(No Model.)

T. L. JOHNSON.

MEANS FOR CLEANING CABLEWAYS.

No. 333,306. Patented Dec. 29, 1885.

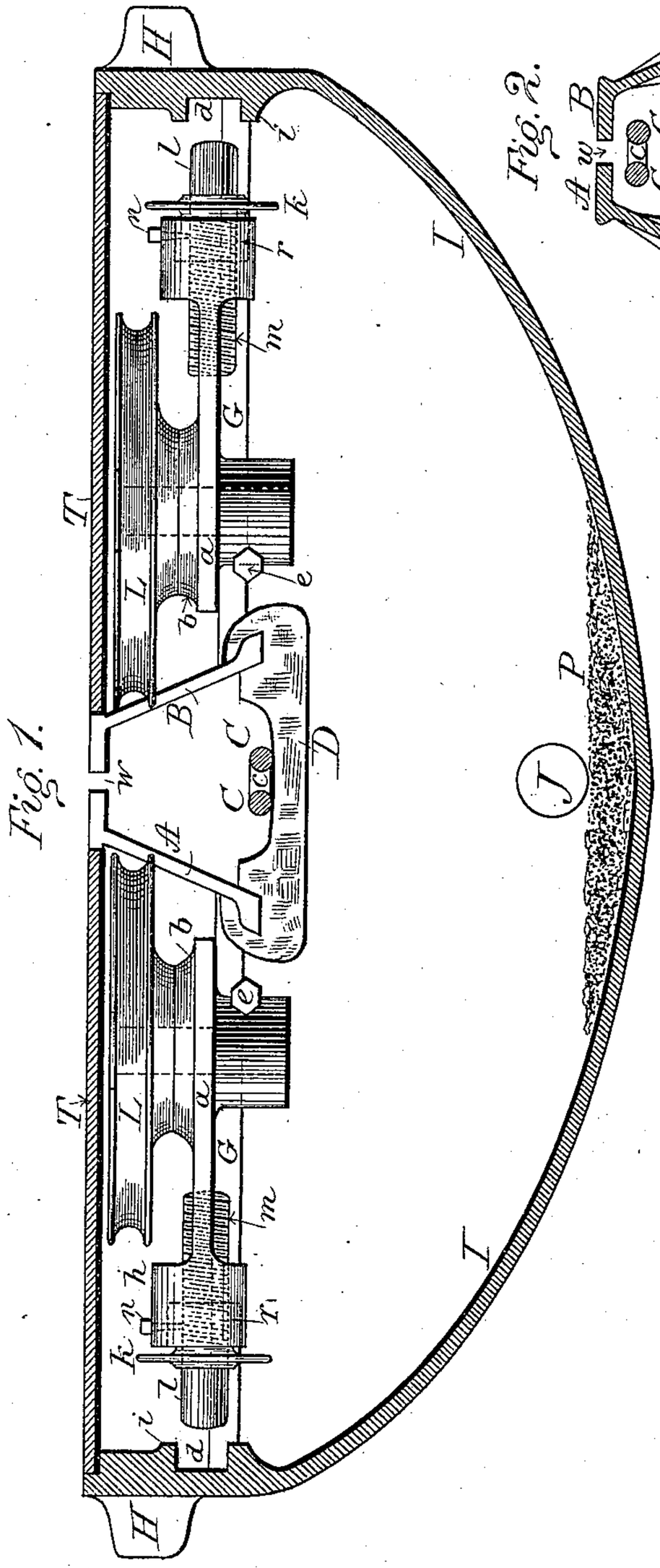

Fig. 1.

