J. J. LAHAYE.

Improvement in Car-Couplings.

No. 132,672.

Patented Oct. 29, 1872.

FIG. 1.

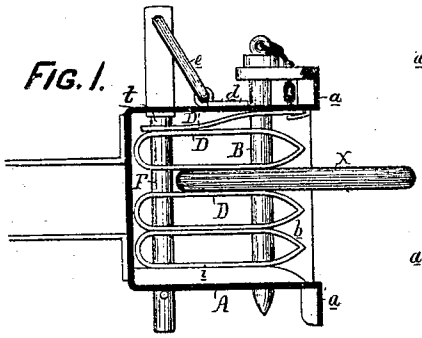


FIG. 2.

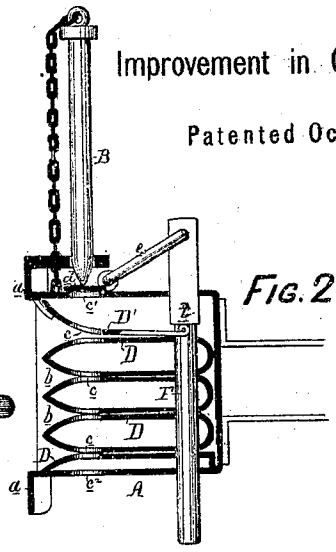


FIG. 3.

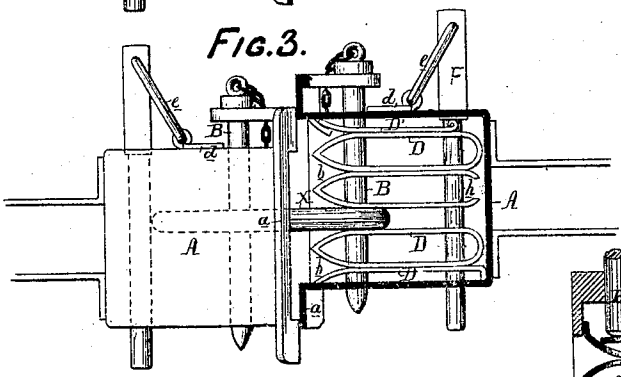


FIG. 6.

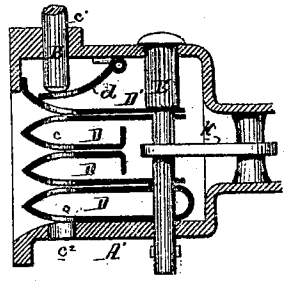


FIG. 4.

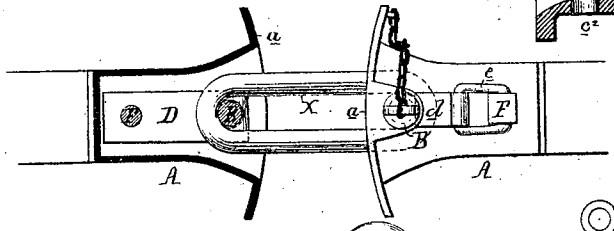


FIG. 7.

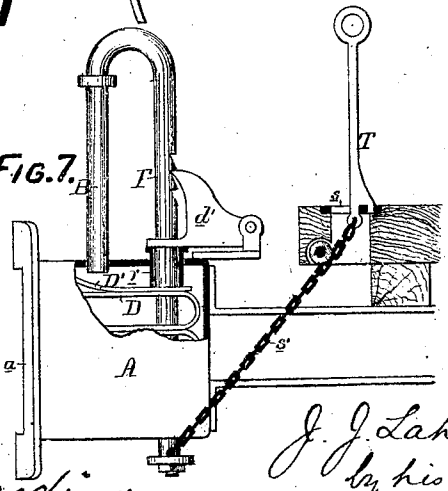
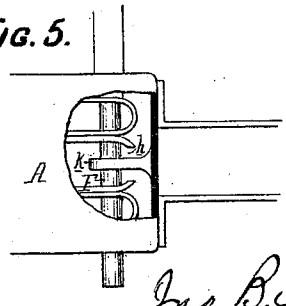


FIG. 5.



