(No Model.)

J. BIRNBAUM & J. T. RICHMOND.

TRACK CLEANER.

No. 287,411. Patented Oct. 30, 1883.

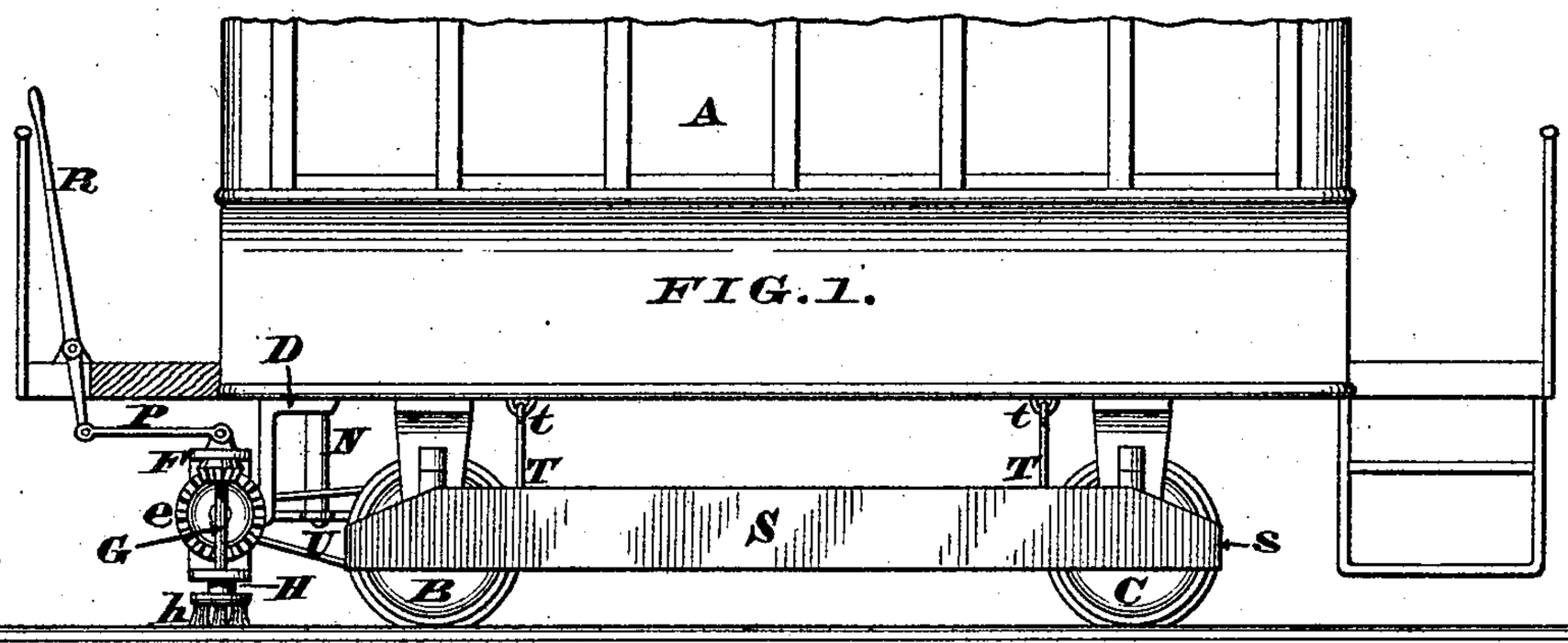

FIG. 1.

