(No Model.)

D. A. GROUNDS & J. R. GIBSON.

CAR COUPLING.

No. 294,127. Patented Feb. 26, 1884.

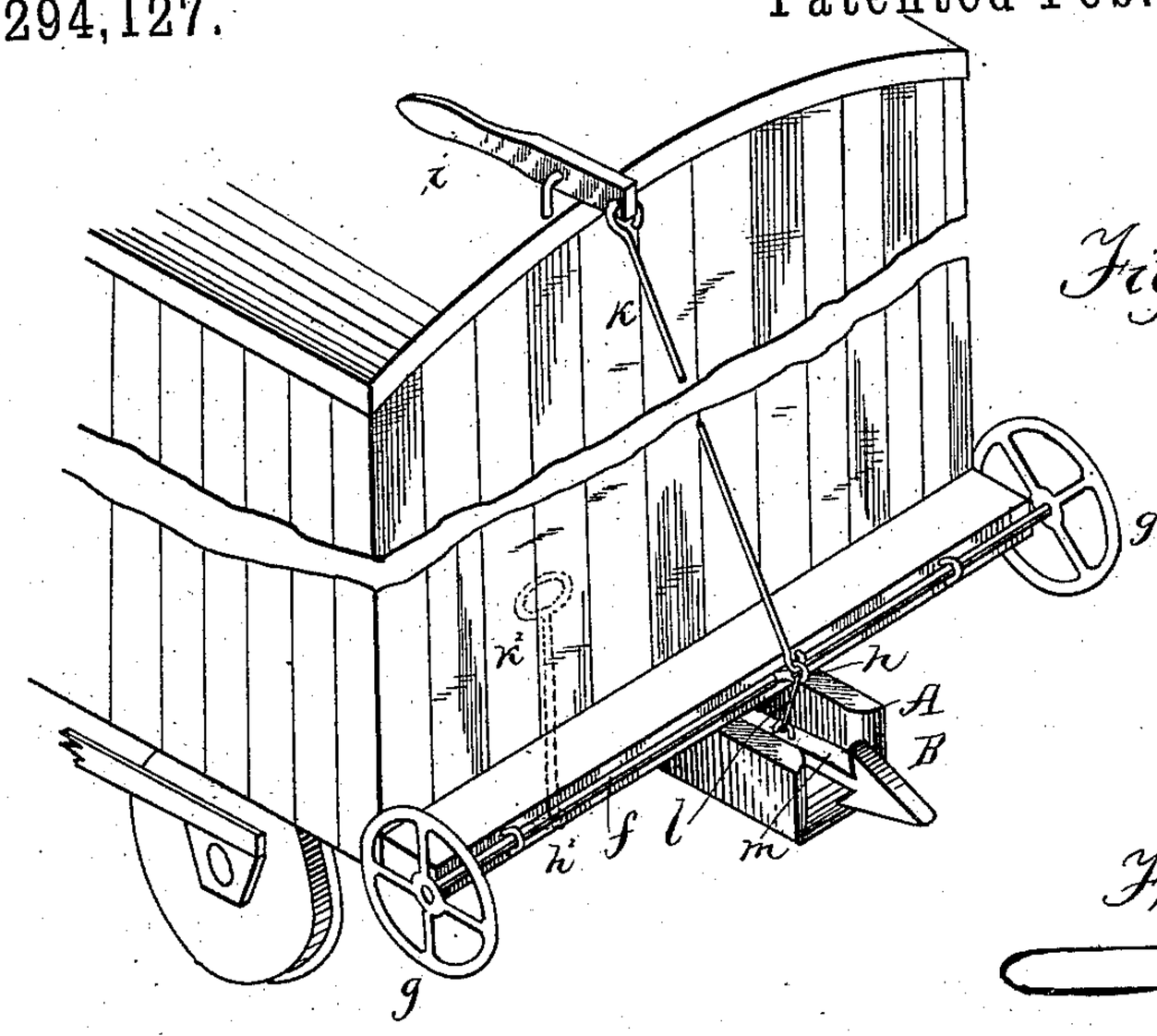


Fig. 1.

Fig. 4.

Fig. 2.

