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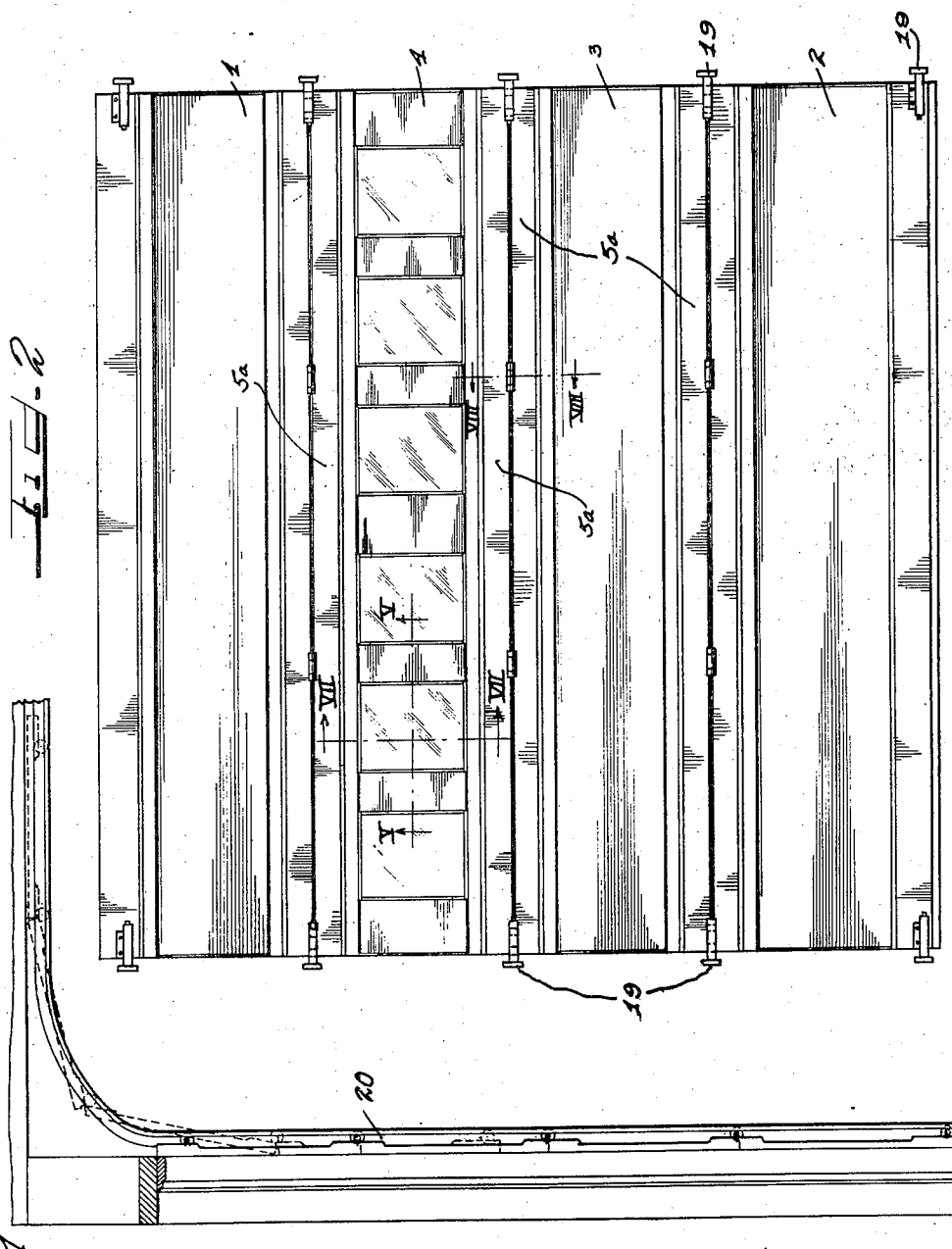
M. P. GRAHAM

