

(No Model.)

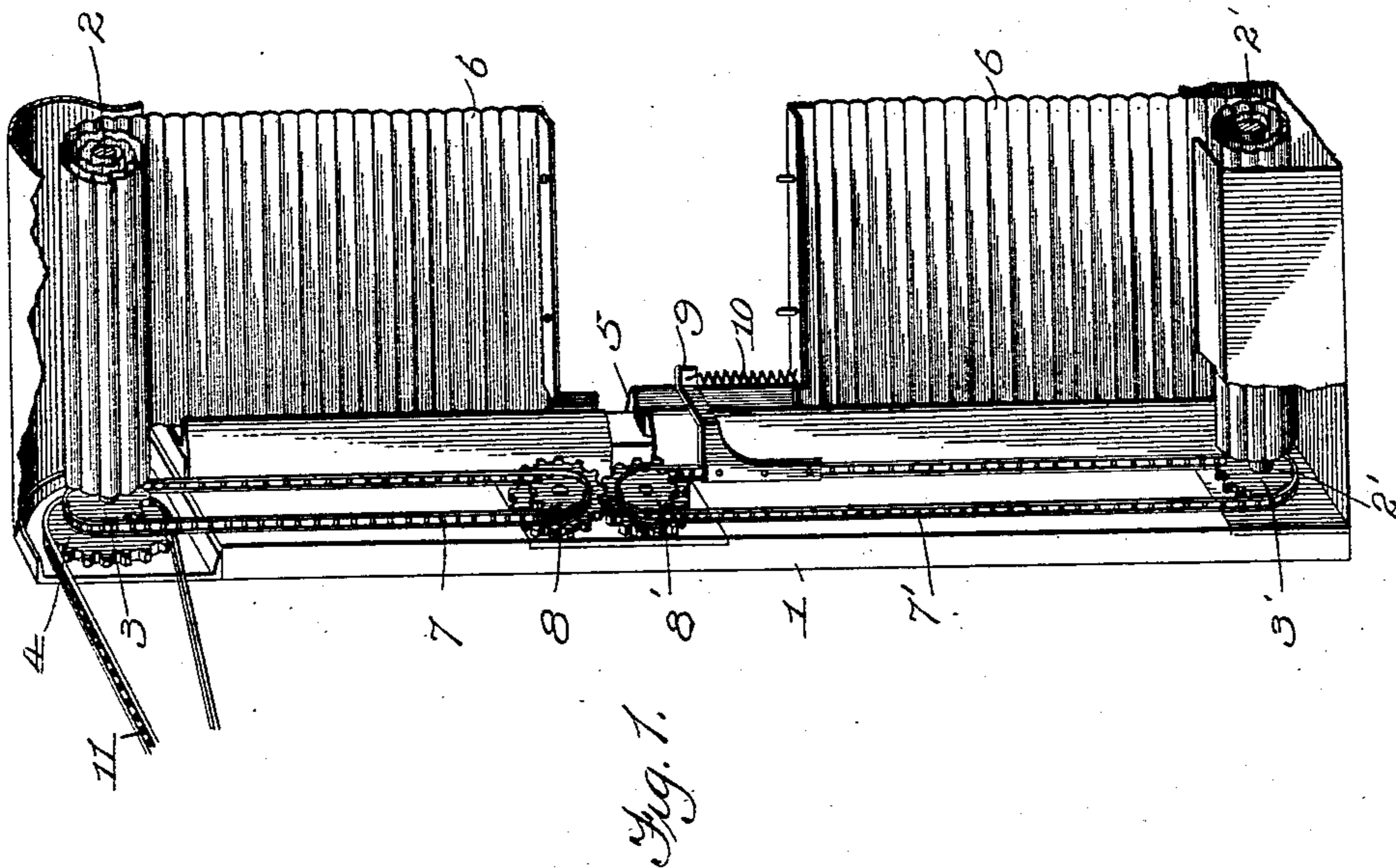
