

No. 765,743.

PATENTED JULY 26, 1904.

W. LINTERN.
MEANS FOR OPERATING PNEUMATIC VALVES.

APPLICATION FILED MAR. 28, 1904.

NO MODEL.

2 SHEETS—SHEET 1.

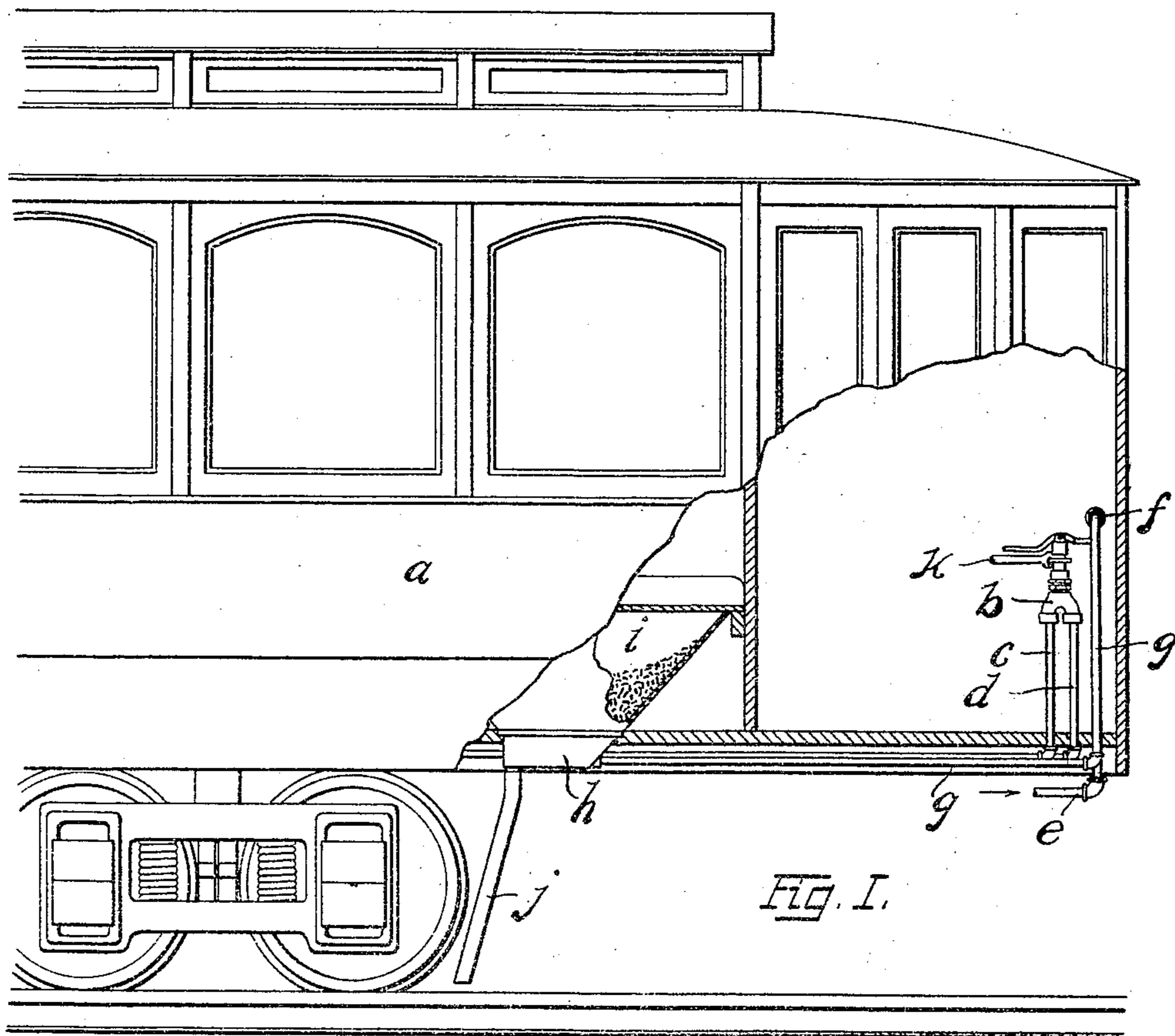


Fig. I.

