

(No Model.)

D. P. SIMMONS.  
CUSPIDOR.

No. 497,419.

Patented May 16, 1893.

Fig. 1.

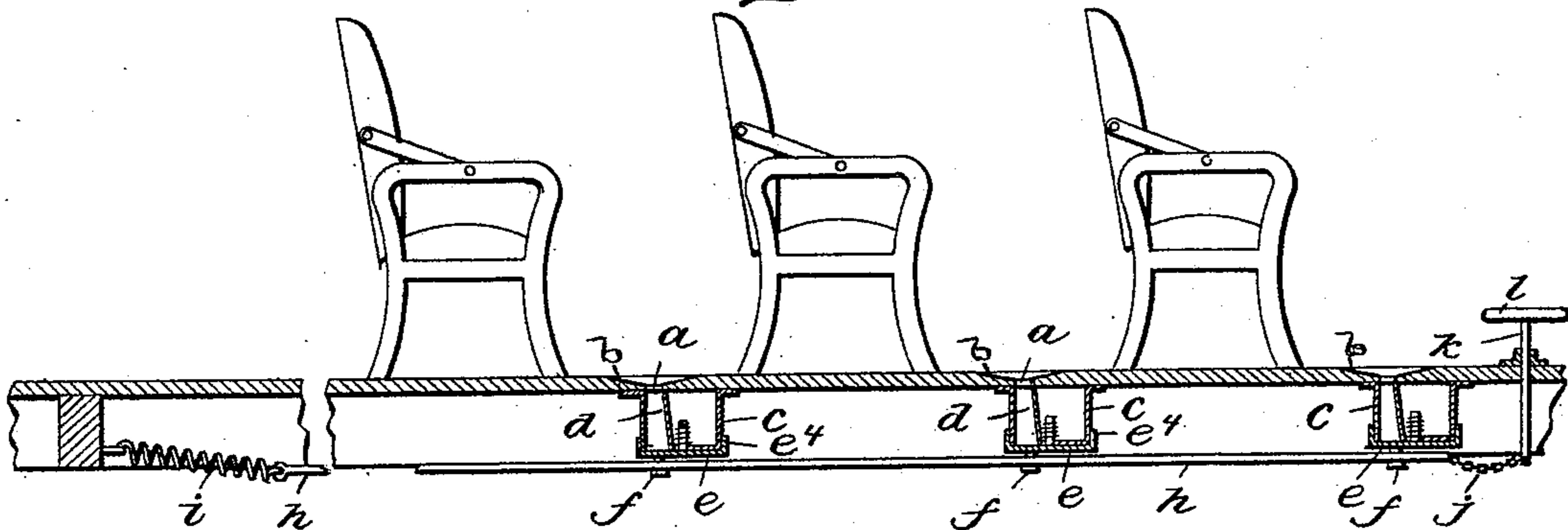


Fig. 2.

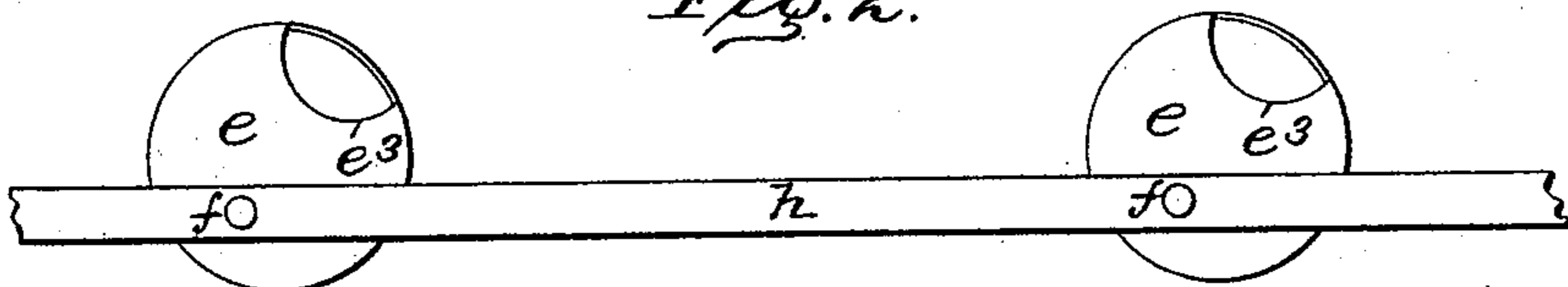


Fig. 3.