2,061,304

SECTIONAL GARAGE DOOR

Filed Nov. 10, 1934

3 Sheets-Sheet 1



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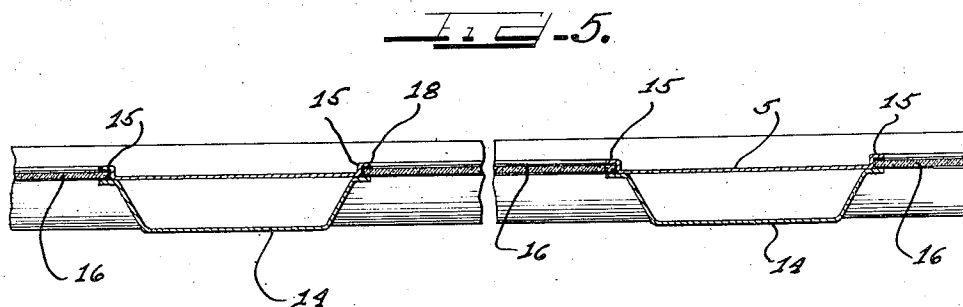
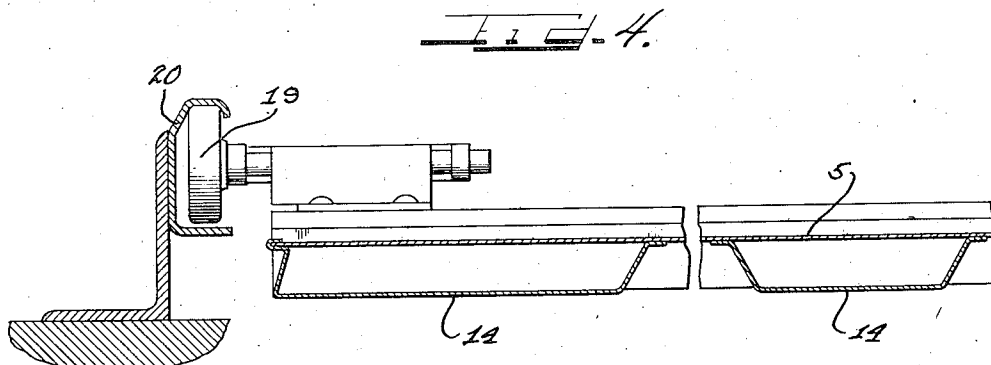
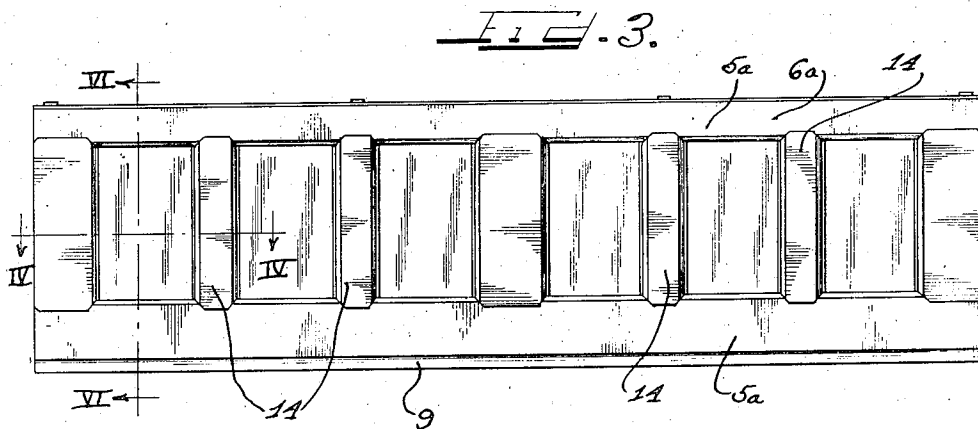
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SECTIONAL GARAGE DOOR