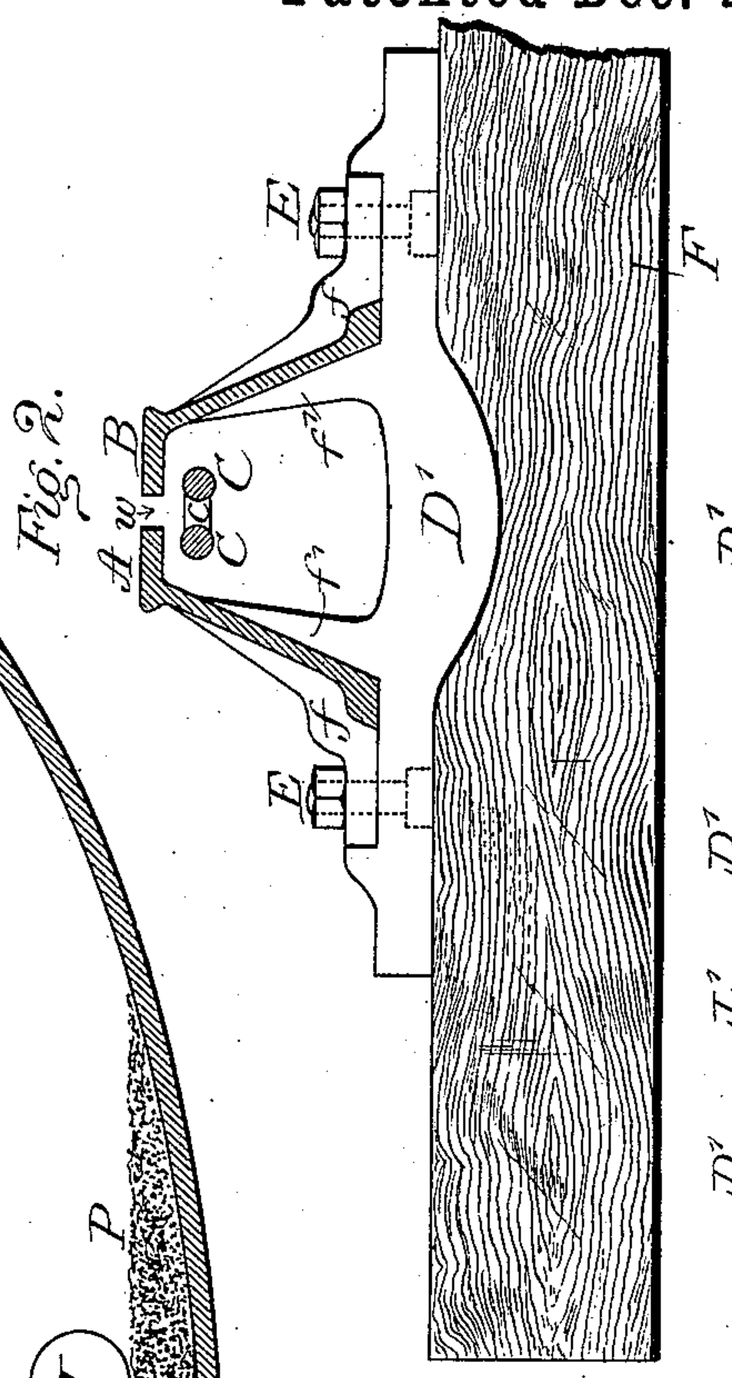

Fig. 2.

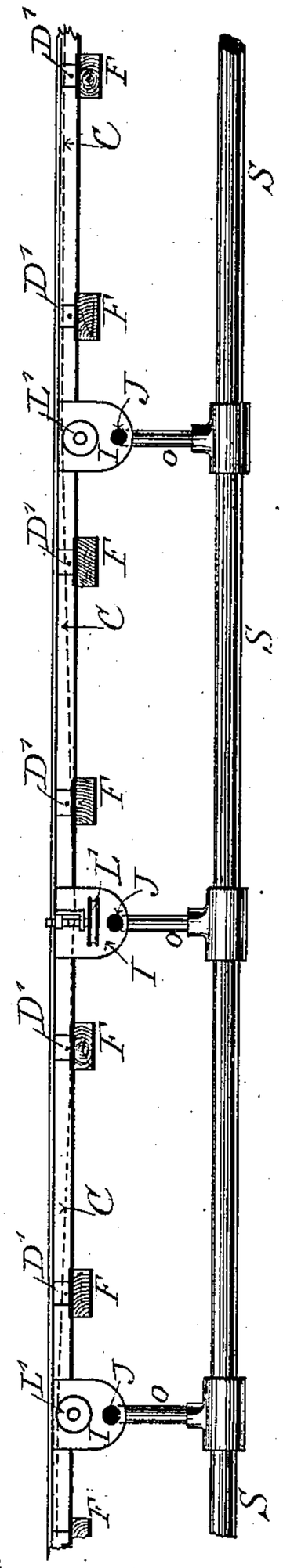

Fig. 3.

