

No. 610,543

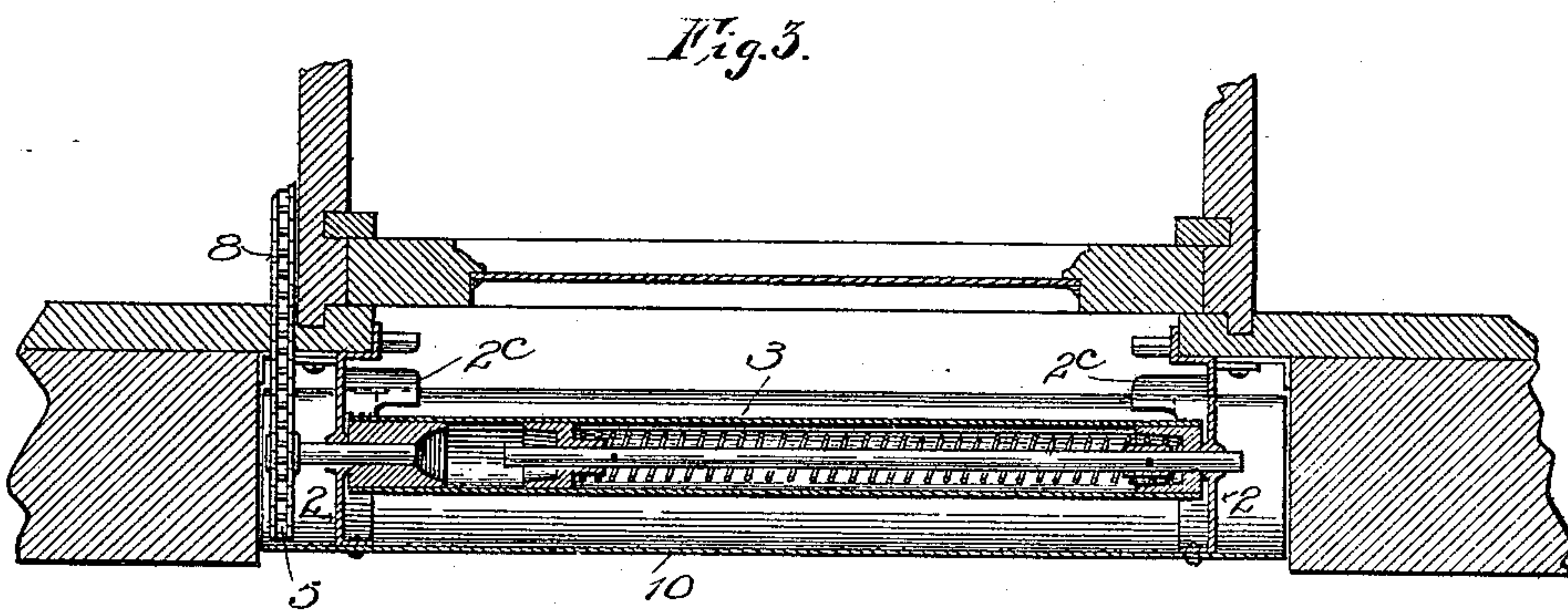
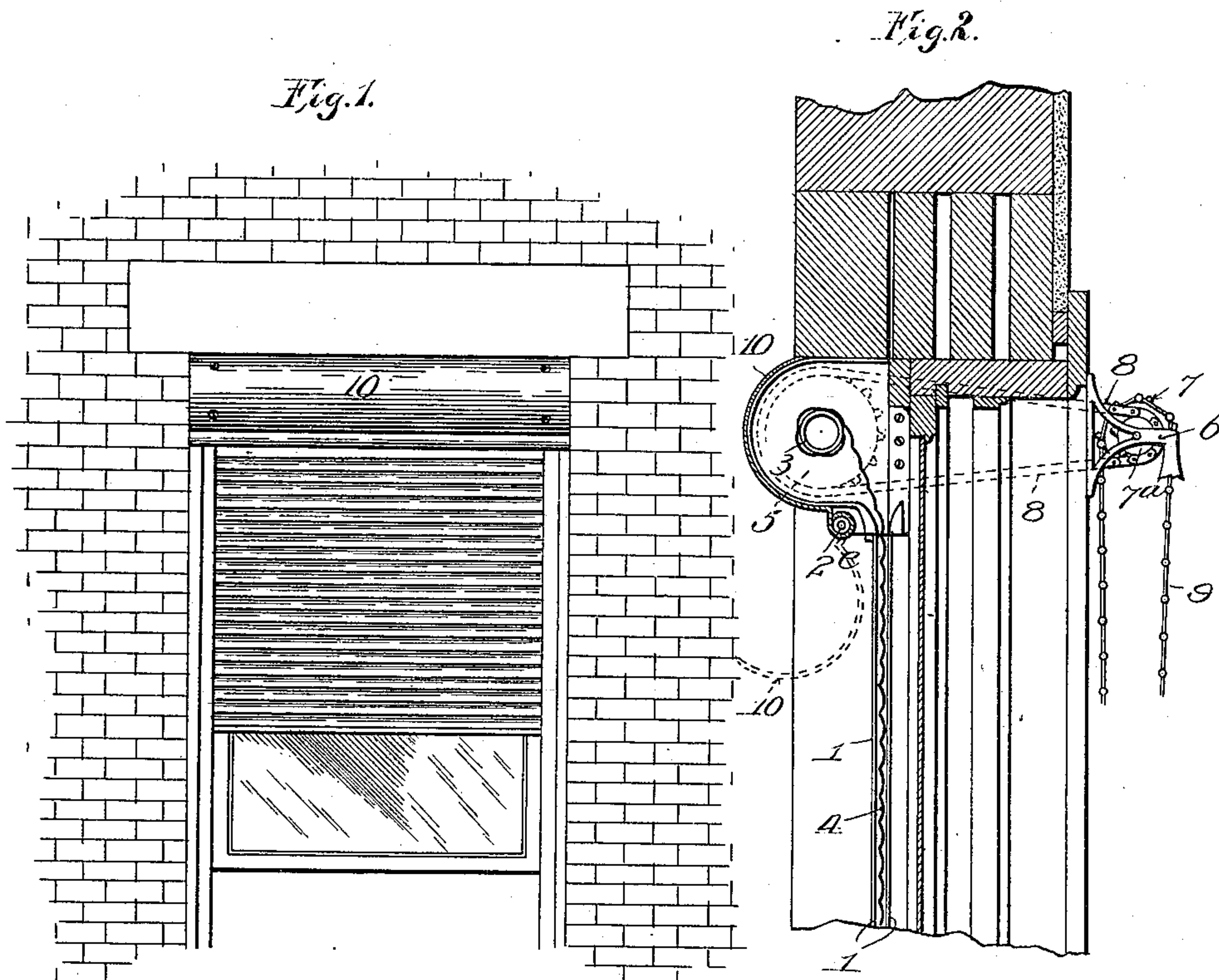
Patented Sept. 13, 1898.