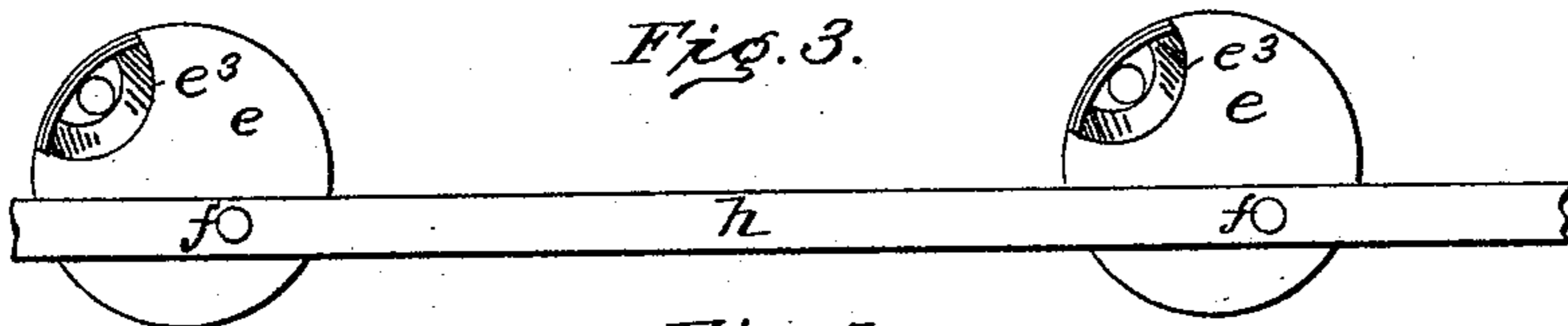


Fig. 5.

