

No. 850,172.

PATENTED APR. 16, 1907.

E. H. McCLOUD.
FIRE RESISTING SHUTTER.
APPLICATION FILED JAN. 27, 1906.

Fig. 1.

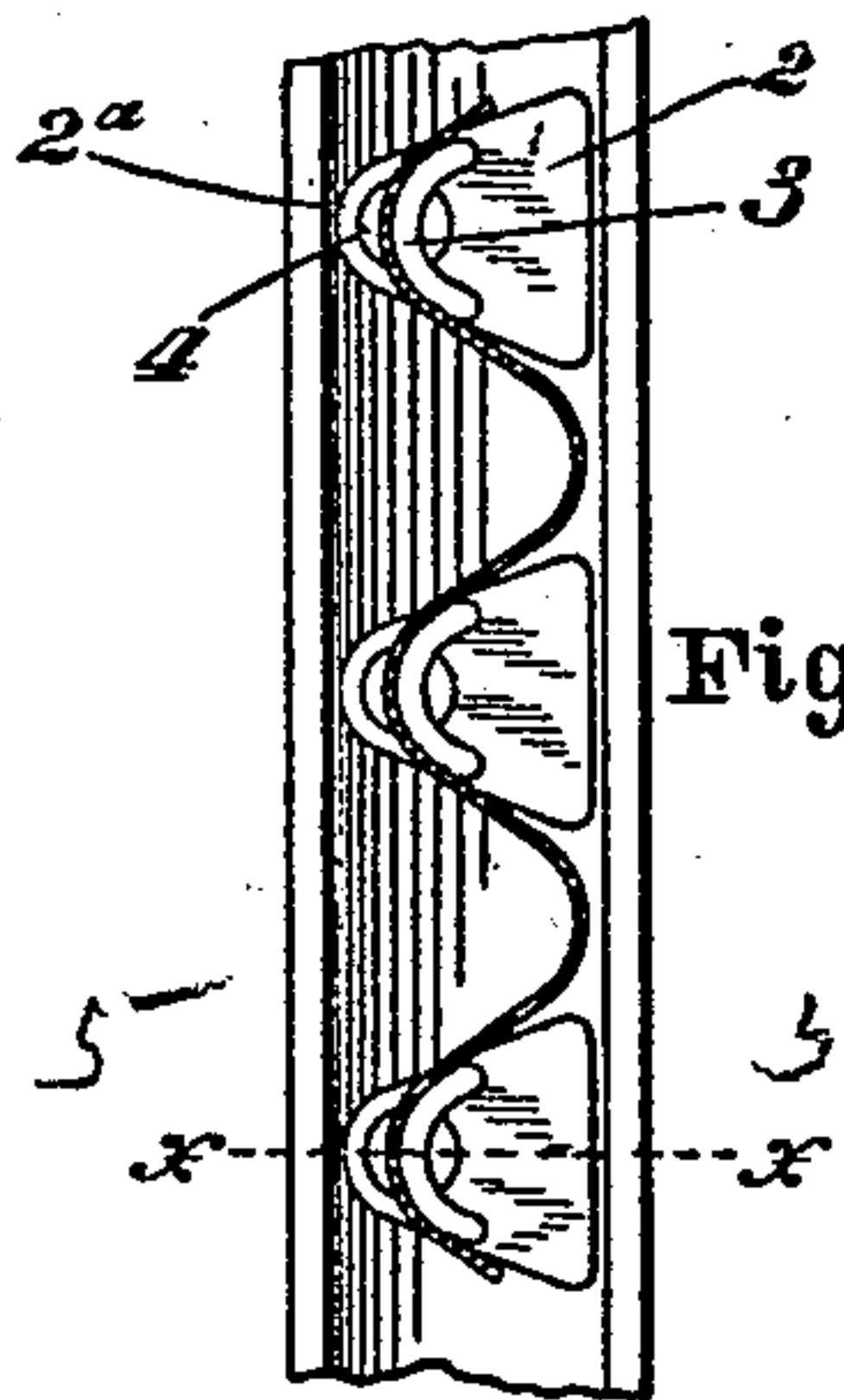
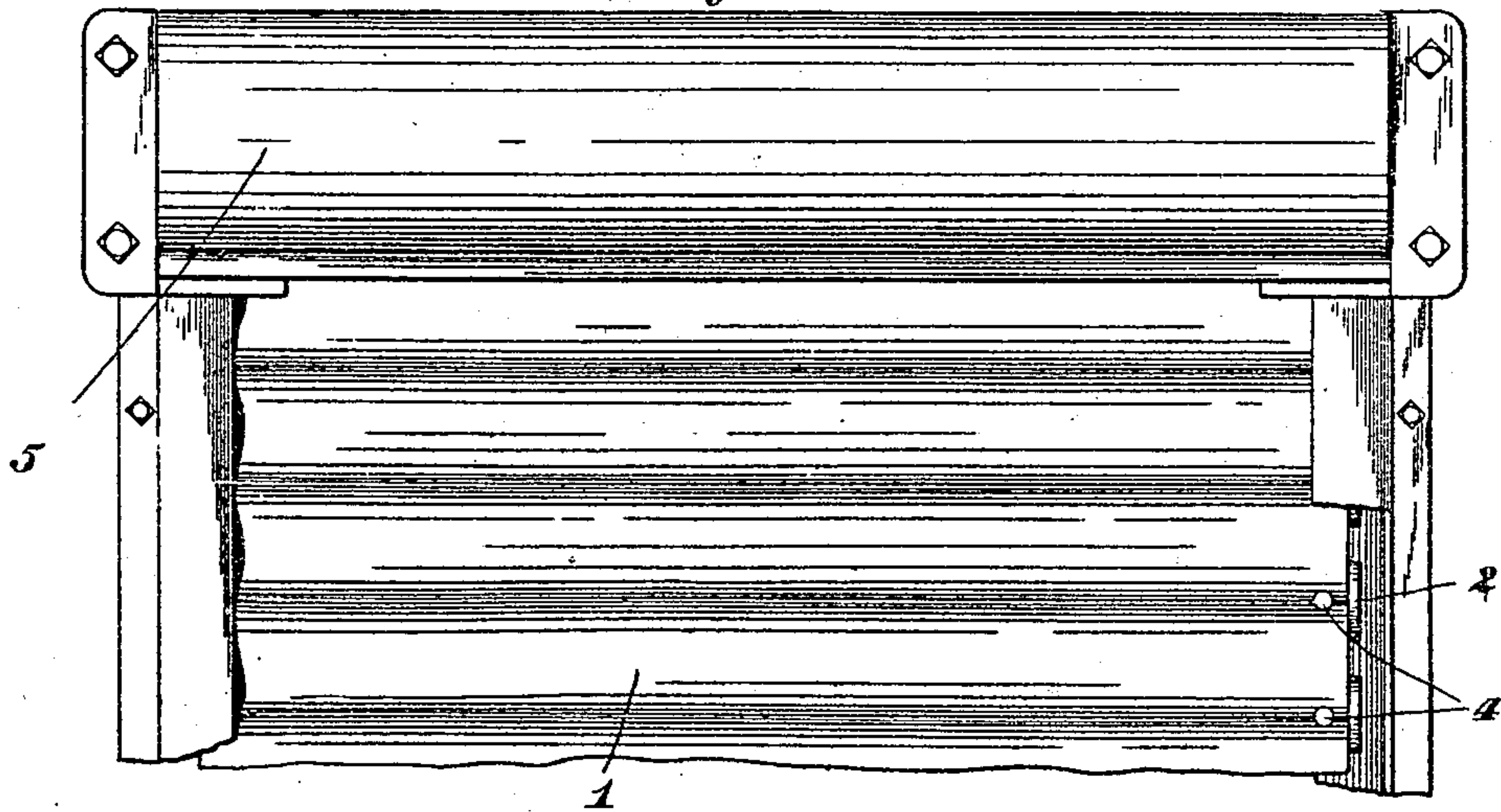


Fig. 2.

