(No Model.) 2 Sheets—Sheet 1.

B. PRICE.

SUPPLEMENTARY TRUCK FOR STREET CARS.

No. 492,230. Patented Feb. 21, 1893.

Fig. 1.

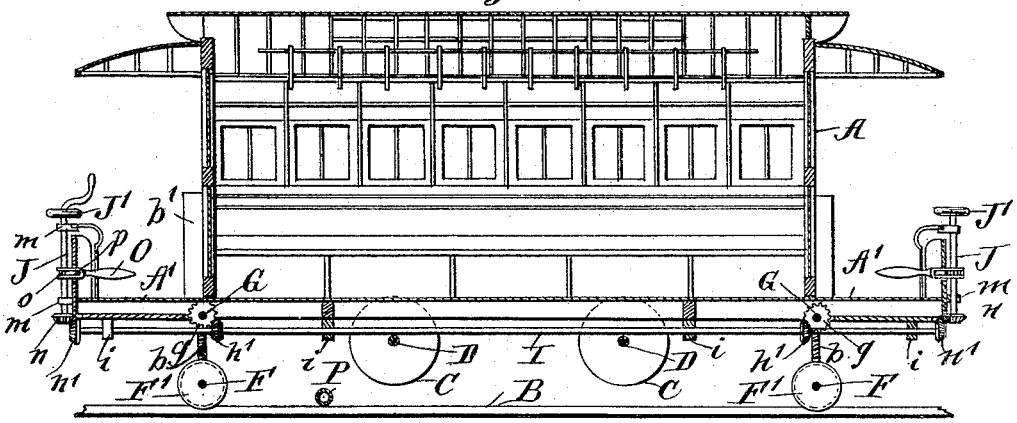

Fig. 2.

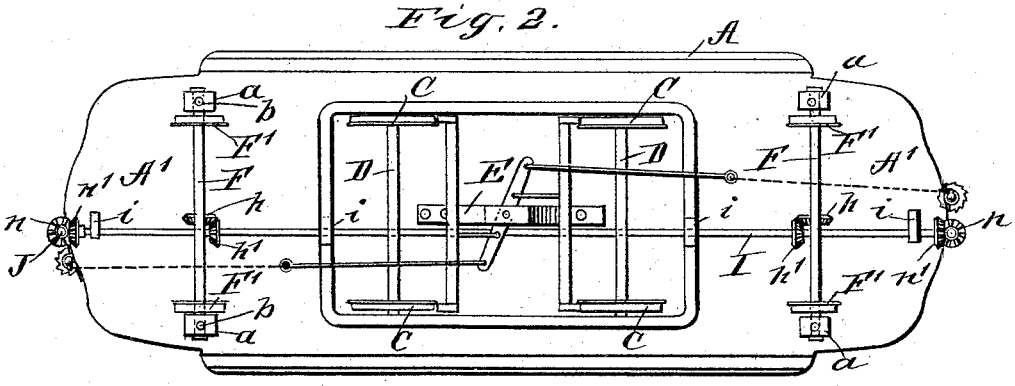

Fig. 3.

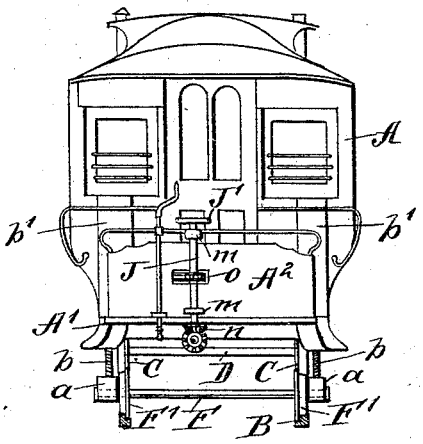

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Fig. 4.