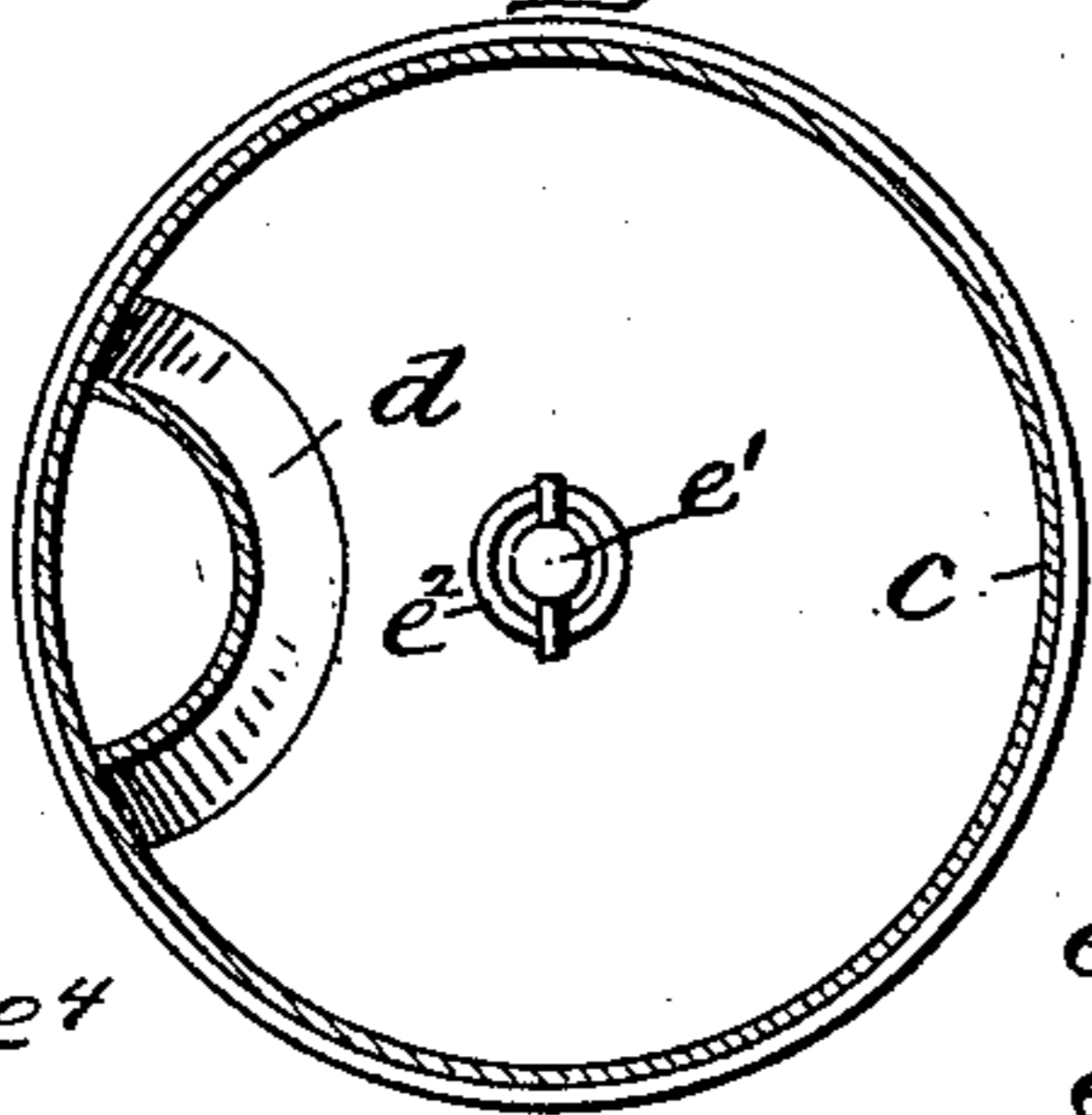


Fig. 6.

