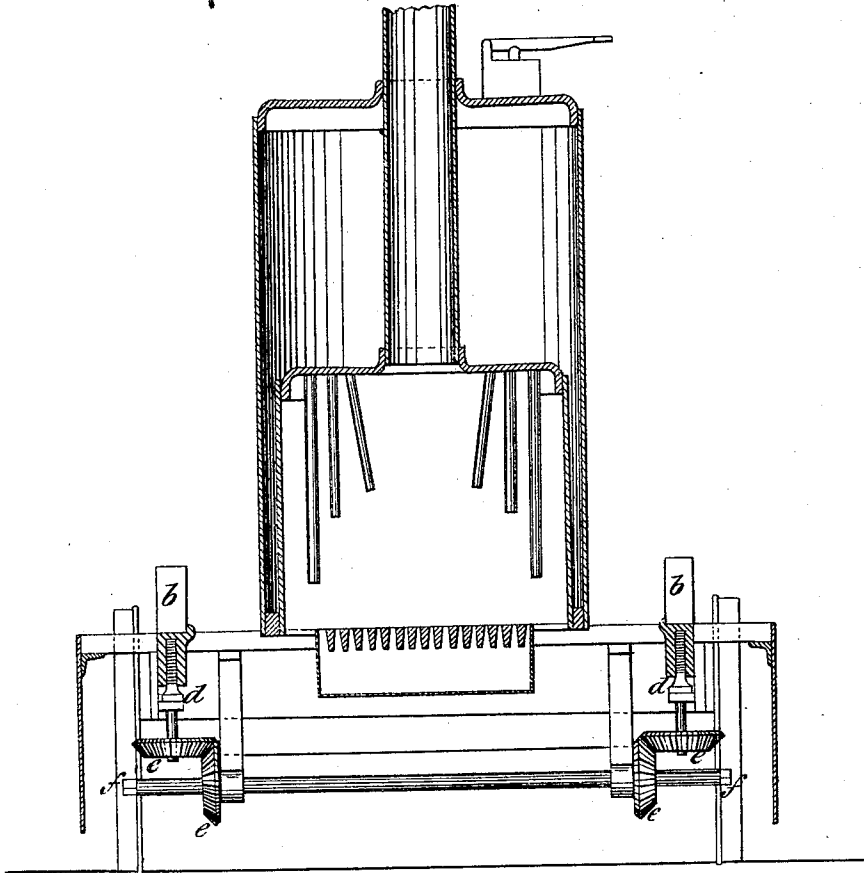


J. C. & H. MERRYWEATHER & C. J. W. JAKEMAN.
COUPLING-CARS TO LOCOMOTIVES.
No. 184,409. Patented Nov. 14, 1876.

FIG. 1.



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Inventors:

James C. Merryweather
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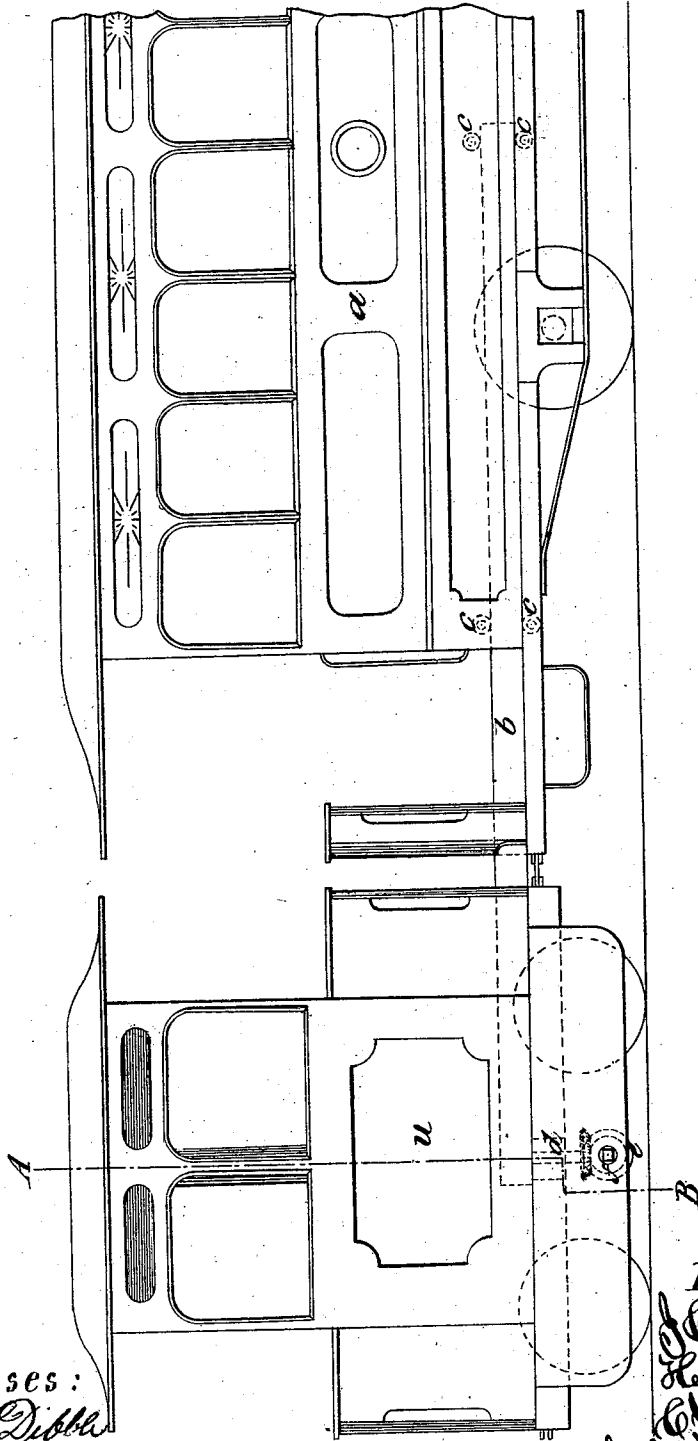
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FIG. 2.



