

(No Model.)

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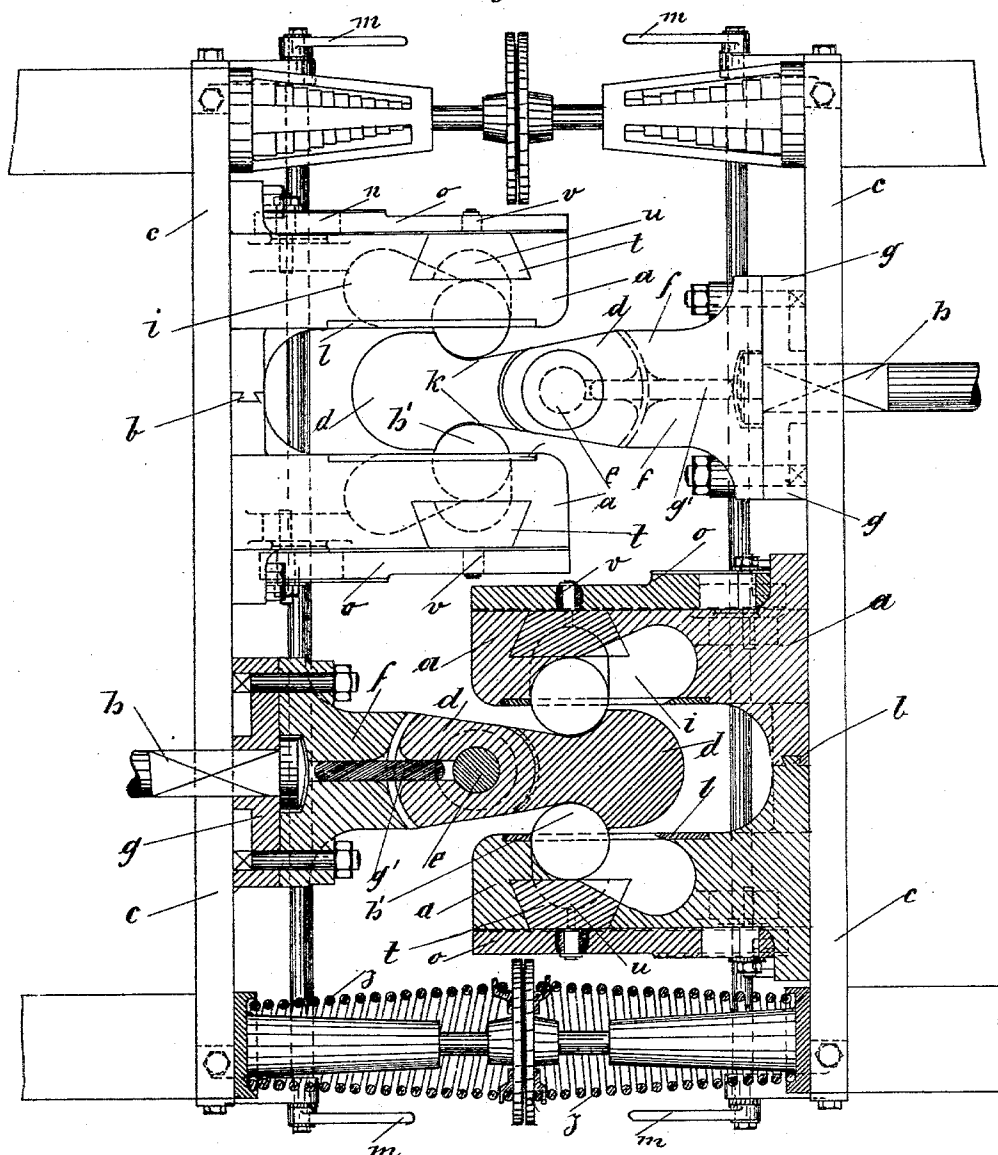
H. OBERLAEUTER.

AUTOMATIC BALL COUPLING FOR RAILWAY WAGONS.

No. 571,682.

Patented Nov. 17, 1896.

Fig. 1.



Witnesses:

Edward Loyer
Rudolph Frick

Inventor

Hugo Oberlaeuter

(No Model.)