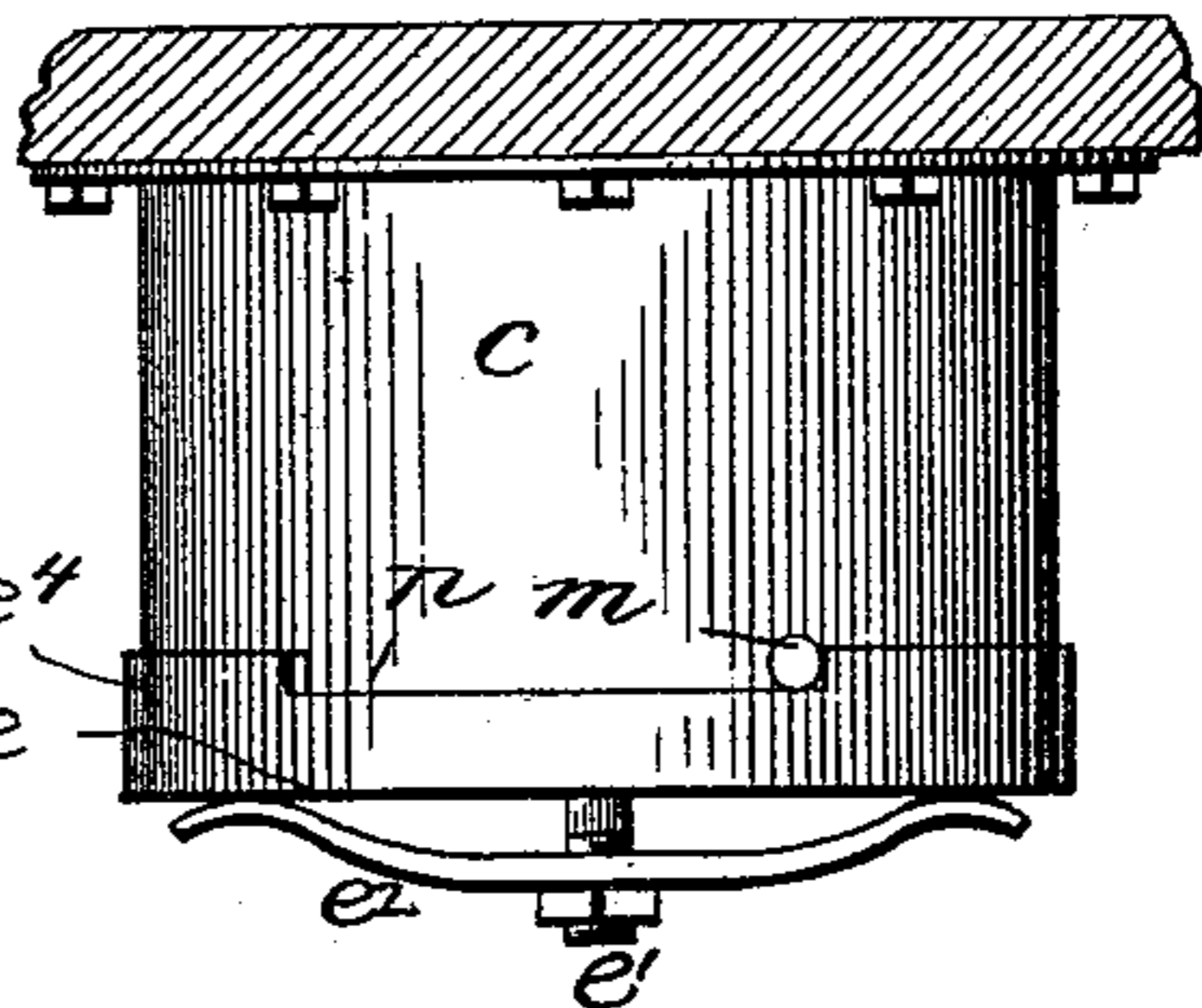


Fig. 4.