W. R. KINNEAR.
ROLLING FIREPROOF CURTAIN.

(Application filed July 28, 1897.)

(No Model.)

2 Sheets—Sheet 1.



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No. 610,543.

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(Application filed July 28, 1897.)

(No Model.)

2 Sheets—Sheet 2.

Fig. 4.

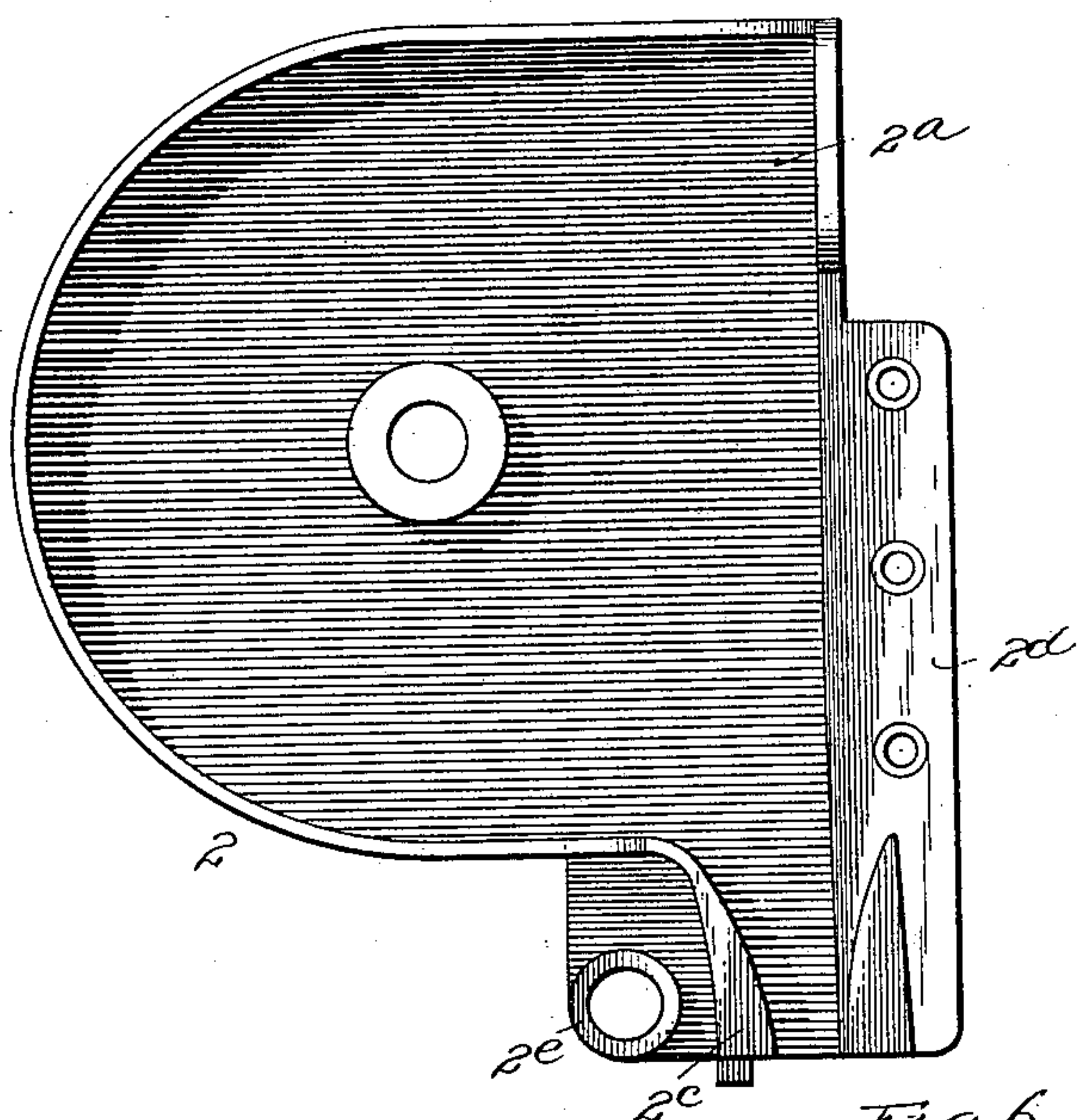


Fig. 5.