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UNITED STATES PATENT OFFICE.

TOM L. JOHNSON, OF CLEVELAND, OHIO.

MEANS FOR CLEANING CABLE-WAYS.

SPECIFICATION forming part of Letters Patent No. 333,306, dated December 29, 1885.

Application filed October 1, 1885. Serial No. 178,731. (No model.)

To all whom it may concern:

Be it known that I, TOM L. JOHNSON, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented new and useful Means of Cleaning the Cable-Ways of Cable Railways, which invention is fully set forth and illustrated in the following specification and accompanying drawings.

The object of the invention is to provide automatic means for cleaning the dirt from cable-ways which falls therein through and between the slot-rails, and to prevent the accumulation of said dirt by automatically discharging or scraping the same into receptacles therefor, placed at certain intervals throughout the line of cable-way.

The invention consists of the combination of parts, as hereinafter described, and set forth in the claim.

In the accompanying drawings, Figure 1 shows a cable-way in vertical cross-section, showing in cross-section, also, a catch-basin containing horizontal carrying-pulleys and a double traction-wire cable of any suitable construction so long as its exterior strands shall be solid—that is, exterior strands composed of single wires not built up of smaller wires. Fig. 2 shows the slot-rails in cross-section and in similar section. The cable is shown in line of draft as supported upon the line-carrying pulleys, the sections being taken midway between any two of said line-pulleys. Fig. 3 is a longitudinal view or sketch showing a portion of the roadway and illustrating the line of sag of the cable between two vertical running-pulleys, the center pulley being thrown down. It also shows the successive locations of the catch-basins shown in Fig. 1, and the connection of the same by pipes to a street-sewer.

In said figures the several parts are indicated by letters, as follows: A and B are the two slot-rails forming the sides of the cable-way. C C, united by the stop *c*, indicate a double cable within said cable-way. D indicates the bottom of said cable-way, and D′ chair-plates resting on and secured to the cross-ties F, between the bottom plates, D. The slot-rails A B are securely held clamped to the chairs D by the clamps *f*, which jam the rails hard against the lugs *f′*, forming part of the chairs D′.

I indicates a catch-basin, secured by the chocks or lugs H to the main rails of the track and connected by a pipe, J, to the sewer S.

T T indicate the covers of the catch-basin I, by the removal of either of which a scoop can be inserted within the catch-basin for the removal of the dirt P, which from time to time may have accumulated in the catch-basin below the mouth of the outlet-pipe J. By the removal also of said covers the pulleys L L can be removed from the catch-basin. The slot-rails A and B, where the catch-basins I intervene, are not continuous, but stop at each side of said basins, the slot across each of said basins being formed by its two covers T T, which, between the ends of contiguous slot-rails, are fitted to leave open between the covers themselves only a space, forming a continuation of the slot between the rails. The ends of the slot-rails are thus separated the width of the catch-basins, (about two feet,) and said catch-basins are located between the cross-ties F, and are about twenty-five feet apart.

The catch-basin and pulleys herein illustrated being the same as those shown in my pending application, Serial No. 174,551, filed August 17, 1885, need, therefore, only a very brief description here. I do not herein claim said pulleys or catch-basins, nor herein confine myself to their use, nor do I confine myself to the use of any pulley device, as any carrying-pulleys suitable for supporting and dropping the cable when either of said offices is required will suffice for the purposes of this invention.

