

(No Model.)

T. A. HETHERINGTON.
SAND AND WATER DISTRIBUTING CYLINDER FOR CARS.
No. 467,809. Patented Jan. 26, 1892.

Fig. I.

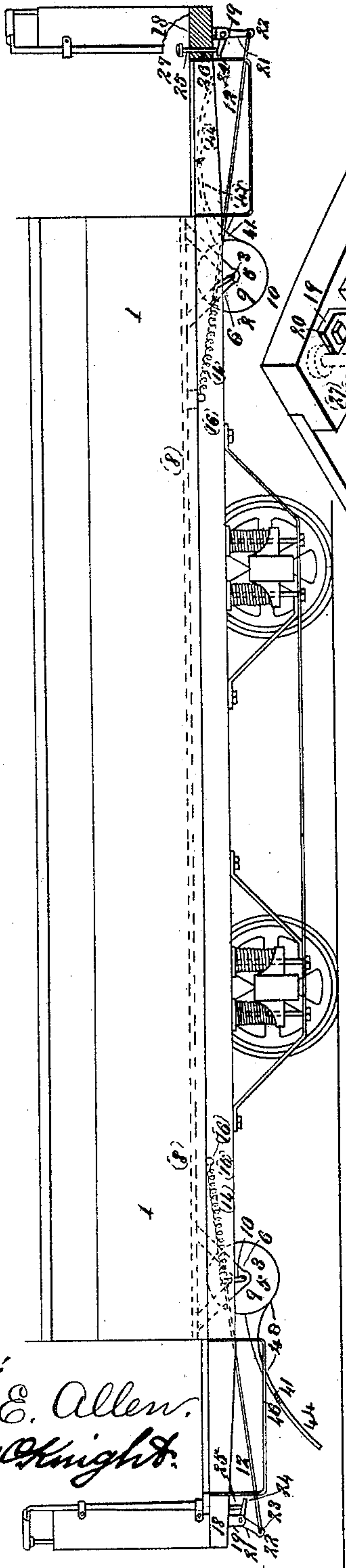
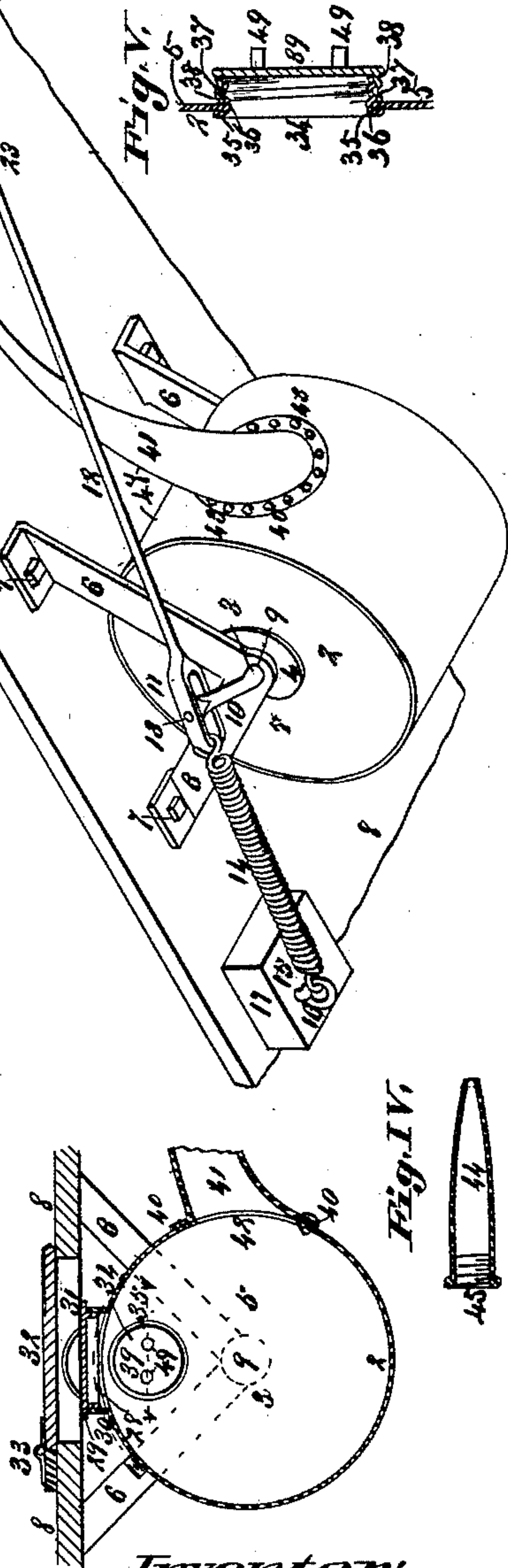


Fig. II.