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3 Sheets-Sheet 2



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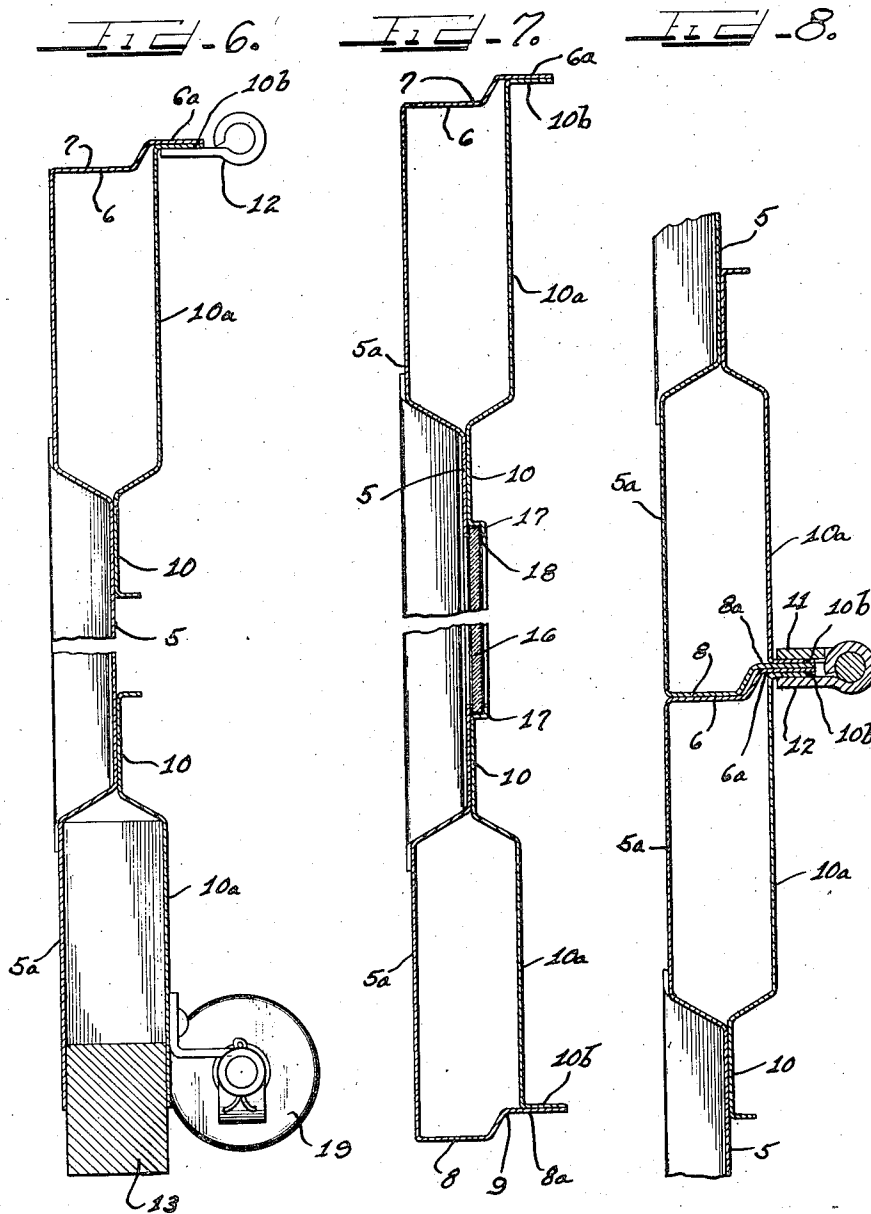
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SECTIONAL GARAGE DOOR

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3 Sheets-Sheet 3



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SECTIONAL GARAGE DOOR

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14 Claims. (Cl. 20—20)

This invention relates to a sectional garage door and concerns itself primarily with a sheet metal construction. In the past such sectional garage doors have usually been made of wood which had to be transported from a very distant location thereby greatly increasing the cost of such doors. In addition, such wooden doors were quite heavy.

According to this invention, the sections of the door are made from sheet metal whereby the cost thereof is greatly reduced. In addition, the weight of the door is materially reduced in the use of relatively light sheet metal which is suitably stamped and reinforced to give the effect of a wooden door and to provide the necessary rigidity.

This invention comprises the novel structure and combination of parts hereinafter described and more particularly pointed out in the appended claims.

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 a fragmentary elevational view of one side of a garage door frame illustrating the track for an overhead sectional door.

Figure 2 is a front elevational view of a garage door involving this invention.

Figure 3 is a front elevational view of the bottom section of the door involving this invention.

Figure 4 is an enlarged fragmentary sectional view taken upon the line IV—IV of Figure 3.