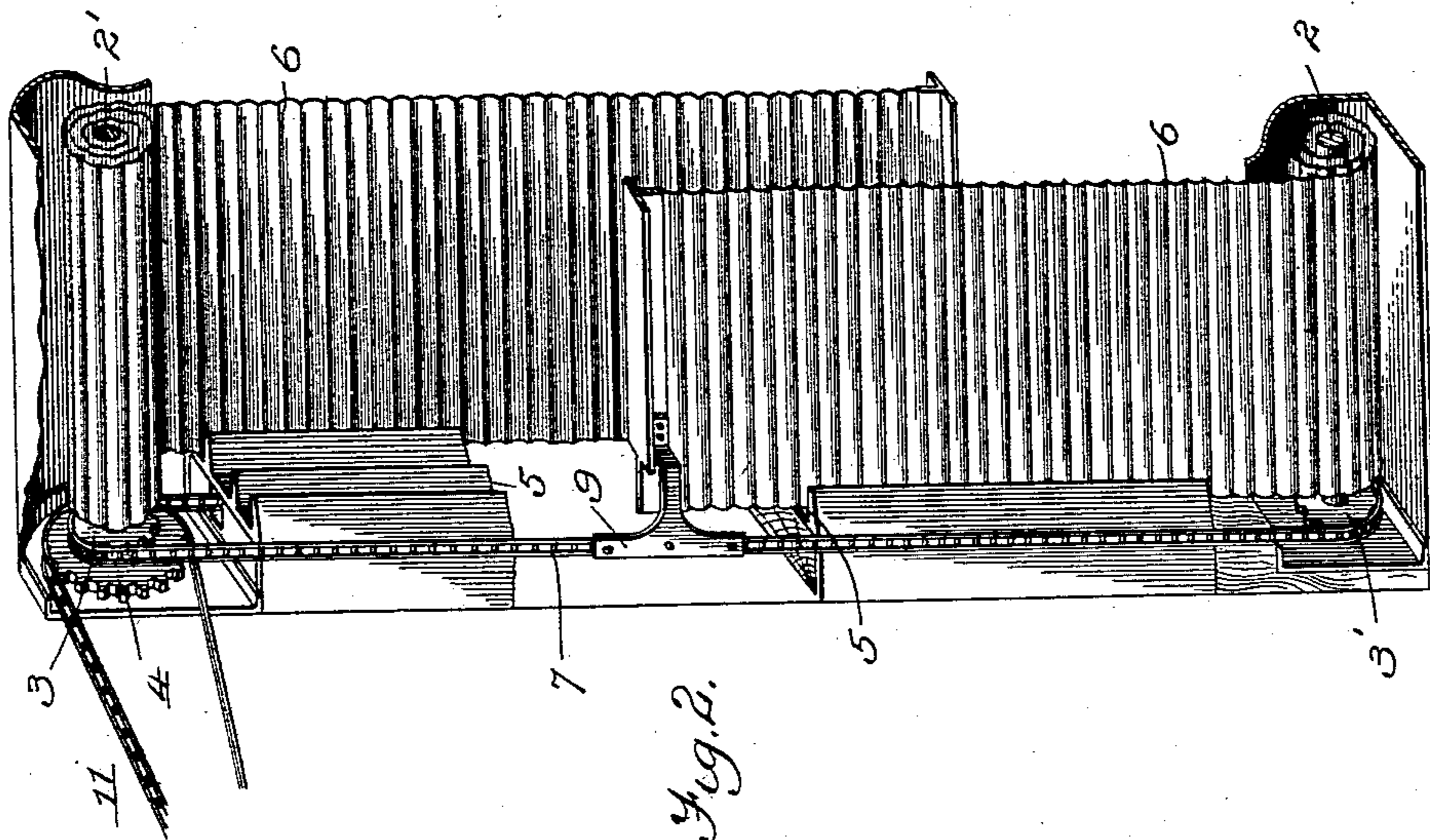
2 Sheets—Sheet 1.

