No. 759,447. PATENTED MAY 10, 1904.

W. R. KINNEAR.

DEVICE FOR PREVENTING ENDWISE MOVEMENT AND LATERAL SEPARATION OF SLATS IN FIRE RESISTING CURTAINS.

APPLICATION FILED SEPT. 9, 1901. RENEWED OCT. 23, 1903.

NO MODEL.

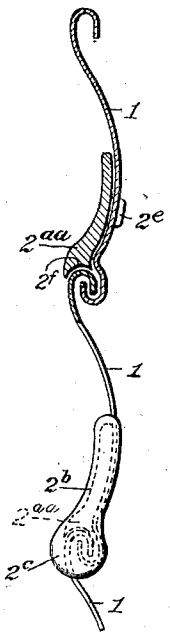


Fig. 1

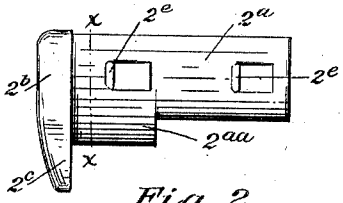


Fig. 2

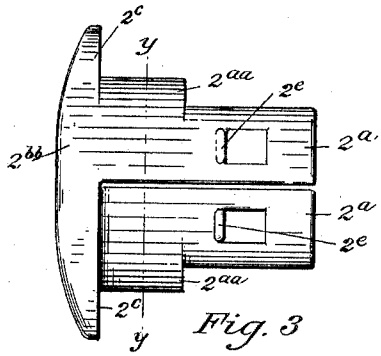


Fig. 3

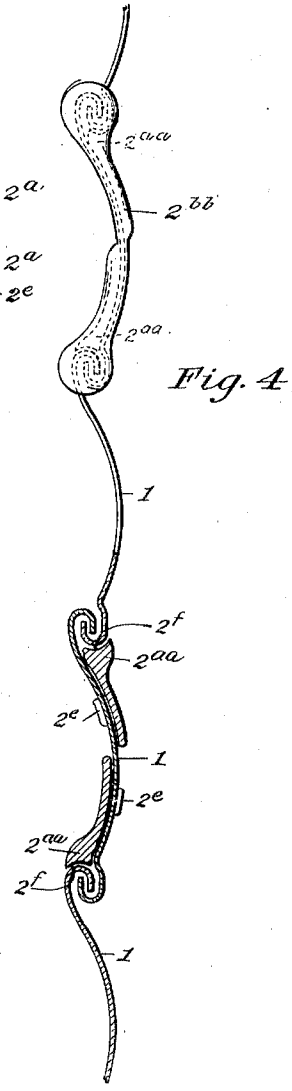


Fig. 4

Witnesses
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No. 759,447. Patented May 10, 1904.

UNITED STATES PATENT OFFICE.

WILLIAM R. KINNEAR, OF COLUMBUS, OHIO.

DEVICE FOR PREVENTING ENDWISE MOVEMENT AND LATERAL SEPARATION OF SLATS IN FIRE-RESISTING CURTAINS.

SPECIFICATION forming part of Letters Patent No. 759,447, dated May 10, 1904.

Application filed September 9, 1901. Renewed October 23, 1903. Serial No. 178,282. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM R. KINNEAR, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Devices for Preventing Endwise Movement and Lateral Separation of Slats in Fire-Resisting Curtains; 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.

This invention relates more particularly to such fire-resisting curtains as are composed of metallic slats hinged together and are designed for use as doors or in windows; and the purpose of the present invention is to combine a shoulder for preventing the lateral separation of the slats, substantially as shown and claimed in my patent of the United States No. 572,014, dated November 24, 1896, with a runner or combined runner and stop for preventing longitudinal movement of the slats upon each other, substantially as described in my application for patent filed June 18, 1901, Serial No. 65,031.

In my Patent No. 572,014 referred to the slats composing the curtain are shown to have tongues and grooves on each edge of the slat, such tongues and grooves being on opposite sides of the general plane of the slat and shoulders to prevent the lateral separation of the slats after they are connected. With the present invention the bodies of the slats may be formed so that they can be separated laterally; but with the attachment to be hereinafter described they are made inseparable laterally and, if desired, immovable longitudinally upon each other.