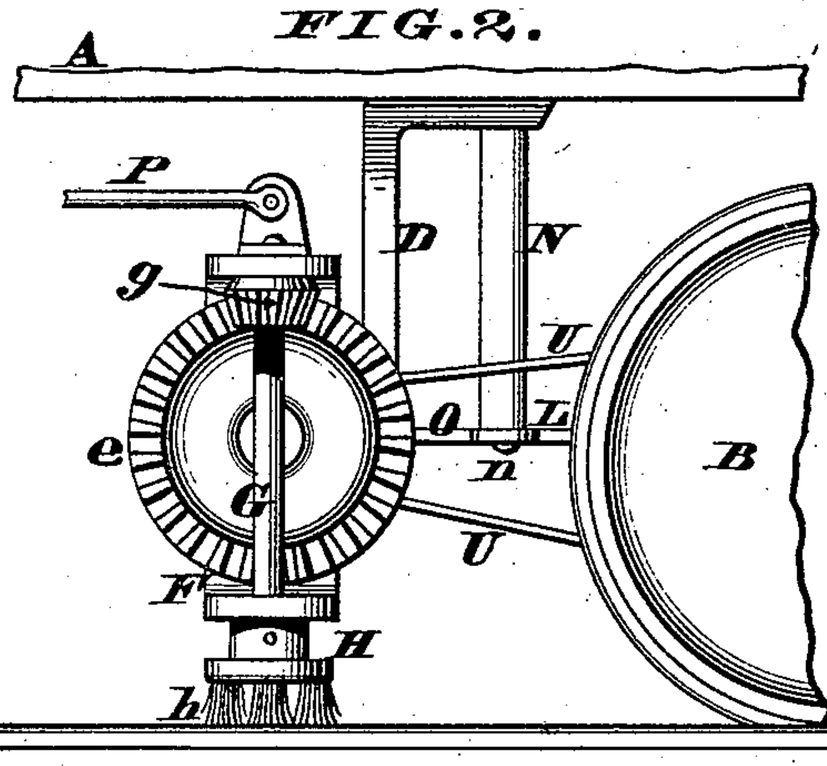

FIG. 2.

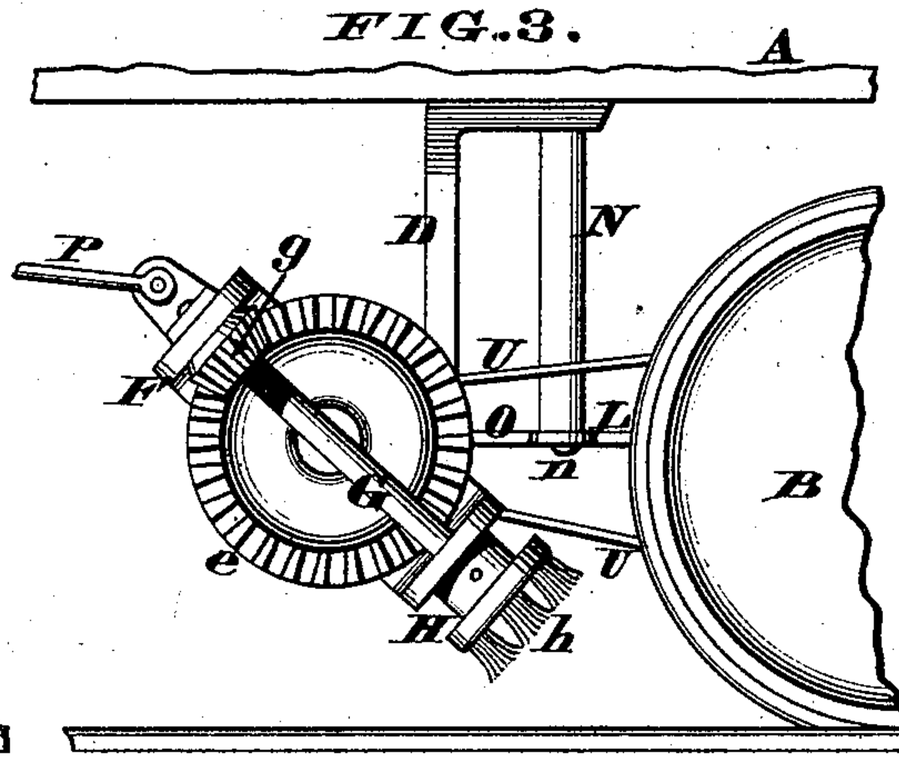

FIG. 3.