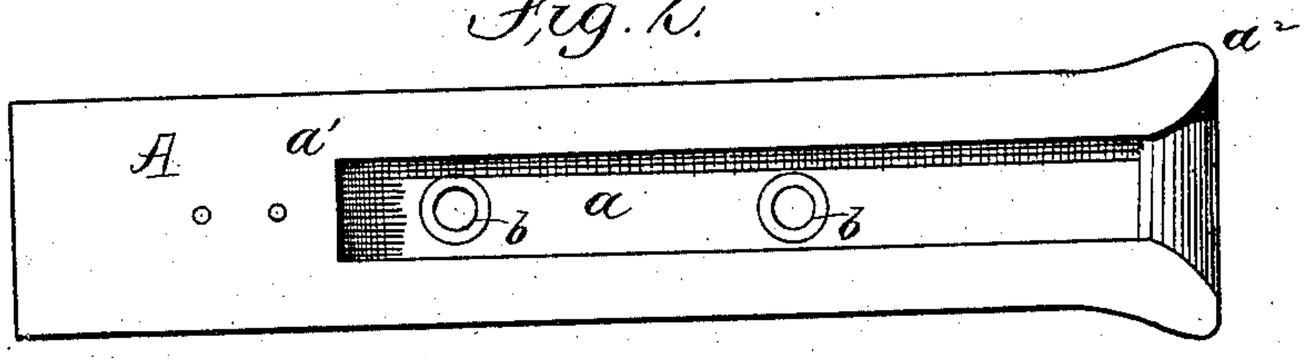
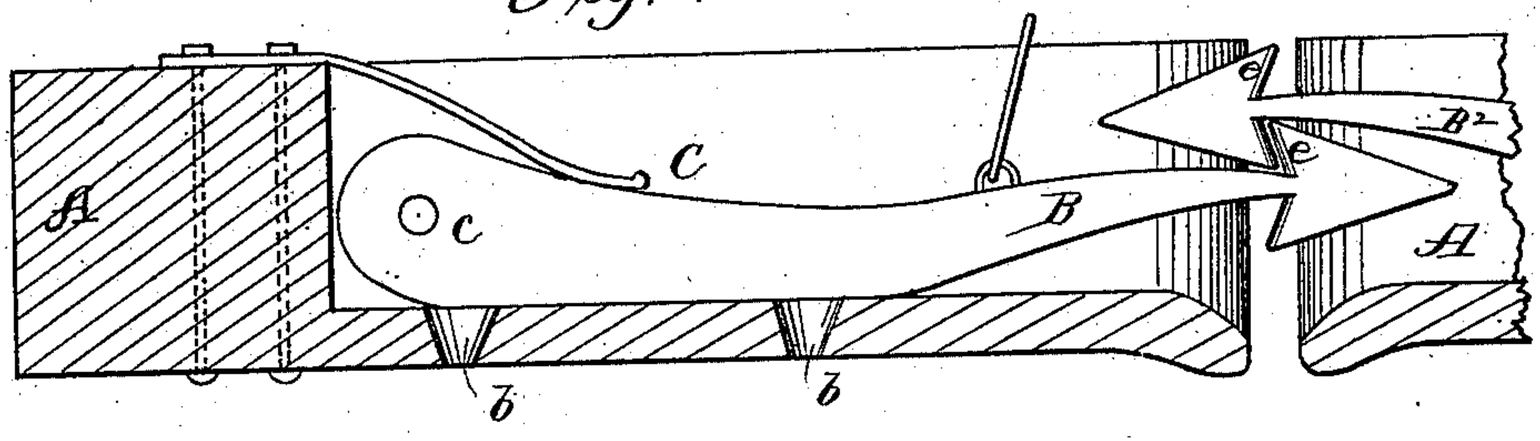


Fig. 3.



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UNITED STATES PATENT OFFICE.

DANIEL AMBROSE GROUNDS AND JAMES RAMBO GIBSON, OF HOPE, ARK.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 294,127, dated February 26, 1884.

Application filed December 13, 1883. (No model.)

To all whom it may concern:

Be it known that we, DANIEL AMBROSE GROUNDS and JAMES RAMBO GIBSON, citizens of the United States, residing at Hope, in the county of Hempstead and State of Arkansas, have invented certain new and useful Improvements in Car Couplers and Bumpers; and we do 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 appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

Our invention relates to car-couplers; and its object is to provide a coupler that will couple itself when the coaches are run together; that will couple coaches of different heights and make; that will maintain an equal bearing on each coupler in making curves; that will never fail to couple; that will not become uncoupled by accident; that can be uncoupled from the top of the car or from either side of the track without putting any part of the person between the coaches.

In the accompanying drawings, Figure 1 represents the perspective end view of a coach with our coupling device attached. Fig. 2 is a top view of bumper A. Fig. 3 is a longitudinal sectional view of bumper A, couplers B and B^2, and spring C. Fig. 4 is a top view of the spear end of coupler B.

