

No. 622,330.

Patented Apr. 4, 1899.

T. M. DILS.  
HOT AIR REGISTER.

(Application filed Apr. 27, 1898.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

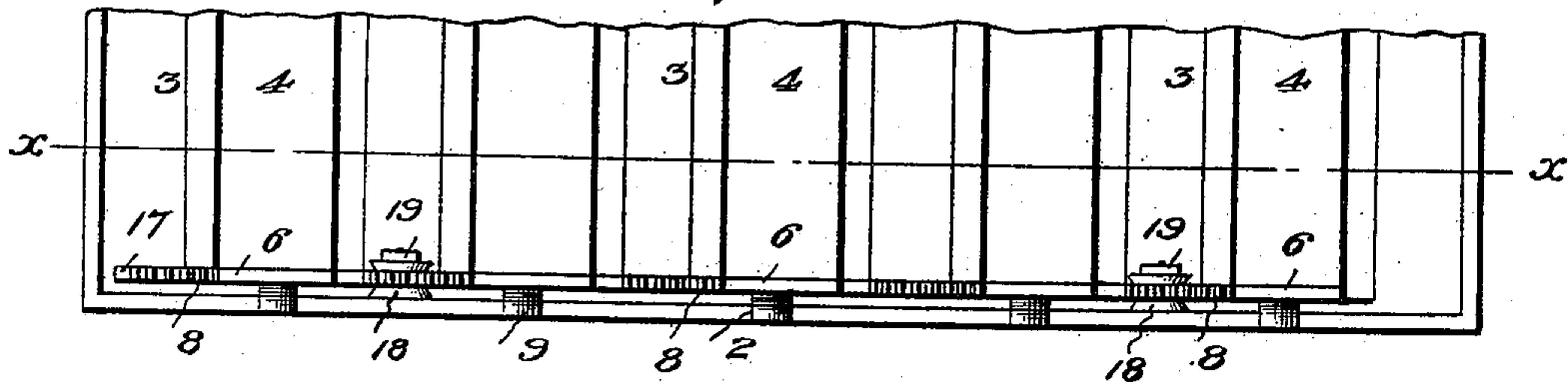


Fig. 2.