W. R. KINNEAR.

FIREPROOF BLIND.

No. 572,014.

Patented Nov. 24, 1896.



WITNESSES:

Harry S. Rohrer.
Grant Burroughs.

INVENTOR

William R. Kinnear,
BY
Finckel & Finckel,
ATTORNEYS.

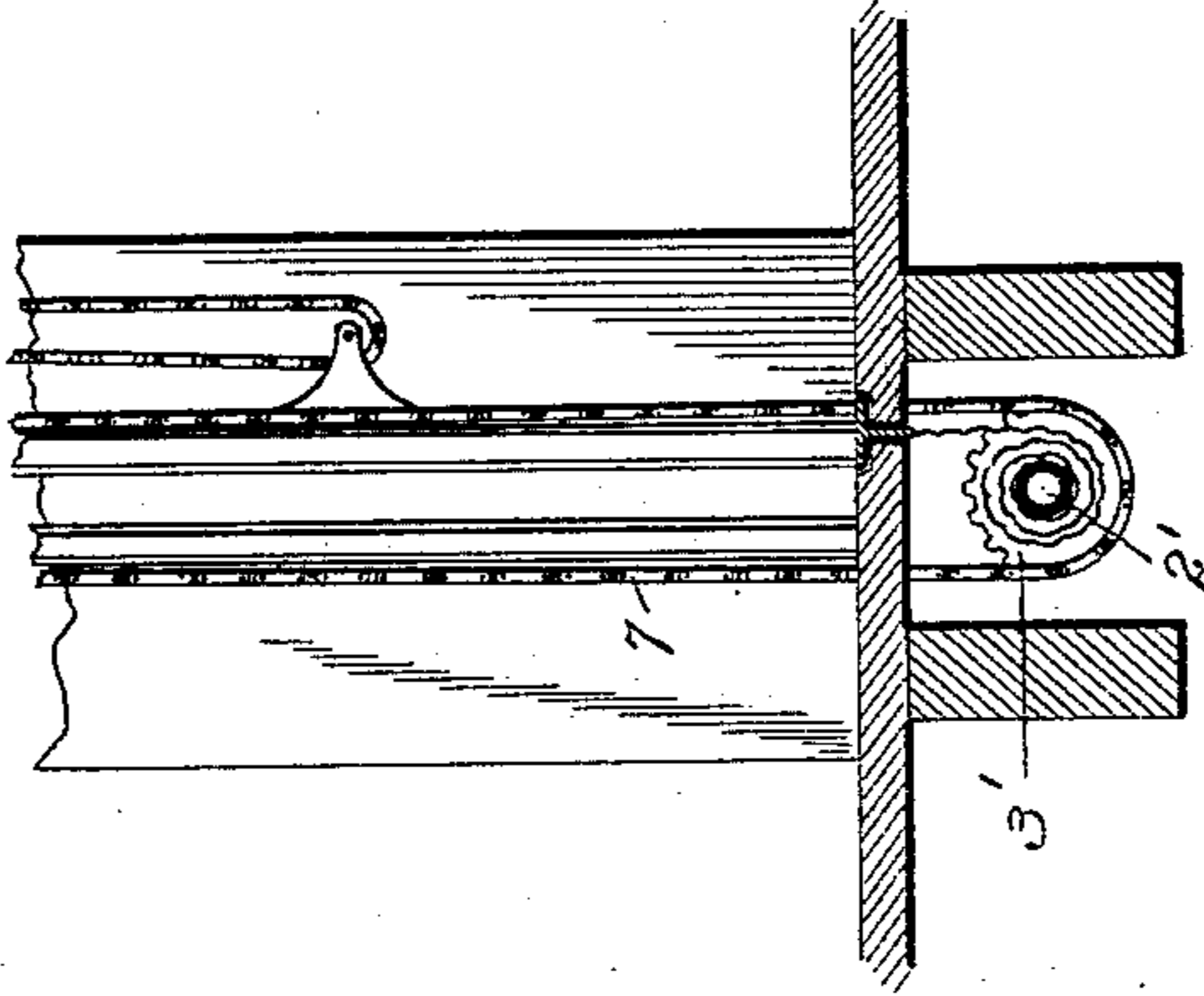
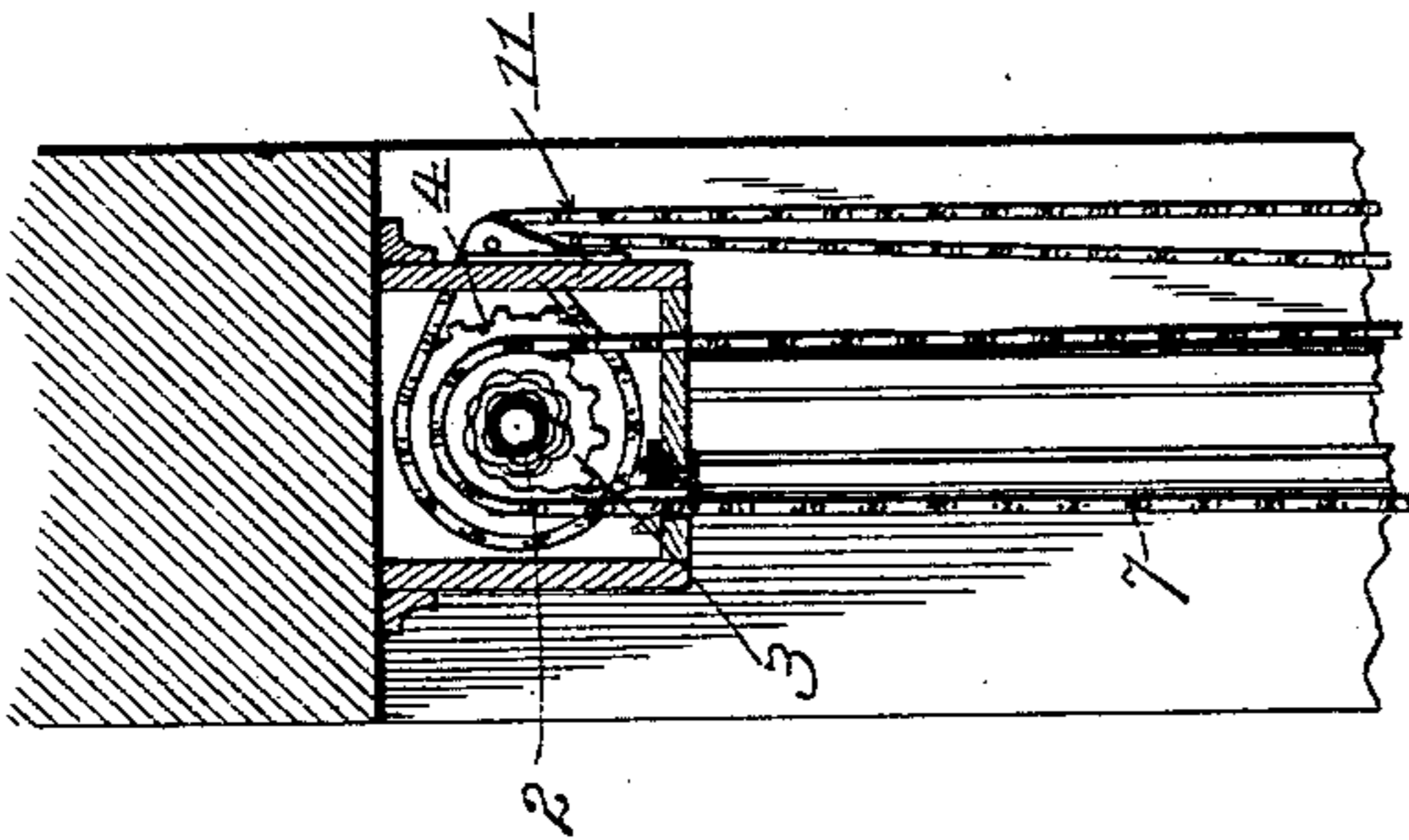
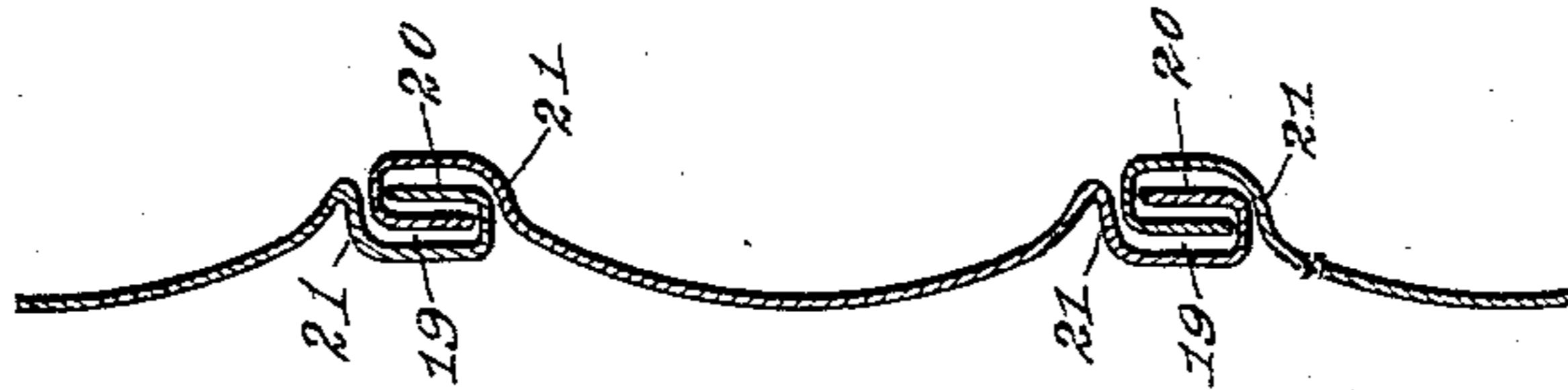