Figure 5 is an enlarged fragmentary sectional view taken upon the line V—V of Figure 2.

Figure 6 is an enlarged sectional view taken upon the line VI—VI of Figure 3.

Figure 7 is an enlarged sectional view of an intermediate section taken upon the line VII—VII of Fig. 2.

Figure 8 is an enlarged fragmentary sectional view taken upon the line VIII—VIII of Figure 2 illustrating the hinge connection between a pair of adjacent sections of the door.

In referring to the drawings, it will be observed that there has been illustrated a door consisting of a plurality of sections hinged together whereby the door can be readily raised to an overhead position. In the illustrated embodiment the door consists of an upper section 1 and a lower section 2 with a plurality of intermediate sections 3 and 4.

These sections are made from sheet metal in a manner that will presently appear. Each section

consists of a main plate 5 the upper and lower portions (Figs. 7 and 8) of which are offset outwardly as indicated at 5a. The upper offset portion 5a terminates in an inwardly directed flange 6 that is upwardly offset at its inner margin as indicated at 6a whereby a rabbet 7 is formed for a purpose that will later appear. The lower offset portion 5a with the exception of the lowermost section has an inwardly directed flange which is upwardly offset as indicated at 8a whereby a rabbet 9 is formed.

Upper and lower reinforcing plates 10 are welded to the main plate 5 between the offset portions 5a and upon the inner side thereof. These reinforcing plates are inwardly offset as indicated at 10a, and with the exception of the lowermost reinforcing plate of the lower door section, these offset portions have flanges 10b welded to the offset portions 6a and 8a of the flanges 6 and 8. These reinforcing plates cooperate with the main plate to form an upper and lower box-like structure upon each panel. Hinge members 11 and 12 (Fig. 8) are attached to the flanges 10b for hinging two sections together. When two sections are thuswise hinged together, it will be observed that the rabbeted edges of adjacent sections interfit. Thus the rabbet 7 receives the main portion of the flange 8 of an adjacent section while the rabbeted portion 9 of such adjacent section receives the offset flange 6a of the other section. The lowermost box-like structure of the lower hinge section of the door is left open as shown in Figure 6 and a shock absorbing member 13 which may be in the form of wood is secured in such box-like structure and projects beyond the lower end thereof. When the door descends this shock absorbing member will strike the ground and absorb the impact and prevent the metal from contact with the ground or foundation which is usually of concrete or the like.

In the event that a window is desired in such a garage door, spaced vertical U-shaped plates 14 may be welded to the plates 5 as shown in Figures 3 to 5, to extend between the offset portions 5a. Suitable window apertures may be cut in the main plate 5 between the vertical plates 14 as shown in Figures 5 and 7 and the lateral margins of the cut away portions of the plate 5 may be inwardly offset as indicated at 15 in Figure 5. It will be noted that the lateral vertical plate 14 cooperates with the offset portions 15 to form lateral grooves for receiving a transparent member 16.

The upper and lower grooves or lodgements for

the transparent member are shown in Figure 7. In referring to this figure, it will be noted that the upper and lower edges of the transparent member are confined between the main plate 5 and offset portions 17 formed upon the ends of the upper and lower reinforcing plates 10. A U-shaped rubber member 18 surrounds the edges of the transparent member.

The door is provided with lateral rollers 19 adapted to be mounted in suitable guideways 20 upon the sides of the door frame as is well known in the art. These guideways extend to an overhead position for supporting the door in its open overhead position.

From the foregoing, it will be apparent that a rigid, durable and relatively light garage door has been provided to take the place of the heavier and more costly wooden doors that are now generally used. It should also be appreciated that the main plate and the reinforcing plate are brought into a novel cooperative relation and that the upper and lower edge portions of adjacent sections in their rabbeted relation effectively exclude the weather between the sections.

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:

1. In a garage door, a sheet metal section comprising a main plate member having upper and lower offset portions, said offset portions terminating in flanges extending in a direction opposite to the direction of said offset portions, said flanges having terminal offset portions extending in the same direction whereby rabbets are formed upon opposite portions of said flanges, and upper and lower reinforcing plates having offset portions corresponding to the offsets of said main plate but oppositely directed, said reinforcing plates being welded to said main plate and having flanges welded to the flanges of said main plates.