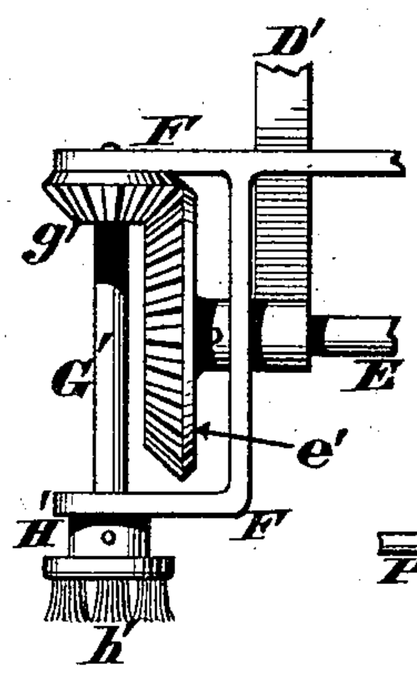

FIG. 5.

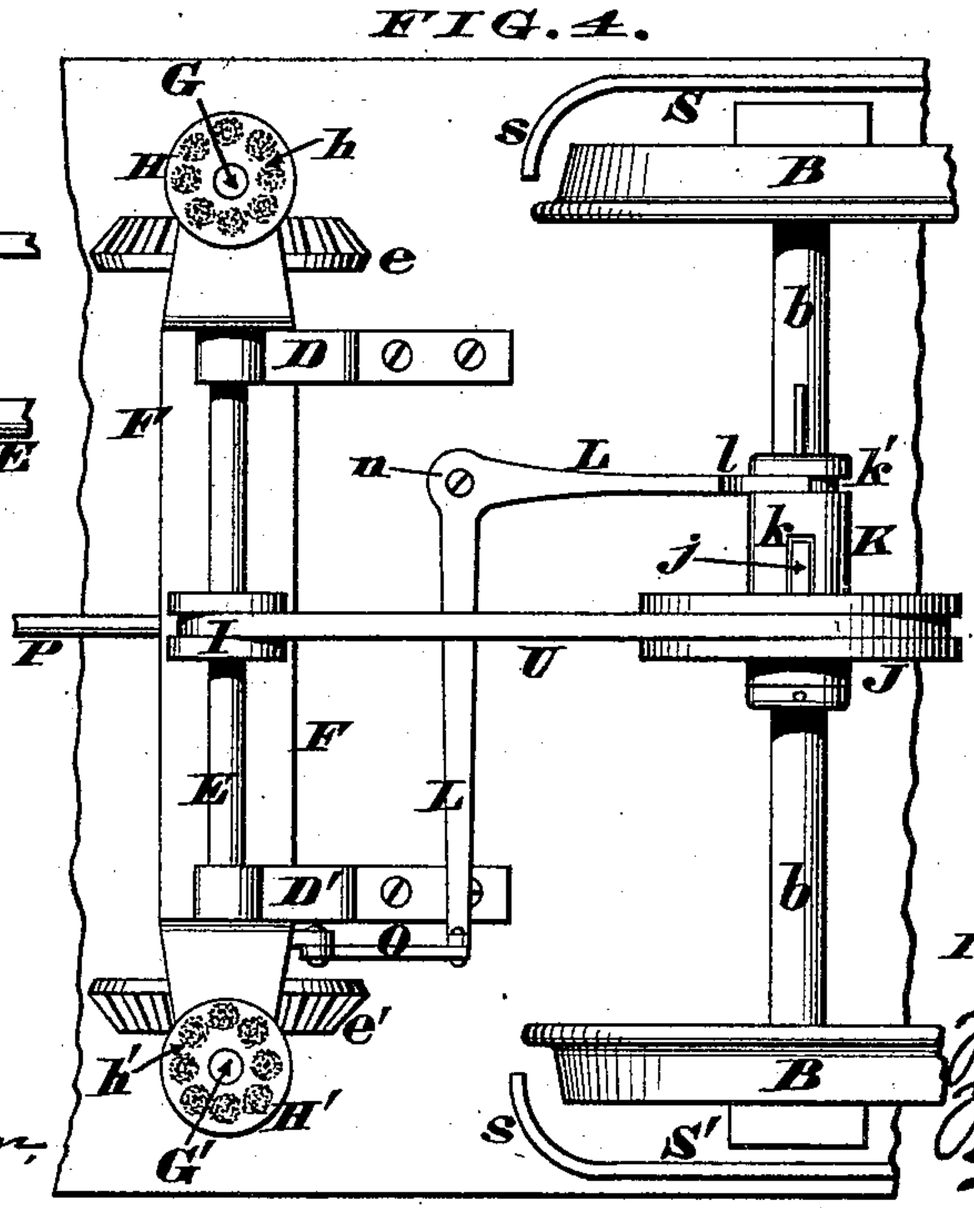

FIG. 4.