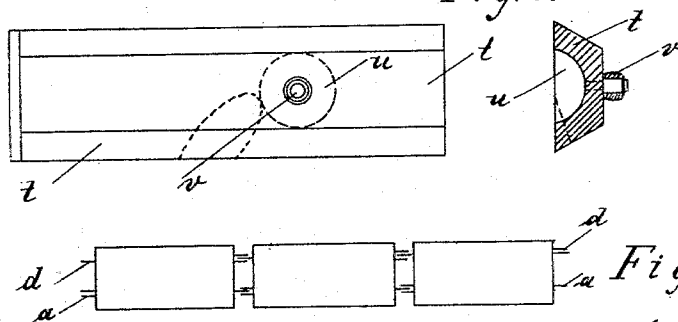
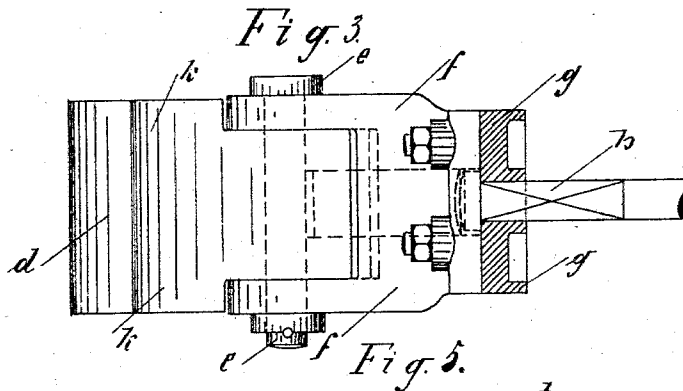
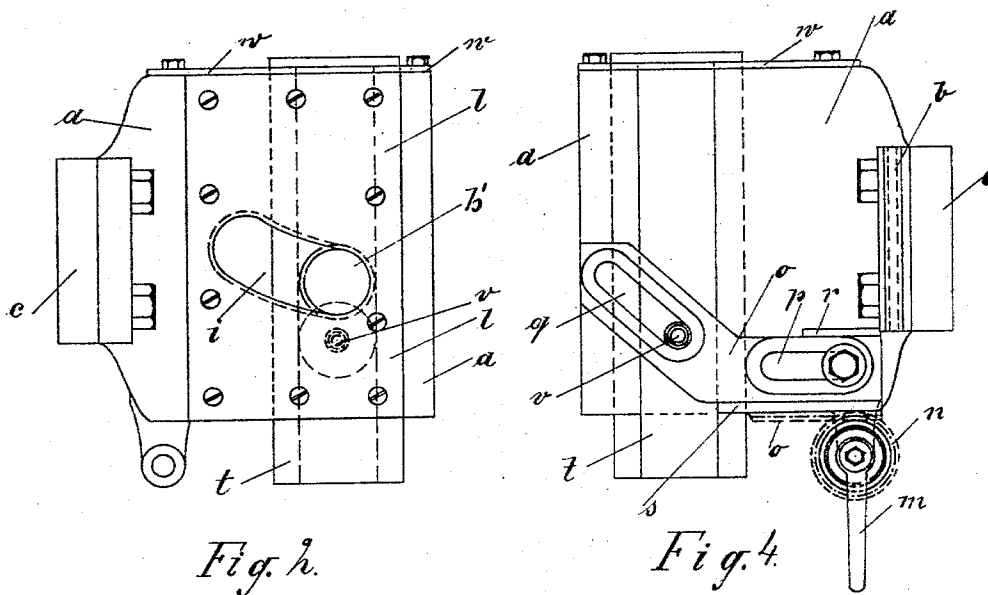
2 Sheets—Sheet 2.

H. OBERLAEUTER.

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No. 571,682.

Patented Nov. 17, 1896.



Witnesses:
Edouard Loepner.
Karl Friedrich

Inventor:
Hugo Oberlaeuter

UNITED STATES PATENT OFFICE.

HUGO OBERLAEUTER, OF LEIPSIK, GERMANY.

AUTOMATIC BALL-COUPLING FOR RAILWAY-WAGONS.

SPECIFICATION forming part of Letters Patent No. 571,682, dated November 17, 1896.

Application filed February 24, 1896. Serial No. 580,563. (No model.) Patented in Belgium December 16, 1895, No. 118,865; in Hungary December 28, 1895, No. 5,012; in Austria January 8, 1896, No. 46/43, and in Canada April 1, 1896, No. 51,827.

To all whom it may concern:

Be it known that I, HUGO OBERLAEUTER, merchant, of 2 Schlossgasse, Leipsic, in the Kingdom of Saxony, German Empire, have invented new and useful Improvements in Automatic Ball-Couplings for Railway-Wagons, (which have been patented in Austria, No. 46/43, dated January 8, 1896; in Hungary, No. 5,012, dated December 28, 1895; in Belgium, No. 118,865, dated December 16, 1895, and in Canada, No. 51,827, dated April 1, 1896,) of which the following is a specification.

The subject of the present invention is a ball-coupling for railway-wagons, by means of which the single wagons can be automatically coupled and detached with the aid of a hand-lever without exposing the workman to danger by necessitating his going between the wagons to effect the coupling or uncoupling. The method of coupling is shown in the following diagram:

Figure 1 is an application of the coupling to a wagon, partly in section and partly in plan. Fig. 2 is a detail of the cheeks seen from inside; Fig. 3, a detail of the tongue and method of attachment; Fig. 4, a detail of the cheeks with uncoupling contrivance; Fig. 5, the slide. Fig. 6 shows how the coupling is effected on two single wagons.

The coupling consists of the two blocks *a*, connected with each other by means of the prism *b* and screwed onto the buffer-beam *c*, and the tongue *d*. The tongue is revoluble upon the bolt *e*, resting in the casting *f*, thus allowing of it to turn when rounding curves. The piece *f* is attached to the plate *g* by means of screws, the latter being in its turn connected with the drawing-rod *h*, underneath the wagon.

