Feb. 7, 1928. 1,658,513

C. R. BUMBARGER

FIRE CURTAIN

Filed July 13, 1926

Fig. 1.

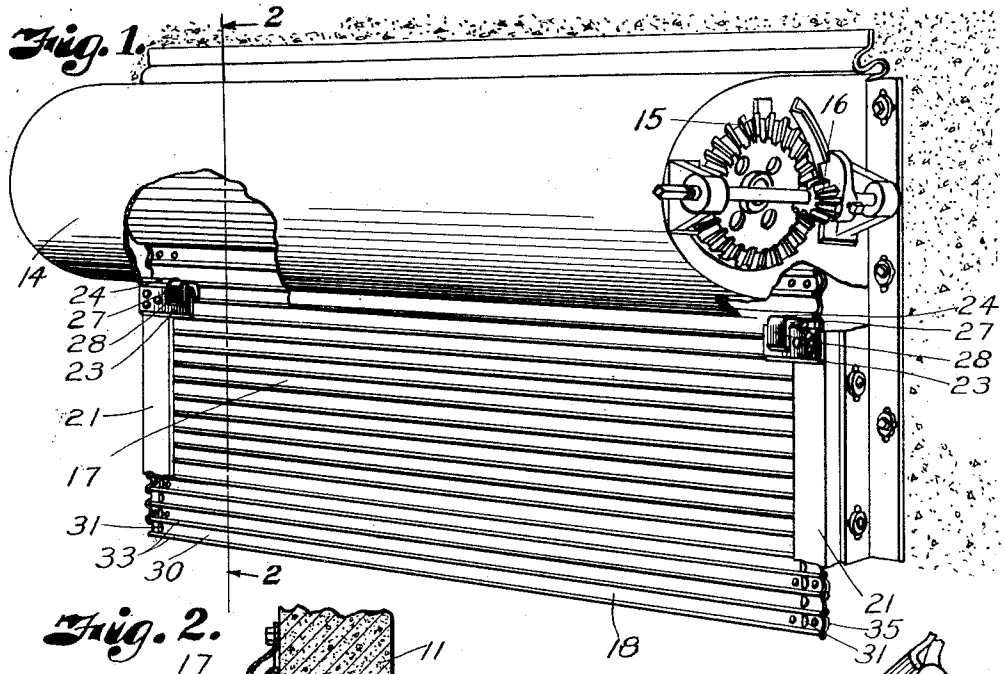


Fig. 2.

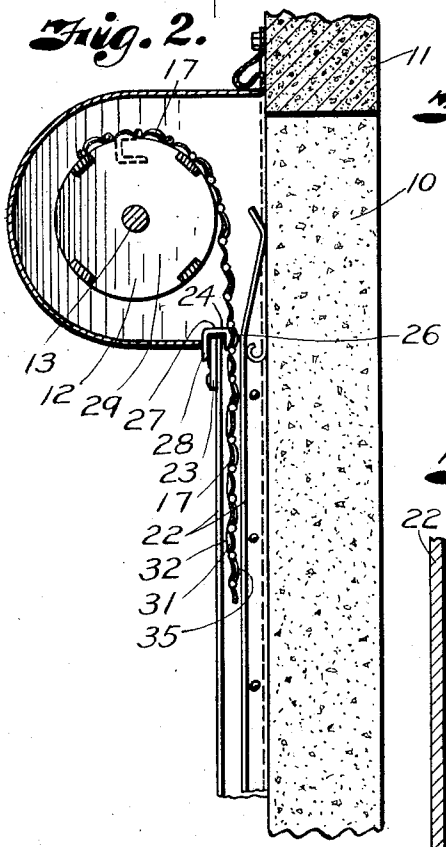


Fig. 4.

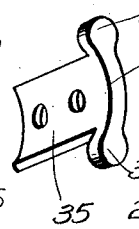


Fig. 3.

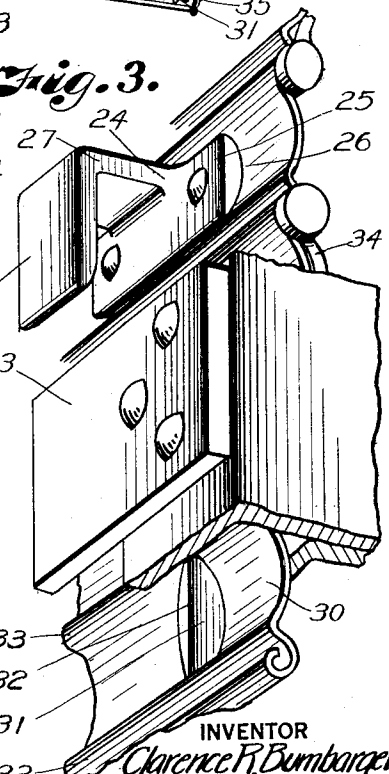
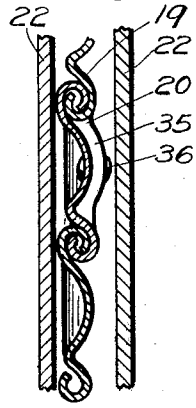


Fig. 5.



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UNITED STATES PATENT OFFICE.

CLARENCE R. BUMBARGER, OF KANSAS CITY, MISSOURI, ASSIGNOR TO GEORGE W. JOHNSON MANUFACTURING COMPANY, OF KANSAS CITY, MISSOURI, A CORPORATION OF MISSOURI.

