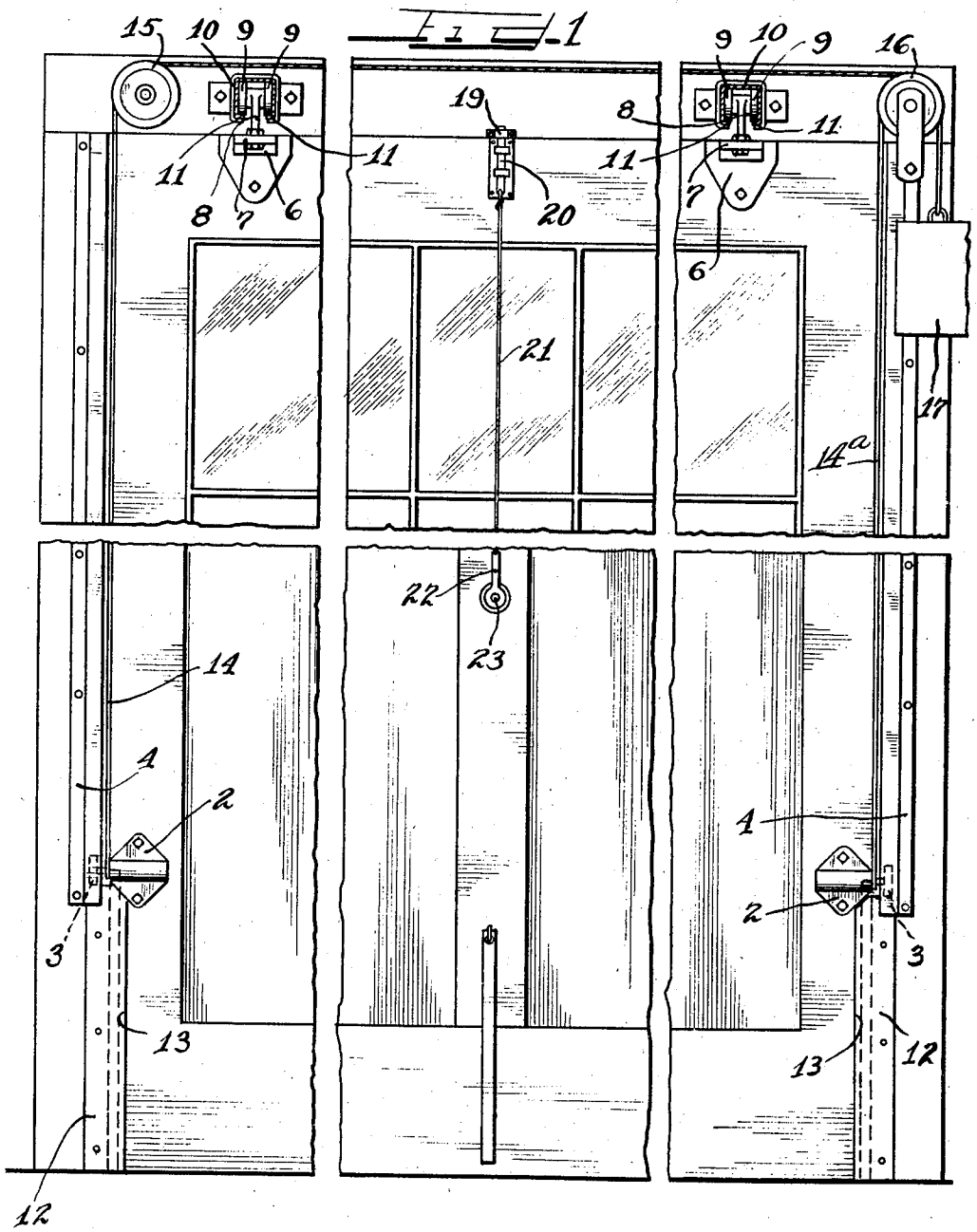
May 22, 1934. C. M. EVANS 1,959,663

OVERHEAD GARAGE DOOR

Original Filed July 20, 1931 2 Sheets-Sheet 1

Fig. 1



Inventor

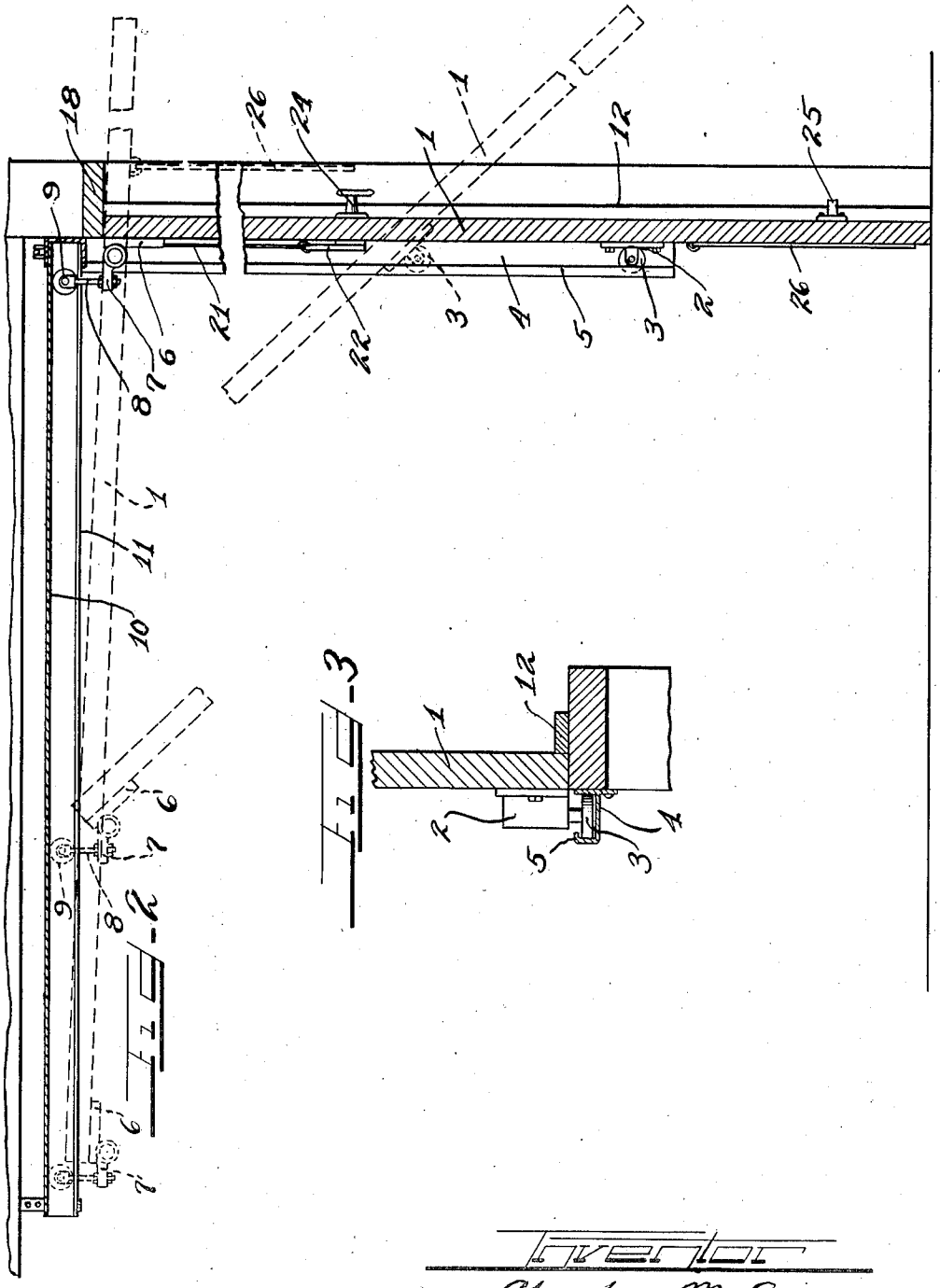
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OVERHEAD GARAGE DOOR

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Patented May 22, 1934 1,959,663

UNITED STATES PATENT OFFICE

1,959,663

OVERHEAD GARAGE DOOR

Charles M. Evans, Dublin, Ind., assignor, by mesne assignments, to Western Products Company, Inc.

Application July 20, 1931, Serial No. 551,853
Renewed November 23, 1933

1 Claim. (Cl. 20—19)

This invention relates to an overhead door construction primarily designed for use in connection with garages or adapted for use in connection with other buildings.

An object of this invention is to provide a one piece door that can be easily and quickly elevated to an overhead position.

It is a further object of this invention to provide a pivot point at a substantially low point upon the door so that as the same swings to its overhead position only a small portion of the door will project beyond the doorway.

The invention comprises a novel structure and combination of parts hereinafter described and more particularly pointed out and defined in the appended claim.

In the accompanying drawings which illustrate a preferred form of this invention and in which similar reference numerals refer to similar features in the different views:

Figure 1 is an interior broken elevational view of a garage having a door involving this invention.

Figure 2 is an enlarged sectional view through the door and one of the upper supporting guideways for the door.

Figure 3 is an enlarged sectional view taken upon the line III—III of Figure 1 looking in the direction of the arrow.

In referring to the drawings, it will be observed that the door embodying this invention consists of a one-piece member 1 having bearings 2 attached to its lateral margin adjacent the lower portion thereof at a point which is substantially a quarter of the height of the door from the bottom thereof. Guide rollers 3 have shafts journaled in the bearings 2 and these rollers travel in channel-like guideways 4 which are attached to the sidewalls of the doorway. These channel-like guideways or tracks 4 have inturned lips or flanges 5 for confining the rollers 3.