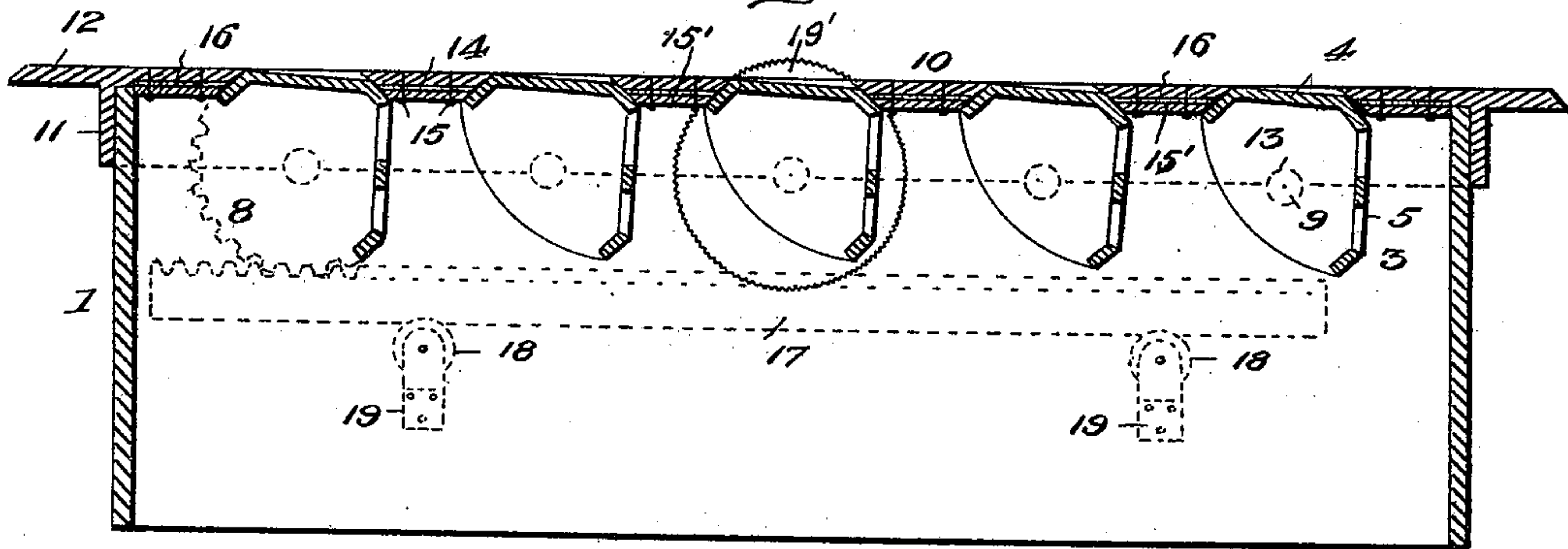
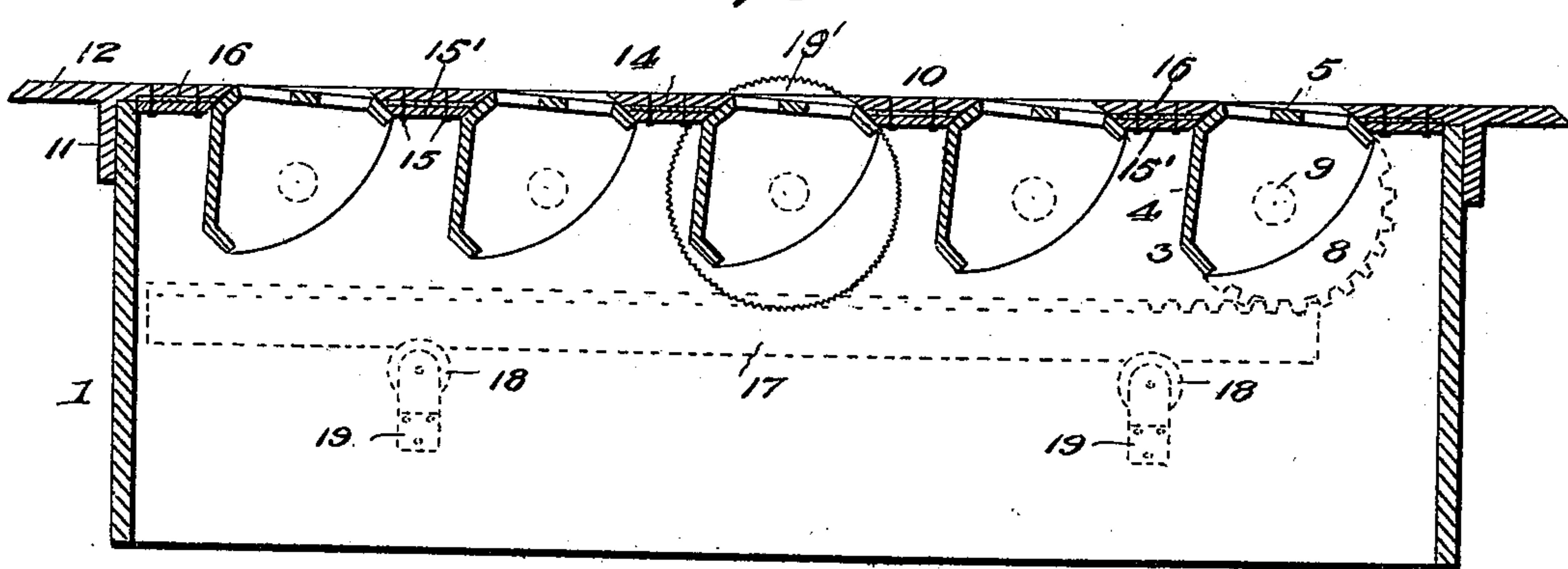


Fig. 3.



