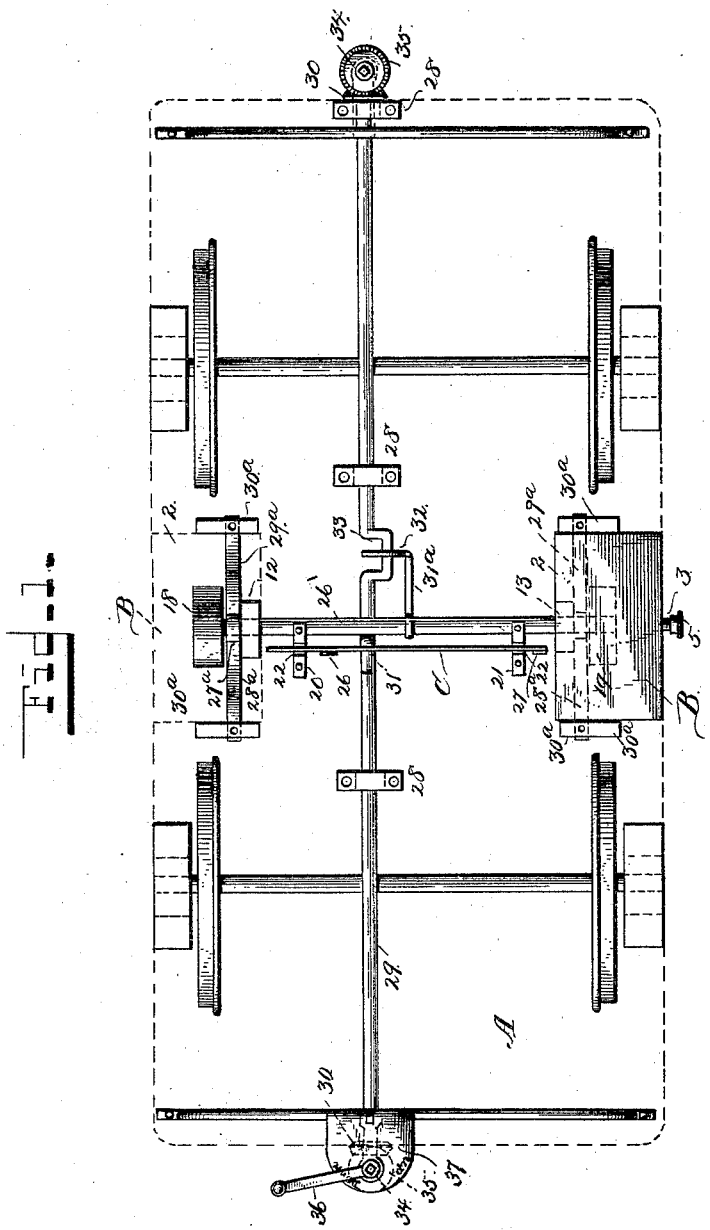
(No Model.) 4 Sheets—Sheet 1.

T. L. ENNIS.

APPARATUS FOR OILING RAILWAY TRACKS.

No. 457,045. Patented Aug. 4, 1891.



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(No Model.)

4 Sheets—Sheet 2.

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Fig. 2.

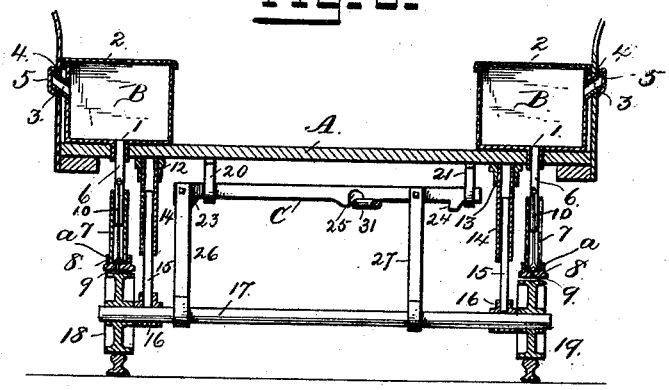
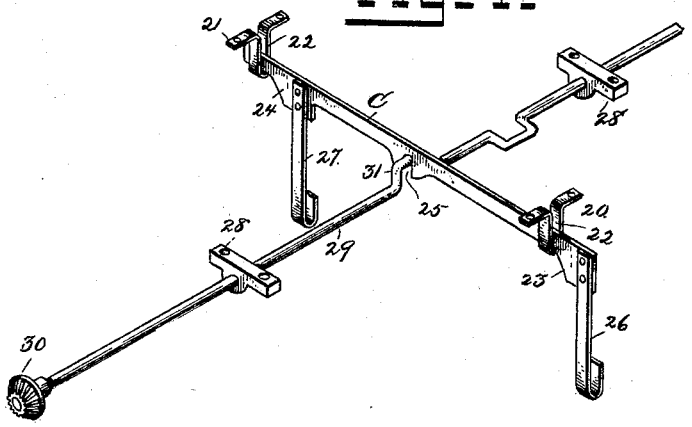


