May 26, 1925. 1,539,014

H. N. MATZEN

GARAGE DOOR

Filed Aug. 21, 1922 2 Sheets-Sheet 1

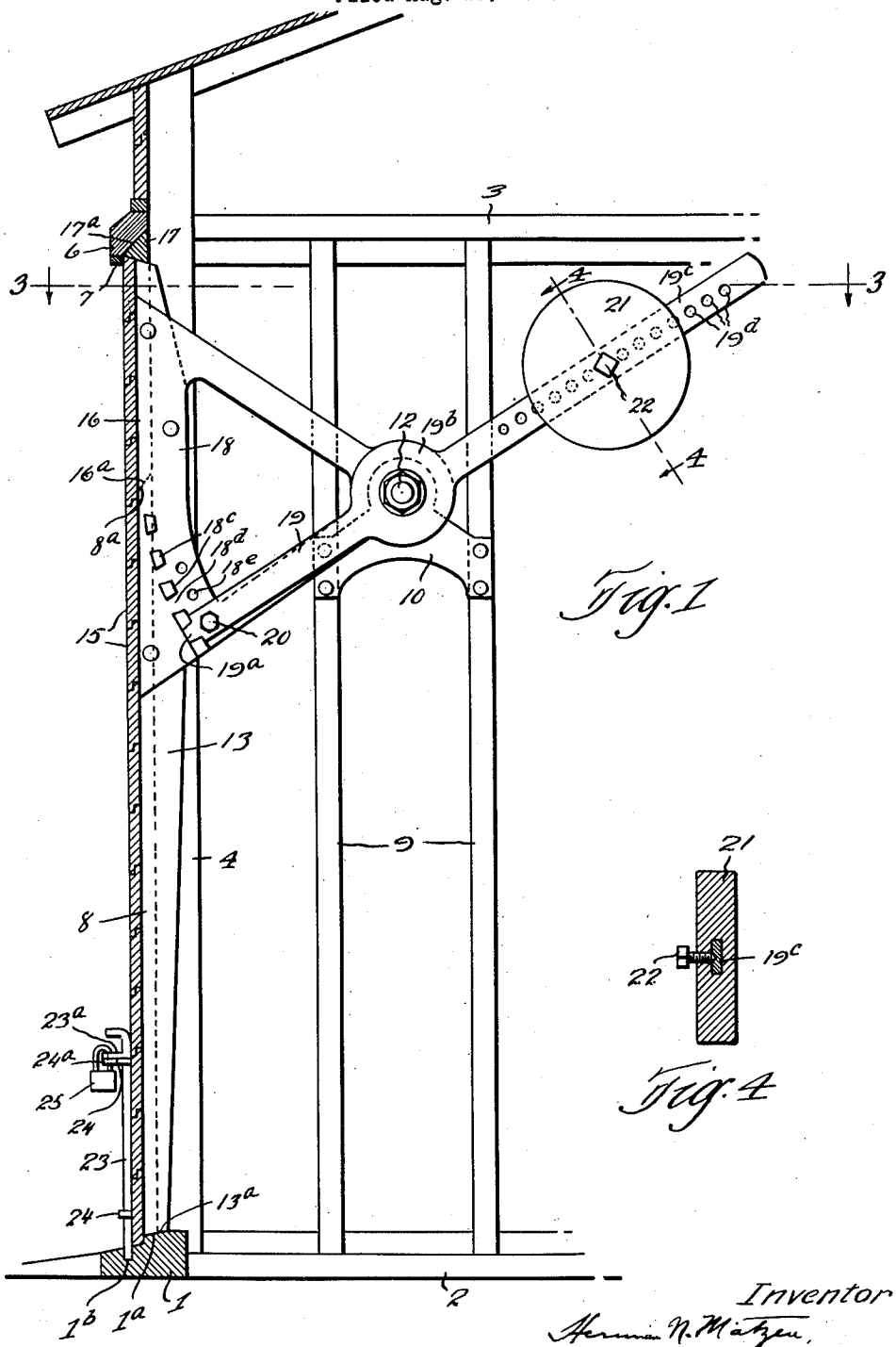


Fig. 1

Fig. 4

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