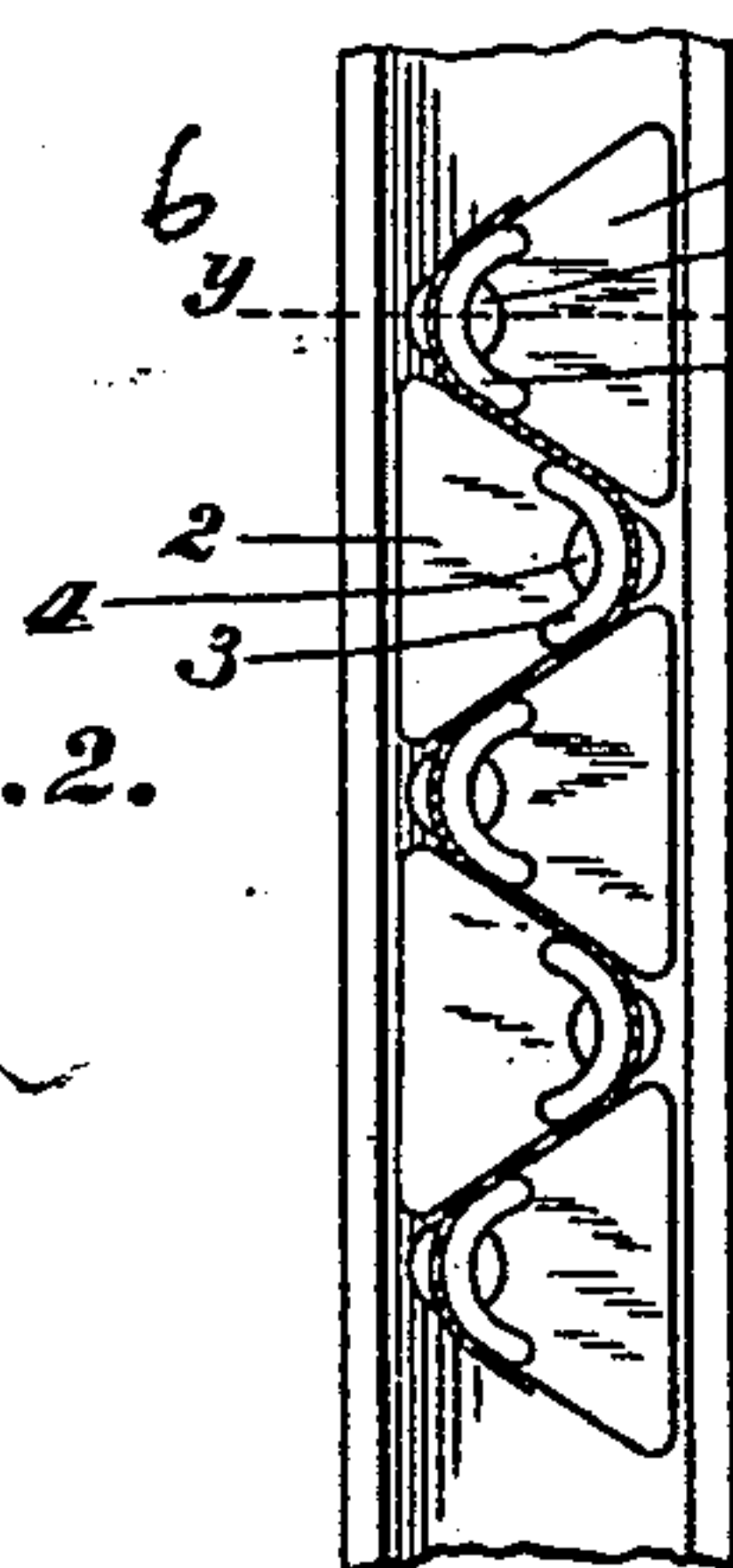


Fig. 3.

