W. C. TOLL.

SLIDING DOOR.

APPLICATION FILED SEPT. 24, 1915.

1,220,910.

Patented Mar. 27, 1917.

2 SHEETS—SHEET 1.

Fig. 1.

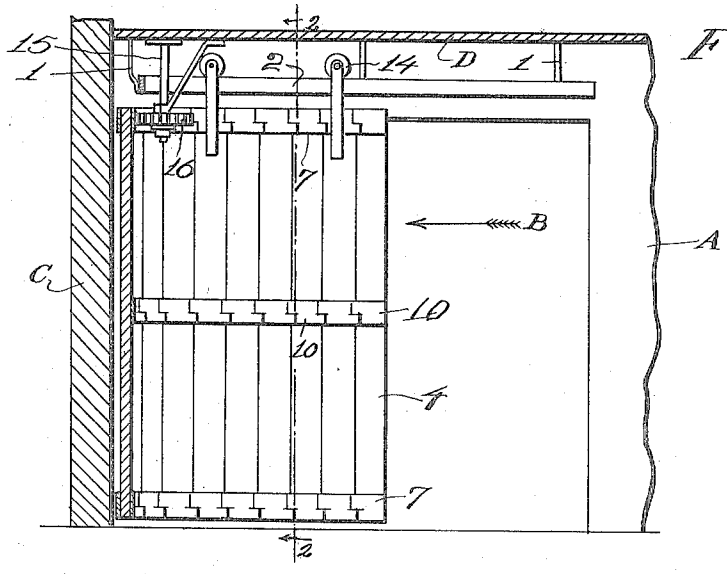


Fig. 2.

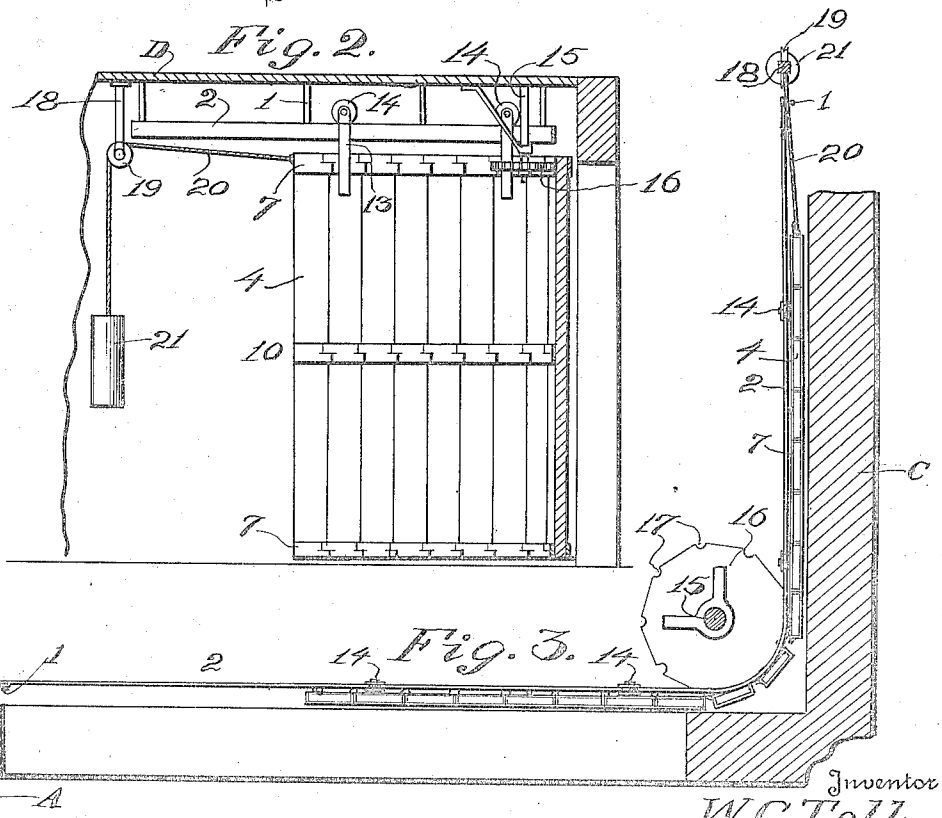


Fig. 3.

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Witnesses

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2 SHEETS—SHEET 2.

Fig. 4.