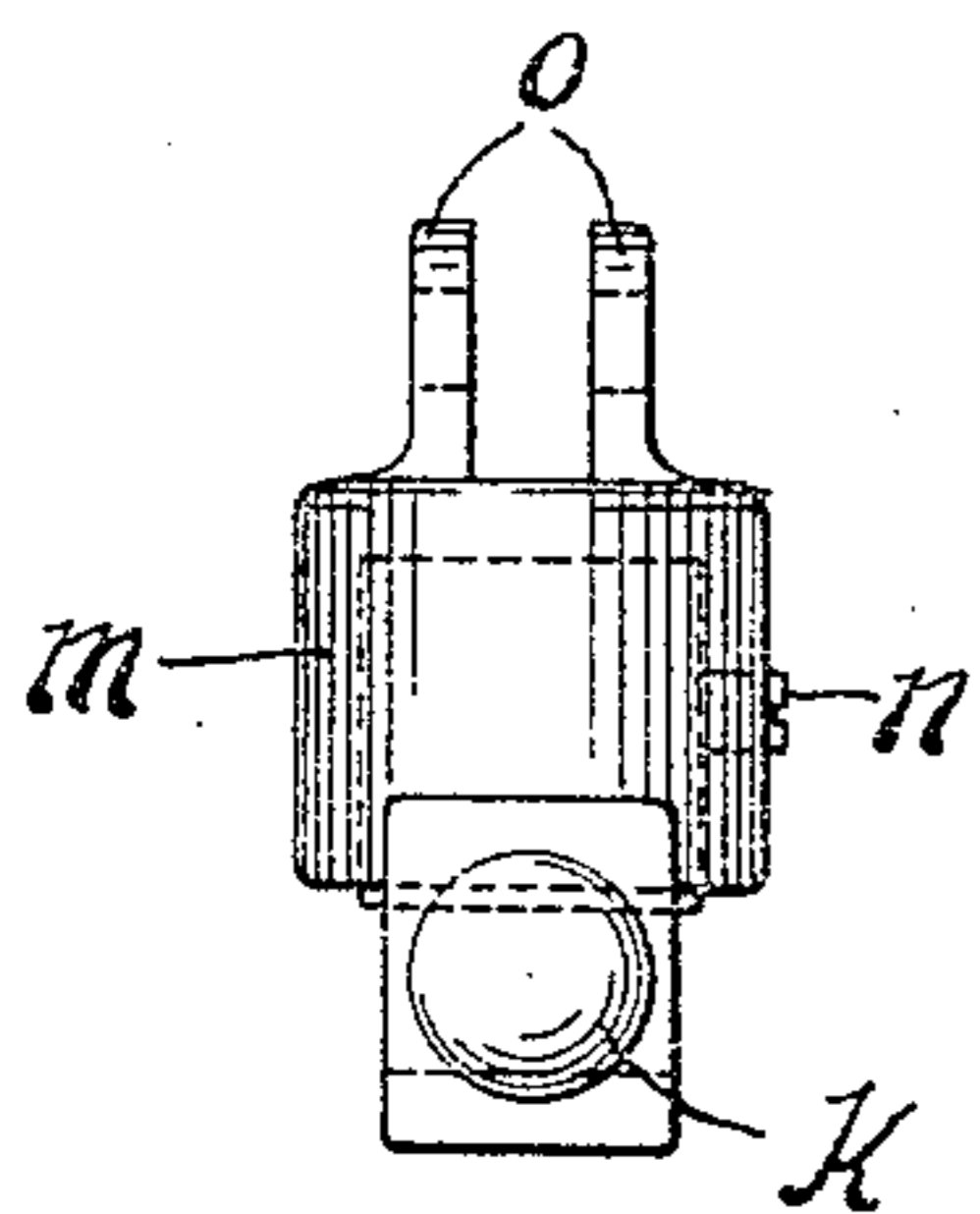


Fig. VI.