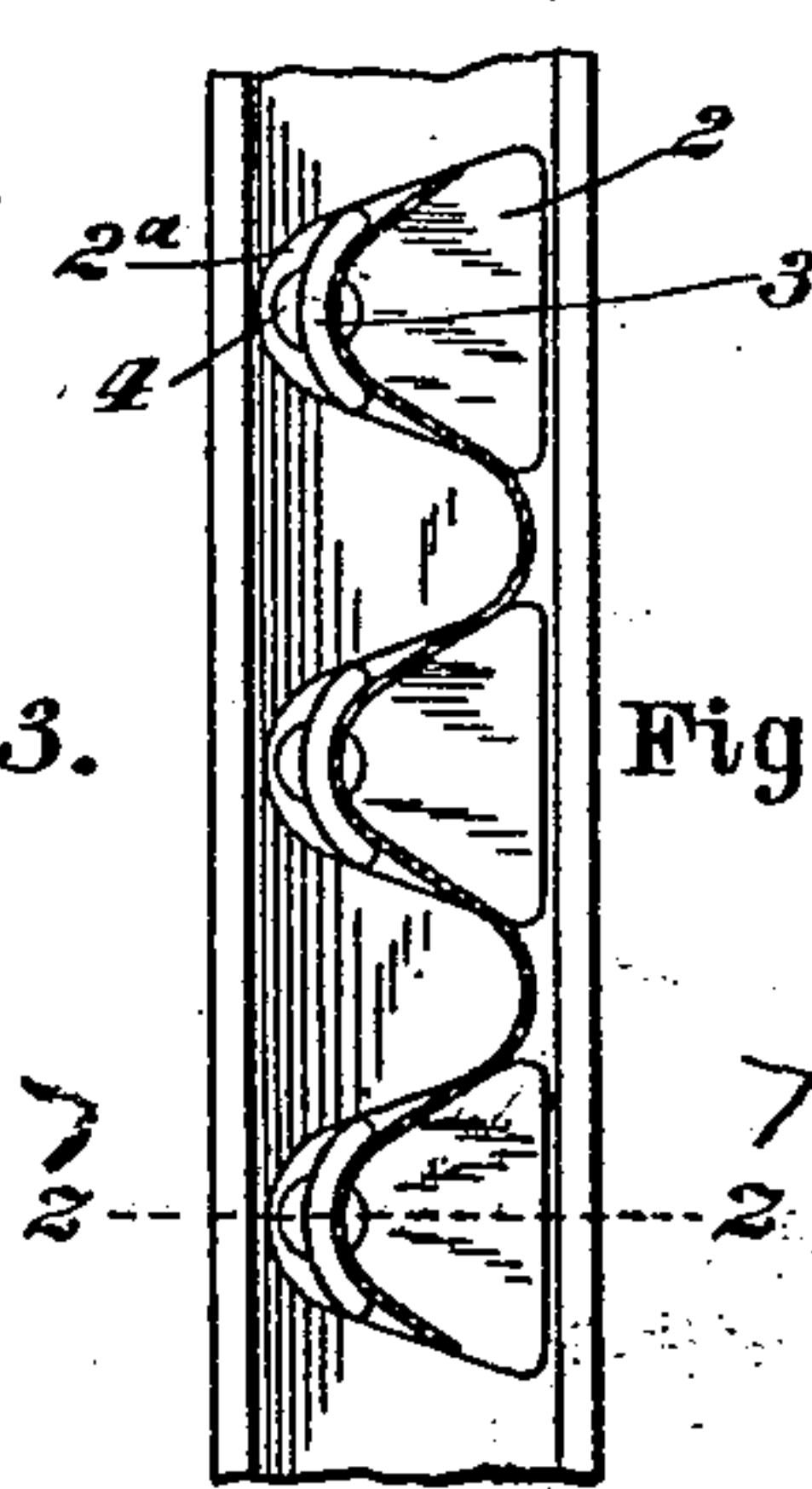


Fig. 4.

