

J. H. BETTELEY & T. SHARER.

CAR-BRAKE.

No. 170,509.

Patented Nov. 30, 1875.

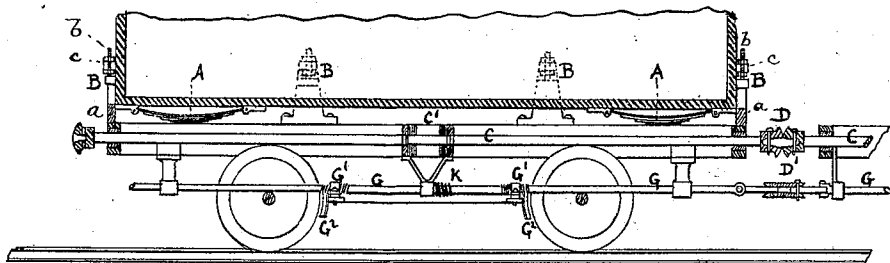


FIG 1

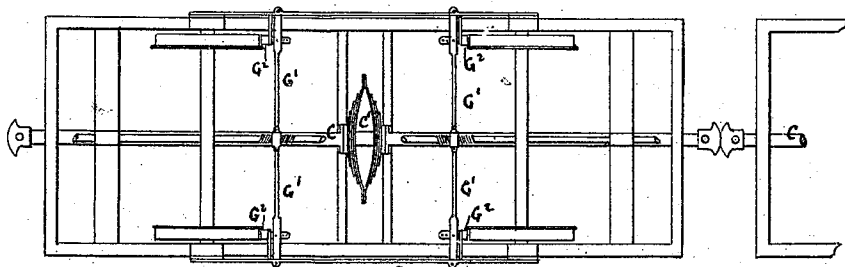


FIG 2

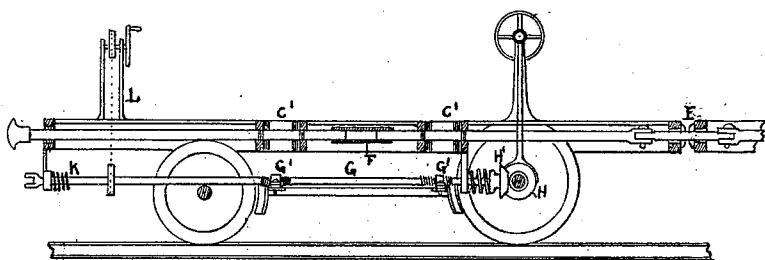


FIG 3

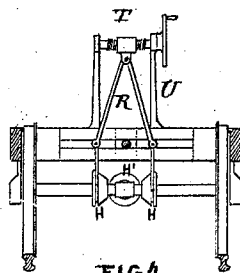


FIG 4

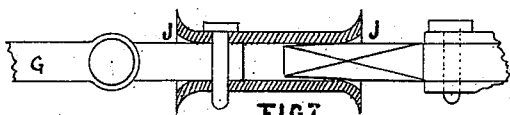


FIG 5

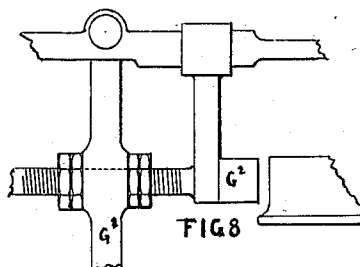


FIG 6

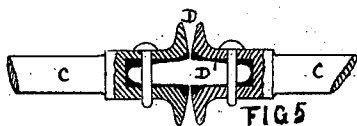


FIG 7

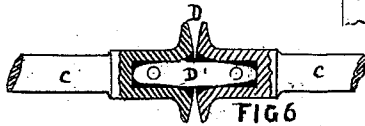


FIG 8

WITNESSES.

W. H. Barrell

Alfred Brown

INVENTORS.

J. H. Betteley
Thomas Sharer

UNITED STATES PATENT OFFICE

JOSEPH H. BETTELEY AND THOMAS SHARER, OF LONDON, ENGLAND.

IMPROVEMENT IN CAR-BRAKES.

Specification forming part of Letters Patent No. **170,509**, dated November 30, 1875; application filed December 30, 1873.