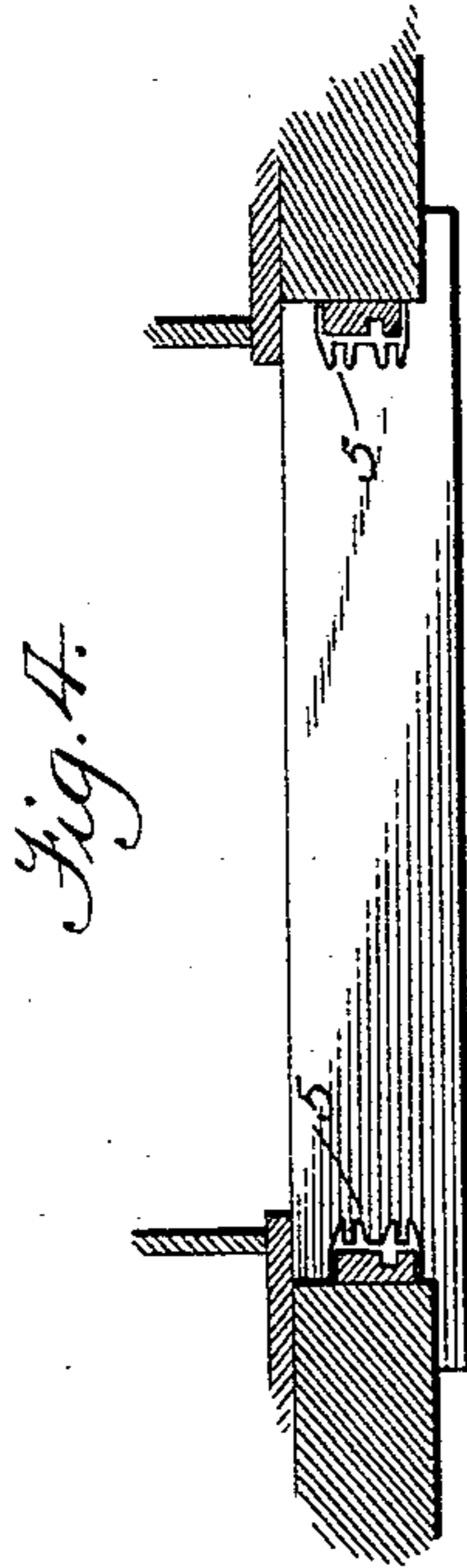
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2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