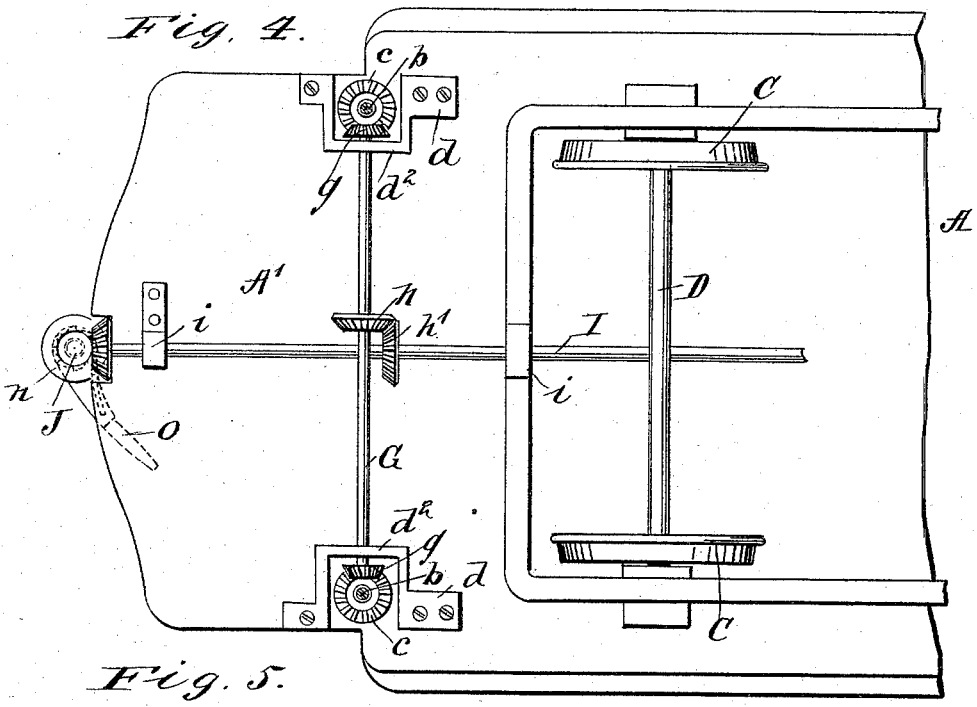
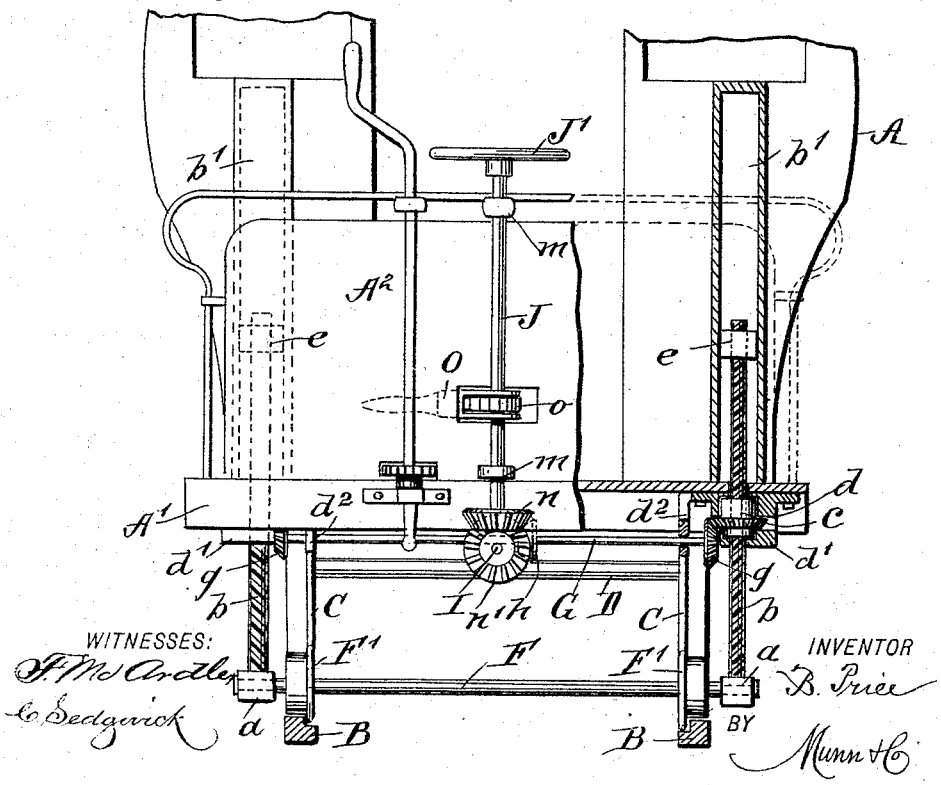


Fig. 5.



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UNITED STATES PATENT OFFICE.

BENNETT PRICE, OF BROOKLYN, NEW YORK.

SUPPLEMENTARY TRUCK FOR STREET-CARS.

SPECIFICATION forming part of Letters Patent No. 492,230, dated February 21, 1893.

Application filed October 24, 1892. Serial No. 449,841. (No model.)

To all whom it may concern:

Be it known that I, BENNETT PRICE, of Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Supplementary Trucks for Street-Railway Cars, of which the following is a full, clear, and exact description.

Railway lines occupying streets of a town or city, are at times blocked by the stretching of lines of hose across their tracks during a fire, or from the disablement of a car due to a broken wheel or axle on it. Such impediments to regular travel are sources of annoyance to the public as well as a loss of valuable time.

The object of my invention is, to provide efficient means for the transference of a street railway car across a line of fire hose that is stretched transversely of the track; and also to obviate the protracted stoppage of a railway car on account of the accidental breakage of one of its wheels or an axle.