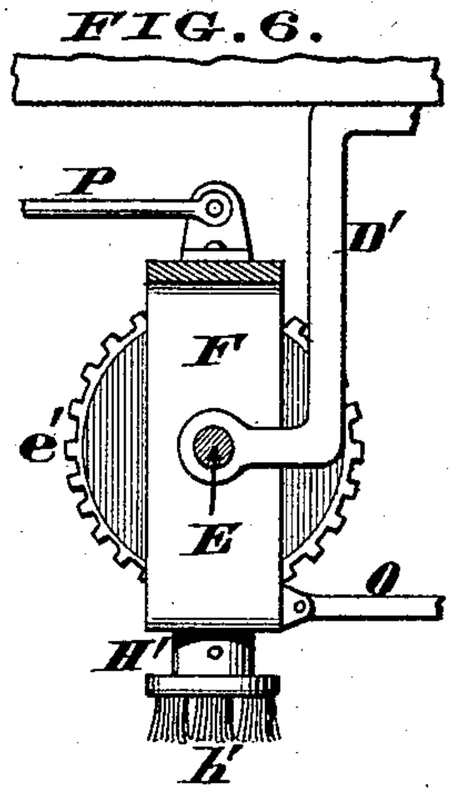

FIG. 6.

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UNITED STATES PATENT OFFICE.

JOHN BIRNBAUM AND JOHN T. RICHMOND, OF CINCINNATI, OHIO, ASSIGNORS OF ONE-THIRD TO GEORGE J. BIRNBAUM, OF SAME PLACE.

TRACK-CLEANER.

SPECIFICATION forming part of Letters Patent No. 287,411, dated October 30, 1883.

Application filed January 8, 1883. (No model.)

To all whom it may concern:

Be it known that we, JOHN BIRNBAUM and JOHN T. RICHMOND, both citizens of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Track-Cleaners, of which the following is a specification.

The object of our invention is to provide a device capable of performing the twofold purpose of clearing street-railroad tracks of snow and ice and other obstructions, and of preventing persons falling under the wheels of the car. This result is accomplished by arranging a pair of brushes, brooms, or similar cleaners under the front platform, to which cleaners a rotary motion is imparted by suitable gears, pulleys, &c., operated, preferably, by a drum mounted on one of the car-axles, although the same motion can be obtained with friction-gearing. These brushes revolve in a horizontal plane, and are located in such close proximity to the front wheels as to render it difficult for any person to fall under the latter. These revolving brushes or cleaners are journaled in a frame capable of being swung, so as to throw the cleaners out of contact with the rails, as hereinafter more fully described, and pointed out in the claims. Furthermore, this swinging frame is so arranged as to shift a clutch and prevent the rotating of the cleaners when the latter are in their inoperative position, as hereinafter more fully described, and pointed out in the claims.

In the annexed drawings, Figure 1 is a side elevation of a street-car provided with our improvements, the front platform being sectioned and the steps of the same omitted. Fig. 2 is an enlarged elevation, showing one of the track-cleaners in its operative position. Fig. 3 is a similar elevation, but showing the cleaner in its inoperative position. Fig. 4 is a plan of the under side of the car and its attachments, the cleaners being in the same position as in Figs. 1 and 2. Fig. 5 is a front elevation of one end of the swinging frame and its accessories. Fig. 6 is a vertical section of said frame, taken in the plane of hanger D′.

A represents a portion of the body of a street-car or other similar vehicle adapted to run on ordinary rails or tracks, said car being supported on a pair of front wheels, B, and rear wheels, C.