Fig. III.



Attest:
Walter E. Allen.
Arthur Knight.

Inventor:
Thomas A. Hetherington.

By Knight Bros.
Attys.

UNITED STATES PATENT OFFICE.

THOMAS A. HETHERINGTON, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF TO EDWARD GUTGESELL, OF SAME PLACE.

SAND AND WATER DISTRIBUTING CYLINDER FOR CARS.

SPECIFICATION forming part of Letters Patent No. 467,809, dated January 26, 1892.

Application filed August 10, 1891. Serial No. 402,278. (No model.)

To all whom it may concern:

Be it known that I, THOMAS A. HETHERINGTON, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Combined Sand and Water Distributing Cylinders for Cars, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to a combined or alternating sand and water cylinder attachable to street and other railway cars, with means for the distribution of the sand or water from said cylinder on the rails; and the invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Figure I is a side elevation of a street-car, showing my combined sand and water cylinder attached thereto, at one end lowered in its operative position and at the other end, partly in broken lines, elevated in its inoperative position. Fig. II is an enlarged under perspective view of the attachment device, showing the combined sand and water cylinder with the distributing sand-spout elevated. Fig. III is an enlarged vertical section through the cylinder and shows a detail of the discharge-spout. Fig. IV is an enlarged vertical longitudinal section of the discharge-water nipple, with part broken away to show the internal screw by which said nipple is secured to the peripheral screw at the end of the discharge-spout; and Fig. V is an enlarged cross-section and shows the cover 39 and its screw-seat.

Referring to the drawings, 1 represents a street-car, to which my distributing device is shown attached. 2 represent cylinders, which carry, respectively, the sand or water, according to which at the time is required for distribution on the track. The said cylinders are supported by the shafts or trunnions 3, whose clamping-collars 4 rigidly hold said shafts or trunnions to the center of the heads 5 of said cylinders and secure water-tight joints to their axial connections.

6 represents bracket-hangers, which are secured by screw-bolts 7 to the under side of the bed 8 of the car, and 9 are the perforate journal-bearings of said axles or trunnions

within the inverted apex of said hanger-brackets.

10 represents crank-arms, formed of extensions of the operative ends of said shafts or trunnions 3, by which crank-arms the cylinder is tilted to effect the distribution of the sand or water from said cylinder along the rail-tracks by the following means: The above-named crank-arm is housed and works within the loop 14 at the driven end of the drive-rod 12, where it is pivotally secured by the pin 13 to said loop. The said loop is elastically held at its outer end by the spiral spring 14, the fast end of which spring is secured by the hook 15 to the eyelet-bolt 16, that is seated in the block 17 and floor-bed 8 of the car. To the cross-sill 18 at the end of the car, on the under side of the car-platform, are secured two brackets 19 by the screw-bolts 20, between which brackets is seated the journal end of the bell-crank lever 21, the eyelet 22 of whose pendent end is engaged by the hook 23 of the driven end of said drive-rod 12.

24 represents a trip-table on the upper arm of the bell-crank lever, on which rests the lower end of the push or trip pin 25, which pin passes through and works in its perforate seat 26 in the aforesaid cross-sill 18 and floor of the platform, above which the head 27 of said pin is sufficiently elevated to operate the bell-crank lever when said pin is pushed down by the foot of the operator.

28 represents the feed-port of the cylinder, through which the sand or water, as the case may be, is supplied to said cylinder, and 29 is a cover whose flange-rim fits within the peripheral flange 30 of said feed-port.

31 represents a trapway in the floor of said car to get access for the removal and replacement of said cover 29, and also to open the way for filling or replenishing said cylinder with either sand or water, according to which, at the time being, is to be distributed on the track.

32 represents a trap-door that covers said aperture in the car-floor and is mounted by and works on the hinges 33.

34 represents a feed-port in the outer end of the cylinders, which is utilized for feeding said cylinder with sand or water, as the case

may be, when it is not convenient to feed *via* a trapway, as previously described, through the car-floor.