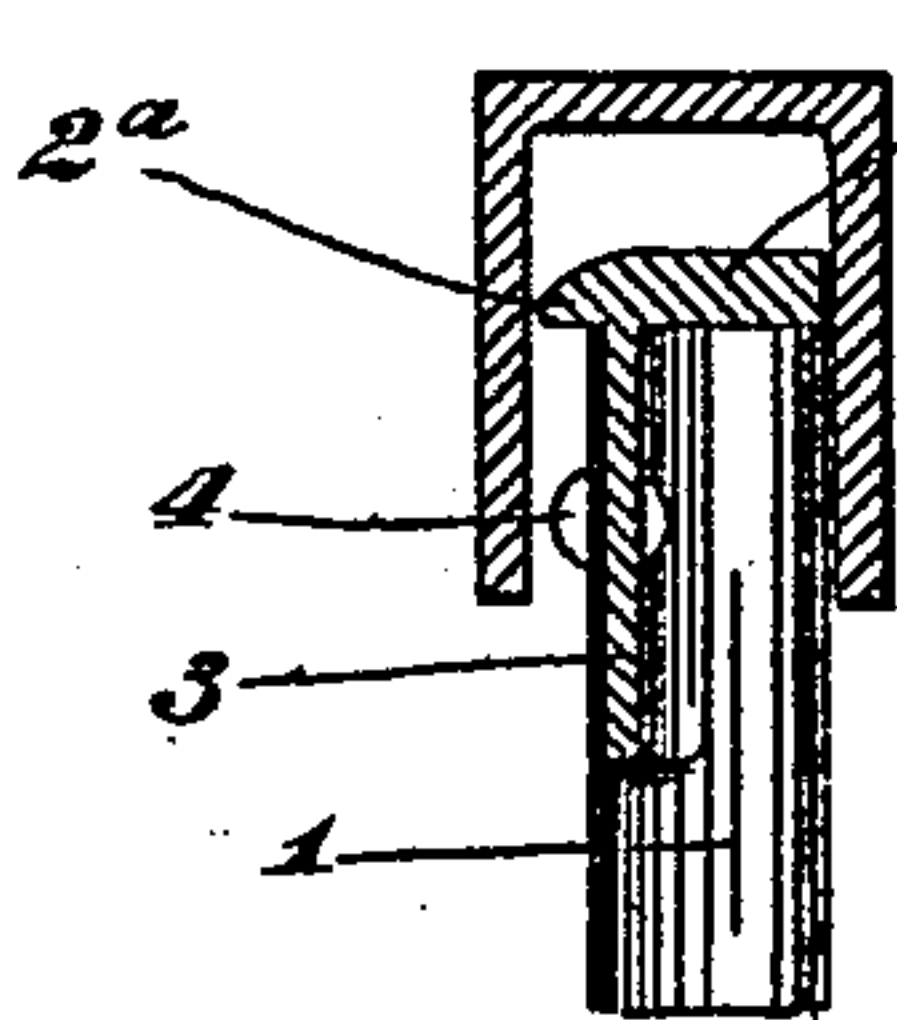


Fig. 5.