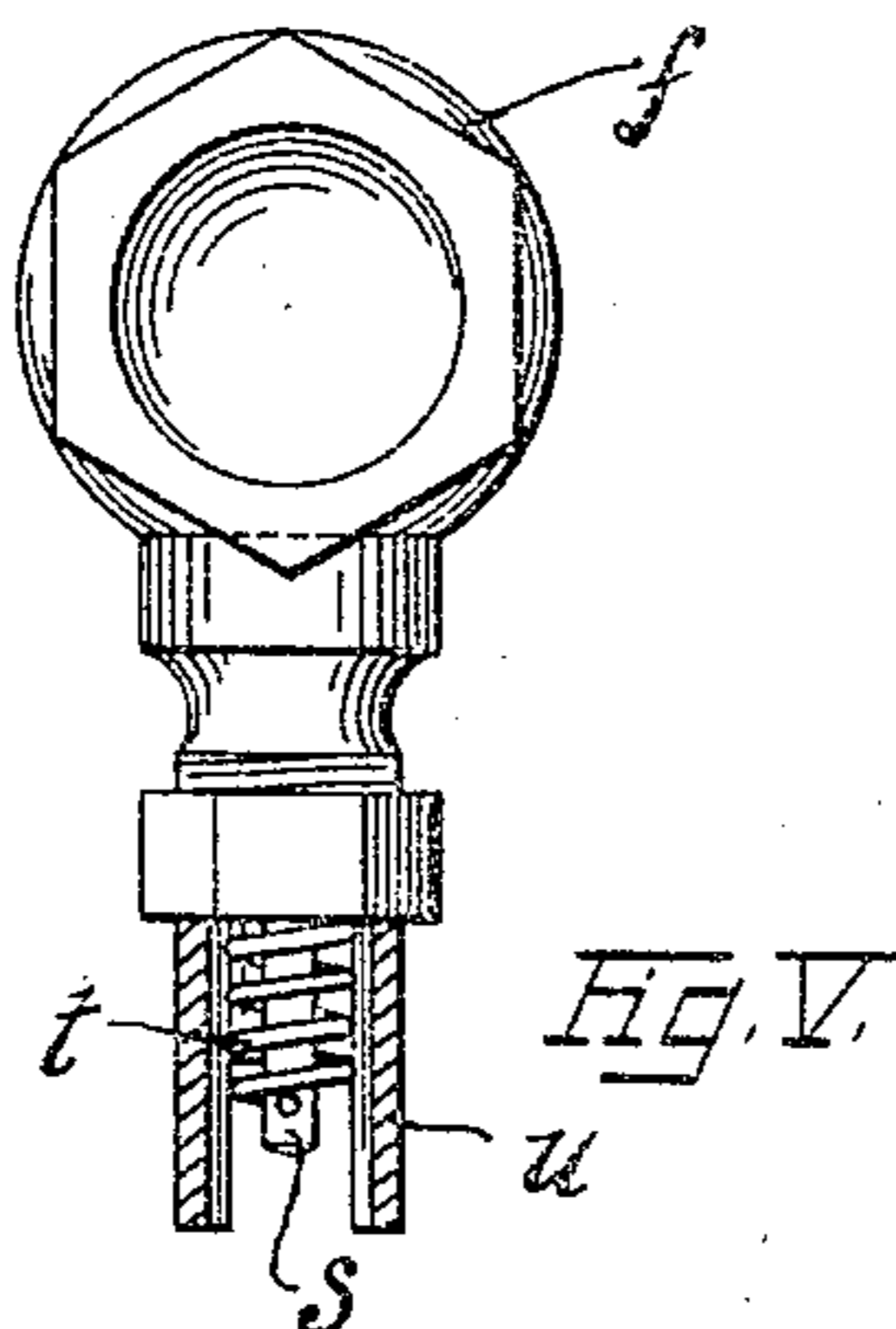


Fig. V.

