

(No Model.)

J. S. LEWIS.  
STREET CAR

No. 245,183.

Patented Aug. 2, 1881.

FIG. I.

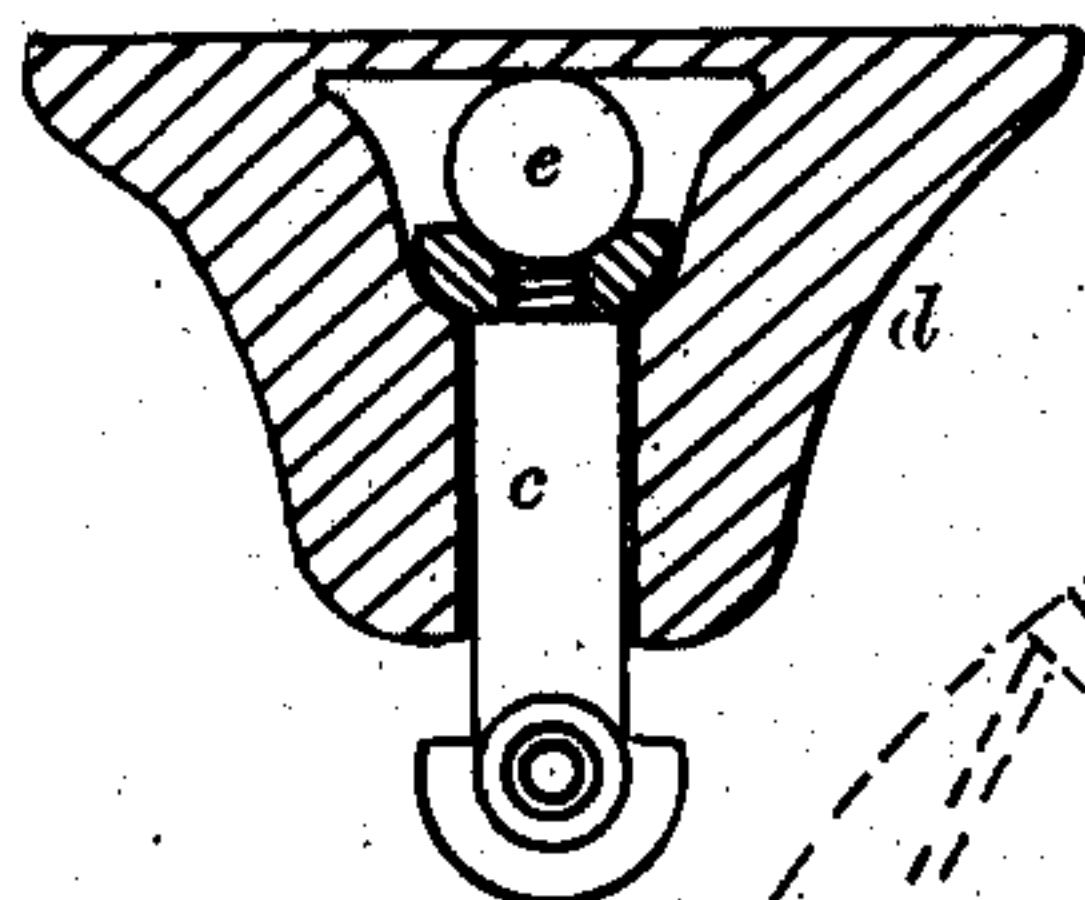
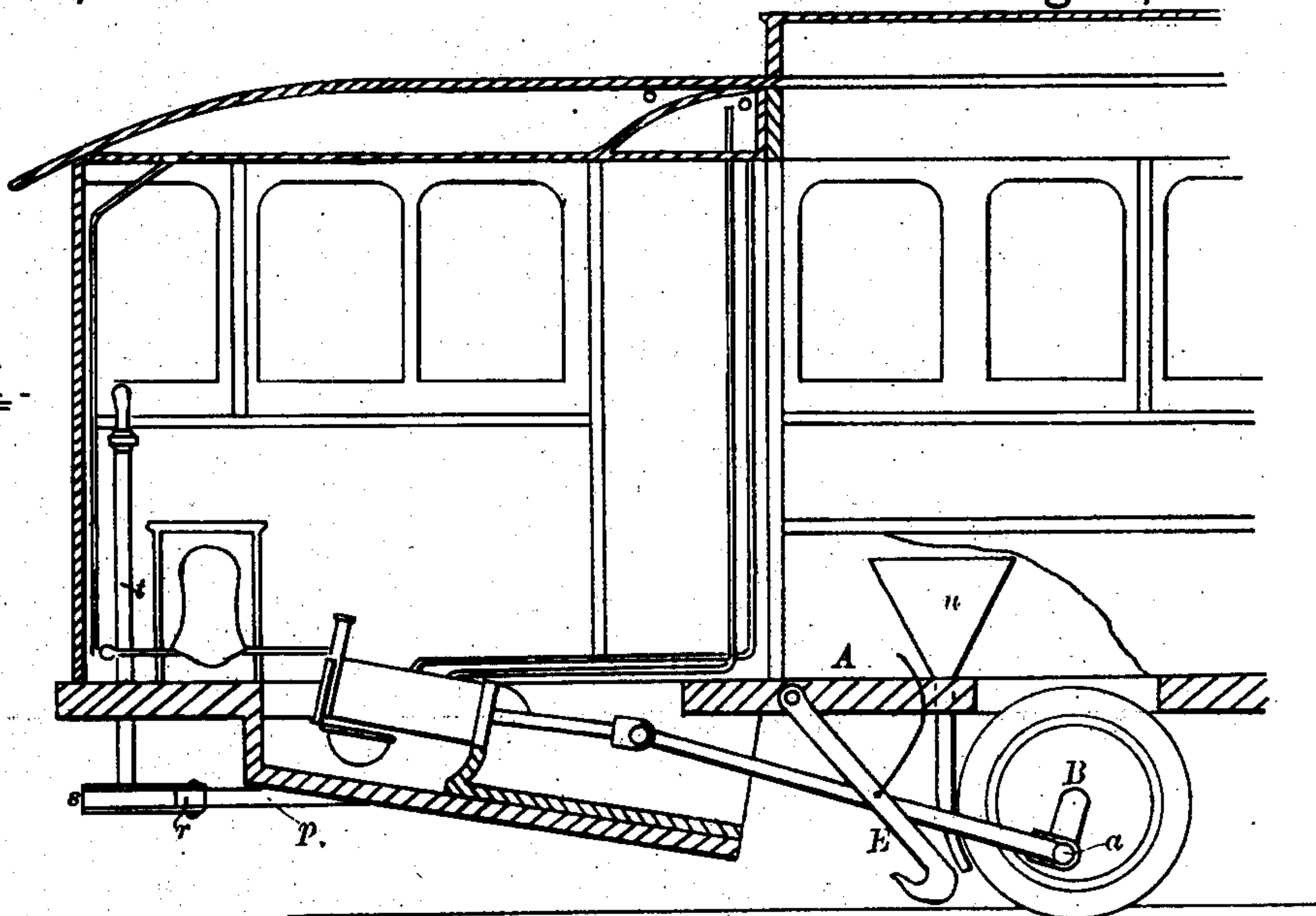
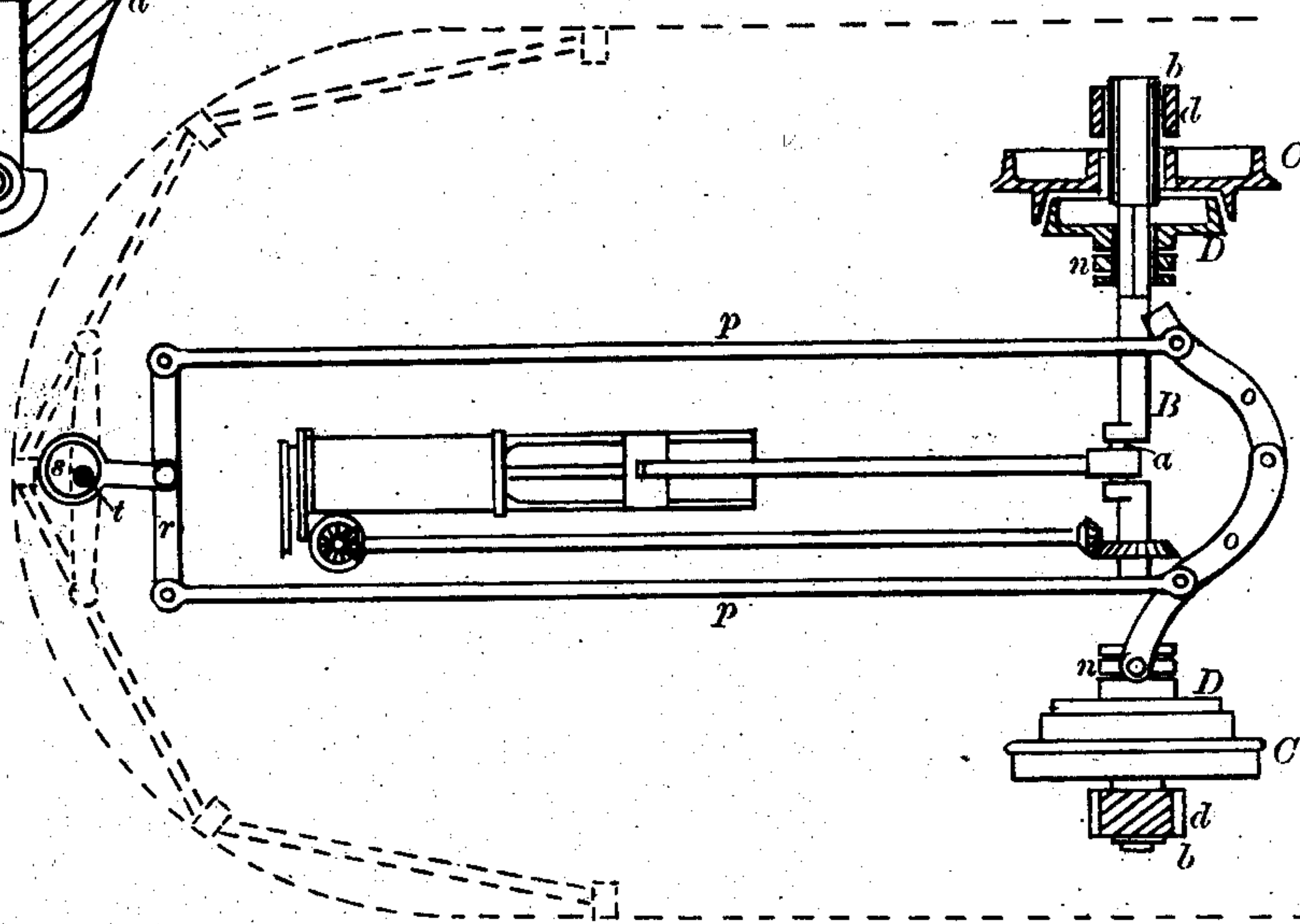