Fig. 4.



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(No Model.) 4 Sheets—Sheet 3.

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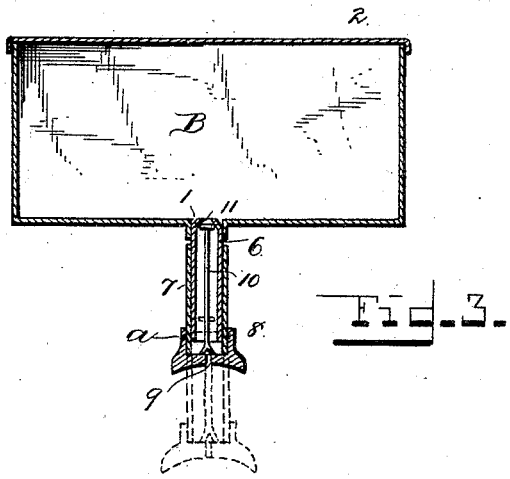
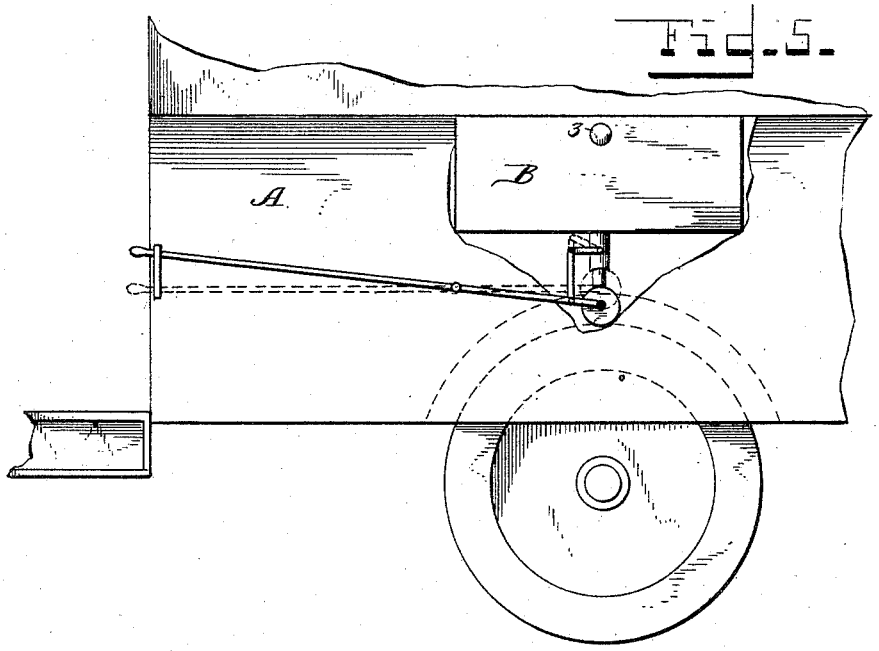


Fig. 3.

Fig. 5.



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(No Model.) 4 Sheets—Sheet 4.

