M. OSBORN.

DRAW-BARS FOR STREET-CARS.

No. 186,687. Patented Jan. 30, 1877.

Fig. 1.

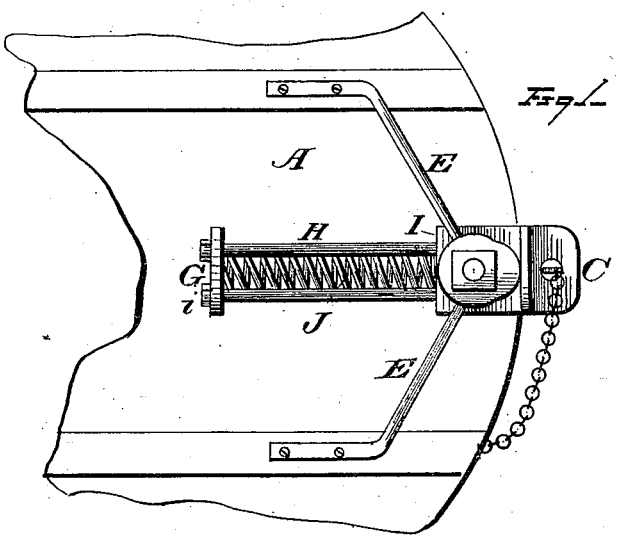



Fig. 2.

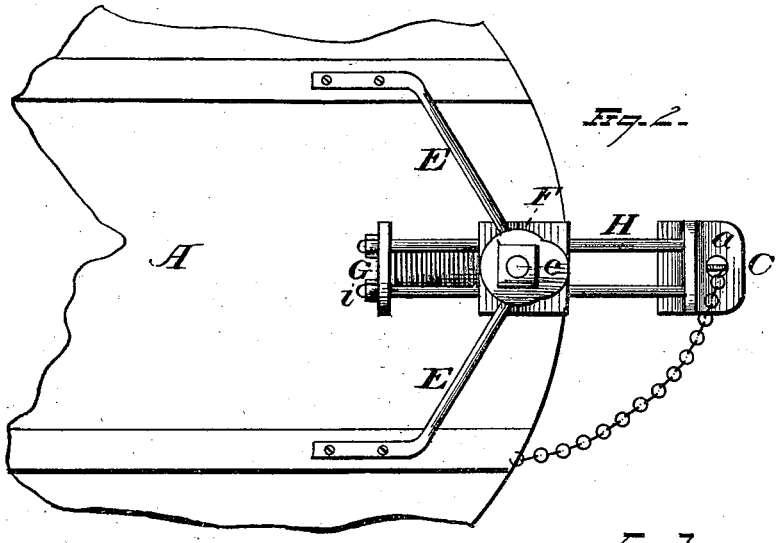
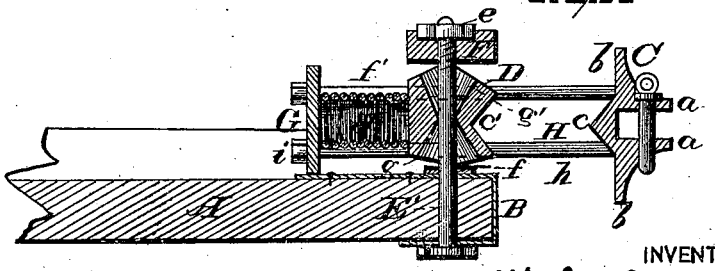



Fig. 3.




WITNESSES

Edw. F. Nottingham

D. W. McCleary

INVENTOR.

Milo Osborn,

By Leggett & Leggett.

ATTORNEYS.

# UNITED STATES PATENT OFFICE.

MILO OSBORN, OF CLEVELAND, OHIO.

## IMPROVEMENT IN DRAW-BARS FOR STREET-CARS.

Specification forming part of Letters Patent No. **186,687**, dated January 30, 1877; application filed September 23, 1876.

*To all whom it may concern:*

Be it known that I, MILO OSBORN, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Draw-Bars; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improved draw-bar for street-cars.

Figure 1 is a plan view of my improved draw-bar, showing the same attached to the under side of the car floor or frame. Fig. 2 shows the position of the several parts of the draw-bar when draft is applied thereto. Fig. 3 is a longitudinal section of the draw-bar, showing the form of the rocking bearing employed therewith.

The object of my invention is to provide a draw-bar adapted to have a yielding movement both laterally and vertically, whereby the draft may always be in the line of direction of the resistance.

A represents the floor or platform of a street-car, and is preferably furnished with a guard strap or plate, B, which is attached to the car by means of bolts, or in any convenient manner. C is the head of the draw-bar, and is constructed with the ordinary perforated flanges *a*, between which the link or ring of the double-tree is placed and secured by a coupling-pin. Draw-head C is constructed with an upwardly-projecting flange, *b*, which rests against the guard-plate B when the head is in a retracted position. The rear side of the draw-head is formed with an angular projection, *c*, which fits within an angular recess, *c'*, in the front face of the rocking bearing D. E E are brace-rods, two or more in number, the outer ends of which are firmly secured to the frame or floor of the car, while the inner ends are attached to a centrally-perforated bearing-plate, F. A bolt, E', passes through the guard-plate B and floor of the car, vertically through the center of the rocking bearing D, its lower screw-threaded end projecting sufficiently below the bearing-plate F to be tightly secured thereto by means of a nut, *e*. The bearing D has its upper and lower edges beveled, so that it has upper and lower central bearings *f f'*. The aperture in the bearing D for the reception of the bolt E is cut away at *g g'*, to allow the bearing to have a free rocking movement on the bearing-bolt. The rocking bearing D is perforated at *h* for the reception of four guide-rods, H, the forward ends of which are secured to draw-head A, while the rear ends are screw-threaded and retain a plate, G, by means of nuts *i*. Between the rear face I of the rocking bearing D and the plate G is interposed a strong spiral spring, J, which is kept in position by the guide-rods H.

In lieu of the spring J, an elastic or compressible substance, such as a rubber cylinder, may be used without departing from the spirit of my invention.

I do not limit myself to the exact number of guide-rods H shown in the drawing, as any number may be used to effect the same result. One bar may be used, if desired, and when such construction is adopted the bar would be provided with a yoke at its forward end, to serve as a guide and means of attachment to the rocking bearing, while the spiral spring or rubber cylinder would, in such case, be placed around the rear portion of such bar.

A street-car provided with a yielding bar of the construction above set forth enables the car to be started with much less strain on the horses than is the case with an ordinary rigid draw-bar. Again, the draw-bar will automatically assume a position in line with the draft-pole, and always preserve its yielding resistance, regardless of its position at any given time.

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

1. The combination, with the rocking bearing D, pivoted to the floor or frame of the car, of the draw-head C, the retaining-plate G, guide-rods H, and spring J, substantially as and for the purpose set forth.

2. The combination, with a yielding draw-head, of a rocking bearing, D, adapted to have both vertical and lateral movement, substantially as and for the purpose set forth.

3. The combination, with a yielding draw-

head, of a rocking bearing, D, formed with cut-away portions *g g'*, substantially as and for the purpose set forth.

4. The combination, with the draw-head C, having guide-rods H secured thereto, the retaining-plate G, and spring J, of the rocking bearing D, perforated for the reception of the guide-rods, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MILO OSBORN.

Witnesses:
FRANCIS TOUMEY,
EDWARD WALSH.