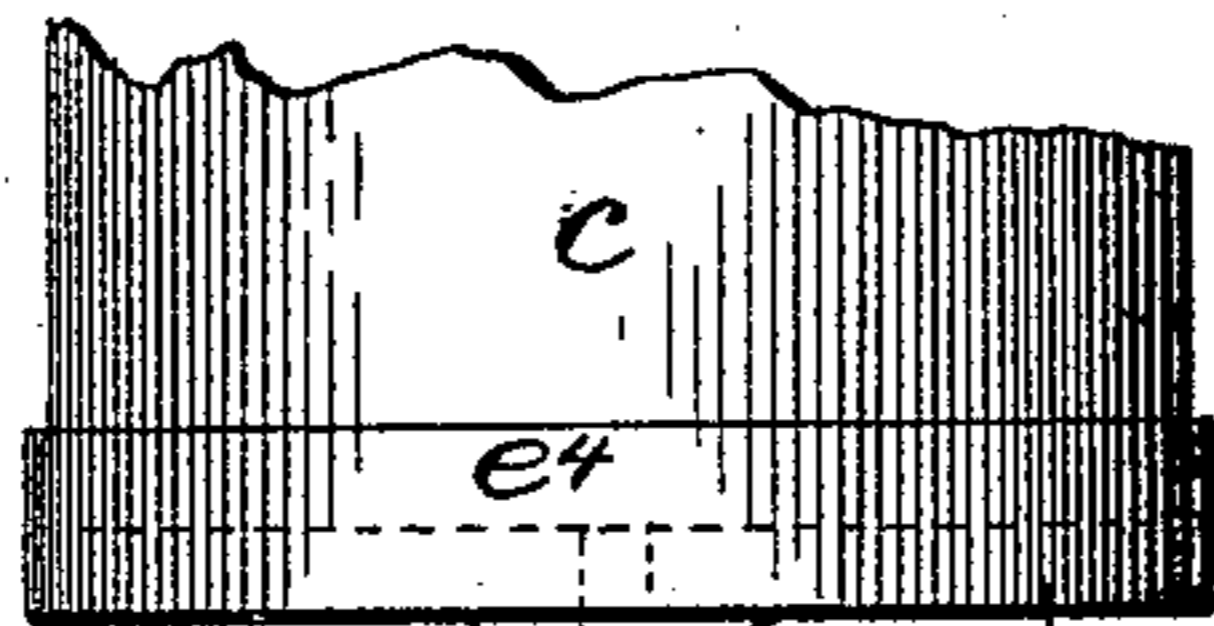
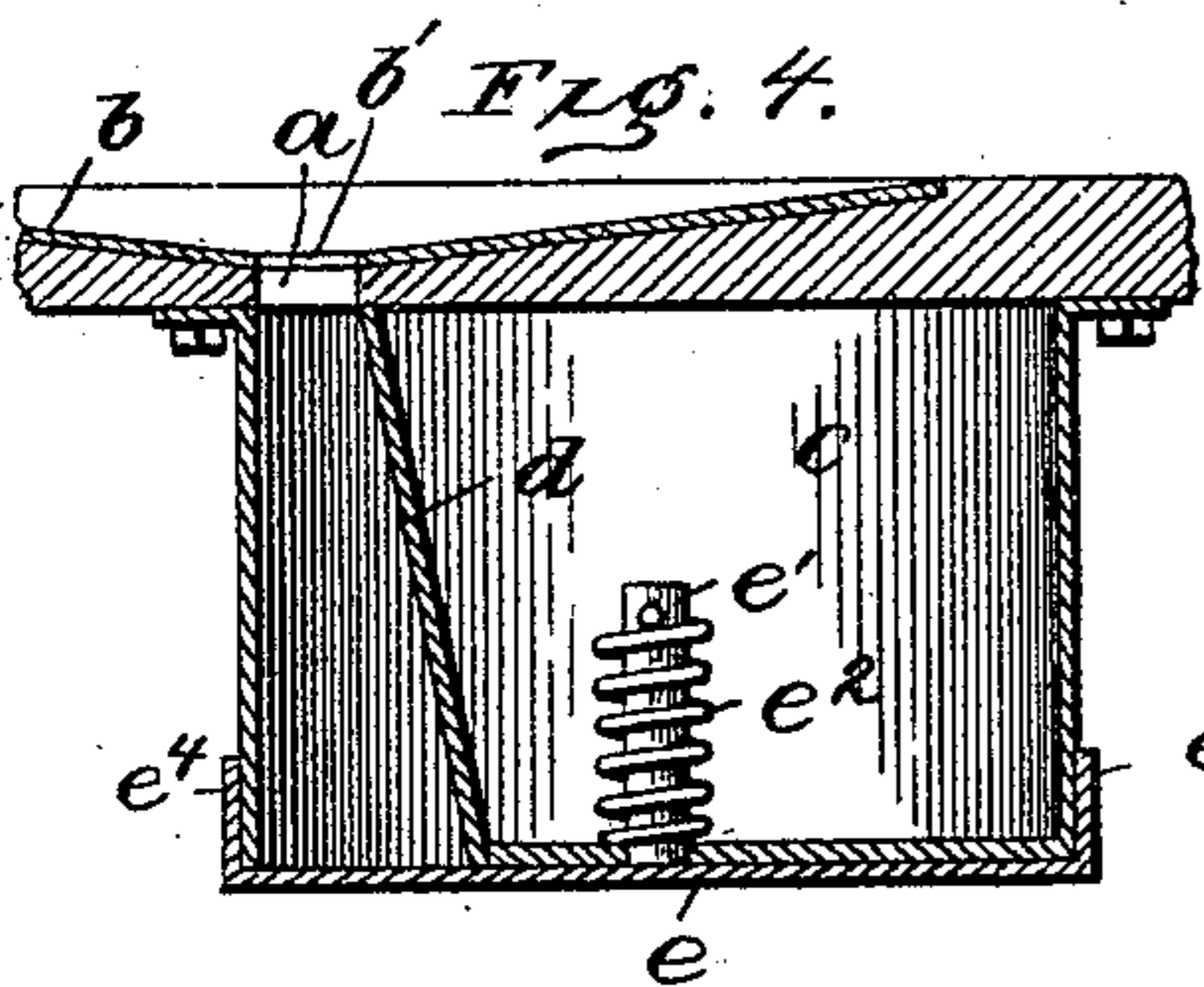
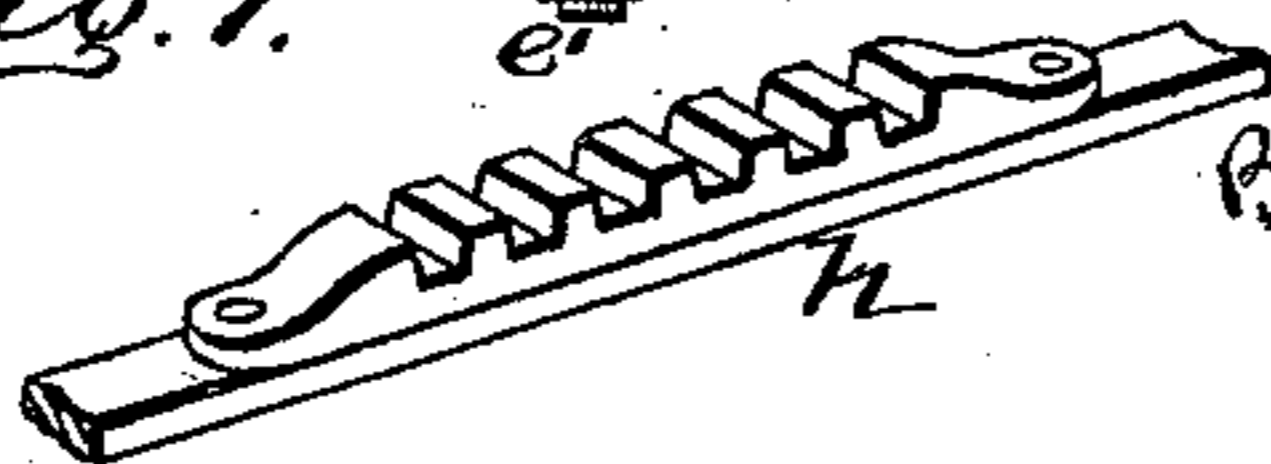


Fig. 7.