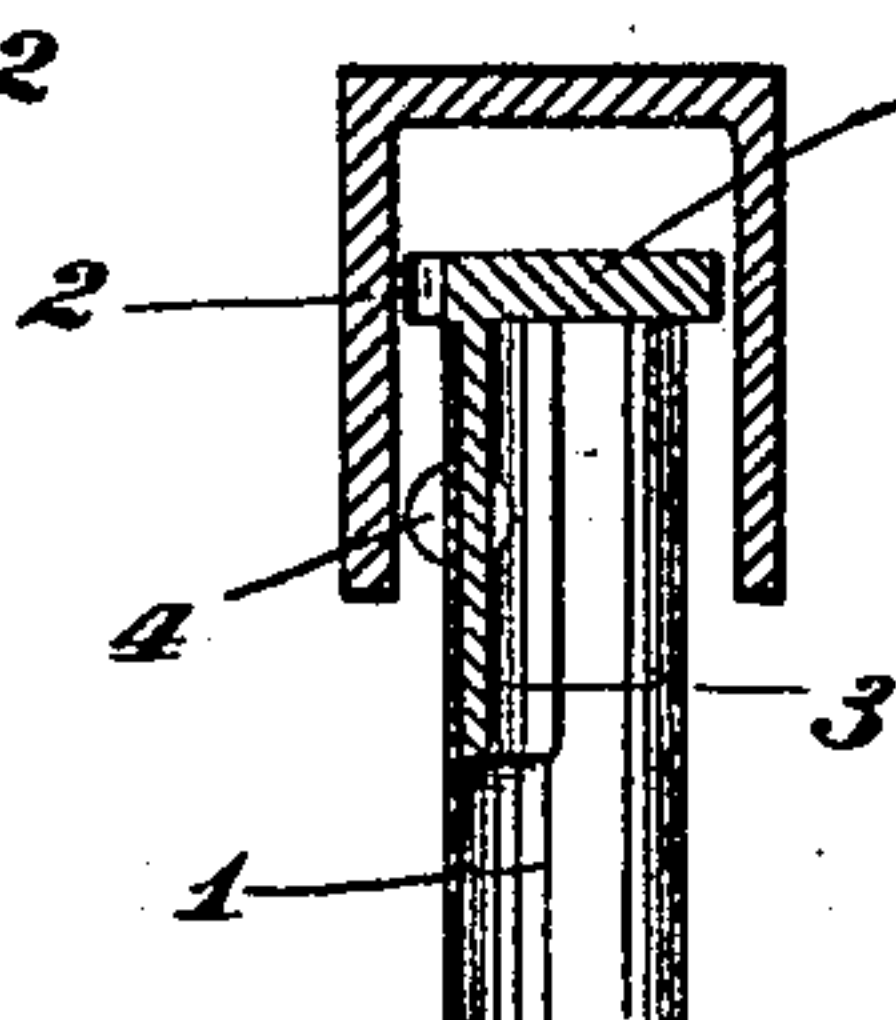


Fig. 6.