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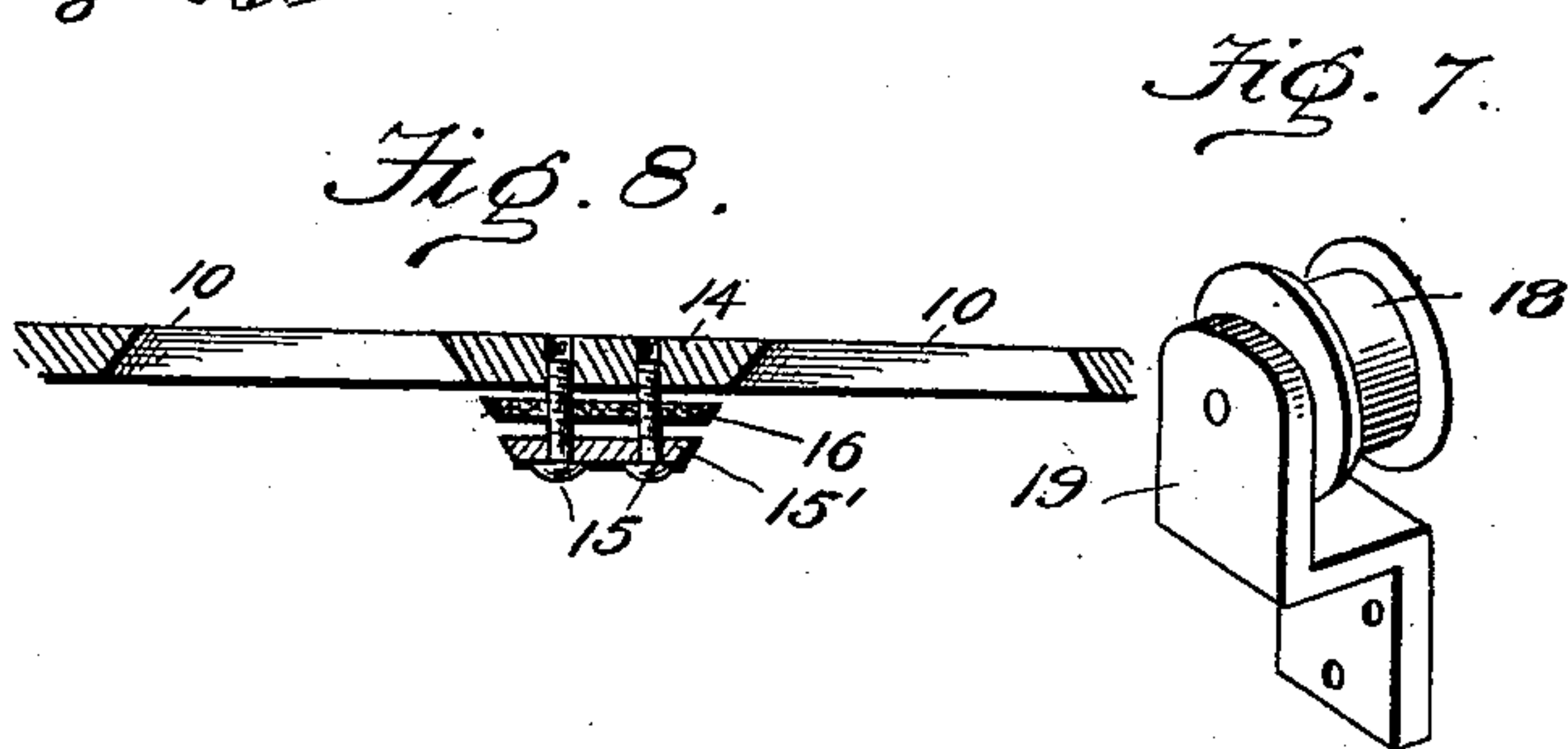
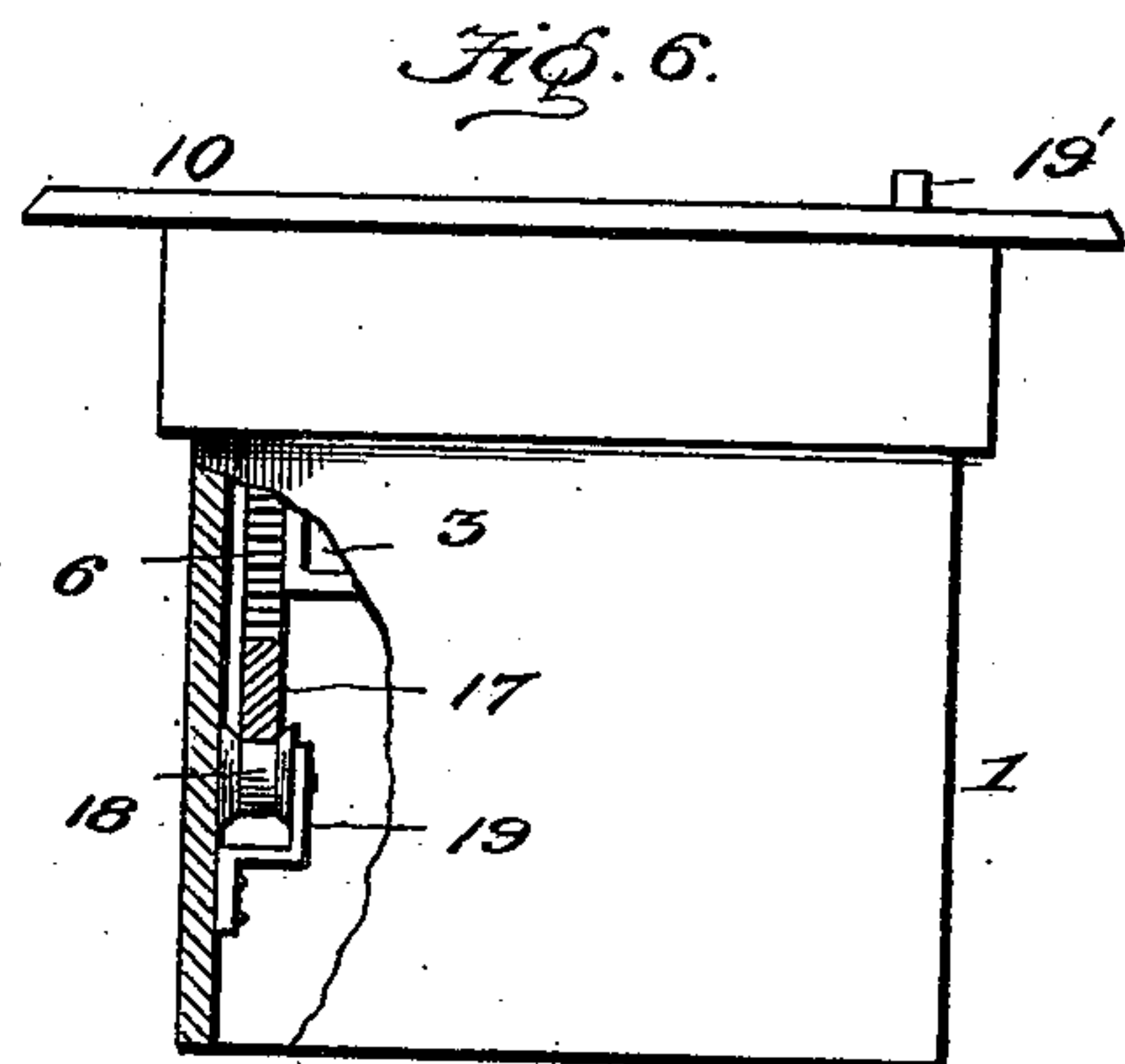