In the accompanying drawings, Figure 1 shows in end view and partially in section several slats with my combined end lock or runner and shoulder, the sectional portion of the view being taken on line $x\ x$ of Fig. 2 so far as the attachment is concerned. Fig. 2 is a side view of the attachment for the slats as shown in Fig. 1. Fig. 3 is a side view of an attachment adapted to be applied to one slat so as to lock the slats hinged to both edges thereof. Fig. 4 is an end and sectional view of the device shown in Fig. 3 as applied to a series of slats, the sectional portion of the view being taken on line $y\ y$ so far as concerns the attachment.

In the several views, 1 designates the body of the slats. These are shown, as before stated, to have tongues and grooves on opposite edges, the tongues and grooves being on opposite sides of the general plane of the slat.

In Figs. 1 and 2 the character 2^a designates the shank of the attachment. This is shown to be provided with pliable teats 2^e, that can be passed through holes in the slat and bent down to fasten the attachment to the slat. The shank can of course be fastened to the slat by rivets or any other suitable device. This shank is also shown to be extended laterally, as shown at 2^{aa}, to form a shoulder or abutment 2^f, reaching over the edge of an adjoined slat to prevent the lateral separation of the slats, but not preventing a hinge-like movement of the slats upon one another, as will be clearly understood from the views. The attachment, as shown in Figs. 1 and 2, is also shown as provided with a rounded or tapering head 2^b, which is to lie beyond the end of the slat and engage the channel in which the curtain runs. This head 2^b can be and preferably is provided with a laterally-extending portion or stop 2^c, projecting over the end of an adjoined slat at its junction with the slat to which the attachment is affixed, so as to prevent longitudinal or endwise movement of the slats upon each other when both edges of the curtain are furnished with such stops. With the form of the invention shown in Figs. 1 and 2 each slat will be provided with the attachment.

In Fig. 3 I have illustrated the attachment as having a double shank 2^a with a single head 2^{bb}. The lateral projections 2^{aa} and 2^c in this form are substantially alike; but they extend in opposite directions and afford abutments or shoulders for the slats hinged to opposite edges of one slat. It is obvious that this form of the device need be applied to alternate slats only.

The device, as illustrated in Fig. 3, has the

shanks 2^a so located that they fit upon and can be attached to the opposite sides of the end of the slat, as further shown in Fig. 4.

Two devices like that shown in Fig. 2 can of course be attached to the same end of one slat.

What I claim, and desire to secure by Letters Patent, is—

1. In a curtain composed of slats hinged together, a device comprising a shank portion having a shoulder to prevent lateral separation of the slats, and a head portion projecting beyond the end of the slat, substantially as described.

2. In a curtain composed of slats hinged together, a device comprising a shank portion having a shoulder to prevent lateral separation of the slats, and a lateral projection to prevent longitudinal movement of the slats upon one another, substantially as described.

3. In a curtain composed of slats hinged together, a device comprising a shank portion having a shoulder to prevent lateral separation of the slats, a head portion projecting beyond the end of the slat, and a lateral projection to prevent longitudinal movement of the slats upon each other, substantially as described.

4. In a curtain composed of slats hinged together, a device comprising a shank portion having a shoulder to prevent lateral separation of the slats, a head portion projecting beyond the end of the slat, and a lateral projection on said head portion to prevent longitudinal movement of the slats upon each other, substantially as described.

5. In a curtain composed of slats hinged together, a device comprising two shank portions adapted to be attached to the end of a slat, said shank portion having shoulders to prevent lateral separation of the slats hinged to opposite edges of the slat, and a common head portion projecting beyond the end of the slat, substantially as described.

6. In a curtain composed of slats hinged together, a device comprising two shank portions adapted to be attached to opposite sides of the end of a slat, said shank portions having shoulders to prevent lateral separation of slats hinged to opposite edges of the slat, and a head portion common to the two shanks, substantially as described.

7. In a curtain composed of slats hinged together, a device comprising two shank portions adapted to be attached to the opposite sides of the end of a slat, said shank portions having shoulders to prevent lateral separation of slats hinged to opposite edges of the slat, and lateral projections to prevent longitudinal or endwise movement of the slats, substantially as described.

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

WILLIAM R. KINNEAR.

Witnesses:
G. W. ALFRED,
GEO. M. FINCKEL.