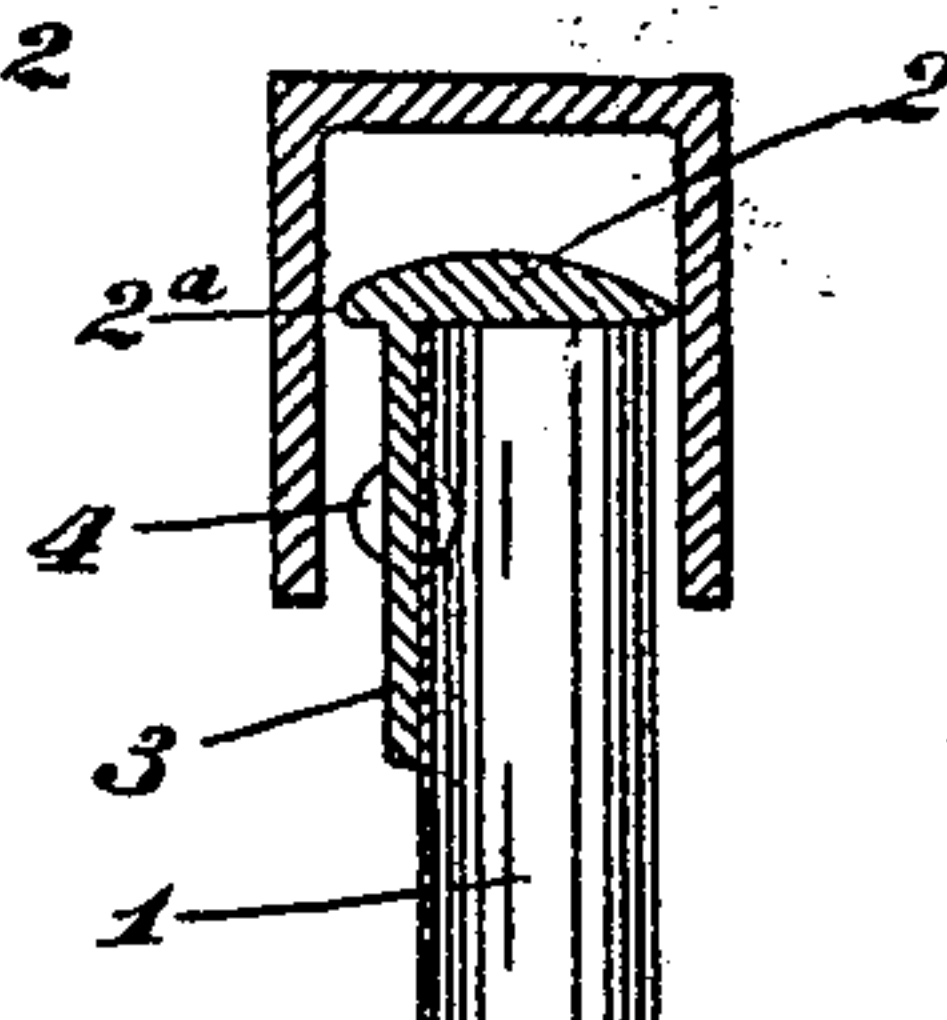


Fig. 7.

Witnesses
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UNITED STATES PATENT OFFICE.

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FIRE-RESISTING SHUTTER.

No. 850,172.

Specification of Letters Patent.

Patented April 16, 1907.

Application filed January 27, 1906. Serial No. 298,169.

To all whom it may concern:

Be it known that I, EDWARD H. McCLOUD, 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 Fire-Resisting Shutters; 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.

Corrugated fire-resisting rolling shutters or curtains are most usually suspended to travel or operate in guides or channels the walls forming which are parallel. Because the shutters are corrugated and cannot, because of friction and binding, be allowed to extend into close contact at its edge with the bottom of the channel large free spaces are afforded within the channels into and around which flames and sparks might pass, thus greatly endangering the interior of the building or adjacent buildings and any inflammable contents that might be stored therein, especially such of the latter as may happen to have been placed near the doorway or window. The object of the present invention, therefore, is to remedy this defect; and the invention consists in the devices and combinations of devices hereinafter described and claimed.

In the accompanying drawings, illustrating several embodiments of the invention, Figure 1 depicts in exterior elevation a fraction of shutter or curtain equipped with my improvement. Fig. 2 illustrates a vertical sectional view of a piece of corrugated curtain, showing one form of the edge shield or guard as they are applied to the curtain or to alternate corrugations thereof. Fig. 3 shows substantially the same form of shields applied to both sides of the curtain. Fig. 4 shows another form of guard or shield as applied to one side of the curtain or to alternate corrugations. Figs. 5, 6, and 7 are horizontal sections on lines *xx*, *yy*, and *zz*, respectively, of Figs. 2, 3, and 4.

Where like characters of reference occur, they designate corresponding parts.

1 designates the body of the curtain, which in the instance shown is of sheet metal regularly corrugated.

In Fig. 2 the shield or attachment is shown

to comprise a head or main portion 2, consisting of a web of triangular form having a shank 3 projecting laterally and from one angle or corner thereof and at right angles thereto. This shank 3, as proposed, is of concavo-convex form or rounded on its outer side to fit within the concave side of the crown of a corrugation, and the shank is secured, as by a rivet 4, to the sheet metal of the curtain.