To this end my invention consists in certain features of construction, and combinations of parts, as is hereinafter described and claimed.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side view of a street railway car in section, and the improvements on the car adjusted for service; Fig. 2 is a reverse plan view of a car and the improvements on it; Fig. 3 is an end view of a street railway car and the improvements on it, adjusted to raise the main car wheels from the track; Fig. 4 is an enlarged reverse plan view of an end portion of a street railway car, and a part of the improvement on it; and Fig. 5 is a broken front end view of a car, and the novel attachments on it, adjusted to elevate the car body and its main wheels from the track rails.

The car body A, is of any approved construction, and may be adapted for electrical propulsion, or be drawn by horses on a railway track B, the ordinary main wheels C, and transverse spaced and parallel axles D, being provided to afford rolling support for the car body.

At each end of the car body the usual platforms A′, are projected, to furnish means for entering the car, and for the accommodation of the driver or motor man, common brake rigging E, being furnished for the control of the vehicle when it is to be stopped.

The improvement consists essentially, in the provision of two supplementary trucks, one for each end of the car, each truck comprising a single transverse axle, having a pair of wheels, and attachments therefor, that by manipulation from the car platforms, will elevate the car body and its main wheels and axles, throwing the weight on the supplementary trucks, that are located a proper distance from the main car wheels toward the end platforms.

The supplementary trucks being alike, a description of one will answer for both, and as shown, they consist essentially of a transverse axle F, on which the flanged wheels F′, are secured near each end leaving journal ends projecting beyond said wheels.

The boxes *a*, which are designed to loosely engage with the journals of the axle F, are secured upon the lower ends of the coarsely threaded screw rods *b*, that are screw cut throughout their length, and which project upwardly through the platform A′, and into the guide boxes *b′*, which latter are attached to the end walls of the car body A, vertically and near its side edges. Upon the screw cut bodies of the rods *b*, the longitudinally perforated and internally threaded hubs of the bevel gear wheels *c*, are screwed, these occupying parts of the screw rods that are below the platforms A′. A bracket block *d*, is provided for each bevel wheel *c*, and has a cylindric socket or recess formed in it from below upwardly, of such dimensions as will permit the cylindrical hub of the bevel gear wheel *c*, to fit loosely in it and seat upon the top wall of the recess, as indicated in Fig. 5. The bracket blocks *d*, are suitably flanged and adapted for a bolted attachment on the lower sides of the longitudinal side timbers of the car bottom frame, or lower surface of the platform near the side edges, as may be preferred, so as to permit the screw rods *b*, to project vertically through holes in the platform, and penetrate the guide boxes *b′*, as before mentioned. There is a hub portion projected

from the lower face of each of the bevel gear wheels *c*, to enter and loosely fit an apertured cap plate *d'*, that is secured upon the lower surface of the bracket block it engages, thereby retaining the gear wheels in position on the car body below the platform and free to rotate in the bracket blocks. A nut *e*, is screwed on the upper portion of each screw rod *b*, before the latter are introduced within the guide boxes *b'*, said nuts loosely fitting the interior surface of the guide boxes *b'*, so as to adapt them for longitudinal movement and restrain them from rotation.

For efficiency in service, it is necessary that the screw rods *b*, should receive rotary motion in the same direction, and that an equal degree of downward projection be given to their portions below the platforms A', so that the axles F, will lie in a plane parallel with the track rails and equally removed therefrom, thus adapting the wheels F', which are of equal diameter, to simultaneously engage said track rails or be removed therefrom by a proper rotatable movement of all the screw rods.

The preferred means for simultaneously actuating the screw rods *b*, consists of a transverse shaft G, provided for each pair of rods at the end of the car body, said shaft having its end portions projected through and journaled in flanged portions d^2, of the bracket blocks *d*. Upon each terminal of the shafts G, a bevel pinion *g*, is secured so as to have a meshed engagement with the gear wheels *c*, the pinions being of equal diameter. A bevel pinion *h*, is secured near the longitudinal center of each shaft G, said pinions being of equal diameter. A main shaft I, is rotatably sustained by the boxes *i*, longitudinally of the car body and platforms on their lower surface near the transverse center, or at such a point as will allow the bevel pinions *h'*, that are affixed upon the shaft I, to have a meshed engagement with the pinions *h*, as indicated in Figs. 1 and 2. On the upright dasher walls A^2 of the platforms A', similar vertical shafts J, are secured rotatably by a loose engagement with the bracket boxes *m*, that project laterally from said dasher walls, the single shaft J, on each part A^2 having a bevel pinion *n*, secured upon its lower end, said pinions being meshed with the similar pinions *n'*, that are affixed on the end portions of the main shaft I. A hand wheel J', is located upon the upper end of each upright shaft J, to afford one means for rotating said shafts; another method for revolving the shafts that will afford greater power when manipulated, consisting of a slotted lever O, for each shaft, that is perforated laterally through both of the parallel walls on the slotted end, of a diameter that will permit each lever to slide upon its respective shaft and project at right angles to it. Between the parallel perforated walls of each of the levers O, a ratchet toothed wheel *o*, is secured upon the upright shaft J, so as to retain the lever O, loosely in position at a convenient distance from the platform, for manipulation. A spring-pressed vibratable pawl *p* shown in Fig. 1, is furnished for each wheel *o*, and as usual is adapted to successively engage with the teeth of the ratchet wheel, when the lever O is vibrated, and communicate a rotary motion to the shaft upon which the ratchet wheel is secured.