Depending from the under side of the car are two hangers, D D′, that afford journal-bearings for a main shaft, E, which latter carries the swinging frame F, within one end of which frame is mounted a counter-shaft, G, having at top a bevel-pinion, *g*, and at bottom a head, H, provided with wire, splint, or other suitable bristles or cleaners, *h*. Bevel-pinion *g* gears with a correspondingly-shaped wheel, *e*, at one end of the horizontal or main shaft E. The opposite end of frame F has mounted in it another counter-shaft, G′, having at top a bevel-pinion, *g′*, and at bottom a head, H′, provided with a suitable cleaner, *h′*. Bevel-pinion *g′* gears with a wheel, *e′*, at the end of main shaft E, the latter being provided with a pulley, I, around which and around a drum, J, is passed a chain or wire or band, U, capable of communicating motion from the front axle, *b*, to said shaft E.

Drum J rides loosely on axle *b*, but can be coupled thereto when lug *j* is engaged with the longitudinal slot *k* of clutch K. This clutch is grooved circumferentially at *k′*, to admit the forked end *l* of a bell-crank, L, pivoted at *n* to a bearing, N, that depends rigidly from the car. The opposite end of said bell-crank is united to the swinging frame F by a link, O.

P is a rod, that connects said frame to the lower end of a pivoted lever, R, the handle of which lever is convenient to the driver on the front platform of the car.

S S′ are long guards or fenders, preferably made of sheet metal, and provided with hooks T, that engage with staples *t*, driven into the under side of the car. Furthermore, the ends of these fenders are bent inwardly, as at *s*, so as to approach quite near the wheels of the car.

When the apparatus is in its normal position, the handle of lever R is thrown forward, and may be locked with a hook or other convenient device, this movement of the lever causing the swinging frame F to become vertical and bringing the cleaners *h h′* in close contact with the rails or tracks. This vertical position of the frame compels the clutch K to engage with the drum J, and consequently the motion of axle *b*

is communicated to main shaft E, the gear-wheels of which, *e e'*, in connection with the pinions *g g'*, impart a very rapid rotation to the brushes or cleaners H *h* H' *h'*. As a result of this rapid rotation of said brushes, the track is thoroughly cleaned in advance of the car, and without imposing any perceptible strain on the horses. The location of these cleaners is such as to prevent any person being run over, in case they should fall across the track in front of the wheels B. After the tracks have been cleaned, and there is no further need of using the brushes, the lever R is thrown back, thereby causing the swinging frame F to assume the position seen in Fig. 3, which changed position of the frame not only elevates said brushes, but so shifts the bell-crank L *l* as to disengage the clutch K from drum J, which act stops the rotation of shaft E and the gearing connected therewith. As this shaft acts as the center of motion of the swinging frame, the belt or chain U is always at the same tension, no matter what position said frame may assume.

By extending the guards or fenders S S' there is no possibility of any person falling on the track between the wheels B and C, and the hooks T and staples *t* enable said fenders to be readily swung up, for the purpose of oiling the axle-bearings, &c.

In some cases it may be found advisable to attach scrapers to the apparatus, so as to break up thick ice and snow, and thereby enable the cleaners to do their work more thoroughly and with less strain on the gearing.

In another modification of our invention the band U and clutch mechanism J K may be dispensed with, and the wheels *e e'* be arranged to be driven by frictional contact with the car-wheels B B as soon as the frame F has been properly shifted.

We claim as our invention—

1. A track-cleaner consisting of the horizontally-rotating brushes *h h'*, operated by gearing, substantially in the manner described, said brushes being journaled in a swinging frame, for the purpose stated.

2. The combination, in track-cleaner, of horizontally-rotating brushes *h h'*, operated in the manner described, and journaled in a swinging frame, which latter is so coupled to a clutch mechanism as to engage and disengage the same, for the object stated.

3. The combination of hangers D D', main shaft E, bevel-wheels *e e'*, swinging frame F, bevel-pinions *g g'*, counter-shafts G G', brushes H *h* H' *h'*, pulley I, and driving band or chain U, as and for the purpose stated.

4. In combination with the main shaft E I, carrying a swinging frame, F, provided with a pair of track-cleaners, *h h'*, geared in the manner described, the drum J *j*, clutch K *k k'*, pivoted bell-crank L *l n*, link O, and band or chain U, for the purpose specified.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN BIRNBAUM.
JOHN T. RICHMOND.

Witnesses:
JAMES H. LAYMAN,
SAML. S. CARPENTER.