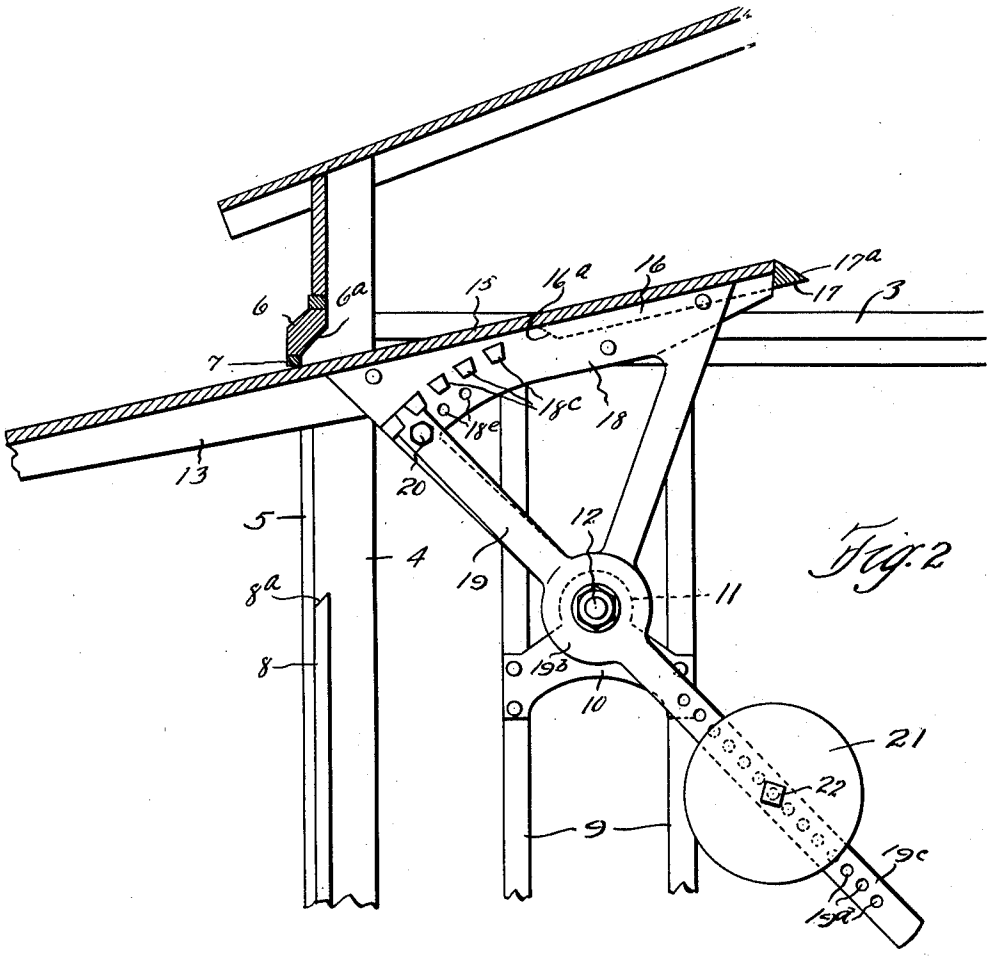


Fig. 2

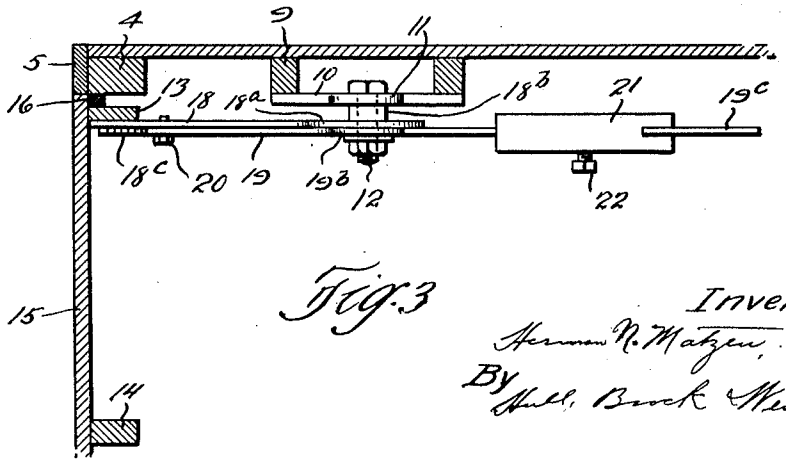


Fig. 3

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UNITED STATES PATENT OFFICE.