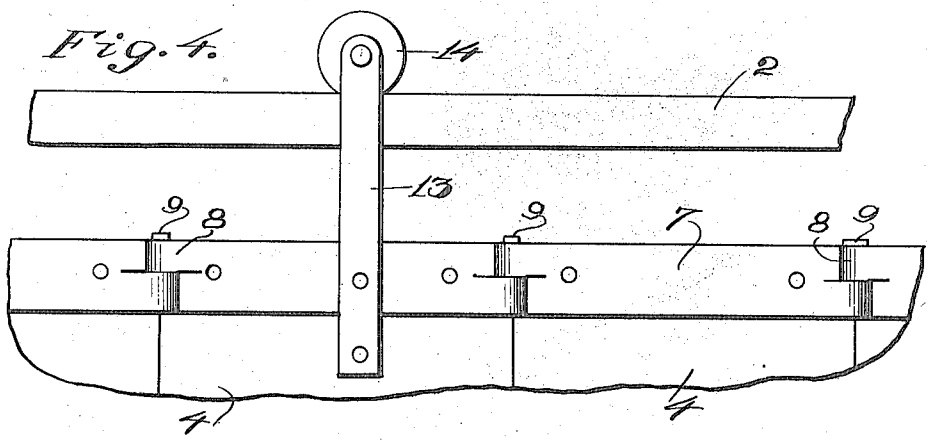


Fig. 5.

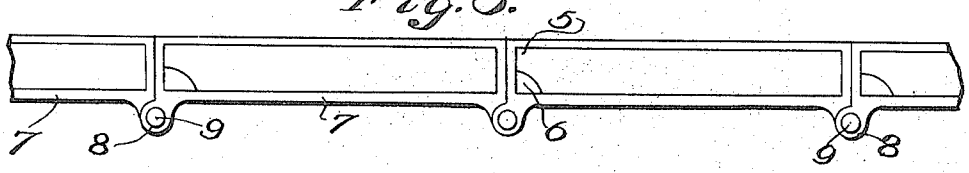


Fig. 6.

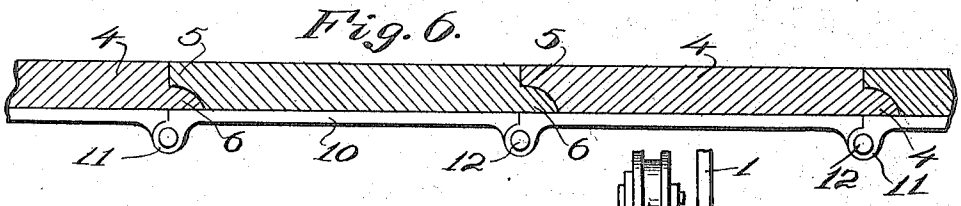


Fig. 7.

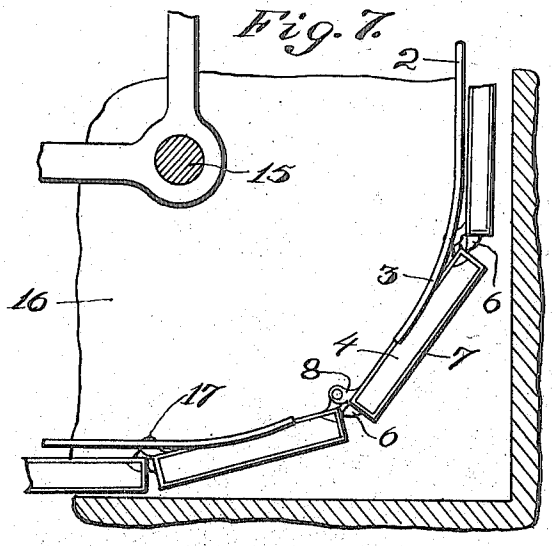
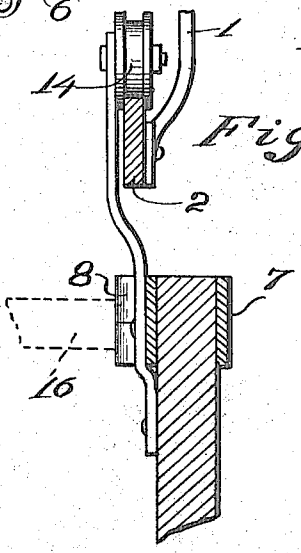


Fig. 8.



Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM C. TOLL, OF ROSENDALE, WISCONSIN.

SLIDING DOOR.

1,220,910. Specification of Letters Patent. Patented Mar. 27, 1917.

Application filed September 24, 1915. Serial No. 52,434.

To all whom it may concern:

Be it known that I, WILLIAM C. TOLL, a citizen of the United States, residing at Rosendale, in the county of Fond du Lac and State of Wisconsin, have invented certain new and useful Improvements in Sliding Doors; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The primary object of this invention is to provide a door, for small buildings such as garages or the like, which are used in connection with residences and which requires to have formed therein a large door opening, which will be so formed that the same can be opened inwardly and when in said open position will occupy very little space.

Another object of the invention is to provide a door for carrying out the above object, and which door will be cheap to manufacture, will be durable, conveniently operated and readily installed in any building without necessitating any change in the construction of the building.