The bumpers A A are made of solid pieces of metal, and are similar to each other. Each has made in it a slot or trench, *a*, running from point *a'* to end a^2, where it opens into a wide mouth, to receive and guide the couplers B B^2 into the same. This slot or trench *a* is deep enough to completely bury both couplers when coupled, (see Fig. 3,) and is about one-half of an inch wider than the couplers are thick, to allow free play up and down, and also to allow free action in making a curve. In the bottom of this slot or trench *a* are funnel-shaped openings *b b*, to allow any dust or foreign matter to escape, thus preventing the device from being choked. The large ends of these funnel-shaped openings are upward. In these bumpers A A are pivoted at point *c* couplers B B^2. These couplers, for about one-half of their length, lie flat down on the bottom of trench *a* and the other half—the front ends—rise and stand up about two inches from the bottom. (See Fig. 3.) This enables the coupler B^2 to drive underneath coupler B, should its trucks be lower than the trucks of coupler B, and so with coupler B, if its coach should be lower than the other. These couplers are held down to their places by their own weight; but to provide certain and quick action a spring, C, is bolted on the upper side of the bumpers, with its front end bent down and bearing on the couplers. The coupling ends of these couplers are spear-shaped, so that their barbs engage each other. The faces *e* of these barbs are inclined backward, so that when once engaged the greater the pull on them the more tightly they become engaged. The faces *e* of these barbs are a little circular, (see Fig. 4,) so that in making a curve they bear evenly and regularly against each other without riding first against one edge and then against the other, as they would do if the faces were flat, which would cause jamming and jerking, to the annoyance of passengers and great strain on the running machinery. The sides of the spear are trimmed away at the ends, so that the coupler will more easily enter the mouth of the bumper. In looking down on the upper face of the spear this gives it a spade-shaped appearance. (See Fig. 4.) These bumpers A A are attached to the car-trucks in any substantial manner, and are provided at their rear ends with any usual bumping device.

To the end of the truck or platform thereof we attach a rod, *f*, running to the outer edge of the same. On each end of this rod we rigidly secure hand-wheels *g g*. From this rod we extend a short arm, *h*. On the top of the coach we provide a lever, *i*. This lever is set a little to the right of the center of the coach, so as not to be in the way of the brakeman in passing from one coach to another. From the front end of this lever *i* we extend a rod, *k*, to the front end of arm *h*, and from this arm *h* we extend another rod, *l*, and secure it to coupler B by means of an eye, *m*.

In passenger-coaches there is an arm, *h'*, (indicated by dotted lines,) extending from rod *f*, from which a short rod, k^2, (indicated by dotted lines,) extends upward within the grasp of the brakeman on platform, in which case

rod *k* and lever *i* are dispensed with. When the cars are to be uncoupled, the operator bears down on the rear end of lever *i*, and thus raises the end of coupler B and releases its hold, if it should be uppermost; and if it should be undermost its motion throws coupler B^2 to a sufficient angle to disengage the barbs—that is, no matter which coupler may be undermost, the cars may be uncoupled by pressing on lever *i*, or by turning either of the hand-wheels *g g*.

Each end of every coach is to be provided with this coupling device.

Should the operator be on the ground, he turns either one of hand-wheels *g g* to uncouple the cars. The rods being stiff put the couplers completely under the control of the operator, either to raise or press down the couplers.

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

1. In a car-coupling device, bumper-head A, made of a whole unbroken body of metal, having trench *a*, opening into a wide mouth at its open end a^2, having in the bottom of said trench funnel-shaped openings *b*, and adapted to carry a coupler, B, and spring C, substantially as shown and described.

2. In a car-coupling device, couplers B, pivoted at their rear ends, at point *c*, into the slot *a*, and having one-half of their length lying on the bottom of slot *a*, and their spear ends standing up from said bottom about two inches, and having their barbs slightly rounded on their faces *e*, substantially as shown and described.

3. In a car-coupling device, in combination with a car-coach, the combination of bumper A, having slot *a*, cone-shaped openings *b*, with couplers B, pivoted in said slot at point *c*, spring C, secured to bumper A, and its front end holding said couplers down, rod *l*, its lower end hinged to said couplers, and its upper end hinged to the end of arm *h*, rod *k*, its lower end hinged to the end of arm *h*, its upper end hinged to the front end of lever *i*, and lever *i*, hung on the end of the car-coach, substantially as shown and described, and for the purposes set forth.

4. In a car-coupling device, in combination with a car-coach, the combination of bumper A, having slot *a*, cone-shaped openings *b*, with couplers B, pivoted in said slot at point *c*, spring C, secured to bumper A, and its front end holding said couplers down, rod *l*, its lower end hinged to said couplers, and its upper end hinged to the end of arm *h*, and rod *f*, pivoted to the end of the coach, having rigidly secured on either end hand-wheels *g g*, and extending from its center arm, *h*, substantially as shown and described, and for the purposes set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

DANIEL AMBROSE GROUNDS.
JAMES RAMBO GIBSON.

Witnesses:
T. F. FINLEY,
E. K. WILLIAMSON.