WILLIAM R. KINNEAR, OF COLUMBUS, OHIO.

FIREPROOF BLIND.

SPECIFICATION forming part of Letters Patent No. 572,014, dated November 24, 1896.

Application filed April 10, 1896. Serial No. 586,921. (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 Fireproof Blinds; 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 invention is to provide a blind or curtain for windows, doors, or partitions, which may be economically constructed, readily put up, and easily operated, and which shall afford efficient protection against fire and water.

As I shall prefer to construct these curtains of metallic slats, my invention further consists of an improved flexible joint connecting the slats, so that they may roll compactly onto rollers arranged in the upper and lower parts of the window-frame and at the same time when unrolled be completely waterproof.

My invention consists, further, in details of construction and mechanism for operating the curtains, all of which are hereinafter particularly set forth and claimed.

In the accompanying drawings, Figure 1 is a perspective view of my curtain in its single form. Fig. 2 is a similar view of the curtain in its double form, that is, where an airspace is provided to increase its efficiency as a fireproof curtain. Fig. 3 is a vertical sectional view showing the application of my curtain to a door, as of a warehouse or factory, through which vehicles may be driven or heavy things moved. Fig. 4 is a horizontal sectional view showing the construction providing grooves for the reception and movement of the edges of the double curtain. Fig. 5 is a detail in cross-section illustrating the construction of the flexible joint of the slats.

Like characters of reference in the different views designate corresponding parts.

Referring to the construction illustrated in the first view, 1 designates one side of a window. In the upper part of this is journaled horizontally a roller 2, having fast on one end a small sprocket-wheel 3 and a large sprocket-wheel 4, and in the lower part is journaled

horizontally a roller 2', having a sprocket-wheel 3' fast thereon. Secured vertically on the opposite sides of the window are metallic strips bent to form grooves 5, which receive the edges of the curtains, (designated 6.) In Fig. 1 the curtain is shown to be of two parts that are attached to the upper and lower rollers, respectively.

The two parts of the curtain are made of such length that when unrolled they shall meet at about the middle of the window, and their free or movable ends are each provided with a strip of angle-iron, the horizontal faces of which lap when they come together. The lower angle-iron may be furnished with pins and the upper one with holes through which the pins project to prevent lateral separation, and any suitable means may be employed for locking the strips together when the curtain is closed. The curtain-rollers are each protected by inclosing sheet-metal shields, substantially as shown.

The two parts of the curtain are operated by means of sprocket-chains. According to the construction shown in Fig. 1 there are two chains 7 and 7', one passing around the sprocket-wheel 3 and one around the sprocket-wheel 3', and power applied to one roller is communicated to the other by means of the intermediate geared sprocket-wheels 8 and 8', journaled on a plate secured to the side of the window-frame. Brackets or bent arms 9 are secured to the sprocket-chain 7', and the upper edge of the lower part of the curtain is connected with said arm by means of coil-springs 10. These springs allow a cushioned contact of the two parts of the curtain when they come together. The two parts of the curtain are operated by means of a sprocket-chain 11, passing around the large pulley 4, which may be manipulated at any convenient point in the room. Instead of the two chains 7 and 7' and the two geared sprockets 8 and 8' I may use simply a crossed single chain belt passing around the roller-sprockets 3 and 3', and thus secure the simultaneous and contrary movements of the parts of the curtain. The weight of the upper part of the curtain largely, if not quite, supplies the power required to raise the lower part of the curtain and so renders easy the operation of the same.