In order, in rounding curves, to give the rod sufficient play, its free end is made fast to a spring underneath the wagon. This arrangement permits equally of an extension as well as contraction, movements which are dependent upon the character of the curves. In order to insure the tongue *d* being constantly directed forward in coupling, a state of things which would be impossible owing to the movability of the tongue upon the bolt *e*, a strong spring *g'*, resting partly in the tongue and partly in the piece *f*, is provided. This di-

rects the tongue always forward. Further, in order to insure the tongue entering between the cheeks, the fore part of the former is sharply rounded off, together with the two opposite faces of the cheeks.

The freely-moving coupling medium, the balls *h'*, lie in the slot *i* of the cheeks *a*. In coupling, the balls protrude from the slot to the extent of one-third of their diameter and lie within the corresponding groove of the tongue. The slot itself is so formed, Figs. 1 and 2, that in coupling the balls are pushed backward by the tongue and very slowly taken up by the cheeks, allowing of the tongue to glide smoothly past the balls. The slots are constructed obliquely to allow of the balls falling back rapidly into place immediately the grooves of the tongue come into position, Fig. 2. As soon as the pressure of the buffer-springs comes upon the two wagons the balls lay themselves in the groove of the tongue to the extent of one-third of their diameter, allowing of the wagons being firmly coupled together. The plates *l* are screwed onto the cheeks to prevent the balls falling out, Figs. 1 and 2.

Uncoupling is effected by means of the hand-lever *m*, the cogged wheels *n* of the rack *o*, provided with the guiding-slots *p* and *q* and guided between the lists *p* and *s*, and the slide *t*, Fig. 4. Each cheek *a* has such a contrivance. The slide itself is easily movable and receives its direction in the cheeks. The rack is moved by means of the slot *q* and attached to *a*, the cogged wheels *n* lying upon a shaft situated underneath the cheek *a*, Figs. 2 and 4. The slide *t*, Fig. 5, has a hollowing *u* of the same size as the ball and a small roller *v* on the opposite side, the roller being guided in the slot *q* of the rack. On the lever being turned to the right the rack is moved to the left. As the little roller *v* must glide along the slot *q* the slide *t* is raised so high as to allow of the ball lying in its hollowing; or it is to be kept as low as the ball in gripping into the groove *k* of the tongue during coupling. As both slides of the cheeks *a* are simultaneously acted upon by the hand-lever the uncoupling is thus effected, and the wagon can be taken out or pushed forward. Hereupon the lever *m* is turned back, so that

the coupling of the approaching wagon can take place automatically.

It should be borne in mind that the guide-slot of the slide *t* is to be so constructed in the cheeks that the ball can be very easily introduced by means of this into the slot *i*. Further, the uncoupling arrangement can be so arranged that it can be worked from one side of the wagon equally well as from the other. The application of the coupling should so take place, as shown in Fig. 6, that in standing at the front or rear side of the wagons the cheeks are either to fasten to the right and the tongue to the left or vice versa. A pair of cheeks and a tongue are attached to each wagon. The construction of the cheeks, particularly in relation to their height, Figs. 2 and 4, is dependent upon the weight of the wagon freight, *i. e.*, the extent of the pressure upon the wagon-springs where the maximum weight of the load falls. The elevation of the tongue is likewise dependent upon the obliqueness of the slot *i*, Fig. 2.

In order to avoid a breaking of the buffer or buffer-flange in cases where the wagons are unequally loaded, for instance, where an empty one is coupled with one fully loaded, the buffer-springs *y* are attached direct to the flanges, while the other end rests against the buffer-block, Fig. 1. In this manner the possibility of a breaking of the flanges is essentially reduced.

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

1. In an automatic ball-coupling for railway-wagons the combination of two blocks or cheeks connected with each other by means of a prism screwed onto the buffer-beam and provided with two slots, with two balls lying

in such slots, and with a tongue being revoluble upon a bolt and resting in a casting-fastener to the other wagon; as and for the purpose set forth.

2. In an automatic ball-coupling for railway-wagons the combination of two blocks or cheeks connected with each other by means of a prism, screwed onto the buffer-beam and provided with two slots, with two balls being slidable in these slots, and with two plates being screwed onto the cheeks and with two movable slides being each provided with a hollowing and receiving its direction in the cheeks, and with an uncoupling device consisting of a hand-lever, two cogged wheels and two racks provided with guiding-slots; as and for the purpose set forth.

3. In an automatic ball-coupling for railway-wagons the combination of a tongue being provided with two grooves and revoluble upon a bolt, with a casting being attached to a plate by means of screws connected with a drawing-rod underneath the wagon, and with a strong spring resting partly in the said tongue and partly in the said casting; as and for the purpose set forth.

4. In an automatic ball-coupling for railway-wagons the combination of a slide being provided with a hollowing of the same size as the ball employed with a small roller guided in a slot of the rack of the uncoupling device; 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.

HUGO OBERLAEUTER.

Witnesses:

EDUARD LOEPER,
RUDOLPH FRICKE.