The sketch Fig. 3 shows single pulleys L′, which are rotated upon an arm or lever to which they are journaled, by which means the cable is supported in proper line of traction when the pulleys are thrown up under the cable with their axes horizontal. When allowed to drop into the vertical position, said pulleys release the cable and allow it to drop or sag upon the bottom of the cable-way. These said pulleys I do not claim, but merely illustrate as showing a single line of pulleys revolving in a vertical plane instead of a double line of pulleys revolving in a horizontal plane, like the pulleys shown in Fig. 1, it being obvious that no matter what system of pulleys is employed for carrying the cable, that if one or more pulleys in the line are withdrawn from support of the cable that the

cable will sag or be depressed between its next supporting-pulleys.

The pulleys shown in Fig. 3 can be raised into support of the cable, or dropped out of its support, by being journaled in a rotary arm or in rotary movable, instead of sliding, bearings, whereby, when said bearings are rotated around a center, said pulleys will occupy, respectively, either a vertical plane of rotation in support of the cable, or a depending position out of use, both of which positions are shown as at L′ L′ in Fig. 3. I therefore make herein no claim to any form of pulley nor to any method of hanging the same.

The operation of the twin pulleys L L is as follows: The covers T T being removed, said pulleys and their bed-plates *a a*, on which they are mounted, are let down through the uncovered openings in the catch-basin I until said plates rest upon the side flanges, G, within the catch-basin. The hand-wheels *k k* are then turned, backing the thrust-bolts *l* out of the nuts *r* until the rear ends of said bolts enter the recess-seats *d*, bored for them in the bosses *i*. As soon as said bolts bear hard upon the ends of said recesses, their continued turning backs the bolts *l* still farther out of their nuts *r*, and thus forces each bed-plate, and with them each pulley, in toward the slot *w* between the rails A B. As the pulleys are being thus slid along, the cable is grasped by a hook inserted in the slot *w*, and elevated so as to take in between and be caught by the grooves of the pulleys as they slide together, by the turning of their hand-wheels *k*, as just described. The cable is thus held in line of traction in the position shown in Fig. 2 at C *c* C. In order to withdraw said pulleys and let the cable drop upon the bottom of the cable-way, as shown at C *c* C, Fig. 1, it is only necessary to screw up the hand-wheels *k*, thus shortening the bolts *l* sufficiently to withdraw them somewhat beyond and out of the recesses *d*, which being done the pulleys L L may be slid back on the side flanges, G, far enough to let the cable drop between said pulleys and sag down upon the bottom of the cable-way D, as seen in Fig. 1.

The chairs D′ make tight joints where they abut the bottom D of the cable-way, and the whole interior face of the bottom is made quite smooth by avoiding rough surfaces and uneven joints where the chairs D′ intervene to form sections of the bottom of the cable-way. It is quite important that the whole of said bottom be smooth and of an even surface, and such being its construction the operation of cleaning the cable-way and preventing accumulations of dirt therein by the travel of the wire cable itself is thus performed, premising that said cable must be formed of solid exterior strands, not strands built up of smaller wires, though said cable need not necessarily be a double cable.

When it is desired to clean the cable-way of any dirt that may have accumulated therein in the intervals between one or more catch-basins, it is only necessary to withdraw one pulley or two adjacent pulleys from the line, as already described, and permit the cable to sag while running upon the bottom of the cable-way, as shown in Fig. 3. The rapid passage or travel of the cable alone unassisted by brushes or other attachments will quickly carry along all the dirt in its path and deposit it in the nearest catch-basin in its front in the direction in which the cable is traveling. The cable-way shown will thus be kept practically clear by the running of the cable itself, and only the catch-basins will need to be cleaned of the dirt swept into them by the cable.

I am aware that it has been proposed to sweep cable-ways by brushes operated by a traveling cable, and such method of cleaning the cable-ways I do not claim; but,

Having thus fully described my said means of cleaning cable-ways as of my invention, I claim—

In a cable-traction railway, in combination with a cable-way provided with a smooth interior-faced bottom and dirt-receptacles at intervals below said bottom, a traveling wire cable of solid exterior strands and carried in said cable-way upon removable pulleys, whereby, when the support of one or more of said pulleys is removed, said cable by its sagging removes or sweeps the accumulations of dirt from the cable-way into said receptacles, substantially as and for the purposes set forth.

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