Feb. 26, 1929. 1,703,622

J. J. HENNESSEY, JR

FIRE SCREEN

Filed July 18, 1928

Fig. 1

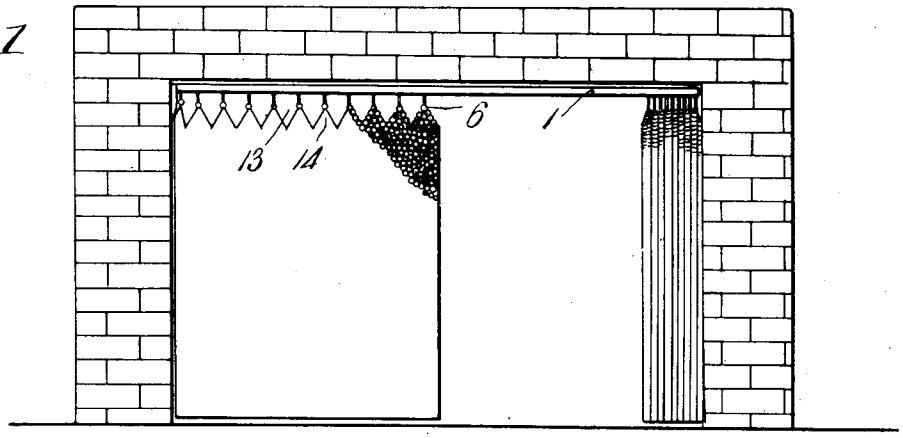


Fig. 2

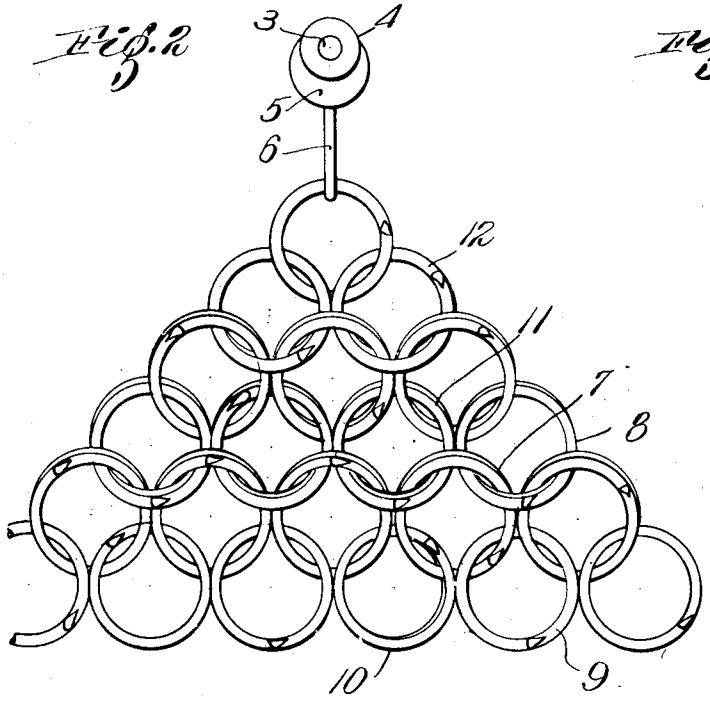


Fig. 3

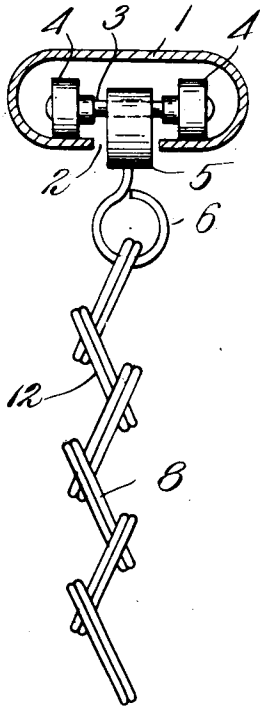


Fig. 4



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FIRE SCREEN.

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Present day fire-screens for fire-places, whether folding or non-folding, comprise rigid frames supporting mesh screens and are bodily removable; consequently they are likely to be displaced accidentally and when intentionally removed they are more or less unsightly and frequently in the way. Objects of the present invention are to provide a fire-screen in the form of a curtain which is permanently attached to the fire-place so that it can not be accidentally displaced, which collapses in folds when pushed to the side so that it is never in the way, which is ornamental when collapsed or extended, which is freely flexible and at the same time has its component parts so interrelated that it effectually obstructs the passage of brands, and which is generally superior to prior screens both in appearance and use.