FIRE CURTAIN.

Application filed July 13, 1926. Serial No. 122,191.

My invention relates to fire curtains and more particularly to a fire curtain made up of a plurality of flexibly connected members.

It is a purpose of my invention to provide a fire curtain with means for limiting the downward movement thereof, said means comprising co-operating stop members on the guide for the fire curtain and on said curtain.

It is a further purpose of the invention to provide a fire curtain that is made up of channelled members, which are usually concave and flexibly connected together, with means extending across the channels or concave portions of said members to substantially close the same adjacent the ends thereof to thus prevent the passage of flames through the channels of the passages and through the guide members.

It is another purpose of the invention to provide end members on the flexibly connected members of the curtain for preventing abrasion of the metal of the flexibly connected members against the guides and also limiting the lateral movement of the curtain at right angles to the wall upon which the guides are mounted.

Other objects and advantages of the invention will appear as the description of the accompanying drawings proceeds. However, I desire to have it distinctly understood that I do not intend to limit myself to the exact details shown or described, but that I intend to include as part of my invention all such obvious changes and modifications of parts as would occur to a person skilled in the art and as would fall within the scope of the claims.

In the drawings:

Fig. 1 is a perspective view of a fire curtain embodying my invention, the guide members therefor being partly broken away.

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

Fig. 3 is an enlarged, fragmentary, perspective view of one edge of the fire curtain and the adjoining guide member.

Fig. 4 is a perspective view of one of the end members employed on the fire curtain, and Fig. 5 is a fragmentary section through one of the guide members and the co-operating portion of the fire curtain.

Referring in detail to the drawings:

My improved fire curtain is shown as being mounted over an opening 10 in a wall 11 and as comprising a reel 12 having a shaft 13 which is mounted within a housing 14, the shaft being driven by means of a suitable bevel gear 15 mounted thereon, which is actuated in any desired manner by means of a bevelled pinion 16 meshing therewith. Mounted upon the reel 12 is the fire curtain 17 which is made up of the elongated, channelled members 18 which are hingedly connected together by means of the curled-over portions 19 and 20 on adjoining members which interengage, as clearly shown in Fig. 5. Channelled guide members 21 receive the opposite edges of the curtain 17 between the flanges 22 thereof.

On the outer flange 22 of each of the guide members 21 is mounted an inwardly extending ear 23 and co-operating with each of said ears 23 is a hook member 24 having a base portion 25 secured to one of the members 18, said base portion being curved as indicated at 26 to conform to the curvature of the member 18 upon which the same is mounted. Each of the hooks 24 has an outwardly extending portion 27 that is substantially perpendicular to the base 25 and a substantially right angularly extending hook portion 28 that is adapted to engage over the ear 23 with which the same co-operates, as shown in Fig. 1. When the hooks 24 are in engagement with the ears 23 the downward movement of the curtain 17 is stopped, the hooks being so placed that the curtain 17 has completely closed the opening 10 when the hooks 24 engage with said ears 23. The hooks 24 are furthermore placed nearer the edges of the curtain 17 than are the end flanges 29 of the reel. Thus the hooks can lie in the position shown in Fig. 2 when the curtain 17 is rolled up on the reel 12 without coming into engagement with any part of the reel.

In order to prevent any flame from passing through the channels in the members 18 and between the guide flanges 22, the concave face 30 of each of the sections 18 has a rib 31 struck inwardly therefrom, the top edge 32 of the rib 31 being substantially flush with the longitudinally extending rib portions 33 on each of the sections 18 to thus close the passage between the guide flanges 22 and the curtain 17 which would otherwise exist because of the concave form

of the members 18. One of said ribs 31 is provided adjacent each end of each of the members 18 on the portion thereof that is overlapped by the guide member 21.

In order to protect the edges of the curtain 17 and to aid in the guiding thereof by the guide flanges 22, end members 34 are provided that overlie the edges of alternating sections 18, said end members 34 having flanges 35 that fit against the convex sides of the members 18, being secured thereto by means of the rivets 36. The members 34 are provided with rounded knobs or enlargements 37 that overlie the joints formed by the curled-over portions 19 and 20 between the members 18 at the edges thereof to thus protect said joints. The members 34 prevent abrasion of the edges of the curtain 17 and also of the convex and concave faces of the members 18 and the ribs 31 due to engagement with the guide member 21 and also, by filling a large portion of the space between the flanges 22, prevent movement of the edges of the curtain at right angles to the wall 11.

What I claim and desire to secure by Letters Patent is:

1. In a fire curtain, a reel, a closure member comprising a plurality of flexibly connected sections mounted on said reel, a guide member engaging an edge of said closure member, a stop on said guide member and a hook on the closure member engaging said stop to limit the downward movement of said closure member.

2. In a fire curtain, a reel, a flexible closure member mounted thereon, a guide member engaging an edge of said closure member and co-operating stops on said closure member and guide member to limit downward movement of said closure member, comprising a hook on one of said members and an ear engaged by said hook on the other of said members.

3. In a fire curtain, a reel, a flexible closure member mounted thereon, guide members engaging the opposite edges of said closure member and co-operating stops on said closure member and said guide members to limit the downward movement of said closure member, each comprising a hook on one of said members and an ear engaged by said hook on the other of said members.

In testimony whereof I affix my signature.

CLARENCE R. BUMBARGER.