2. In a garage door, a sheet metal section comprising a main plate member having upper and lower offset portions, and reinforcing plates having offset portions welded to said main plate and forming therewith upper and lower box-like structure, said main plate having terminal flanges formed with rabbets for the purpose set forth.

3. A sheet metal garage door comprising a plurality of sections, said sections having upper and lower box-like structures formed with rabbets and terminal flanges extending in the same direction and hinge members connecting said terminal flanges, the rabbets of adjacent sections having an interfitting relation.

4. In a sheet metal garage door, a plurality of hinged sections, one of said sections having upper and lower offset portions forming box-like structures, spaced vertical U-shaped metal plates welded to said section between said box-like structures, said section being cut away between said U-shaped plates and the margins of said cut away portion being offset and cooperating with said U-shaped plates for receiving a transparent member.

5. In a metal garage door, a hinge section comprising a main plate having upper and

lower offset margins terminating in right angled flanges formed with rabbets, upper and lower reinforcing plates welded to said main plate between said offset portions, said reinforcing plates having offset portions cooperating with the offset portions of said main plate for forming box-like structures and having terminal flanges welded to the flanges of said main plate.

6. A sectional door comprising a plurality of metal sections, the adjacent portions of said sections comprising spaced sheet metal plates, the plates of each section terminating in laterally directed flanges extending in the same direction, said flanges being in overlapping relation beyond the planes of said plates and hinges connecting the overlapping flanges of one section with the overlapping flanges of the other section.

7. A sectional door comprising a plurality of metal sections, the adjacent portions of said sections comprising spaced sheet metal plates, the plates of each section terminating in laterally directed flanges extending in the same direction and overlapping beyond the planes of said plates, and hinges connecting the overlapping flanges of one section with the overlapping flanges of the adjacent section, the flanges on the plates most remote from said hinges being horizontally offset to provide interfitting parts.

8. In a door, a plurality of metal sections, each section comprising a sheet metal panel member having upper and lower spaced portions, the adjacent spaced portions of said sections terminating in laterally directed flanges extending in the same direction and overlapping beyond the planes of said plates, and hinges connecting said overlapping flanges.

9. In a garage door, a sheet metal section comprising a plate having upper and lower laterally offset portions terminating in right angled flanges vertically offset to provide rabbets, a plate cooperating with each laterally offset portion to form box-like structures, and having a right angled flange abutting the flange upon the first plate beyond the planes of said plates.

10. In a sectional garage door, a plurality of sheet metal sections having upper and lower box-like structures vertically offset to provide interfitting rabbets, said box-like structures comprising spaced plates having terminal right angled flanges extending in the same direction and overlapping beyond the planes of said plates and means hingedly connecting the overlapping flanges of one section with the overlapping flanges of an adjacent section.

11. In a sectional garage door, a sheet metal section having upper and lower box-like structures, the end terminal of each box-like structure being vertically offset and having overlapping flanges extending beyond the plane thereof, and bracing members extending between said box-like structures.

12. In a sectional garage door, a sheet metal section comprising a central panel portion and upper and lower box-like portions symmetrically arranged with respect to said panel portion, each box-like portion having a pair of flanges extending in the same direction beyond the plane thereof and in overlapping relation beyond said plane, one of said flanges being vertically offset to form a rabbet in the end of the section for the purpose set forth.

13. In a sectional garage door, a pair of adjacent sections, each section comprising spaced plates having their ends at one terminal of the section transversely directed in overlapping rela-

tion and extending beyond one side of said sections, the transversely directed ends of said sections being in overlapping relation, and hinge means connecting said ends.

- 5 14. In a sectional garage door, a lower sheet metal section comprising a plate having upper and lower offset portions, a second plate attached to the first plate and having an offset portion cooperating with the upper offset portion of the

first plate, the upper ends of said plates terminating in laterally directed flanges in contacting and overlapping relation and extending beyond the side of said section, a third plate attached to the first plate and having an offset portion cooperating with the lower offset portion of the first plate to form an open ended channel and a shock absorbing member secured in said channel. 5

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