In Fig. 2 I have illustrated my improve-

ments as embodied in a double or twofold curtain, that is, one in which each of the parts composing the curtain extends the entire length of the window. In this instance the parts of the curtain move up and down in separate grooves somewhat separated, so as to afford an air-space between them. The upper curtain is attached to the roller as before. A single chain passes around and connects the sprockets of the upper and lower rollers, and the curtain on the lower roller is connected directly to an arm or bracket secured to the chain. In this instance, as in the first, the weight of the curtain on the upper roller supplies nearly if not quite all the power required to lift the curtain on the lower roller and so renders very easy the operation of the curtain. In this instance also the rollers may be protected by sheet-metal shields.

Where the curtain is to be used in the door of a warehouse, as illustrated in Fig. 3, the lower roller is placed under the floor and the curtain moved up or down through a slit made for that purpose. In this case the upper edge of the curtain on the lower roller will be furnished with a strip of T-iron, the head of which will rest in a slot countersunk so that the upper face of the T-iron shall be flush with the floor, thus allowing unimpeded passage of vehicles into and out of the building. In putting up my curtains I propose also to incase in sheet metal all exposed woodwork of the window-casing, thus preventing ingress or communication of fire to the building. Where the double curtain is employed the entire length of the windows and doors and a good air-space left between the parts of the curtain, the ignition of the interior of a building or of its contents from the outside will ordinarily be impossible.

The slats of which I prefer to construct my metallic curtains will be of substantially the form shown in cross-section, Fig. 5. The opposite longitudinal edges will be bent in opposite directions to form grooves 19 of rectangular or elliptical hook form in cross-section.

The edge portions of the slat will constitute tongues 20, lying on opposite sides of the general plane of the slat, so as to form water-shedding joints at both edges of the same, and the body of the slat will be bent across

the mouth of the groove to form a shoulder 21, a small narrow opening being left for the insertion in a longitudinal direction only of the tongue of another similarly-formed slat. When the slats are thus connected, the shoulder 21 prevents lateral separation of the slats, but permits their movement upon each other with a hinge-like movement. Thus the curtain may be rolled compactly upon a roller, and when unrolled will form a completely waterproof curtain.

Either or both of the parts of the curtain may be doubled and separated by separate channels in the side of the window-frame, so as to afford a plurality of air-spaces.

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

1. In a window or other opening, a curtain or blind composed of two parts, rollers in the upper and lower parts of said opening upon which said parts of the curtain may be rolled or unrolled, a belt or chain connecting said rollers, the part of the curtain on the lower roller being connected to said belt, whereby the movement of said belt shall cause the movement of said curtains in contrary directions to open or close the opening in which the curtain or blind is placed, substantially as described.

2. In a window or other opening, rollers journaled in the upper and lower parts of said opening, a double or twofold curtain one part being secured to each roller, separate channels or grooves for said parts of the curtain, a chain or belt for operating said curtain, the lower part being connected to said chain, substantially as described.

3. A metallic blind or curtain composed of slats having tongues and grooves formed at their opposite edges, shoulders 21, and slits between the edges of the tongues and shoulders, the tongues lying on opposite sides of the general plane of the slat, whereby the slats may be joined by sliding the tongues longitudinally in the grooves and a water-shedding curtain formed, substantially as shown.

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

WILLIAM R. KINNEAR.

Witnesses:

RAYMOND H. KINNEAR,
L. F. SCOTT.