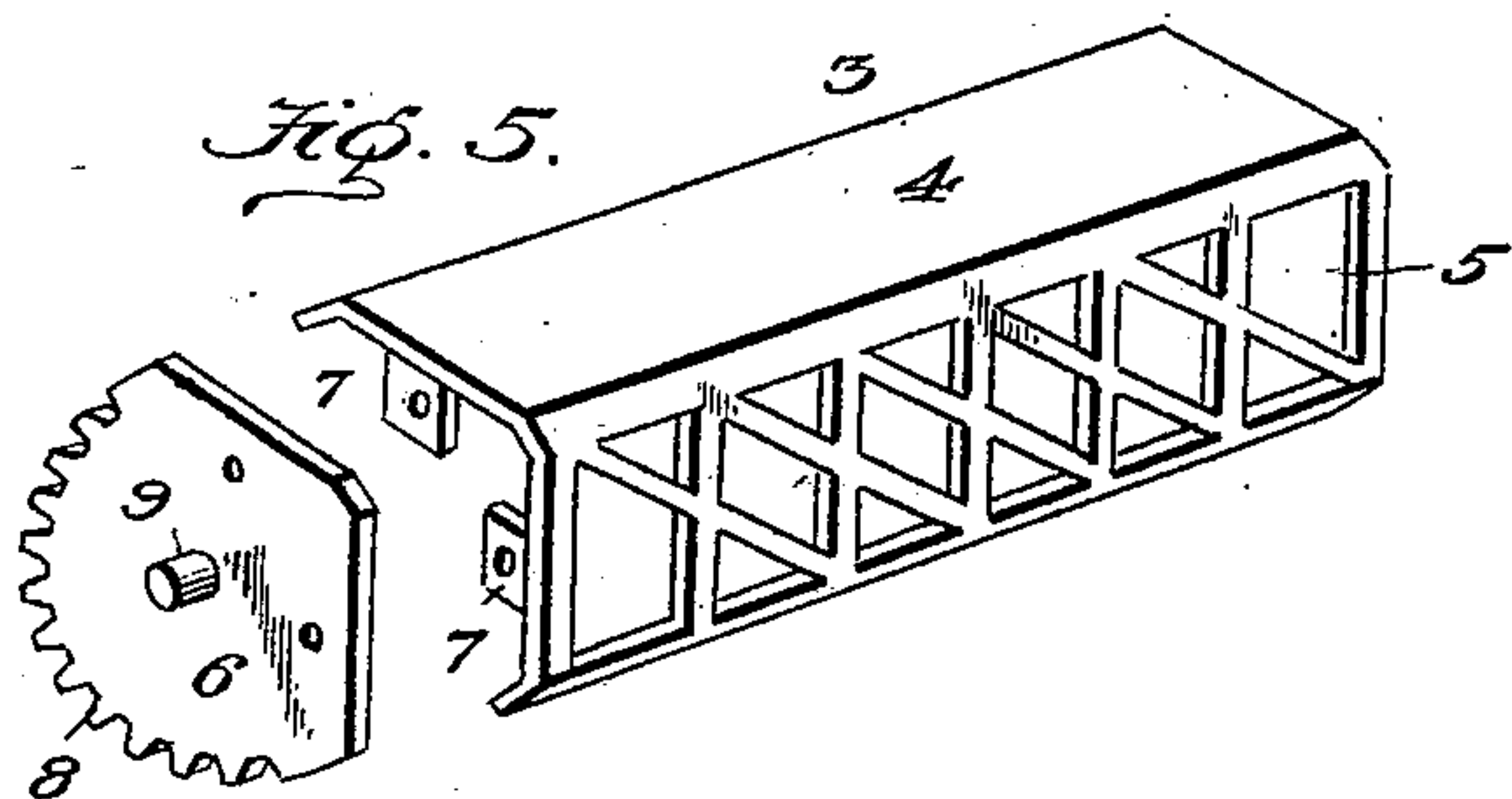
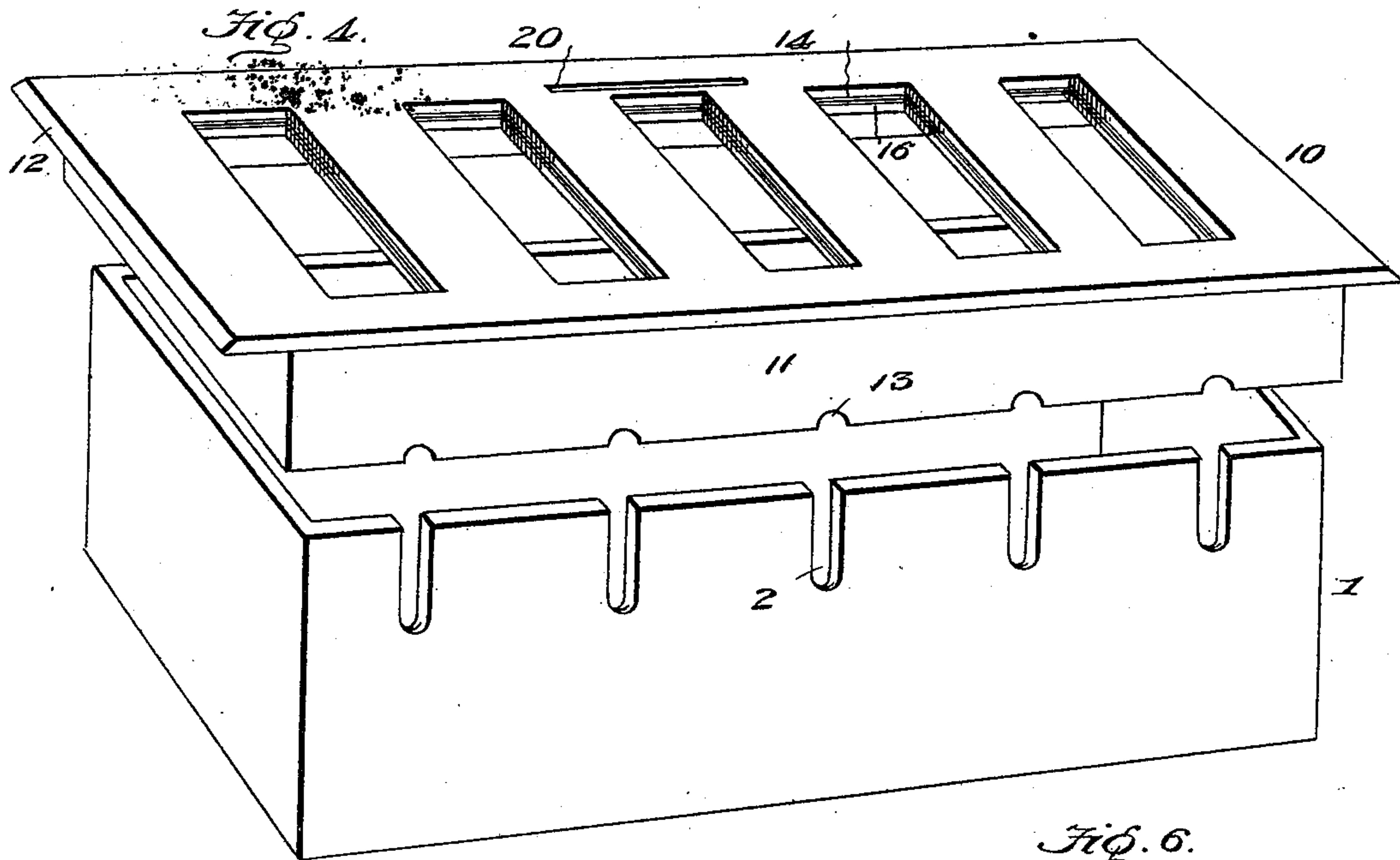
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2 Sheets—Sheet 2.