Inventor

David P. Simmons  
By *John A. Johnson*  
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Witnesses

*Chas. Johnson*  
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# UNITED STATES PATENT OFFICE.

DAVID PITMAN SIMMONS, OF GEORGETOWN, TEXAS.

## CUSPIDOR.

SPECIFICATION forming part of Letters Patent No. 497,419, dated May 16, 1893.

Application filed February 13, 1893. Serial No. 462,147. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID PITMAN SIMMONS, a citizen of the United States, and a resident of Georgetown, in the county of Williamson and State of Texas, have invented certain new and useful Improvements in Cuspidors, of which the following is a specification.

I have improved the cuspidor designed for use as a fixture in the floor of railway cars and other places, and the object of my invention is to provide a simple device fixed to and depending from the floor in connected series so as to receive the filth and sweepings and to be emptied and cleaned. The cuspidors are arranged in a line on the surface of the floor between the seats, or at other suitable places, so that they can all be connected to be opened for cleaning. Each cuspidor consists of a shallow basin or depression in the surface of the floor which has a central hole through which the matter from the basin surface drops. A cylinder depends from the bottom of the floor and has a tube on its inner wall into which the hole in the floor opens. This tube serves as a conductor for the filth from the basin to the bottom of said cylinder where it is discharged. An oscillating valve at the bottom of the cylinder serves to close the tube at its lower end to prevent the air from coming up through the floor opening, and to open the tube to empty its contents. The cylinder serves as a carrier for this valve and for the tube of the cuspidor. The valve of each cuspidor has a pin which stands down at the side of the center of the valve and is connected to a horizontal rod, which, by the action of a spring at one end, is maintained in position to close all the valves, while by a hand connection above the floor at the other end of the rod, it is operated to open all the valves at once to empty the contents of their tubes.

In the concluding claims of this specification I will point out the particular matters which constitute my invention and which are illustrated in the accompanying drawings, in which—

Figure 1 shows in elevation a portion of a railroad car having my improved cuspidors applied to the floor thereof. Fig. 2 is a bottom view showing the connected valves of the line of cuspidors closed. Fig. 3 is a similar

view showing the connected valves open. Fig. 4 is a vertical section of one of the cuspidor cylinders; and Fig. 5 is a horizontal section of the same, showing the cuspidor tube on the inner wall of the cylinder. Figs. 6 and 7 are modifications.

In the floor at suitable places holes *a* are cut and at the upper surface the floor is excavated to receive a shallow basin *b* having a central hole *b'* over the hole in the floor and always open, the edges of the depressed basin surface being flush with the floor and forming the bowl of the cuspidor.

At each floor opening at the under side of the floor I secure a cylinder *c* preferably closed at its lower end, and having on its inner wall a tube *d* which joins the floor opening and is open at the bottom of the cylinder which depends from the floor. On the bottom of this cylinder is fitted a circular plate *e* which acts as a valve to open and close the bottom of the filth conducting tube. I prefer to make this valve with a pin *e'* standing centrally upward and passing through a central hole in the bottom of the cylinder, and having a coil spring *e<sup>2</sup>* which bears upon the bottom of the cylinder and the pin so as to exert an upward pressure on the latter to hold the valve in contact with the bottom of the cylinder. This plate valve has a circumferential notch *e<sup>3</sup>*, which, when the plate is turned on its pin so as to bring said notch co-incident with the tube, opens the latter for the discharge of the filth which accumulates therein from the floor opening, upon said valve. This plate valve when turned to close the lower end of the tube forms the bottom of the cuspidor and prevents the entrance of wind or air into the car through the floor opening. I prefer to make this plate valve *e* with a turned up rim *e<sup>4</sup>* and to hold it snugly on the bottom of the cylinder by this spring *e<sup>2</sup>* and the central pin *e'*, so that it will have a close fit and be prevented from rattling. As stated these cylinders are arranged in line and hang from the under side of the floor and the valve plate of each has a pin *f* depending at one side of its center, which is connected to a rod *h* extending horizontally under the cylinders. One end of this rod has a spring *i* connected with the floor and the other end of said rod is connected by a chain

