

No. 765,742.

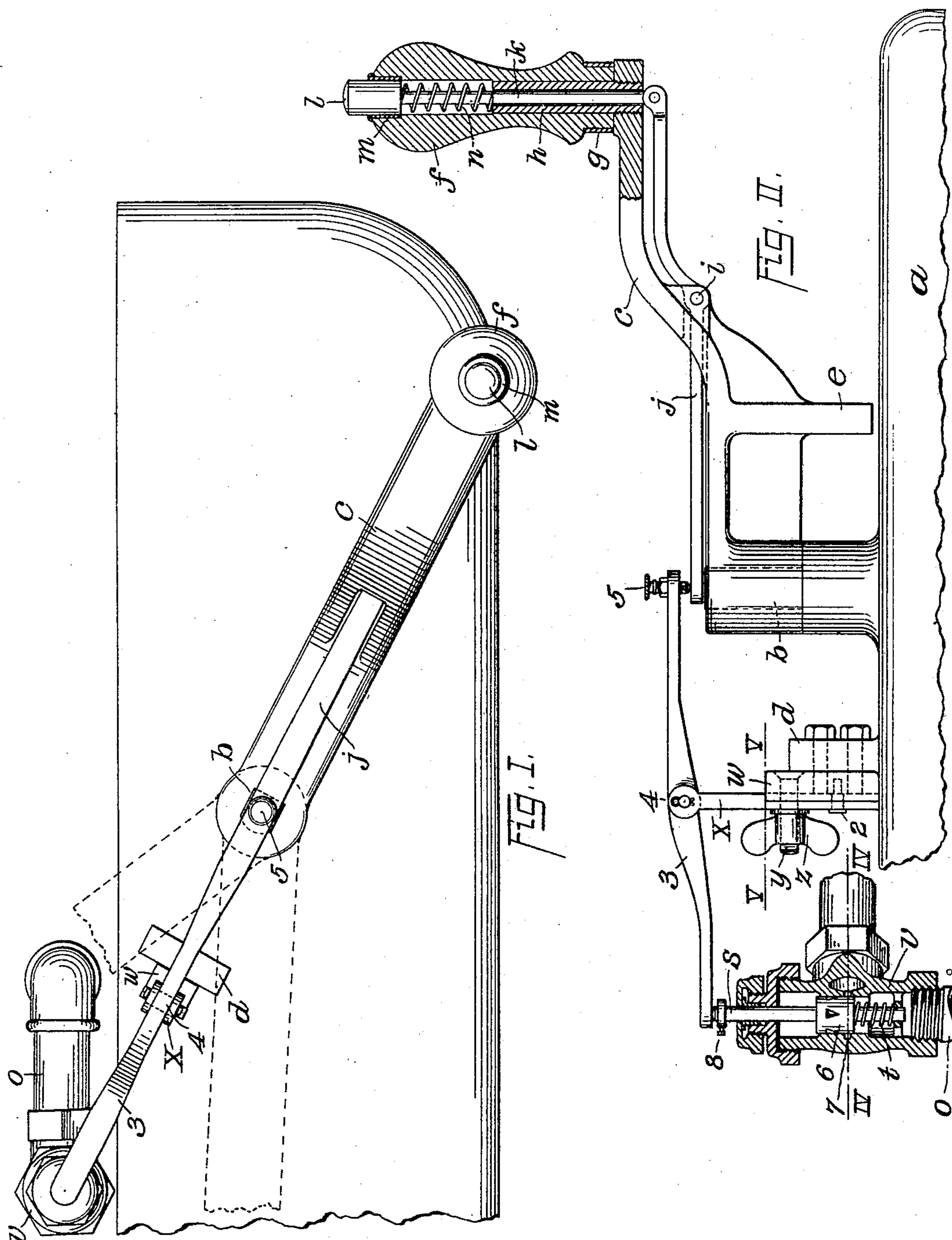
PATENTED JULY 26, 1904.

W. LINTERN.
TRACK SANDER FOR MOTOR CARS.

APPLICATION FILED DEC. 23, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:

John F. Traut
John T. Sullivan

Inventor,

William Lintern,

by *Luther G. Tupper,*
Attorney.

No. 765,742.

