

United States Patent Office.

THOMAS C. ROBINSON AND GEORGE P. CLARK, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 85,331, dated December 29, 1868.

IMPROVED STEAM STREET-CAR.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that we, THOMAS C. ROBINSON and GEORGE P. CLARK, both of Boston, in the county of Suffolk, and State of Massachusetts, have invented a new and improved Mode of Connecting and Operating the Boiler of a Steam Street or other Car with the Truck and Frame of the Car; and we do hereby declare that the following is a full and exact description of the same, taken in connection with the accompanying drawings, with letters of reference marked thereon.

The nature of our invention consists in using the boiler of our car as a transient bolt, thus permitting the car-truck to turn on curves and switches, without interfering with the supply of steam from the boiler to the propelling steam-cylinders, and certain devices to facilitate this.

In the drawings—

Figure 1 is a vertical longitudinal section of the car, with a side view of the boiler inside of the truck, and wheels, with a part of the cylinder.

Figure 2 is a vertical longitudinal section of the car, and of the outer portion of the boiler, (with part of its lower portion omitted, to show what we call the transient ring,) and of the truck, with a side view of the wheels, cylinder, and connecting-rods *p*.

Figure 3 is a view from the top, of the car-frame surrounding the boiler, with the transient ring and its rollers round the boiler, and its trunnions; also the inner transient ring.

In figs. 1, 2, and 3, *C* is the boiler, upright, resting on the truck-frame *L*, and forming a transient bolt for the car.

D is the inner transient ring, (which we sometimes dispense with,) fastened round the outside of the boiler, and supporting it on the truck-frame *L*.

E is the outer transient ring, made in two sections, the line of division being horizontal, and is supported by two trunnions, *G G*, on each side, upon the car-frame.

F F are eight metallic cylindrical rollers, held with their axes vertical, firmly, but so as to admit rotation by the two sections of the outer transient ring. The rollers (instead of which *I* sometimes use balls) project beyond the inner surface of the ring, and impinge upon the inner transient ring, round the boiler, as seen in fig. 3. Their object and effect are to diminish friction, when any change in direction of the truck, as in going round a curve, causes the truck to partially rotate round the boiler. We sometimes fasten these rollers or balls upon the boiler, and let them rotate upon the inner surface (in a groove therein) of the transient ring.

G G, fig. 3, are two trunnions, firmly attached to the

respective sides of the outer transient ring, and working in bearing on the car-frame. These permit the ring to oscillate.

H H are the ordinary car-rolls, secured firmly to the truck-frame.

I I, fig. 3, are the timbers of the car, which rest on the truck-frame, with the car-rolls intervening.

J, figs. 1 and 2, is a steam cylinder, used to rotate the wheels, fastened to the truck-frame under the front part of the car. There are two of these, one on each side, and they may be placed either inside or outside of the truck.

K is the cross-head and slide, attached to the cylinder.

L L is the frame of the truck.

M M, fig. 1, are rubber springs, beneath the housing, resting on the journals of the axles.

N, fig. 2, is the parallel rod, connecting the driving and forward wheels.

O is the connecting-rod to the cross-head.

P P are two projections of metal, fastened firmly to the outer transient ring *E*, on the front and back side. These play in a slot or groove of the car-frame, and their use is to take off from the trunnions and their bearings the strain occasioned by any sudden advance or recession of the car, acting upon the momentum or the inertia of the boiler. They are called the draw-bars.

The mode of operation of our device is evident without further explanation.

We sometimes support the boiler upon the car-body, and let the car-truck rotate around the lower end of it; and

What we claim herein as new, of our invention, and desire to secure by Letters Patent, is—

1. In locomotive-cars, the use of the boiler as a transient bolt, when arranged and used substantially as described.

2. In locomotive-cars, when the boiler is used as a transient bolt, the transient ring, and the rollers to diminish friction, whether with or without the inner ring, all substantially as described.

3. In locomotive-cars, with the boiler, transient bolt, and friction rollers, and transient ring, above described, the use of trunnions on the transient ring, all substantially as and for the purpose described.

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Witnesses:

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