Other objects will appear and be better understood from that embodiment of my invention of which the following is a specification, reference being had to the accompanying drawings forming a part thereof, in which:—

Figure 1 is a vertical sectional detail taken through one of the side walls of the building and through the adjacent series of slats or sections, and showing the other series of slats or sections partially closing the door opening in the front wall of a building,

Fig. 2 is a vertical sectional detail taken through the door opening in the front wall and looking in the direction of the arrow in Fig. 1,

Fig. 3 is a horizontal section taken on the line 2—2 of Fig. 1,

Fig. 4 is a detail view of the upper end of certain of the slats and showing one of the hangers for the slats,

Fig. 5 is a top plan view of the upper end of certain of the slats of which the door is formed, showing the manner of hingedly connecting the adjacent slats together,

Fig. 6 is a longitudinal section through the slats and showing the overlapping tongues of the adjacent slats and the intermediate hingedly connected rods carried by the slats,

Fig. 7 is a detail plan of the corner disk, showing the manner in which the peripheral sockets in the disk receive certain hinge connections for the slats,

Fig. 8 is a vertical detail section taken through one of the hangers for the door.

Referring to the drawings, the letter A designates the front wall of a building having a door opening B, C one of the adjacent side walls, and D the ceiling for the building.

Extending from the ceiling D and arranged in an angular series along the front wall A and the side wall C, are a plurality of spaced and inwardly curved brackets, designated 1, the lower ends of which support an angular track 2, the angular portions of which extend respectively along one of the sides and front walls of the building, the said track being positioned above the door opening, as shown most clearly in Figs. 1 and 2 of the drawings, the angular portions of the track being connected to each other by means of an arcuate portion 3.

The door for closing the door opening B consists of an angular series of hingedly connected vertically disposed slats or sections 4, which when the door is in closed position, extend across the opening and along the side wall of the building. These slats or sections are formed either of wood or metal, and each have its vertical longitudinal edges formed with oppositely arranged tongues 5 and 6, the tongues 5 of one slat being arranged in overlapping engagement with the tongues 6 on the adjacent slat as shown in Fig. 6. The hinge connection for the slats consists of rectangular shaped frames 7 which are mounted upon the opposite ends of the slats, and each of which has one end provided with an offset eye 8, and the opposite end with an offset lug 9. The frames 7 are so arranged on the ends of the slats, that the end upon which the eye is formed on one frame is opposed to the end upon which the lug is formed on the adjacent frame, so as to admit of the lug being loosely received by the eye, as shown in Figs. 4 and 5. With this arrangement, the adjacent slats of which the door is formed, are hingedly connected for a purpose to be hereinafter referred to. The slats 4 are also provided, at points intermediate their ends, with transversely extending bars 10. These bars or rods 10 are arranged in horizontal alinement with each other and have one end

provided with an offset eye 11, and its opposite end with an offset lug 12, the said bars 10 being so arranged on the slats that the eye on one bar will be loosely received by the lug on the adjacent bar, so as to provide an additional hinge connection for the slats.

Certain of the slats 4 carry at their upper ends vertically disposed hangers 13, and the upper ends of these hangers 13 carry grooved rollers 14, which operatively engage the upper edge of the track 2.

Depending from the ceiling and positioned in line with the point of juncture between the front and side walls and spaced a considerable distance from the track 2, is a stationary shaft 15. The lower end of this shaft has loosely mounted thereon a disk 16. The disk 16 is peripherally provided with spaced pockets 17, and the said disk is so positioned with respect to the door, that certain of the offset eyes and lugs are received by the adjacent pockets in the disk. The ceiling has depending therefrom, at a point adjacent the side wall and in line with the adjacent series of brackets, a bracket 18, the lower end of which carries a pulley 19 over which passes a cord 20, one end of which is connected in any suitable manner with the upper frame 7 carried by the adjacent end slat of the series which extend parallel with the side wall, the opposite end of the cord extending downwardly in a vertical plane from the pulley and provided with a balance weight 21.

In use, when the door is in closed position and lying across the door opening, certain of the slats or sections extend along that portion of the track positioned adjacent the side wall of the building for a part of the length of the said track portion, and forms a series of sections which lie substantially at right angles to the slats that cover the door opening. When the slats or sections which close the door opening are slid rearwardly, to open position, the weight will descend and assist in the rear travel of the sections, the disk 16 being also rotated during the rearward travel of the slats, so as to admit of the offset eyes in the adjacent section being received by the adjacent pockets in the disk, so that the disk can drive the sections over the arcuate portion 3 in the angular portions of the track.

Having thus described my invention, what I claim as new is:—

In a door structure, the combination with an angular track, of a plurality of sections slidable on the track, hinges connecting said sections and extending outwardly from the surface thereof, a vertically disposed shaft located at the point in line with the point of juncture between the angular portions of the track, a friction reducing guide disk rotatably mounted on the lower end of said shaft and in alinement with said hinges, said friction guide disk having spaced pockets corresponding to the distance between said hinges, the pockets being adapted to receive the outwardly extending portions of the hinges when the latter are moved across the point of juncture between the angular portions of the track to guide said section over said angular portions of the track.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM C. TOLL.

Witnesses:
WILL SWANEY,
HAMILTON BUCKER.