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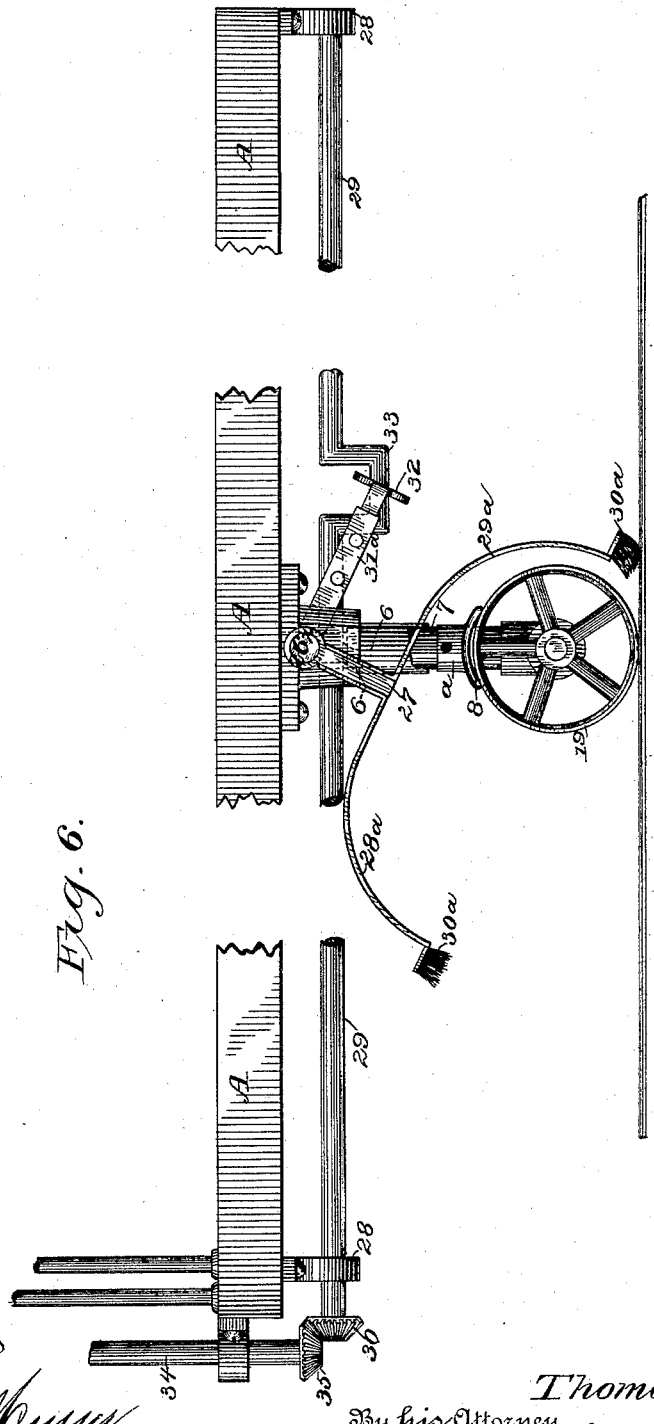

Fig. 6.

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UNITED STATES PATENT OFFICE.

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APPARATUS FOR OILING RAILWAY-TRACKS.

SPECIFICATION forming part of Letters Patent No. 457,045, dated August 4, 1891.

Application filed April 12, 1889. Serial No. 307,015. (No model.)

To all whom it may concern:

Be it known that I, THOMAS L. ENNIS, a citizen of the United States of America, residing at El Paso, in the county of El Paso and State of Texas, have invented new and useful Means for Applying Oil to Curves and Switches of Street-Railway Tracks, of which the following is a specification.

My invention has relation to mechanism for delivering oil on certain portions of the rails forming a street-railway.

It is well known to managers and operators of street-railways located in countries having dry warm climates that the effect of the dry atmosphere and caloric heat is to cause the draft of the cars about curves and over switches to be very heavy, the warmth and dust causing the contact of the wheel-flanges and the rail to cut and wear each other, damaging the wheel and rail, and where draft animals are used straining and damaging them to a great degree. These difficulties and their bad effects are in a great measure overcome and avoided by the application of a lubricant to the rails of the road.

It is the object of my invention to provide improved oiling means connected with and carried on the car, the disposition of the lubricant being controlled by simple mechanism operated by the driver or other person in charge of the same.

In the accompanying drawings I have fully and clearly illustrated a preferred mechanism for carrying my invention into practice, wherein—

Figure 1 is a plan view of my invention, the floor of the car being removed. Fig. 2 is a view in elevation of the operating mechanism and vertical sectional view of the oil tanks and tubes. Fig. 3 is a detail vertical section of the oiling tube and tank. Fig. 4 is a detail of the lifting mechanism. Fig. 5 is a modification showing the oiler applied to the wheel of the car. Fig. 6 is a detail side view.