HERMAN N. MATZEN, OF CLEVELAND, OHIO.

GARAGE DOOR.

Application filed August 21, 1922. Serial No. 583,178.

To all whom it may concern:

Be it known that I, HERMAN N. MATZEN, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Garage Doors, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

This invention relates to doors, and more particularly to doors such as are employed in garages or other out-buildings. The general purpose and object of the invention is to provide a construction and arrangement of door and its cooperating parts which will enable the door to be conveniently opened and closed, with a minimum of effort on the part of the operator; which will, when open, serve as an extension of the roof as a protection against rain, etc.; also to provide a door of this character with a counterweight connected thereto in such manner that the counterweight may be conveniently adjusted not only to vary its lifting or counter-balancing effort upon the door, but to enable the application of such weight to be varied to accommodate the counterweight and supporting arm to varying installations. Further and more limited objects of the invention will appear hereinafter and will be realized through the combinations of elements embodied in the claims hereto annexed.

In the drawings forming part of this application, Fig. 1 represents a vertical sectional view of the front portion of a garage or similar building having my invention applied thereto, the door being shown in its closed position; Fig. 2 a similar view showing the upper portion of such garage or outbuilding and a portion of the door, the latter being in its open position; Fig. 3 a horizontal sectional view corresponding substantially to the line 3—3 of Fig. 1; and Fig. 4 is a sectional detail corresponding to the line 4—4 of Fig. 1.

Describing the various parts by reference characters, 1 denotes the front bottom sill, 2 one of the bottom side sills and 3 one of the top frame members of the garage or other building. For the purpose of convenience of description, the building will be referred to hereinafter as a "garage". The sill 1 may be of concrete or other suitable material and has its upper face beveled, as shown at 1^a, to form a seat for the lower ends of the vertical frame members of the door; it is also provided with a socket 1^b for the lower end of a locking bolt to be carried by the door.

On each side of the door opening, the garage is provided with the frame members 4 to which the siding 5 may be nailed. Extending transversely across the top of the door opening is a lintel 6, having its inner edge beveled, as indicated at 6^a, to cooperate with and receive the correspondingly beveled upper edge of the door (to be described hereinafter). The lower edge of the lintel 6 is provided with a transverse strip 7 of felt or other yieldable material forming a bumper or stop for the swinging door as well as a protection against the weather. Secured to the opposed faces of the frame members 4 are the jamb sections 8, each extending upwardly from the bottom of such frame member and terminating with a beveled upper end 8^a at a point vertically spaced from and below the lintel 6.

9 denotes a pair of uprights, there being a pair on each side of the garage doorway opening, the members of each pair being supported by their respective bottom sill 2 and cross piece 3. Each pair of uprights 9 forms a support for a bracket 10, said bracket having an upwardly projecting bearing portion 11 provided with a central opening for the reception of a bolt 12, which bolt supports the corresponding side of the garage door in a manner to be explained hereinafter.

The door comprises two frame members 13, one or more intermediate frame members 14 and weatherboarding or other suitable siding or covering material 15. Each of the frame members 13 has at its upper portion a jamb section 16, which extends substantially to its upper end and has its lower end beveled, as indicated at 16^a, so that, when the door is closed, it contacts with the upper end of the jamb section 8 and extends and completes the same. Extending across the top of the door is a transverse member 17 having its outer face beveled, as indicated at

17ª, whereby it contacts with the correspondingly beveled face 6ª of the lintel 6 when the door is closed, thus forming a weatherproof joint therewith. The surfaces 6ª and 17ª are preferably beveled on the arc of a circle described from the center of the bearing portion 11, about which the door swings as a pivot.