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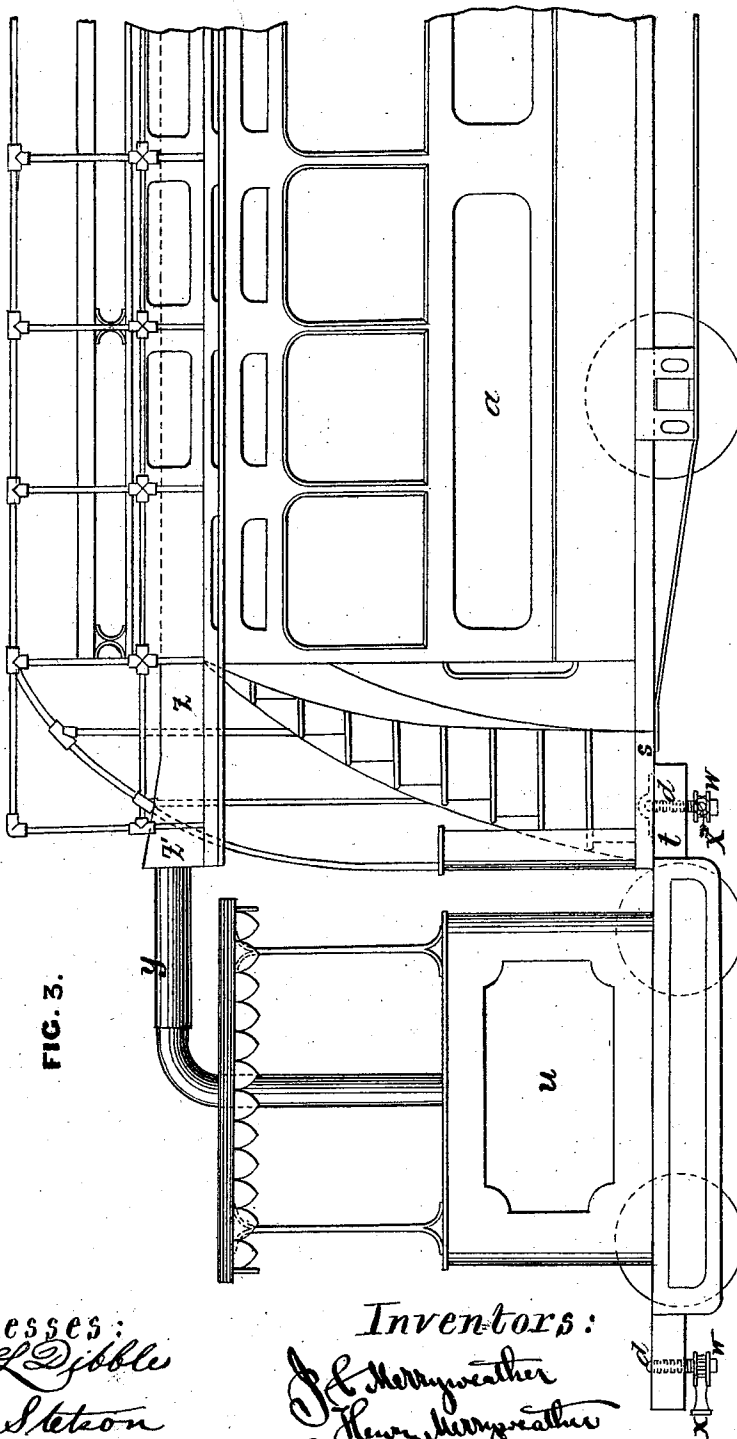
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UNITED STATES PATENT OFFICE.