A designates the body part of the car, of the usual construction, mounted on a truck of four wheels. Under the seats of the car, at any desired or convenient location, are arranged oil-tanks B, having valve-ports 1 in the bottom and tightly-arranged covers 2. For convenience in filling these tanks with the oil I attach a filling-nozzle 3 to the side of the tanks and arrange it in an aperture 4, formed in the side of the car. A cap 5 is fitted on the nozzle to prevent the oil from escaping. The tanks may be thus readily filled from a spouted can from the outside of the car. In the bottom of each tank is fitted a tube 6, projected through the bottom of the car and extended vertically downward for a suitable distance. On the lower portion of the tube 6 is fitted another tube 7, which is arranged to telescope with the tube 6, and on the lower end of the tube 7 is secured or formed a shoe 8, which has an oil-port 9, formed therein, through which the oil escapes to the track or wheel. The under face of the shoe 8 is curved to conform to the surface with which it contacts. In these tubes 6 and 7 is arranged a valve-rod 10, the lower end of which sets on the bottom of the tube 7, and the other end either carries a valve or is arranged in relation to a valve 11 in the bottom of the tank, governing the flow from the aperture therein, so that when the lower part of the telescoping tube is raised the valve will be closed by the valve-rod and opened when the tube 7 and shoe are extended. The shoes 8 are curved to substantially conform to the rim of the wheels, and are formed with necks *a*, slipped loosely on the ends of the reciprocating oiling-tubes, and there secured, so as to have a slight rocking movement in the direction of their length. This construction and arrangement makes one end of the shoe serve as a scraper on the tread of the wheel and keeps it clear of dirt.

On the under side of the car-bottom are secured two brackets 12 13, having vertically-depending tubular extensions 14, in which are fitted the stems 15 of the shaft-bearings 16, which are thus adapted to be raised and lowered, as hereinafter stated. In the bearings 16 is fixed a shaft 17, carrying on its extended journal ends small wheels 18 19. These wheels revolve on their journals and are made with plain rims, so as to run on the face of the rails to be oiled.

It will be perceived from the foregoing description that it is proposed to use the oiling mechanism only when the condition of the track requires oil to be applied, and that by lowering the oiling-wheels to the track the oil will flow through the tubes on the wheels

and be applied to the track, or that when the wheels are lifted from the track the valves are closed, the flow of oil stopped, and the application to the rail ceases. Any suitable mechanism to effect the lowering and raising of the wheels and tubes, or which opens and closes the valves, may therefore be used to effect the result. To accomplish the purpose named I have contrived the following-described mechanism: On the bottom of the car are secured two hangers 20 21, formed with slots 22. In the slots of these hangers is arranged a transversely-reciprocable lifting-bar C, formed with inclined steps 23 24 to engage the ends of the slots in the hangers, and near the middle of the lifting-bar is a seat 25, which is engaged by a crank-wrist of the lever-rod. To the lifting-rod are secured two hangers 26 27, having their ends formed to grasp the shaft 17. Mounted in bearings 28 on the under face of the car-bottom is the lever-rod 29, having mounted on one or both ends a bevel-gear 30 and formed with a crank or bail 31, which engages the seat 25 in the lifting-bar. By turning the lever-rod the lifting-rod is reciprocated, and, the inclines thereon engaging the hanger-slots, the shaft with its wheels may be raised and lowered and the oil tubes or valves correspondingly affected.

As it is essential that the rails be clean when the oil is applied—at least the effect of the oil applied to the clean rails is more certain, immediate, and durable—I have invented mechanism for operating brushes on the rails. In bearings formed in the brackets 12 13 at the base thereof is mounted a rock-shaft $26^{\times}$, which has its ends extended through and beyond the brackets, as shown, and on these extensions are mounted brush-hangers consisting of a depending bar $27^{\times}$, fixed to the shaft $26^{\times}$ and provided with arms 28^{a} 29^{a}, on the ends of which are secured track-brushes 30^{a}, arranged before and behind the oiling-wheels. To rock the shaft carrying the brushes and apply the brushes one at a time to sweep the rail before the oiling-wheel in the direction the car may be moving, I attach on the shaft an arm 31^{a}, having a forked arm 32 on its end extended at right angles to the arm 31^{a}, which forked arm engages with a crank 33 in the lever-rod. The cranks in the lever-rod are arranged to work the oilers and the brushes simultaneously. On the end of the platform is arranged a vertical rod 34, mounted in bearings similar to a brake-staff, and on the lower end of a bevel-wheel 35 meshing with the bevel-wheel on the lever-rod. On the head of the rod 34 is a hand-piece 36, which traverses over a dial-plate 37, marked with indicating-marks, showing when the oiler, brushes, &c., are "down" or "up," the direction of the hand-piece in its position over the dial-plate showing the position of the mechanism operated through its instrumentality.