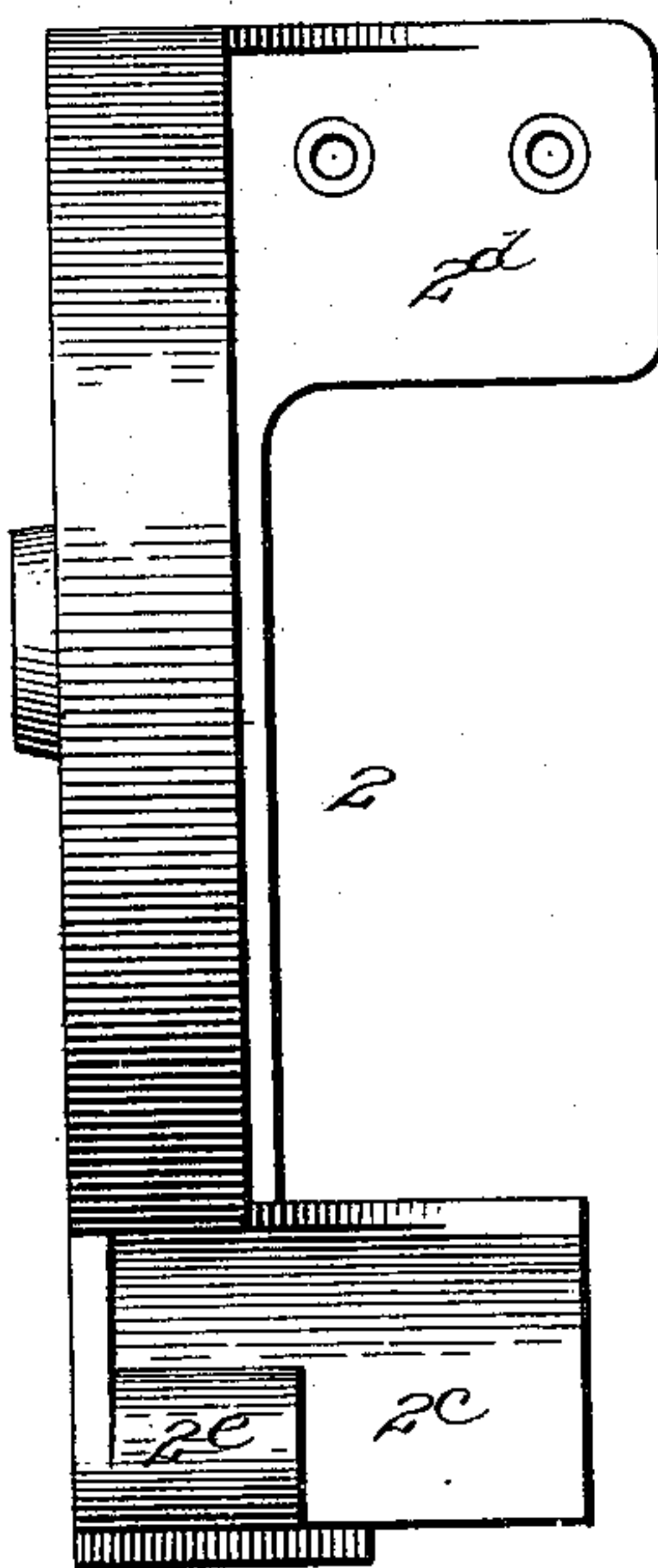


Fig. 6.