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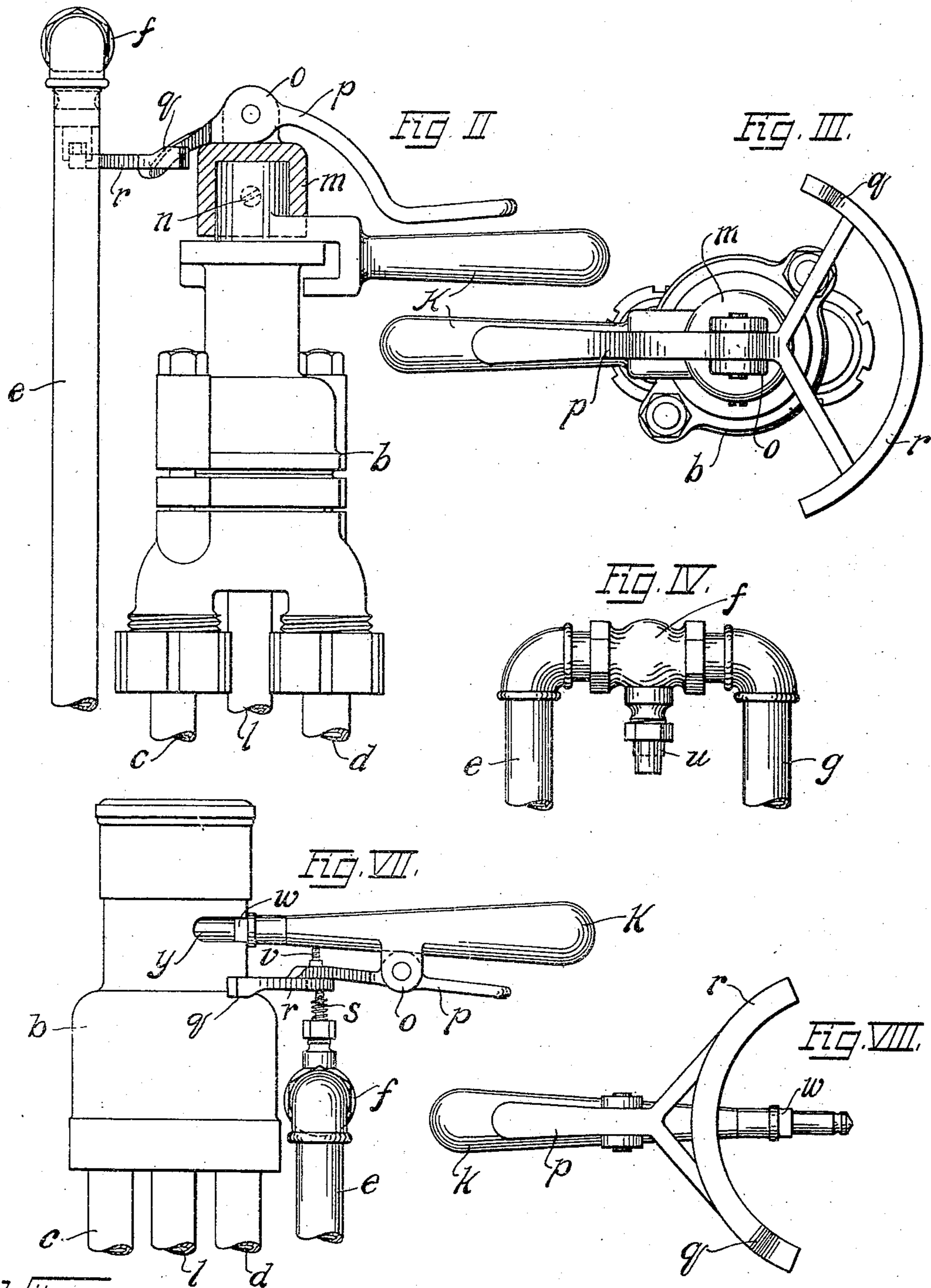
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2 SHEETS—SHEET 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

WILLIAM LINTERN, OF WESTPARK, OHIO.

MEANS FOR OPERATING PNEUMATIC VALVES.

SPECIFICATION forming part of Letters Patent No. 765,743, dated July 26, 1904.

Application filed March 28, 1904. Serial No. 200,331. (No model.)

REISSUED

To all whom it may concern:

Be it known that I, WILLIAM LINTERN, a citizen of the United States, residing at Westpark, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Means for Operating Pneumatic Valves, of which the following is a specification.