In Fig. 5 of the drawings I have illustrated a modification of the application of my invention, wherein the oil-tank is arranged in the upper position of the hood or shield over the car-wheel. The valve is in the bottom of the oil-space and may be controlled by a lever arranged to turn or lift in the valve, and under the valve is arranged the oiling-wheel, which runs lightly on the track or face of the car-wheel and applies the oil.

To operate the oiler, the tanks having been filled and the valves closed and the oiling-wheels lifted, when the car approaches a portion of the track to be oiled the operator turns the hand-piece until it stands over the indicator on the mark "down," which movement turns the oil on or lowers the wheels. After the car has passed the place over which the oil is to be applied the hand-piece is turned to the position indicating "up," which returns the mechanism to its normally-raised position and cuts off the flow of oil.

Having thus described my invention, I proceed to particularly point out and distinctly claim the parts and combinations which I claim, as follows:

1. In a street-railway-track oiler, the combination of an oil-tank arranged on the car, a telescoping tube depending from the tank, a valve arranged within said tube, and a lever adapted to be manipulated by the driver of the car to control the valve, substantially as described.

2. In a street-railway-track oiler, the combination of an oil-tank arranged on the car, a telescoping tube secured to the bottom of the tank, a valve-rod and valve in the said tube, an oiling-wheel arranged under the lower end of the telescoping tube, and means, substantially as described, for raising and lowering the wheel, thereby opening and closing the valve, substantially as specified.

3. In a street-railway-track oiler, the combination of an oil-tank provided with a valve, a telescoping tube secured to the bottom of the tank over the valve and provided with a shoe on the lower end, a wheel mounted on a shaft in adjustable bearings, a transversely-arranged lifting-bar having connection with said shaft, and a lever-bar to shift the lifting-bar and raise and lower the oiling mechanism, substantially as described.

4. In a street-railway-track oiler, the combination of an oil-tank, a telescoping tube secured to the tank to deposit the oil and having a secured shoe on the end thereof, a valve in the tank operated by the movements of the said tube, a vertically-adjustable shaft carrying an oiling-wheel arranged with its rim bearing on the shoe, a shifting and lifting bar having hangers on the said shaft, a lever-rod to shift the lifting-bar, and a vertically-arranged rod to turn the lever-rod, substantially as described.

5. The combination, with the oil-tanks provided with depending telescoping valve-tubes, of tubular brackets secured under the car, bearings formed with stems to fit in the bore

of the tubular brackets, a shaft fixed in said bearings, oiling-wheels on said shaft and arranged with their rims under the valve-tubes, a shifting lifting-bar to raise and shift, and a lever to operate the lifting-bar, substantially as described.

6. The combination, with a street-railway oiler, of a rock-shaft mounted on the car, depending arms secured to the ends of the rock-shaft, track-brushes secured to the ends of the depending arms, and a lever to rock the rock-shaft and lift or lower the brushes, substantially as described.

7. The combination, with the oil-tanks and oil-conducting tubes, the oiling-wheels, and the operating-levers, of a rock-shaft mounted on the car, brushes secured to the rock-shaft and arranged before and behind the oiling-wheels, an arm secured to said shaft provided with an arm to engage the operating-lever of the oil mechanism, whereby the brushes are applied to the tracks simultaneously with the oil, substantially as described.

8. The combination, with the oil-tank, the valves, the telescoping tubes, and oiling-wheel, of a curved shoe arranged loosely on the end of the telescoping tube to have a limited rocking motion on the wheel, whereby either end of the shoe will scrape the tread of the wheel, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS L. ENNIS.

Attest:

B. W. SOMMERS,

A. G. HEYLMAN.