*j* with a vertical rod *k* which, passing up through the car floor, has a hand wheel *l*, by which the person cleaning the car can operate the rod to open the valves of all the cuspidors connected with it. The normal action of the connecting spring *i*, however, is to keep the valves closed, while the function of the cylinder is to form a carrier for the open tube of the cuspidor and a seat for the valve. In turning the hand wheel the rod is drawn toward it against the tension of the spring and acts on the valve pins to turn the plates with a crank movement. A stop *m* on the cylinder and a notch *n* or slot in the valve rim, serve to limit the movement of the valve-plate to open and to close the lower end of the tube. But in placing the crank-pin *f* near the center of the valve, the rod will be caused to move almost in a straight line and thus give the proper opening and closing movement to the valve.

I prefer to make the tube flaring downward from the floor opening so as to give, as far as possible, a free descent for the filth and prevent its lodgment and collection on the inner wall of the tube. As the tube is always open at the top it can be easily cleaned and mopped out with water. The device can be made of castings and very easily put in place for use in railroad cars, coaches, theaters and other public places.

It will be understood that the extent of the oscillating motion of the valve is only sufficient to open and close the lower end of the tube of the cuspidor, and that such movement of the valve cleans it of the waste thereon in being opened, as it has a stripping action with the bottom of the cylinder.

The central pin on which the plate-valve is mounted may extend downward from the cylinder head to receive the spring to hold the valve up in place, as shown in Fig. 6, but I prefer the construction shown in Fig. 4, in which the pin and spring are placed within the cylinder, so as not to interfere with the action of the valve operating rod and to permit it to operate on nearly a straight line in giving the oscillating movement to the valves connected with it. It is also obvious that the valves may be operated by rack and pinion gear as seen in Fig. 7, wherein the valve is shown as having a pinion on its under side through which its centrally confining pin passes, and that the operating rod is provided with racks which engage the valve pinions.

The cylinder instead of being closed at its lower end may have a spider bottom.

I claim as my improvements—

1. The combination, with a cylinder adapted to be applied to and depend from the floor under a sunken basin or recess therein which is provided with a central opening, of a tube on the inner wall of said cylinder central with said floor opening, a valve fitted to oscil-

late on the lower end of said cylinder and having a circumferential notch, and means for oscillating said valve to open and to close the lower end of said tube, substantially as described.

2. The combination, with a cylinder adapted to be applied to and depend from the floor under a sunken basin or recess therein which is provided with a central opening, of a tube on the inner wall of said cylinder central with said floor opening, a valve fitted to oscillate on the lower end of the cylinder, having a circumferential notch and a pin central with the valve and a spring on the pin supporting said valve, an eccentric pin upon and standing down from the latter and a rod connected to said eccentric pin having a spring and a hand operating connection, substantially as described.

3. The combination, with a cylinder adapted to be applied to and depend from the floor under a sunken basin or recess therein which is provided with a central opening, of a tube on the inner wall of said cylinder, having unbroken walls and flaring downward from said floor opening to its discharge end, a valve at the flaring end of said tube and means for operating said valve, substantially as described.

4. In a cuspidor, the combination with a cylinder adapted to be applied to and depend from the floor under a sunken basin or recess therein which is provided with a central opening, of a downward flaring tube on the inner wall of said cylinder central with said floor opening, a plate valve having a pin passing up through the bottom of and having a bearing in said cylinder and provided with a spring for maintaining said valve in contact with said cylinder, and means for oscillating said valve to open and to close said tube, substantially as described.

5. A series of cuspidors comprising each a cylinder depending from the floor beneath a hole therein having a tube on its inner wall flaring downward, opening, at the bottom of the cylinder, and a valve at the lower end of the cylinder having a circumferential notch and adapted to open and to close said tube, a pin projecting centrally as a bearing for said valve, a spring on said pin for supporting the valve, means for connecting and for oscillating the valve of each cylinder, and a sunken basin in the upper surface of the floor having a central hole co-incident with the hole in the floor and with the upper end of the tube, substantially as described.

In testimony whereof I have hereunto signed this specification in the presence of two subscribing witnesses.

DAVID PITMAN SIMMONS.

Witnesses:

N. M. WILCOX,  
FRANK ELLIOTT.