This invention relates to apparatus for operating an air-valve in connection with controlling mechanism. Its object is to provide means whereby said air-valve and the controlling mechanism may be conveniently manipulated as required by one hand of the operator. It is particularly adapted to motor-cars and locomotives having an air-brake equipment and wherein it is desired to install another pneumatic system—such, for example, as a pneumatic track-sander. The operator having one hand engaged with an electric controller or a throttle-valve may by means of the present invention manipulate both the air-brakes and the track-sanding or other pneumatic system instantaneously and conveniently with his other hand.

To these ends my invention consists in the novel features, arrangements, and combinations hereinafter described and claimed, an embodiment thereof as applied to a motor-car equipment of air-brakes and pneumatic track-sanders being illustrated in the accompanying drawings, in which—

Figure I is a side elevation of the forward end of a motor-car, partly in section, showing the operating-valves and a track-sander. Fig. II is a side elevation partly in section, and Fig. III is a plan view of an air-brake valve and a supplementary air-valve and their operating means. Fig. IV is a front elevation of the valve *f* and its connections. Fig. V is an end view, partly in section, of the valve *f*. Fig. VI is a front view of the handle *k* and cap *m* detached. Fig. VII is a side elevation of another form of air-brake valve, showing the supplementary air-valve and the operating means as applied thereto. Fig. VIII is a bottom view of the handle shown in Fig. VII and its attachments.

The reference-letter *a* indicates a motor-

car, upon the front end of which is mounted in a convenient position a valve *b*, communicating with air-pressure pipes *c* and *d*, one of which pipes leads to the brake-operating mechanism and the other is connected to the compressed-air supply in the usual and well-known way as applied to air-brake systems. A supplementary compressed-air-supply pipe *e* is located, preferably, in front of the air-brake pipes and being provided with a valve *f* communicates therethrough with a pipe *g*, which latter leads to a suitable sand-trap *h*, communicating with a sand-reservoir *i* and provided with a delivery-pipe *j*, or the pipe *g* may be connected to a whistle or other device for which the supplementary pneumatic system is adapted instead of a track-sander, if desired. The valve *b*, as plainly shown in Figs. II and III, is one of the usual types and is provided with a removable handle *k*, adapted to be swung horizontally through a considerable angle from its central or closed position, being swung in one direction to apply the brakes and in the opposite direction to release them, the air in the latter case escaping through an exhaust-pipe *l*.

Upon the hub of the handle *k* I fit a cap *m*, having a notch in its lower edge fitting over the shank of the handle, as shown in Fig. VI, and provided with a set-screw *n* to keep it in place, or the cap *m* can be screwed or otherwise secured to the valve-stem in cases where the valve-stem projects above the handle *k*. Suitable lugs *o* are provided on the top of the cap *m*, between which is hinged a lever *p*, having a handle end projecting substantially parallel with the handle *k*, so that it may be grasped by the hand of the operator when manipulating said handle *k*. The front end of the lever *p* is provided with a horizontally-disposed rim *r*, being in the form of a circular arc, centered at the hub-axis of the handle *k*, flat-topped and raised above its supporting arms, as plainly shown in Figs. II and III. One end of the rim *r* is raised above the level of its upper face and connected therewith by an inclined surface, as shown at *q*, the purpose of which will be hereinafter explained.

The air-pipes *e* and *g*, rising to a convenient

position adjacent to the valve *b*, are connected by a horizontal section, as shown in Figs. II and IV, in which the valve *f* is located. This valve is self-closing and preferably of the type known as a "whistle-valve," having a projecting valve-stem *s*, provided with a spring *t* in compression, serving to hold the valve against its seat. I do not confine myself to this particular style of valve, since other self-closing valves having projecting stems may be employed for this purpose. The valve *f* is placed above the forward end of the lever *p*, so that the rim *r* of said lever runs under the end of the stem *s* when the handle *k* is swung. When it is desired to open the valve *f*, the operator grasps the rear end of the lever *p* without removing his hand from the handle *k*, thus raising the rim *r* against the stem *s* and unseating the valve. The lever *p* is designed to rest normally against the top of the cap *m*, as shown in Fig. II. For the purpose of protecting the stem *s* and its spring I prefer to provide a sleeve *u*, which may be integral with the cap of the stuffing-box and notched at its lower end to receive the rim *r*, as plainly shown in Fig. V. In cases of emergency when it is desired to stop a car or train in the shortest possible time the handle *k* of the air-brake valve is swung to the extreme limit of its travel in one direction, and it being very advantageous to sand the track instantaneously in such case I form the incline and elevated surface *q* at the end of the rim *r*, which is brought under the valve-stem *s* by such movement of the handle *k* which, as will readily be seen, serves to open the valve *f* automatically, or, in other words, without the necessity of operating the lever *p*.