In Fig. 5, which shows a horizontal section of the attachment shown in Fig. 2, the shank 3 is so located with reference to the head portion that the inner point 2^a of the head portion projects beyond the end of the rivet 4, and so takes any wear due to the travel of the curtain in the channel. It will be observed that substantially all the open space between the face of the margin of the curtain and the wall of the channel opposing said margin is closed by the heads when they are applied to the alternate corrugations, as seen in Fig. 2, and this, too, without materially affecting the flexibility of the curtain.

To close the openings around the curtain from both faces or sides thereof, shields can be applied to all the corrugations, as seen in Fig. 3. The shields shown in Fig. 3 are of substantially the same form as those shown in Fig. 2, except that wear-points 2^a are omitted, such wear-points not being desirable in this form, because the wear is taken by the edges of the heads themselves and for the further reason that in the flexing of the curtain, as in rolling it up, the corner of one head should be free to roll with reference to the edge of the head on the adjacent corrugation.

In Fig. 4 the shields are depicted as riveted to alternate corrugations, as in Fig. 2; but in this view the shanks of the heads, although shown as made of concavo-convex form, are also shown to be of a form adapted to fit upon the outer or convex side of the crown of the corrugation.

5 designates the usual hood designed to inclose and protect the roller upon which the curtain is wound.

The shields or guards are not necessarily in all cases applied to the crowns of the corrugations, and they can be secured otherwise than by riveting. The form of the closing heads 2 can also be varied.

It will be convenient and economical to make the head or shield, including its shank, of cast metal and in one piece.

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

1. The combination with a corrugated curtain and walls forming a channel in which said curtain operates, of shields applied to the edge of said curtain adapted to close substantially entirely openings between the concave sides of the corrugations at one face of the curtain and the opposed wall forming the channel.

2. The combination with a corrugated fire-resisting curtain and walls forming a channel in which said curtain operates, of shields applied to the edge and from opposite faces of said curtain adapted to close substantially entirely openings between the concave sides of the corrugations and the opposed walls forming the channel.

3. The combination with a corrugated curtain and walls forming a channel in which said curtain operates, a head or web secured to the edge of the curtain and adapted to close substantially entirely the openings between the concave side of the corrugation and the opposed wall forming the channel, and means adapted to prevent contact of the face of the curtain at its margin with the wall of the channel.

4. The combination with a corrugated curtain and walls forming a channel in which said curtain operates, a head or web secured to the edge of the curtain and adapted to close substantially entirely the openings between the concave side of the corrugation and the opposed wall forming the channel, and means adapted to prevent contact of the face of the curtain at its margin with the opposed wall of the channel.

5. In combination with a corrugated curtain and channel-walls between which said curtain operates, a head or web secured to the edge of the curtain and adapted at one side to close the opening substantially en-

tirely between the concave side of the corrugation and the opposed wall forming the channel, and at the opposite side to serve as a wear-point between the curtain and channel-wall.

6. In combination with a corrugated curtain and channel-walls between which said curtain operates, a head or web secured to the edge of the curtain and adapted at one side to close substantially entirely the opening between the concave side of the corrugation and also adapted to prevent contact of the curtain with the opposed wall of the channel, and at the opposite side to serve as a wear-point between the curtain and the wall of the channel opposed to said opposite side.

7. A device for application to the edge of a corrugated curtain comprising a head or web adapted to close substantially the opening between the concave side of the corrugation, and a shank extending laterally therefrom adapted to be secured to the edge of the curtain, substantially as described.

8. A device for application to the edge of a corrugated curtain comprising a head or web of substantially triangular form, and a shank extending laterally therefrom adapted to be secured to the edge of the curtain, substantially as described.

9. A device for application to the edge of a corrugated curtain comprising a head or web of substantially triangular form and adapted when applied to the curtain to close substantially entirely the opening between the concave side thereof and the opposing wall of the channel in which the curtain is to run, and a shank having a curved surface extending laterally therefrom and adapted to be applied to the crown of a corrugation.

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

EDWARD H. McCLOUD.

Witnesses:

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BENJ. FINCKEL.