COMBINED BRACKET AND GUIDE FOR ROLLING STEEL DOORS

Filed June 19, 1930

2 Sheets-Sheet 1

INVENTOR. W. G. MILLER

BY

ATTORNEY.
This invention relates to a combined bracket and guide for rolling steel doors. It has been difficult in making doors of this character to construct the same in a manner to prevent the wind pressure exerted on the door to cause the ends of the same to be moved out of alignment with the vertical guides.

An object of my invention is to provide a guide for a rolling steel door and a bracket arranged at the top of the door opening in such a manner that the vertical guides will always be in alignment with the opening in the bottom of the bracket so that it is impossible for the door when being pulled down from its rolled up position to strike against any obstruction on the guide channel.

Another object of the invention is to provide a rolling steel door which is comparatively inexpensive in construction and which may be quickly and easily assembled in a suitable opening in a building.

These objects and the several novel features of the invention are hereafter more fully described and claimed, and the preferred form of construction by which these objects are attained is shown in the accompanying drawings in which—

Fig. 1 is a front elevation of my improved device.

Fig. 2 is a section taken on line 2—2 of Fig. 1.

Fig. 3 is a vertical section through several of the interlocking plates of a door.

Fig. 4 is a detail perspective of one of the brackets used for holding the edges of a door in alignment with the guide channels.

Fig. 5 is an edge view of the overhead bracket and one of the vertical guides; the door not shown.

Fig. 6 is a section taken on line 6—6 of Fig. 5.

Fig. 7 is a section taken on line 7—7 of Fig. 5.

Referring now to the drawings, the door 1 is arranged to close the opening 2 in the wall 3 of a warehouse or the like. The door 1 comprises a series of horizontally extending plates 4, the same being in the form of an S curve in cross section, as will be clearly understood by reference to Fig. 3. The upper and lower edges of the plates 4 are reversely rolled as indicated at 5 and 6 for interlocking relationship with the rolled edges of the next adjacent plate. As will be understood by reference to Figs. 3 and 4, an L shaped stop 7 is riveted adjacent the vertical edges of the plates 4 and so arranged that the portion 8 of the bracket 7 will closely abut the rolled edges 5 and 6 thus preventing the plate 4 from moving longitudinally in relation to each other.

A second L shaped bracket 9 is riveted at 10 to the outer edge of one of the plates 4. It is to be understood that the brackets 9 will be spaced at suitable intervals as it is not necessary to have the same upon every preceding plate 4.

As will be understood by reference to Fig. 2, an angle iron 11 is secured to the angle iron 12, the same being a part of the building. Another angle iron 13 has one flange riveted at 14 to the flange 15 of the angle iron 11. Another angle iron 16 has the flange 17 also secured to the angle iron 13 and 11 by means of the rivets 14. It will be seen that the flange 18 of the angle iron 16 is in spaced relation to the flange 19 of the angle iron 13 and a channel-shaped member 20 is riveted at 21 to the flange 18 of the angle iron 16 thus forming a space 22 between the base 23 of the channel-shaped member 20 and the flange 19 of the angle iron 13. The space 22 is of sufficient width to permit the plates 4, forming the door 1, to be easily slidable therein. It will be seen that the bracket 9 secured to the plate 4 will extend into the space formed between one flange of the angle 13 and the adjacent leg of the channel 20 and will be of sufficient width to prevent the plates 4 from being moved out of the space 22. It will be clearly understood that since the plates 4 are kept from longitudinal movement in relation to each other due to the bracket 7 extending over the outer end of the interlocking edges and since the door 1 is prevented from appreciable lateral movement being due to the fact...
that the bracket 9 secured thereto engages behind one of the legs of the channel 20, the door will maintain its position in relation to the guide channels.

Referring now to Figs. 5, 6 and 7, it will be seen that the bracket 25 has the flange 26 secured to one face of the building while a portion 27 of the said bracket is provided approximately centrally thereof with a hub 28 having the aperture 29 therein for forming a bearing for a suitable shaft (not here shown) on which the door 1 may be rolled.

It will be understood that there are two brackets 27 positioned at each side of the door opening 2. As will be seen by reference to Fig. 6, the lower end 30 of the bracket 27 is provided with an L-shaped groove 31. The portion 32 of the L-shaped groove is of the approximate width of the space 22 formed between the channel 20 and the flange 19 of the angle iron 13 and the space 33 is of approximately the same size as the space formed between the angle iron 13 and the adjacent leg of the channel 20. A rib 34 is formed integral with the lower end 30 of the bracket 27 and is of a width less than the thickness of the flange 25 so that a shoulder 35 is formed by the rib 34 and the flange 25.

By reference to Fig. 5, it will be seen that the shoulder 35 rests on the upper edge of the flange 19 of the angle iron 13 and that the base 28 of the channel iron 20 is in alignment with the flange opposite to the flange 20 on the bracket 25 and that the space 22 is in alignment with the opening 32 in the bracket 25 so that as the door is rolled up or down it will travel in a continuous unobstructed run-way.

From the foregoing description it becomes evident that I have provided a rolling steel door composed of a series of interlocking plates that are prevented from longitudinal movement in relation to each other and that the door as a whole is prevented from moving out of the runways which guide both edges of the door.

Having thus fully described my invention, its utility and mode of operation, what I claim and desire to secure by Letters Patent of the United States is—

1. A rolling steel door comprising a series of interlocking plates, the interlocking means being such as to permit longitudinal movement of one plate relative to another, a bracket mounted on the ends of one plate to engage over the interlocking end of another to hold the plates from lateral displacement, L-shaped guide channels at each edge of the door opening adapted to receive the edges of the plates and the aforesaid brackets thereon, L-shaped brackets at the edges of the plates riding in the L-shaped guide channels to hold the door as a whole from lateral displacement, a housing at the upper end of the channels having an opening through which the plates may pass and having depending portions at opposite ends provided with an L-shaped opening therein in registration at the lower end with the openings in the respective channels and at the upper end being provided with a widened throat to permit the plates and brackets to turn in passing into the housing, a flange on each of said depending portions engaging the respective channels to hold the same in alignment therewith, and a roller in the housing about which the plates are wound.

2. A rolling steel door comprising a series of interlocking plates, a channel at each side of the door opening to receive the edges of the plates, said channels being L-shaped in cross section, L-shaped brackets on the opposite edges of the plates riding in the brackets, a housing at the top of the door opening having a slot through which the plates may pass, depending portions at opposite ends of the housing for registration with the ends of the channels and having an opening therein L-shaped in cross section through which the brackets and the edges of the plates pass in passing into the housing, and means on the said depending portions engaging the respective channel to maintain the said portions with the opening therein in alignment with the channel opening.

3. A rolling steel door comprising a series of interlocking plates, a channel at each side of the door opening to receive the edges of the plates, said channels being L-shaped in cross section, L-shaped brackets on the opposite edges of the plates riding in the brackets, a housing at the top of the door opening having a slot through which the plates may pass, depending portions at opposite ends of the housing for registration with the ends of the channels and having an opening therein L-shaped in cross section through which the brackets and the edges of the plates pass in passing into the housing, and an integral flange on each of the said depending portions lying in engagement with the respective channels to maintain the said portions with the openings therein in alignment with the channel openings.

WILLIAM G. MILLER.