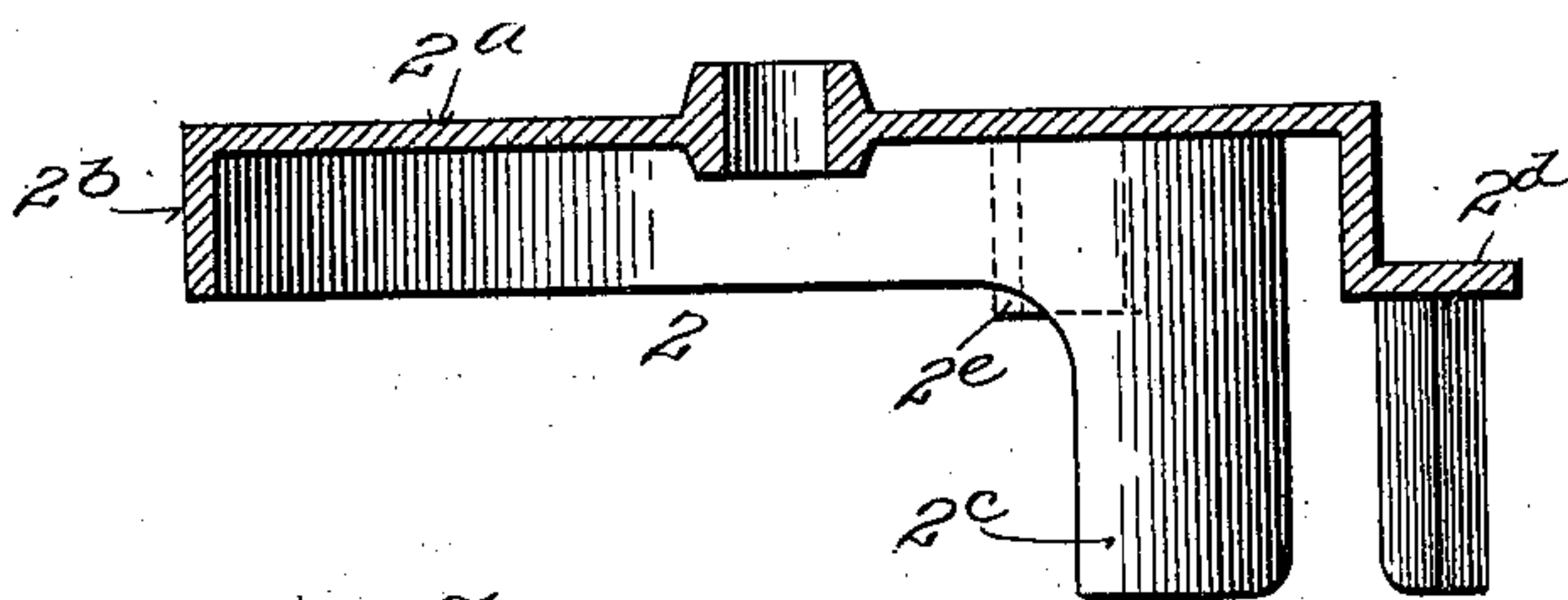
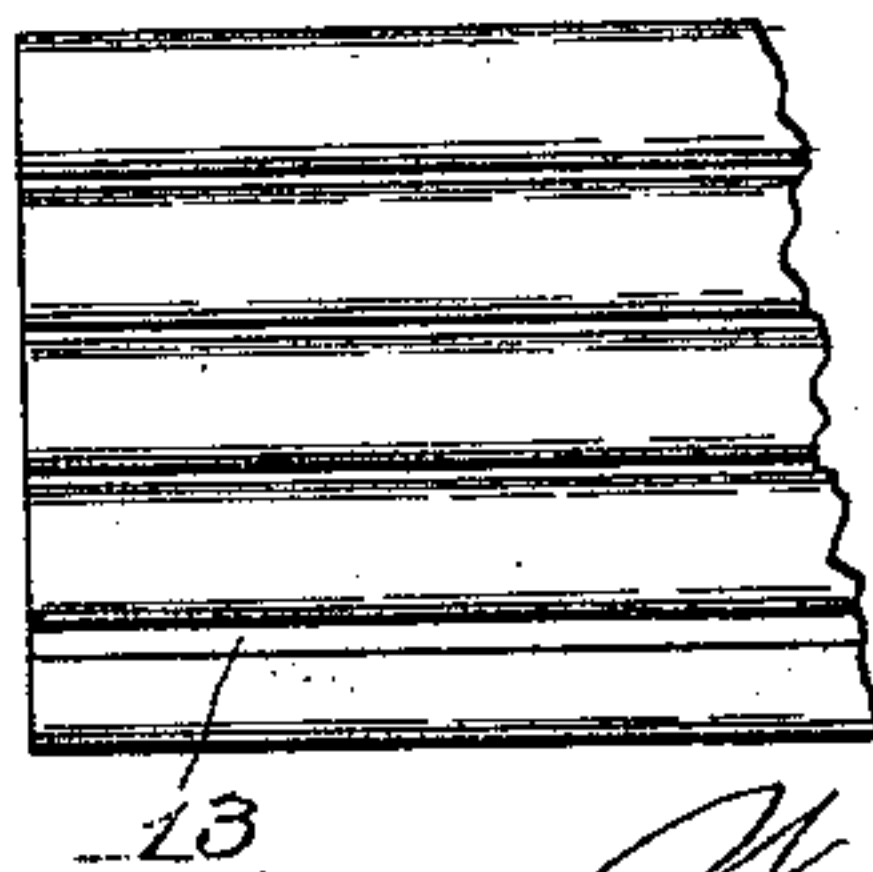