JAMES C. MERRYWEATHER, HENRY MERRYWEATHER, AND CHRISTOPHER J. W. JAKEMAN, OF LONDON, ENGLAND.

IMPROVEMENT IN COUPLING CARS TO LOCOMOTIVES.

Specification forming part of Letters Patent No. **184,409**, dated November 14, 1876; application filed April 3, 1876.

To all whom it may concern:

Be it known that we, JAMES COMPTON MERRYWEATHER, HENRY MERRYWEATHER, and CHRISTOPHER JOHN WALLACE JAKEMAN, all of London, in the county of Middlesex, in that part of Her Majesty's Kingdom of Great Britain and Ireland called England, have invented a new and useful Improvement in Coupling or Connecting Cars to Locomotive-Engines to increase the adhesion of the wheels of the latter, which invention is fully set forth in the following specification, reference being had to the accompanying drawings.

Our invention relates to a mode of increasing the adhesion to the rails or ways of the wheels of locomotives when used for drawing other vehicles constructed to be capable of running independently; and consists in so arranging and connecting the locomotive and the independent vehicle to be drawn as that a portion of the weight of the vehicle to be drawn may be thrown upon the locomotive when it is desired to increase the adhesion of the wheels of the latter, but that when the locomotive and the other vehicle are disconnected each shall form a complete and independent vehicle, which may be separately run, and either end of which may at any moment be coupled to either end of the locomotive in such manner as to increase the adhesion, as aforesaid.

We provide the vehicle that is to be drawn next to the locomotive with one or more bars of wood or metal arranged to slide in and out, as required, at the respective ends of the vehicle from under the seats or platform, the end or ends of such bar or bars when drawn out being caused to rest upon a screw, wedge, cam, or equivalent contrivance on the frame of the locomotive, whereby the bar or bars is or are raised, thus lifting the wheels of one end of the drawn carriage off the rails, and throwing the weight of that end upon the locomotive, or in some cases the weight of one end of the body of the drawn vehicle may be thrown upon the locomotive without raising the wheels of the vehicle.

These arrangements are capable of being adapted to existing cars, and the bars being arranged to slide through the carriage they

may be used at either end of it. Carriages designed to be used with separate locomotives we provide with strong platforms, under which the platform of the locomotive runs, so as to carry part of the weight, as in the arrangement above described. For the same purpose the platforms of existing carriages may be strengthened.

Figure 1 is a transverse vertical section, in the line A B of Fig. 2, of a locomotive embodying our invention. Fig. 2 is a side elevation to a reduced scale of the same engine having an ordinary tram-car attached to it in accordance with our invention.

a is an ordinary tram-car fitted with bars *b* sliding between rollers *c*. *d d* are screws on the engine for setting up the ends of the sliding bars *b*, and are actuated by the beveled wheels *e* and the shaft *f*, the end of which is made square to receive a lever or key for turning the shaft.

Fig. 3 shows in side elevation a locomotive and tram-car connected together, so as to increase the adhesion of the engine-wheels according to our invention, in a manner somewhat differing from the arrangement shown in Figs. 1 and 2. In this arrangement, instead of using sliding bars, the platform *s* is made to serve the same purpose. It is made strong enough to support the end of the car, and is placed in position for use by being run over the platform *t* of the engine *u*, where it is secured and set up by a single screw, *d*, worked through a ratchet, *w*, by a lever inserted in the hole *x*. In some cases we fix two or more rollers in the platform *t* of the locomotive to facilitate the radial motion when going round curves.

As the locomotive and car are provided with similar arrangements at both their ends the locomotive may be used to draw the car in either direction.

Existing cars can have their platforms strengthened to adapt them to this arrangement.

The chimney *y* of the engine is turned in a horizontal direction, and enters the wide mouth *z'* of a tube, *z*, passing along the carriage-roof under the seat. By this arrangement we ob-

viate the use of a tall chimney, which would be necessary to guard against inconvenience to outside passengers from the heated air escaping from the chimney.

The arrangement of the locomotive with a carriage-body, within which the boiler and engine are inclosed, as shown, prevents the frightening of horses or other animals.

What we claim is—

1. One or more bars, *b*, arranged to slide in and out on the car, as required, in combination with means for throwing the weight of the car end on the locomotive, as specified.
2. The beveled gear-wheels *e* and transverse shaft *f* on the locomotive, for simultaneously setting up the ends of the bars *b* connected into the car, as specified.
3. The car *a*, having the anti-friction rollers *c*, in combination with the bars *b*, and provis-

ions for attaching the same to a locomotive, as specified.

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