FIG. III.

FIG. II.



— WITNESSES —

*Chas. F. Vergandt, Jr.*  
*Chas. H. Pidgeon*

— INVENTOR —

*Jacob S. Lewis*  
*by E. H. T. Howard*  
*attys.*



# UNITED STATES PATENT OFFICE.

JACOB S. LEWIS, OF BALTIMORE, MARYLAND.

## STREET-CAR.

SPECIFICATION forming part of Letters Patent No. 245,183, dated August 2, 1881.

Application filed June 14, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, JACOB S. LEWIS, of the city of Baltimore and State of Maryland, have invented certain Improvements in Street-Cars, of which the following is a specification; and I do hereby declare that in the same is contained a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention relates to certain improvements in the running-gear of the car, whereby the same is adapted for attachment to a motor, as will hereinafter fully appear.

In the accompanying drawings, forming a part hereof, Figure I is a longitudinal section of a street-car, showing the application thereto of my improvements. Fig. II is a plan of Fig. I, with the car-body shown in dotted lines. Fig. III is a view of a part of the invention.

Similar letters of reference indicate similar parts in all the views.

A is the car-body. B is a crank-shaft, which is used in place of one of the ordinary car-axles. The pin *a* of the crank-shaft is connected by means of a connecting-rod to an engine, which is preferably of that description in which the power is furnished by the explosion of gas; but a motor of any other kind may be used.

In this invention it is proposed to keep the engine in constant revolution during the entire trip of the car from terminus to terminus. I therefore place the driving-wheels C loosely on the crank-shaft and drive them by means of clutches D, which are connected with and disconnected from the said wheels at the pleasure of the engineer or person in charge of the car. I also support the outer ends of the crank-shaft in sleeves *b*, each one of which is fastened to a bar, *c*, having at its upper end a cup-shaped flange, between which and a frame, *d*, is interposed an elastic ball, *e*, to serve as a spring. The wheels C run loosely on the sleeves *b*, and have an annular flange on their inner faces, into which clutches D, capable of being slid longitudinally of the axle, but not turned longitudinally thereof, are adapted to be forced. The contact of the clutches and the annular projections produces sufficient friction to communicate motion to the said wheels and drive the car.

Any proper mechanism may be used to ef-

fect the engagement and disengagement of the clutches and driving-wheels; but that which I prefer consists as follows: The hubs of the clutches are grooved and rings *n* placed in the grooves, and toggle-bars *o* attached to the said rings by means of pins. The toggle-bars *o* are curved to clear the crank, and connected by rods *p* to a cross-head, *r*, at the front end of the car, to which an eccentric, *s*, is attached. The eccentric is turned by means of a vertical bar, *t*, having a cross-handle at its upper end in a convenient position for the engineer. The cross-handle is shown only in dotted lines, Fig. II. A sand-box with a delivery-pipe is used, as on locomotives, to increase the traction of the wheels when the same have a tendency to slip.

E E are bars hinged to the frame or other part of the car in such manner as to admit of their lower ends being brought into contact with the surface of the depressed portion of the rails to prevent derailment of the car in turning curves. The said bars are provided with suitable devices for retaining them in an elevated position when not in use. It will be understood that when the bars are lowered they bear against the elevated portion of the rails in advance of the wheels. The lower ends of the bars E being in the rear of the hinged ends and turned upward, as shown, the bars do not impede the movement of the car, and upon meeting an obstruction ride easily over it.

I claim as my invention—

1. In combination with the crank-axle of a street-car, a vertical bar at either end thereof, carrying a sleeve in which the axle is adapted to turn, a spring resting on each vertical bar, upon which the car-body rests, and a pair of car-wheels placed loosely on the said sleeves, and adapted to be connected and disconnected from the said axle by means of clutches, substantially as specified.

2. In combination with the body of a street-car, a pair of swinging bars hinged thereto and adapted to be thrown in contact with the track in advance of the car-wheels; the lower ends of the said bars being in the rear of the said hinges, substantially as and for the purpose specified.

JACOB S. LEWIS.

Witnesses:

JNO. T. MADDOX,

HARRY V. ALBAUGH.