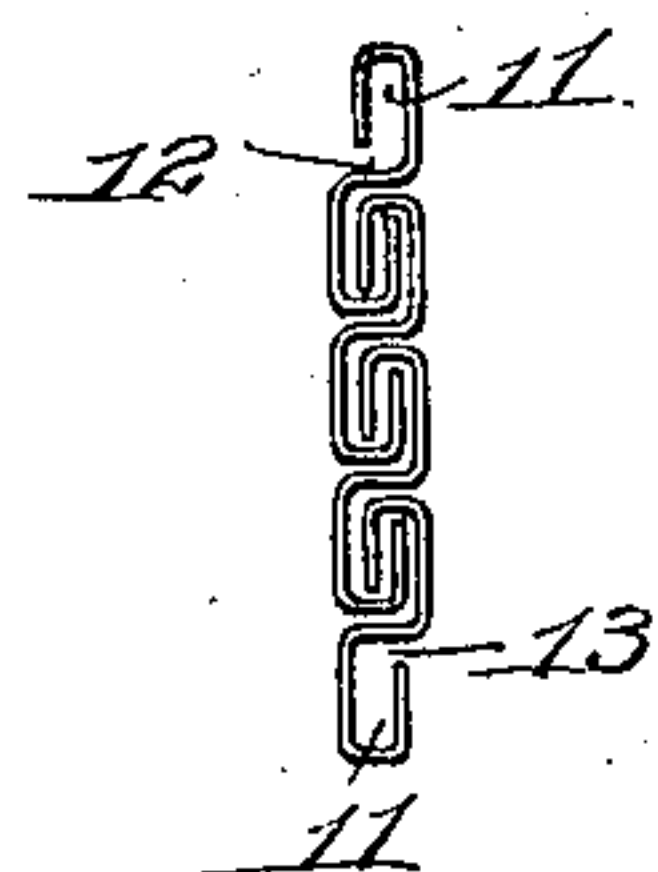