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# UNITED STATES PATENT OFFICE.

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## HOT-AIR REGISTER.

SPECIFICATION forming part of Letters Patent No. 622,330, dated April 4, 1899.

Application filed April 27, 1898. Serial No. 678,929. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS MOORE DILS, a citizen of the United States, residing at Davenport, in the county of Scott and State of Iowa, have invented certain new and useful Improvements in Hot-Air Registers; and I do 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.

My invention relates to hot-air registers.

The object of the invention is to provide a register which when closed will present practically a smooth surface, and thereby prevent the sweepings lodging and accumulating within the hot-air pipe of the furnace; furthermore, to provide means by which the valves may be easily opened and closed, and, finally, to provide a register which shall be simple of construction, durable in use, and comparatively inexpensive of production.

With these objects in view the invention consists in certain features of construction and combination of parts, which will be hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a plan view of a fragment of the register-box, the valves being shown closed. Fig. 2 is a longitudinal sectional view on line *xx* of Fig. 1. Fig. 3 is a similar view, the valves being shown open. Fig. 4 is a detail perspective view of the register-box and the surface plates, the parts being separated. Fig. 5 is a similar view of one of the valves, its head being shown separated from the ends. Fig. 6 is an end view, the front of the register-box being removed to more clearly illustrate the rack-bar and its connection with the segmental racks of the valve-heads. Fig. 7 is a detail perspective view of one of the roller-bearings and its bracket, and Fig. 8 is an enlarged detail view of the valve-packing and its coacting elements.

In said drawings, 1 denotes the bottomless register box or casing, the sides of which are provided at their upper edges with aligned slots 2.

3 denotes valves which consist of a solid face 4 and an open-work face 5. In cross-section these valves are angular. 6 denotes the heads of said valves, which are secured to integral

lugs 7, projecting from the sides of said valves, and are provided with segmental racks 8 and with trunnions 9. These trunnions 9 are slipped into the slots 2, and a surface plate 10, consisting of a vertical flange 11 and a horizontal flange 12, is slipped over the upper edge of the box and has its vertical flange 11 provided with semicircular recesses 13, that fit over the trunnions 9 of the valve-heads, so as to permit of a free rotary movement of the valves. The surface plate is formed with integral transverse bars 14, to the under side of which are clamped the asbestos packing-strips 16, which are removably secured in place by means of the backing-plates 15' and the screws 15. This packing is designed to form an air-tight joint between the edges of the solid portions of the valve and the edges of the bar when the register is closed, and thereby prevent the escape of hot air through said register, as well as prevent dust and sweepings falling through into the hot-air pipe.

17 denotes a rack-bar the lower smooth edge of which is supported on rollers 18, journaled to brackets 19, secured to one of the sides of the casing. This rack-bar meshes with the segmental racks of the cylinder-heads.

19' denotes a foot-wheel which projects upward through a slot 20 in the surface plate a sufficient distance to enable the foot of a person to engage said wheel and rotate it. The rotation of this wheel will open or close the register, according to the direction of movement of said wheel, as the movement of the valve to which said wheel is secured will be transmitted to the remaining valves through the rack-bar and segmental racks.

From the foregoing description, taken in connection with the accompanying drawings, the construction, operation, and advantages of my invention will be readily understood without requiring an extended explanation.

It will be seen by reference to the drawings that when the register is closed a practically smooth surface is presented, thereby enabling the furniture in the room to be moved from one place to another without danger of breaking the grating, which is a serious drawback to the registers now in use. Furthermore, owing to the closed joints formed between the

solid portions of the valve and the bars of the surface plate no sweepings can possibly lodge and accumulate within the hot-air pipe.

Having thus described my invention, what  
5 I claim, and desire to secure by Letters Patent, is—

The combination with a register-box, of valves journaled in said box and formed with solid and open-work faces, a surface plate se-  
10 cured to said box and formed with the spaced transverse bars 14, the backing-plates 15' removably secured to the under side of said bars

and the packing-strips 16 clamped between said bars and plates and having their free edges projecting into the path of said valves, 15 substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

THOMAS MOORE DILS.

Witnesses:

FRED. HEINZ,

L. M. FISHER.