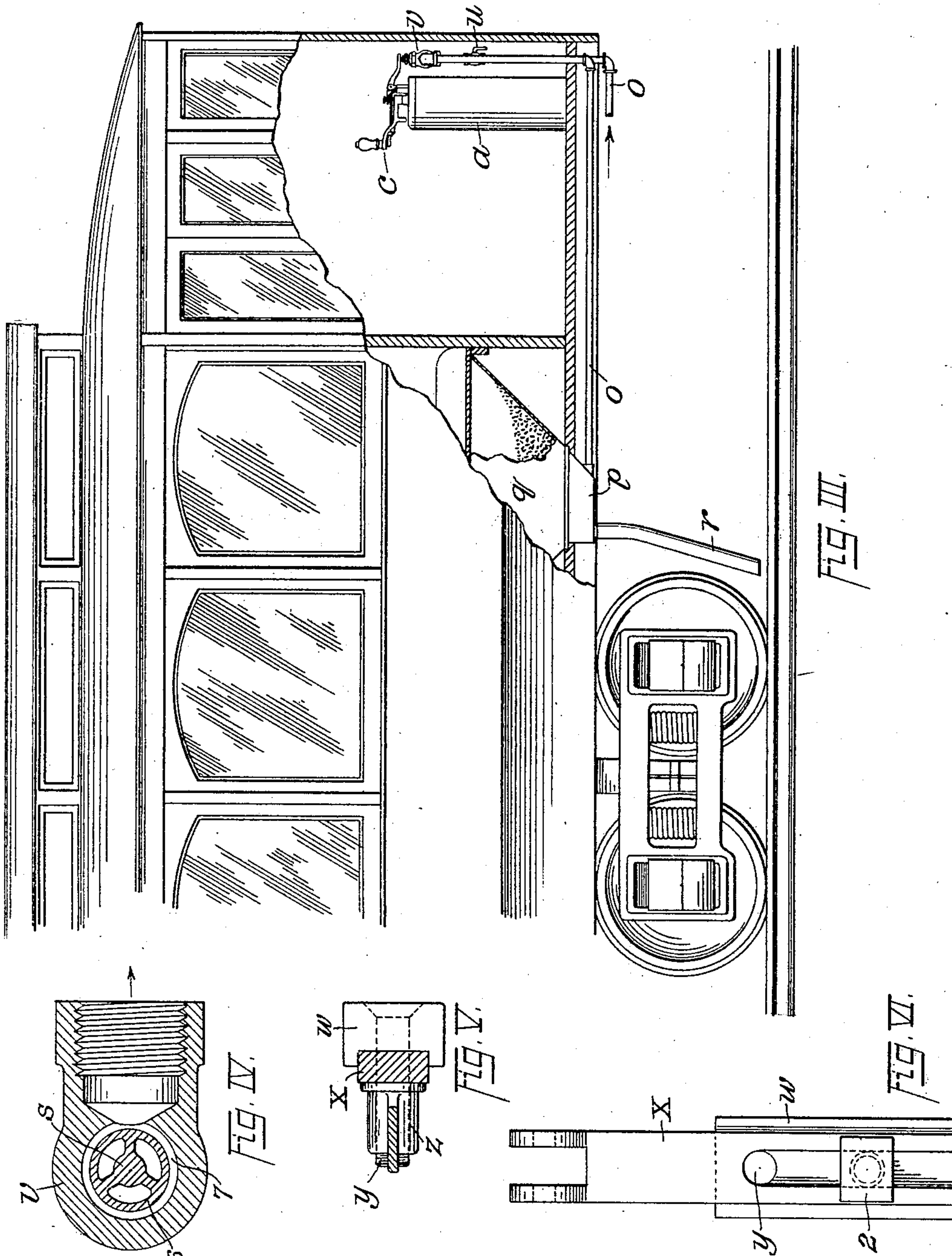
PATENTED JULY 26, 1904.

W. LINTERN.
TRACK SANDER FOR MOTOR CARS.

APPLICATION FILED DEC. 23, 1903.

NO MODEL.

2 SHEETS—SHEET 2.



Witnesses:
John F. Strauss
John T. Sullivan

Inventor,
William Lintern,
by *Luther C. Hopper*,
Attorney.

UNITED STATES PATENT OFFICE.

WILLIAM LINTERN, OF WESTPARK, OHIO.

TRACK-SANDER FOR MOTOR-CARS.

SPECIFICATION forming part of Letters Patent No. 765,742, dated July 26, 1904.

Application filed December 23, 1903. Serial No. 186,314. (No model.)

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 Track-Sanders for Motor-Cars, of which the following is a specification.

The present invention relates to apparatus employed upon motor-cars for the purpose of sprinkling sand upon the track-rails.

Its object is to provide motor-cars, and particularly electric cars, with a more convenient, effective, and economical means for sanding the track than those in present use.

In starting and stopping a car it is often very essential to apply sand to the track quickly and continuously, so as to prevent the traction-wheels slipping upon the track-rails, but in cars as at present equipped this is either impossible or exceedingly difficult to accomplish, since the operator must employ one hand in manipulating the controller and the other hand in operating the brake, while one of his feet is often employed in ringing a gong. Were it convenient to apply sand to the track under the traction-wheels at the instant of starting many large cars which carry four motors could dispense with two of them, and were it possible and convenient to sand the track at the instant of applying the brakes and shutting off the power cars could be stopped within a shorter distance and many accidents avoided.