Fig. 7.

Fig. 8.



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UNITED STATES PATENT OFFICE.

WILLIAM R. KINNEAR, OF COLUMBUS, OHIO.

ROLLING FIREPROOF CURTAIN.

SPECIFICATION forming part of Letters Patent No. 610,543, dated September 13, 1898.

Application filed July 28, 1897. Serial No. 646,182. (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 Rolling Fireproof 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.

The object of my present invention is to construct a framing for a vertically-moving rolling fireproof curtain in which the curtain is guided and held within certain boundaries during its entire movement, so that it shall not be necessary to lock the slats composing the curtain from longitudinal movement upon each other and so that the curtain shall therefore roll up more compactly than when such locking devices are present.

Another object of my present invention is to provide an improved form of slat for the construction of metallic curtains.

My invention consists in the details of construction hereinafter set forth and claimed.

In the accompanying drawings, Figure 1 is a front elevational view of a window equipped with my improvements. Fig. 2 is a vertical sectional view, taken on a larger scale, of the upper portion of a window containing my improvements. Fig. 3 is a horizontal sectional view taken through the curtain-roller. Figs. 4, 5, and 6 are side, edge, and horizontal sectional views, respectively, of the heads in which the curtain-roller is mounted; and Figs. 7 and 8 are edge and face views, respectively, of a fraction of a curtain made of my improved slats.