Upon the upper edge of the door, there are a pair of spaced castings 6 as shown more clearly in Figure 1. Suitable arms 7 are pivotally connected to these castings 6 as shown in Figure 2. A roller hanger 8 is adjustably supported by each arm 7, and each roller hanger 8 supports a pair of spaced rollers 9 which travel in inverted channel-like tracks 10 which are secured within the garage at a height which is a trifle above the top of the door opening. The depending flanges of the channel-guides or tracks 10 have inwardly extending lips or flanges 11 upon which the rollers 9 are adapted to travel.

A pair of weatherstrips 12 are attached to the outer surfaces of the door frame and extend from the top to the bottom of the door frame. The lower lateral portions of the door below the rollers 3 are cut away as indicated at 13 in order to pass the weatherstrip 12 when the lower portion of the door is swung outwardly as will later more fully appear. A cable 14 is attached to the axle of one roller 3 as shown in Figure 1 and this cable extends vertically to the top of the doorway where it is trained over a pulley 15. From the pulley 15, the cable extends across to the other side of the doorway and is trained over another pulley 16. A counterweight 17 is attached to the free end of the cable 17 which hangs over the pulley 16. When the door 1 is in its closed position, the upper edge engages under the top frame member 18 as shown in Figure 2 and the counterweight, of course, has no effect upon the door until the lower end is swung outwardly and the upper end is swung inwardly beyond the top frame member 18. A cable 14*a* is connected to the axle of the roller upon the other side of the door and is trained over a pulley mounted coaxially with the pulley 16 but in the rear of said pulley so as not to be observable in Figure 1. The free end of this cable is also attached to the counterweight 17.

In referring to Figure 1, it will be observed that a keeper 19 is attached to the upper frame member 18 and a latch bolt 20 is mounted in a suitable casting attached to the top portion of the door and is adapted to slidably engage the keeper 19 for locking the door in closed position. A suitable wire 21 is attached to the lower end of the latch bolt 20 at one end while the other end of the wire is attached to a crank arm 22 which is secured upon a shaft 23 which extends through the door and is provided with an operating knob 24, the latchbolt may be retracted for unlocking the door when it is desired to open the same. Of course, the latchbolt may be also projected into its latching position by rotating the knob 24 in the opposite direction.

A suitable handle 25 may be attached to the outer surface of the door adjacent the bottom thereof as shown in Figure 2 for the purpose of pulling the door outwardly at its lower end when it is desired to open the same. Upon the inside of the door, there is secured a suitable strap 26 or the like which hangs down sufficiently when the door is in its open position so that it may be grasped by the hand of a person for pulling the door downwardly from its overhead position and closing the same.

In operating the door, it is only necessary to

unlatch the same by rotating the knob 24 and pull outwardly upon the handle 25 when the counterweight will elevate the door. It will be evident that when the lower portion of the door is pulled outwardly, it will pivot upon the rollers 3 and the upper portion willl swing inwardly causing the rollers 9 to travel in their guide tracks. Due to the fact that the rollers 3 which constitute the pivotal point of the door are located at a distance below the center line of the door, only a small portion of the door will project outwardly beyond the line of the building when the door is being opened. When the door is closed, it will abut the weatherstrips 12 as shown and effectively seal the weather except for the small portion of the door that is cut out. However, as this cutout portion fits the sides of the weatherstrips quite closely very little weather can enter therebetween.

It will be appreciated that by attaching the cables at a point about a quarter from the bottom of the door, a very good balancing arrangement is obtained so that the door may be easily elevated as soon as the upper portion is pushed inwardly beyond the frame member 18. In other words, when the door is in its overhead position, the fulcrum point will be at the rollers 9, the power will be applied at the rollers 3 and only a short portion of the door will project outwardly beyond the rollers 3, whereby the counterbalancing force is greatly reduced over the common constructions. A further important factor resides in the simplicity of the structure of the door, and its mounting and the ease with which it can be opened and closed.

I am aware that many changes may be made and numerous details of construction may be varied through a wide range without departing from the principles of this invention, and I, therefore, do not purpose limiting the patent granted hereon otherwise than necessitated by the prior art.

I claim as my invention:

In a building having a doorway provided with a frame, weather strips attached to the outer surfaces of the sides of said frame, guide tracks upon the inner surfaces of the sides of said frame, guide rollers secured to the lateral margins of the door below the center line thereof and located in said guide tracks, the lateral margins of the door being cut away below said guide rollers to clear said weather strip when the door is tilted, inwardly extending tracks above said door intermediate the sides thereof, hangers upon the upper margin of the door, rollers carried by said hangers for traveling upon said last mentioned tracks, means for latching the upper end of the door upon the inner side thereof and means for tilting and elevating the door to overhead position.

CHARLES M. EVANS.