The prime object, therefore, of my invention is to provide a track-sander which may readily be operated instantaneously and kept in operation as long as desired without the operator removing his hand from his power-controller or from his brake.

To these ends my invention consists in means for placing the control of the sanding apparatus literally under the operator's thumb, and in other novel features and combinations, as hereinafter described and claimed, an embodiment thereof as applied to an electric motor-car being illustrated in the accompanying drawings, in which—

Figure I is a plan view, and Fig. II is an elevation, partly in section, of the upper portion of an electric controller equipped with my

sanding apparatus. Fig. III is a side elevation of the forward end of an electric motor-car, partly in section, showing the sander applied thereto. Fig. IV is a section of the air-valve taken on line IV IV of Fig. II. Fig. V is a section of the hand-lever stop attachments taken on line V V of Fig. II. Fig. VI is a rear elevation of the hand-lever stop attachments.

The reference-letter *a* indicates an electric controller of the type usually employed upon motor-cars, having a squared shaft *b* projecting upward through its top, upon which a hand-lever *c* is removably fitted. A stop *d* projects above the top of the controller and is usually made integral therewith, its purpose being to limit the movement of the hand-lever by intercepting the depending rib *e* thereof. Thus the travel of the hand-lever *c* is less than a complete circle, the dotted lines in Fig. I indicating its extreme positions, in one of which the power is shut off from the motors and in the other the motors receive the maximum power. The swinging end of the hand-lever is raised above the level of its hub, as shown, and is provided with an upright handle *f*, which is preferably of hardwood, having a metallic ferrule at *g* and a metallic bushing *h* driven therein, and screw-threaded, as shown, or otherwise secured to the hand-lever *c*.

A lever *j* is fulcrumed to the hand-lever *c* at *i*, and its inner arm passes through a suitable aperture in the hand-lever and extends horizontally to and slightly beyond the center of the hub of the hand-lever. The outer arm of the lever *j* extends to its termination close to the hand-lever beneath the handle *f*, where it is hinged to an upright rod *k*, passing loosely through the bushing *h* and having rigidly secured to its upper end a cylindrical push-button *l*, of a larger diameter than said rod. The button *l* is fitted loosely and extends into the bore of the handle, said bore being preferably bushed with metal at *m*. The upper end of the button *l* projects normally some distance above the handle *f*, as shown in Fig. II, and is upheld by a spiral spring *n* in the handle-bore thereunder, which spring rests upon the bushing *h*.

A pipe *o* is connected to a compressed-air supply and, rising to a convenient position adjacent to the controller *a*, is carried thence downward and rearward to a suitable sand-trap *p*. Said sand-trap is supplied with sand from a reservoir *q* and is provided with a delivery-pipe *r*, leading down into close proximity to the track forward of and preferably as near as possible to the traction-wheel. It is obvious that a plurality of sand-traps may be employed upon a single car and that the air-pipe may have branches leading to them. Located in the upper bend of the air-pipe *o*, adjacent to the controller-top and preferably in line with the shaft *b* and stop *d*, is an air-valve *v*, having a stem *s* projecting upward through its top and provided with a spring *t*, which operates to close said valve by raising it. A shut-off cock *u* may also be placed in the pipe *o* between said valve and the air-supply.

Rigidly secured to the stop *d* is an upright guide-block *w*, having a broad groove in its outer face, in which a fulcrum-plate *x* is slidably fitted. A stud-bolt *y* is carried by the guide *w*, and the plate *x* is slotted upward from its lower end, so that it may be slid down over said bolt to its normal position, as shown in Figs. II and VI, and secured therein by tightening a thumb-nut *z*, screw-threaded upon the said bolt. A stud 2, having a head and a shank fitting the slot in the plate *x*, may be attached to the guide *w* below the bolt *y* to further guide and secure the plate *x*; but this stud is not designed to be tightened upon said plate. A lever 3 is hinged to the upper end of the plate *x* at 4, so as to swing vertically, and has its outer arm extending over and normally in contact with the upper end of the valve-stem *s*, while the inner arm of said lever projects over the center of the shaft *b* above the end of the lever *j* and is provided with an adjusting-screw 5, standing in line with the axis of the shaft *b* and having its end bearing normally against the upper side of the lever *j*.

In the operation of the device it will now be readily understood that the push-button *l* being substantially under the thumb of the operator while his hand is grasping the handle *f* of the controlling-lever sand may be distributed instantly to the track at any time, since a simple depression of said push-button serves to open the valve *v*, which permits a greater or less blast of air to enter the sand-trap *p*, according as the button is depressed more or less, thus distributing a greater or less volume of sand to the track.