The vertical sides of the ordinary window-casing are furnished with metallic channels 1, extending from the bottom nearly to the top of the window. Arranged at the upper ends of these channels are (right and left) heads 2, formed, preferably, of cast metal and in one piece, substantially as shown in Figs. 4, 5, and 6. These heads have walls 2^a, inwardly-projecting flanges 2^b around their outer edges, and a rounded projection 2^c, forming a kind of mouth to allow the curtain to unroll freely from the roller. At the inner

edges of the heads are flanges 2^d, perforated for the employment of screws to fasten the heads to the window-casing. The heads 2 are placed and fastened to the casings so that the walls 2^a shall be in the same plane with the bottoms of the channels 1 and form practically continuations thereof, so that said walls shall guide the curtain properly onto the roller and so that the slats composing the curtain shall not move longitudinally upon each other, thereby affecting its integrity.

As metallic curtains are necessarily somewhat heavy, I prefer to use a spring-roller 3, constructed on the principle of what is commonly known as the "Hartshorn" roller, and this is mounted in openings in the heads, one part of the shaft thereof being fixed and the other part being movable, so that as the curtain is unrolled the spring is wound up and its power stored for use in raising or assisting in raising the curtain when the curtain is to be rolled up. 4 designates the curtain, which may be of any approved form, but preferably constructed of slats like those shown in Figs. 7 and 8. This curtain is attached to the roller and has its lower edge furnished with a strip of angle-iron that abuts against the projections 2^b on the heads when drawn up, these projections serving as stops to prevent the curtain from being drawn into the casing at the top of the window.

The movable shaft of the curtain-roller projects sufficiently beyond the head to receive a sprocket-wheel 5, and inside the building in a suitable bracket 6 I arrange another sprocket-wheel 7, having formed therewith pinion sprocket-wheel 7^a. A sprocket-chain 8 connects the sprockets 5 and 7^a, so that when motion is imparted to the sprocket 5 by means of a hand-chain 9 on the sprocket 7 the curtain may be wound or unwound, as the case may be.

In order to protect the curtain-roller and the remaining operative parts from weather and the window casing and frame from fire, as well as to enhance the appearance of the window, I provide a sheet-metal cover 10, that is hinged upon pins 2^e on the lower parts of the heads 2, so as to be capable of being swung outward, as indicated in Fig. 2, thus affording access to the curtain-roller, sprocket

5, and chain 8. This cover 10 is secured in place by means of screws entering the rim of the heads 2, as indicated in Figs. 1 and 3.

My improved curtain-slat is formed of a strip of sheet metal bent at its edges to form two grooves 11, with its middle portion 12 standing substantially at right angles to a plane passing through both grooves. In bending the strip a small slit or opening 13 is left sufficiently large to permit the tongue or wall of a groove of one slat to be inserted longitudinally into the groove of another. By putting a considerable number of slats thus together a flexible metallic fabric is formed, the individual slats of which are capable of a hinge-like movement upon each other, but which cannot be parted laterally with respect to each other. It may be remarked here that this new form of slat is a modification of that shown in my former patent, No. 572,014, dated November 24, 1896.

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

1. A flexible rolling shutter composed of hinged slats movable longitudinally upon each other, combined with a shaft or drum upon which said curtain may be rolled, heads between which said shaft or drum is journaled, the inner sides of which are in line with the grooves of the window-frame, whereby the curtain-slats are held from longitudinal movement on each other, substantially as described.

2. In combination with a flexible rolling curtain, a shaft or drum around which the curtain is to be rolled, heads between which said shaft is journaled having rounded lateral projections cast or formed integral and stationary therewith and constituting guides for the edges of the curtain, substantially as described.

3. In combination with a flexible rolling curtain, a shaft or drum around which the curtain may be rolled, heads between which said shaft is journaled, and a cap or cover for inclosing said curtain hinged or pivoted to said heads, substantially as described.

4. A slat for flexible curtains and the like consisting of a strip of metal bent longitudinally to form two channels or grooves the middle portion of said slat being unbent and standing transversely across the mouth of both grooves or substantially at right angles to the plane of the slat so as to permit said slats to be slid upon each other longitudinally and to move upon each other with a hinge-like movement but to prevent their separation laterally, substantially as shown and described.

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

WILLIAM R. KINNEAR.

Witnesses:

W. H. LOTT,

F. E. MARTIN.