Figs. VII and VIII illustrate another form of air-brake valve *b* and the application of my invention thereto. In this arrangement the valve *f* is inverted and placed in the rear of the valve *b*. The hinge-lugs *o* are formed upon the lower side of the handle *k* and the lever *p* hinged thereto underneath said handle. This arrangement operates in the same way as that described above, except that the direction of the movement of the lever *p* is reversed. A stop *v* is provided for the lever *p*, and the handle *k* is provided with a square or rectangular portion *w* to fit the slot *y* in the valve *b*, and thereby keep said handle from rotating.

Having now so fully described my invention that those skilled in the art to which it appertains can make and use it either in the form shown herein or under some modification thereof, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a controlling-handle arranged to be swung through an arc of a circle, of a self-closing valve, and a grip-lever upon said handle adapted to operate said valve, substantially as set forth.

2. The combination with a controlling-handle

arranged to be swung through an arc of a circle, of a self-closing valve, and a grip-lever upon said handle provided with a circular segment adapted to operate said valve, substantially as set forth.

3. The combination with a controlling-handle arranged to be swung through an arc of a circle, of a self-closing valve, and a grip-lever hinged to said handle provided with a circular segment through which said valve may be operated at any position of said handle, substantially as set forth.

4. The combination with a controlling-handle arranged to be swung through an arc of a circle, of a self-closing valve, a grip-lever upon said handle, a circular segment carried by said grip-lever, and an elevated surface upon said segment connected to the face thereof by an inclined plane and adapted to open said valve automatically when said controlling-handle is swung to an emergency position, substantially as set forth.

5. In apparatus of the class described, the combination of a controlling-handle mounted to be swung through an arc of a circle, a grip-lever having a hinge attachment to said handle and provided with a circular segment, and a self-closing valve provided with a projecting stem arranged to be operated by the segment of said grip-lever, substantially as set forth.

6. In apparatus of the class described, the combination of a controlling-handle mounted to be swung through an arc of a circle, a grip-lever having a hinge attachment to said handle, a suitable stop for said grip-lever, a circular segment carried by said grip-lever, and a self-closing valve provided with a projecting stem arranged to be operated by the segment of said grip-lever, substantially as set forth.

7. In apparatus of the class described, the combination of a controlling-handle mounted to be swung through an arc of a circle, a grip-lever having a hinge attachment to said handle, a suitable stop for said grip-lever, a circular segment carried by said grip-lever, an elevated and inclined surface upon said segment, and a self-closing valve provided with a projecting stem arranged to be operated by the segment of said grip-lever and opened automatically by said elevated and inclined surface when said controlling-handle is swung to an emergency position, substantially as set forth.

8. The combination with an air-brake-controlling valve, of a handle thereof having a limited travel about the operating-axis of said valve, a grip-lever hinged so as to travel with said handle, a circular rim carried by said grip-lever, and a supplementary self-closing valve provided with a projecting stem arranged to be operated by the rim of said grip-lever, substantially as set forth.

9. The combination with an air-brake-con-

trolling valve, of a handle thereof having a limited travel about the operating-axis of said valve, a grip-lever hinged so as to travel with said handle, a circular rim carried by said grip-lever, a supplementary self-closing valve
5 provided with a projecting stem arranged to be operated by the rim of said grip-lever, and a raised portion of said rim adapted to automatically open said supplementary valve when
10 said brake-valve handle is swung to its outer

position in one direction, substantially as set forth.

In testimony whereof I affix my signature, in the presence of two subscribing witnesses, at Cleveland, Ohio, this 19th day of March, 15 1904.

WILLIAM LINTERN.

Witnesses:

LOUIS G. WRIGHT,
JOHN T. SULLIVAN.