For the purpose of enabling the door to swing about this pivot, each side frame member 13 has attached thereto a supporting bracket of generally triangular form, the foot of the bracket (indicated at 18) being firmly secured to its appropriate frame member 13 and the apex of the bracket being provided with a circular bearing portion 18ª having a central aperture for the bolt 12, there being a spacing sleeve 18ᵇ interposed between each bearing portion 11 and the cooperating bearing portion 18ª. The base 18 of each bracket is also provided with a plurality of inwardly extending lugs or projections 18ᶜ providing notches 18ᵈ therebetween for the reception of a tooth 19ª carried by the outer end of a weight-supporting arm 19. The projections 18ᶜ are preferably arranged on a short arc of a circle described from the center of the bolt 12, and an aperture 18ᵉ is provided in radial alignment with each notch for the reception of a bolt 20, by means of which the outer end of each arm 19 may be adjusted with its tooth 19ª in the proper notch to suit a particular installation, being secured in such position by means of the bolt 20 and the appropriate aperture 18ᵉ. The arm 19 is provided with a central bearing portion 19ᵇ adapted to engage the corresponding bearing portion 18ª of the door supporting bracket, and is extended beyond such bearing 19ᵇ to provide an inner weight-supporting arm 19ᶜ having longitudinally arranged recesses 19ᵈ enabling the weight 21 to be adjustably secured thereto by means of the bolt 22, the weights being slidable along the arm in a manner ordinary with the use of counterweights.

Ordinarily, each side of the door will be provided with a bracket 18, counterweight arms 19, 19ᶜ, and a counterweight 21, as this arrangement enables the counterweighting effort to be balanced and also removes the counterweights from the door opening, leaving the latter clear.

The lower ends of the door frame members 13 and 14 will be beveled, as indicated at 13ª on the former frame members, to cooperate with the beveled surface 1ª of the cross strip 7; and, to lock the door in its closed position, I preferably employ a bolt 23 which is slidably mounted in suitable guides 24 on the door, so that the lower end of the bolt can enter the aperture 1ᵇ provided therefor in the sill 1. The bolt may be locked in place by means of an eye 23ª carried thereby and adapted to overlap an eye 24ª on the upper guide, these eyes serving to receive jointly the shackle of a padlock 25.

By the construction described, I have provided a garage or similar building with a door which may be very easily opened by a lifting movement; in fact, the weights 21 may be arranged so as slightly to overbalance the door and tend to lift the same, thus enabling the operator to draw the bolt 23, whereupon the door will open itself through the action of the weights 21, the door striking against the felt or similar resilient stop 7 and assuming the inclined shedding position indicated in Fig. 2. When in this position, it will be evident that the operator will be protected from rain, snow or the like.

It will be noted further that the relation of the counterweight supporting arms to the doors may be varied in accordance with particular installations, the carrying brackets and counterweight parts thus being capable of independent manufacture and application to varying doors and installations thereof.

Having thus described my invention, what I claim is:

1. The combination with a building having a doorway and a lintel above such doorway, said lintel having a strip of yieldable material along the lower edge thereof and a beveled seat along the inner edge thereof, and a door pivotally supported within said doorway, said door having a transverse member along its upper edge provided with a beveled seat adapted to engage the beveled seat of said lintel, said door being adapted to engage said yieldable material in full opened and full closed positions.

2. The combination, with a building having a doorway provided on each side thereof with a sill having a door jamb section extending upwardly from the bottom thereof and terminating short of the top of such doorway and each having its upper end beveled, of a lintel above such doorway and provided with a beveled inner edge, a door, means for pivotally supporting said door on a substantially horizontal axis and in position to open and close said doorway, the said door having frame members each provided with a door jamb section extending downwardly from the top thereof and each having its lower end beveled and adapted to contact with the upper end of the cooperating jamb section on the doorway frame members, respectively, and said door having a transverse member along its upper edge provided with a beveled seat adapted to engage with the beveled seat of said lintel.

3. The combination, with a building having a doorway and provided on each side of such doorway with a bracket having a

hub, of a door for such doorway having on each side thereof an inwardly projecting bracket having a central bearing portion pivotally connected to said hub, a counterweight supporting arm pivotally connected to the pivotal axis of each of the door brackets, the end of each of said arms adjacent said door being adjustably connected to the door bracket, and a counterweight adjustably connected with the opposite end of each of said arms.

In testimony whereof, I hereunto affix my signature.

HERMAN N. MATZEN.