In electric motor-cars it is found necessary to remove the hand-lever of the controller when the operator leaves his post. This can be easily accomplished by loosening the thumb-nut *z*, which permits the lever 3 and its fulcrum-plate *x* to be raised sufficiently to permit the hand-lever *c* to be lifted off of the squared shaft *b*, or, if desired, the lever 3 and

plate *x* may be lifted clear of the controller and attached to another controller.

Any suitable type of valve may be employed, but I prefer to use a balanced valve, so that it will not be necessary for the operator to push with his thumb against the air-pressure. Such a valve is shown at *v*, the valve 6 being a cylindrical shell attached to the stem *s* by arms fitted to reciprocate vertically in its seat and having ports which communicate with a passage 7, leading to the outlet, as plainly shown in Figs. II and IV. An adjustable stop 8 may be attached to the stem *s*, by means of which the maximum opening of the valve may be regulated.

Having so fully described what I now consider the best mode of applying 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. In apparatus of the class described, the combination with a suitable sand-trap and a compressed-air pipe communicating therewith, of a valve in said pipe, a controller-handle, a push-button in said handle, and connecting means whereby an inward thrust of said push-button opens said valve, substantially as set forth.

2. In apparatus of the class described, the combination with a suitable sand-trap and a compressed-air pipe communicating therewith, of a self-closing valve in said pipe, a controller-handle, a push-button in said handle, and connecting means whereby at any point in the travel of said handle an inward thrust of said push-button opens said valve, substantially as set forth.

3. In apparatus of the class described, the combination with a suitable sand-trap and a compressed-air pipe communicating therewith, of a valve in said pipe, a removable controller-crank provided with a handle, a push-button in said handle, and connecting means adapted to permit the removal of said crank whereby an inward displacement of said push-button opens said valve, substantially as set forth.

4. In a track-sander for motor-cars, the combination of a suitable sand-trap, a compressed-air pipe communicating therewith, a valve in said pipe, a controller-crank provided with a handle, a lever fulcrumed to said crank having its inner arm extended over the center of said crank, a push-button in said handle operatively connected with the outer arm of said lever, and suitable means operatively connecting the inner arm of said lever with said valve, substantially as set forth.

5. In a track-sander for motor-cars, the combination of a suitable sand-trap, a compressed-air pipe communicating therewith, a valve in said pipe, a controller-crank provided with a handle, a lever fulcrumed to said

crank having its inner arm extended over the center of said crank, a push-button in said handle operatively connected with the outer arm of said lever, and a suitably-fulcrumed lever adapted to engage the inner arm of the aforesaid lever and open said valve when said push-button is inwardly displaced, substantially as set forth.

6. In a track-sander for motor-cars, the combination of a suitable sand-trap, a compressed-air pipe communicating therewith, a self-closing valve in said pipe, a removable controller-crank provided with a handle, a lever fulcrumed to said crank having its inner arm extended over the center of said crank, a push-button in said handle operatively connected with the outer arm of said lever, and suitable means adapted to permit the removal of said crank operatively connecting the inner arm of said lever with said valve, substantially as set forth.

7. In a track-sander for motor-cars, the combination of a suitable sand-trap, a compressed-air pipe communicating therewith, a self-closing valve in said pipe having a projecting stem, a removable controller-crank provided with a handle, a lever fulcrumed to said crank having its inner arm extended over the center of said crank, a push-button in said handle operatively connected with the outer arm of said lever, and a valve-lever having a

removable fulcrum-piece, one arm of said valve-lever being adapted to engage the inner end of the aforesaid lever and its other arm disposed so as to bear upon the stem of said valve, substantially as set forth.

8. In a track-sander for motor-cars, the combination of a suitable sand-trap, a compressed-air pipe communicating therewith, a self-closing valve in said pipe having a projecting stem, an electric controller, a removable crank upon said controller provided with a handle, a lever fulcrumed to said crank having its inner arm extended over the center of said crank, a push-button in said handle operatively connected with the outer arm of said lever, a guide-block rigidly attached to said controller, a removable fulcrum-piece adapted to slide upon and be clamped to said guide-block, and a valve-lever hinged to said fulcrum-piece bearing at one end upon the inner end of the aforesaid lever and at the other end upon the stem of said valve, substantially as set forth.

In testimony whereof I affix my signature, in the presence of two subscribing witnesses, at Cleveland, Ohio, this 8th day of December, 1903.

WILLIAM LINTERN.

Witnesses:

JOHN F. STRAUSS,
JNO. T. SULLIVAN.