For the purpose of illustration one concrete embodiment of the invention is shown in the accompanying drawings in which

Fig. 1 is a front elevation of a fire-place showing one curtain suspended and one collapsed;

Fig. 2 is an enlarged view of one of the upward extensions which occur at intervals along the upper portions of the curtain as shown at the left of Fig. 1;

Fig. 3 is the side view of the portion of the curtain shown in Fig. 2, this figure also showing in cross section the support for the curtain; and

Fig. 4 is the diagram showing the manner in which the curtain automatically collapses, alternate folds extending in opposite directions, when the curtain is pushed back.

The particular embodiment of the invention chosen for the purpose of illustration, comprises a tubular support 1 which anchors at each end to the fire-place and has a slot 2 in its lower side to support the hangers for the curtain. The support 1 may be mounted inside the fire-place as shown in Fig. 1 or on the face of the fire-place; and it may be either straight or curved to the rear at the ends. As shown in Figs. 2 and 3 the hangers for the curtains each comprises an axle 3, two concentric rollers 4, an eccentric support 5, and a hook 6 depending from the support 5. The axle 3 may turn with the rollers 4, or it may be tightly fitted in the parts 5 so that the rollers revolve therearound, or it may be rotatable in respect to both the rollers 4 and the parts 5. As shown in Fig. 3 the rollers are held on the axle by rivet-like heads on the end of the axle. Obviously these hangers move freely back and forth in the split tube 1 and provide both cheap and effective supports for the curtain. However, other types of supporting means may be employed within the scope of this invention.

As illustrated in Figs. 2 and 3 the curtains are preferably constructed of split rings each of which interlinks with four adjacent rings throughout the body of the curtain, that is throughout the entire curtain except along the edges thereof. For example ring 7 interlinks with each of the four rings 8, 9, 10 and 11, links 8 and 11 constituting a part of a horizontal row of links above the row containing link 7, links 9 and 10 constituting a part of a horizontal row below the row of link 7, links 10 and 11 constituting a part of a vertical row to the left of the vertical row containing link 7, and links 8 and 9 constituting a part of a vertical row to the right of the vertical row containing link 7. Following the circumference of each link in a clockwise direction it will be obvious that links 8 and 9 enter link 7 from the front and links 10 and 11 enter link 7 from the rear.

By virtue of this arrangement the links of each horizontal row are inclined relatively to the vertical plane of the curtain, each successive horizontal row being inclined in the opposite direction to the preceding row; thus in Fig. 3 the lower row is inclined to the left, the next row to the right, the next to the left and so on towards the top. It will also be observed that successive rings of each vertical row are inclined in the same direction so that the rings of each vertical row are parallel to each other; thus, for example, rings 10, 11 and 12 lie in parallel planes.

Along the upper margin of each curtain are provided alternate notches 13 and extensions 14, each extension tapering upwardly to a single ring by making the number of rings in each horizontal row one less progressing from the bottom upwardly, the single link at the top of each extension being supported by one of the hooks 6 as shown in Figs. 2 and 3.

The construction herein disclosed provides a very effective barrier to flying brands for the reason that the opening in each ring is largely closed by the fact that four other rings extend through the opening and for the further important reason that the rings of successive horizontal rows are inclined alternatively in opposite directions in zig-zag

fashion, as shown in Fig. 3, so that even with fairly large rings having an internal diameter of the order of one-half inch or more the screen affords an extremely safe guard against flying brands. By using double split rings of the well-known key-ring type, as shown in Figs. 2 and 3, the rings are positioned more oblique to the vertical plane of the screen and the opening in each ring is more completely closed by the four rings interlinking therewith. In order to afford both an effective barrier against brands and also the best degree of horizontal flexibility to facilitate folding the curtain, I prefer to incline the rings with respect to the plane of the curtain at an angle ranging somewhere in the neighborhood of twenty to thirty degrees.