The supplementary trucks comprising the axles F, wheels F', and attachments thereto, which have been described, are normally adjusted to remove the wheels of said trucks from the track rails; but when there is a blockade of the railway produced by the location of a hose line across the track rails, which the cars cannot cross in the usual way without severing the hose, the supplementary trucks are brought into service, and effect a speedy transfer of a car across the hose, as will be explained.

When a car having the improvement, is propelled toward a line of hose such as P, in Fig. 1, the main wheels C, of the car are located near to the hose line that is across the track B; this will dispose the hose between the main wheels C, and supplementary wheels F', as indicated in Fig. 1. The hand wheels J', are now rotated in a proper direction to lower the wheels F', and cause them to impinge upon the track rails, a rotation of one hand wheel being sufficient to produce such a result, owing to the connection of parts that have been described, the action of which is obvious. After the truck wheels F', are seated upon the track rails, the operator grasps one of the levers O, or two operators may each use one of these levers, and by vibration of the same cause all the screw rods *b*, to receive a downward sliding movement at the same time and of an equal degree; the threaded hubs of the gear wheels *c*, that are rotated simultaneously, causing such a downward projection of the screw-rods and the axles F, which are journaled in the boxes on their lower ends.

It will be seen, that the boxes *b'*, and nuts *e*, will support the upper end portions of the screws *b*, and contribute to their easy movement.

When the supplementary trucks have been lowered a sufficient degree to raise the car body A, and main wheels C, above the track rails so as to avoid contact of the latter with the hose line, the car is moved on the wheels F', until the hose occupies a position between the rear main car wheels and the rear truck wheels; the latter are now elevated by the means already described, so as to lower the car body and cause the wheels C, to rest on the track, which will adapt the car for progressive movement away from the hose line which has been crossed, and injury thereto is avoided.

In case a main axle or a main wheel breaks on a car having the improvement, and propulsion is arrested by such an accident, the lowered adjustment of the supplementary

trucks as before explained, will provide a full set of wheels for the car, on which it may be moved to a place for repairs, and thus avoid a blockade of other cars on the line of railway.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination with a car, of supplementary trucks located below the ends of the car, and adapted for vertical adjustment with screws and geared shafts, substantially as described.

2. The combination with a car, of supplementary trucks located one below each end of the car body, and adapted for a simultaneous vertical adjustment by connecting devices on the car platforms, substantially as described.

3. The combination with a car body, its main axles and wheels thereon, of supplementary trucks each having an axle and two track wheels, located on the car below and nearer the platforms than the main wheels, and upright screws, bevel geared shafts and ratchet-rigging for vertically adjusting the supplementary wheels and axles, substantialy as described.

4. The combination with a car body having a platform at each end, main axles, and track wheels on said axles, of supplementary trucks one at each end of the car below the body and platforms, each comprising a supplementary axle, track wheels thereon, screw rods depending from hubbed and bevel toothed wheels rotatably supported on the car below its ends, and devices on the platforms, in geared connection with the toothed wheels, and adapted to rotate said wheels by manipulation from either platform, substantially as described.

5. The combination with a car body having platforms at the ends, rotatable main axles below said body, and main track wheels on each axle, of supplementary trucks each comprising an axle, track wheels thereon, depending screw rods having journal boxes on their lower ends engaged by the truck axles, rotatable bevel toothed wheels on the screw rods, guide boxes on the car body above the screw rods, guide nuts on the rods within said boxes, a transverse rotatable shaft for each pair of screw rods, a rotatable main shaft longitudinally extended beneath the car body, bevel gearing on the cross shafts engaging bevel gearing on the main shaft, bevel pinions on the ends of the cross shafts, in mesh with the bevel toothed wheels, a rotatable upright shaft on each platform having geared connection with the ends of the main shaft, and a ratchet lever device on each upright shaft, substantially as shown and described.

BENNETT PRICE.

Witnesses:
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M. KILCOMIN.