35 represents a projecting flange around said feed-port 34, which flange carries a peripheral screw 36, on which engages the internal screw 37 of the flange 38 of the cover 39, which, when thus screw-seated, provides a water-tight joint around said feed-port.

40 represents the shoulder-flange of the distributing-spout 41, through which spout the sand or water, respectively, as the case may be, is distributed on the track. The said flange is secured around the open port 42 to the periphery of the cylinder by the tightening of the rivets 43. The said joint is also preferably soldered over, so as to overcome the danger of leakage.

44 represents the water nozzle or nipple. (Shown on an enlarged scale in Fig. IV.) The internal screw 45 of said nipple is screw-seated on the peripheral screw 46 around the mouth of the sand-nozzle when the track is to be watered instead of sanded.

I have described one of said distributing-cylinders and the means of operating the same, and have shown in Fig. I, which is a side view, one of said cylinders at each end beneath that side of the car exactly over the rail-track on said side, it being understood that said distributing-cylinders may, if desired, be duplicated at each end beneath the other side of said car over the other track-rail for distributing on the same, and also said tilting cylinder or cylinders may, if desired, be attached to only one end of the car or to one side only. Whichever end of the car is leading at the time being the distributing cylinder or cylinders on said leading end are operated, sanding or watering, as the case may be, either one or both rails ahead of the wheels.

The operation of my invention is as follows: The device being secured to the under side of the end or ends of the car exactly over the track rail or rails is so arranged that the push or trip pin 25 is within easy reach of the motor-man, gripman, or driver of the car, who, when operating the device, depresses said trip-pin, by which means the bell-crank lever 21 will be turned and draw the rod 12 and the crank-arm 10 forward, and so turn the cylinder and spout from the inoperative position, with the distributing-spout elevated, (shown in broken lines at 47 at one end of the car and in full lines in the enlarged view in Fig. II,) to the operative position shown at 48 at the other end of said car, in which the distributing-spout is lowered for discharge, when the sand or water, as the case may be, will be distributed on the track, while as soon as the pressure on the push-pin is removed the spring 14 will again dominate and elevate the

distributing-spout, stopping the discharge, and causing the device to return to its normal inoperative position.

I claim as my invention—

1. In a combined sand and water distributing cylinder for cars, the combination of a cylinder 2, with a distributing-spout, a crank-arm 10, an operating-rod connected to said crank-arm, a bell-crank lever 21, a trip-pin 25, and a spring 14 for returning the parts to their normal position, substantially as and for the purpose set forth.

2. In a combined sand and water distributing cylinder for cars, the combination of the tilting cylinder 2, the distributing-spout 41 of said cylinder, the said cylinder provided with the feed-port 28, the cover 29, that closes said port, the axial rocking mount 3 of said cylinder, the bracket-hangers 6, in which said cylinder has its journal-bearings, the crank-arm 10, the drive-rod 12, to which said crank-arm is connected, the spiral spring 14, that elastically holds one end of said drive-rod, the bell-crank lever 21, the hanger-brackets 19, in which said bell-crank lever has its journal-bearings, and the trip-pin 25, that pushes said bell-crank and tilts said cylinder and spout into their distributing position, substantially as and for the purpose set forth.

3. In a combined sand and water distributing cylinder for cars, the combination of the tilting cylinder 2, the distributing-spout 41 of said cylinder, the water-nipple 44, attachable to said spout, the axial rocking mount 3 of said cylinder, the bracket-hangers 6, in which said axle has its bearing, the crank-arm 10, the drive-rod 12, the spiral spring 14, the bell-crank lever 21, the hanger-brackets 19, and the trip or push pin 25, substantially as and for the purpose set forth.

4. In a combined sand and water distributing cylinder for cars, the combination of the tilting cylinder 2, the distributing-spout 41, the said cylinder provided with the end feed-port 34, the cover 39 of said port, the water-nipple 44, attachable to said spout, the rocking axle 3 of said cylinder, the bracket-hangers 6, in which said axle has its bearings, the crank-arm 10, the drive-rod 12, the spiral spring 14, the bell-crank lever 21, the hanger-brackets 19, in which said bell-crank lever has its bearings, the said lever having the trip-table 24 on its upper arm, and the trip-pin 25, that, when depressed by the operator, trips said table and the lever that carries it and tilts the cylinder and its distributing-spout, substantially as and for the purpose set forth.

THOMAS A. HETHERINGTON.

In presence of—

BENJN. A. KNIGHT,
E. S. KNIGHT.