The fire curtain built in accordance with the present invention will automatically fold in the manner illustrated in Fig. 4 in which alternate folds extend in opposite directions laterally from the plane of the curtain. One of the principal factors contributing to this unique result consists in arranging the rings of each horizontal row edge to edge in the same plane so that horizontally the curtain has a certain degree of stiffness, whereby when compressed horizontally the rings will not bunch up but on the contrary the curtain will flex; and if it happens to flex outwardly between the first and second supports it will automatically flex inwardly between the second and third, outwardly between the third and fourth and so on, as illustrated in Fig. 4. Another factor contributing to this regular folding of the curtain results from the notches 13 along the upper margin of the curtain between the supports 6, whereby the portions of the curtain intermediate the supports are free to project either forwardly or rearwardly from the plane of the curtain. If it were not for these notches the curtain would tend to bunch up along the upper margin, thereby limiting the extent to which the curtain could be pushed back. However, when constructed as herein disclosed the curtain may be collapsed to the very small dimension as shown at the right of Fig. 1 and the collapsed curtain hangs in regular folds.

I claim:

1. A fire curtain comprising a plurality of rings interlinked in rows extending vertically and horizontally, each ring throughout the body of the curtain interlinking with two rings in the next row above and below and on either side, the rings of alternate horizontal rows being inclined in opposite directions to the plane of the curtain with successive rings of each horizontal row lying in substantially parallel alignment when the curtain is extended, alternate downwardly tapering notches and upwardly tapering extensions along the upper margin of the curtain, successive rows in said extensions having fewer rings progressively toward the top, and aligned sliding supports connected to the upper ends of said extensions for collapsing the curtain into folds which project laterally of the vertical plane of said aligned supports by virtue of said tapering notches with alternate folds projecting in opposite direction by virtue of the tendency of the rings of each horizontal row to maintain their normal parallel relationship.

2. A fire curtain comprising a plurality of rings interlinked in rows extending vertically and horizontally, each ring throughout the body of the curtain interlinking with two rings in the next row above and below and on either side, the rings of alternate horizontal rows being inclined in opposite directions to the plane of the curtain with successive rings of each horizontal row lying in substantially the same inclined plane when the curtain is extended, and means for supporting the curtain at spaced intervals along its upper edge, whereby when the curtain is pushed back it naturally develops uniform folds without causing the rings to bunch up unevenly.

3. A fire curtain comprising a plurality of rings interlinked in rows extending vertically and horizontally, each ring throughout the body of the curtain interlinking with two rings in the next row above and below and on either side, the rings of alternate horizontal rows being inclined in opposite directions to the plane of the curtain with successive rings of each horizontal row lying in substantially the same inclined plane when the curtain is extended, whereby when the curtain is pushed back it naturally develops uniform folds without causing the rings to bunch up unevenly.

4. A fire curtain comprising a plurality of rings interlinked together both vertically and horizontally with alternate downwardly tapering notches and upwardly tapering extensions along the upper margin, successive rows in said extensions having fewer rings progressively toward the top terminating in a single ring, and aligned sliding supports engaging said single rings for collapsing the curtain into folds which project laterally of the vertical plane of said aligned supports by virtue of said tapering notches, thereby preventing the curtain from bunching up along its upper margin when collapsed.

5. A fire curtain comprising a plurality of rings interlinked together both vertically and horizontally with alternate downwardly tapering notches and upwardly tapering extensions along the upper margin, successive rows in said extensions having fewer rings progressively toward the top.

6. A fire curtain comprising a plurality of rings interlinked, with rows extending in two dimensions, so that rings of alternate rows in one dimension are inclined in opposite directions relatively to the plane of the

curtain, with successive rings positioned in zig-zag fashion in the other dimension, thereby more effectively to obstruct passage of brands.

7. A fire curtain comprising a plurality of rings interlinked in rows extending in two dimensions so that succeeding rings of each row extending in one dimension lie approximately in the same plane and succeeding rings of each row extending in the other dimension lie in parallel planes spaced apart, whereby the rings are positioned in zig-zag fashion more effectively to obstruct passage of brands.

8. A fire curtain comprising a plurality of rings interlinked in rows extending in two dimensions, each ring throughout the body of the screen interlinking with two links of adjacent rows on each side and in both dimensions so that each ring has four rings extending therethrough, whereby the opening in each such ring is largely obstructed to prevent passage of brands while the curtain may be collapsed to a relatively small compass when not in use.

Signed by me at Boston, Massachusetts this 17th day of July 1928.

JEREMIAH J. HENNESSEY, JR.