To all whom it may concern:

Be it known that we, JOSEPH HENRY BETTELEY and THOMAS SHARER, both of the city of London, England, have invented certain Improvements in the Construction of Railway-Carriages, of which the following is a specification:

The object of this invention is to utilize the momentum of railway-cars, when in motion, for applying the brakes to stop the train; and it consists in a brake-bar arranged longitudinally under the car, and adapted to operate the brake-levers by means of right and left screw-threads on the bar operating in threaded bosses attached to said levers, said brake-bar being provided with a beveled friction-wheel at one end, adapted to work in connection with corresponding beveled friction-wheels attached to the axle of the tender, which are capable of being shifted thereon in such manner that either may be thrown in contact with the bevel-wheel on the brake-bar, and rotate it in either direction at will, to apply or take off the brakes.

In the drawings, Figure 1 is a sectional elevation of a railway-car with my improvements applied; Fig. 2, a plan view of the under framing of the same; Figs. 3 and 4, sectional and end views, respectively, of the brake-van. Figs. 5 and 6 show the method of coupling the cars by means of the buffers or draw-bars, and Fig. 7 the method of connecting the brake-bars; and Fig. 8 shows the method of adjusting the brake-shoes.

Similar letters of reference indicate corresponding parts in all the figures.

The following is the construction and operation of the brake: A steel or iron bar, G, is placed along the center and underneath the framing of the carriage, and is furnished with right and left handed screw-threads, on which travel double-armed corresponding bosses, and in slots in the arms of these bosses a lever, G¹, at right angles to the center bar, works. The lever extends till it comes to the bar, on which it has its fulcrum in lieu of on the frame, as usual, thereby causing less vibration, and to it an ordinary brake-block, G², furnished with a guide, is applied on an iron arm perforated to admit of adjustment for wear; or the brake-block may be attached to a solid iron

arm passing through the main lever, thickened for the purpose, and be regulated by a pair of block-nuts on each side, thus admitting of great nicety of adjustment. (See Fig. 8.) The power is generated by the train itself, either in the guard's van or on the engine-tender, in the following manner: The driving-wheel of the van is made larger, and at a slightly higher elevation than the wheels of the train, and its axle is furnished with two beveled friction-wheels, H. In their outer rims a two-armed vertical lever, R, is inserted, whose upper end works in the slotted arm of a boss, S, which travels on a horizontal screw-threaded bar, T, supported by suitable standards U, and is worked by an ordinary wheel and handle in the van or tender above the axle. The bar G has a beveled friction-wheel, H', keyed onto it, which is made to correspond with the aforementioned beveled wheels H. By turning the handle of the motive-wheel in the tender the boss and levers travel at will, so as to cause contact of one of the beveled wheels on the axle H with the wheel H', keyed onto the bar. As soon as contact is created the bar revolves, and the wheels are skidded with the promptest and nicest, and most gradual, power. The power is taken off by putting into contact the beveled wheel upon the axle opposite to that which generated motion, which will unwind the bar when the train moves on, or the slightest backward turn, before the complete creation of motion, breaks the contact and takes off the brakes. Springs are provided at K, which are coiled round the revolving brake-bar, and will tighten when the brake is put on, and recoil when the motive power is taken off, thereby taking off the brake. The letter L represents an ordinary dragging-wheel, which may be used as a "stand-by" in the event of the other devices for operating the brakes failing to act from any accidental cause.

We will now proceed to describe the method of joining or connecting together the brake-bars of a train. The junction is formed by a tube with a squared interior, but trumpeted ends J, for the purpose of easier bedding of the ends of the bars, near each of which a joint is placed, one being horizontal and the other vertical, to allow of traveling curves. In one end of the tube the brake-bar works

freely, while the other is secured by a pin passing through it and the tube. This admits, at the same time, of the longitudinal play and of the revolution of the bar. Each end of the bar has a pin-hole, so that it can be made to work free, or be secured as circumstances may require.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

The continuous brake-bar G and cross-bar G¹, in combination with the bevel-wheels H'

and H H, the lever R, attached to the boss S, and the threaded bar T, for throwing either of the wheels H H into contact with the wheel H' to automatically shift the brakes, substantially as described.

J. H. BETTELEY.
THOMAS SHARER.

Witnesses:

W. H. BURRELL,

ALEX. BROWNE,

*Both of 5 Southampton Buildings,
Holborn, W. C., London, England.*