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by his attys
Howson and Son

AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

UNITED STATES PATENT OFFICE.

JOHN JOSEPH LAHAYE, OF READING, PENNSYLVANIA.

IMPROVEMENT IN CAR-COUPLINGS.

Specification forming part of Letters Patent No. **132,672**, dated October 29, 1872.

To all whom it may concern:

Be it known that I, JOHN JOSEPH LAHAYE, of Reading, county of Berks, State of Pennsylvania, have invented certain Improvements in Car-Couplings, of which the following is a specification:

Nature and Object of the Invention.

My invention consists of a car-coupling, too fully described hereafter to need preliminary explanation; the objects of my invention being to render cars self-coupling, to retain the coupling-links in a horizontal position when the cars are approaching each other, to enable cars of different heights to be readily coupled together without inclining the links, and the attainment of other advantages more particularly alluded to hereafter.

Description of the Accompanying Drawing.

Figure 1 is a sectional view of my improved car-coupling with the link attached; Fig. 2, the same with the coupling-pin raised; Fig. 3, a view of two coupling-heads linked together; Fig. 4, a plan view of Fig. 3 with one of the heads in section; and Figs. 5, 6, and 7, views of modifications.

General Description.

A represents the front portion of a coupling-head arranged for attachment to the under side of a car or truck and to a spring draw-bar as usual, and having a curved front end or face, *a*, and a recessed interior for the reception of the link X, coupling-pin B, and a number of loose horizontal partitions or guides, D, which are strung upon a bolt, F, arranged to slide vertically in the rear portion of the draw-head. The loose partitions or guides D may be made solid, or may consist of light strips of wrought-iron or steel doubled or bent to the peculiar form best observed in Fig. 2, each partition being rounded to a point in front so as to form inclined passages *b* between all of them for the introduction of the link. Holes *c* on line with corresponding holes c^1 and c^2 in the top and bottom of the draw-head are formed in all the partitions for the passage of the coupling-pin B. The uppermost partition D′ consists of a simple bent plate which may either embrace the bolt F beneath a shoulder, *t*, on the same, as shown in Fig. 1, or be hinged to the said bolt, as shown in Figs. 2 and 3, so that the latter when depressed may, by its weight, serve to maintain all the partitions in contact with each other and in a horizontal position, as shown in Fig. 2. When the sliding bolt F is thus depressed and supported by the partitions, a slide, *d*, connected to the said bolt by a link, *e*, covers the opening c^1 in the top of the draw-head and prevents the descent of the coupling-pin B. This slide *d* can only be withdrawn from over the opening c^1 so as to permit the descent of the coupling-pin by elevating the sliding-bolt F, and the latter will be automatically elevated when, owing to the introduction of a link into the draw-head, the movable guides or partitions yield and separate in the manner best observed in Fig. 3, so as to permit the passage of the link between them; the uppermost partition D′ being raised toward the top of the draw-head, and consequently elevating the sliding bolt F, withdrawing the slide *d*, and permitting the descent of the pin B through the holes in the partitions and through the link which has been introduced between the latter, the coupling being thus automatically affected without requiring an attendant to incur the usual risk of standing between the cars to hold the link and drop the pin at the proper moment. In uncoupling it will be only necessary to raise the pin B in order to permit the withdrawal of the link on the parting of the cars; and when the link has been thus withdrawn the several parts will be immediately restored to their original positions, Fig. 2, the coupling-pin being supported in an elevated position as before by the slide *d*. For the purpose of imparting a degree of elasticity to the partitions or guides one or more of the latter in each draw-head may be split or divided at the rear end, as shown at *h* in Figs. 3 and 5, and for the purpose of reducing the strain upon the coupling-pins and of preventing the bending of the same by heavy strains, each of the bolts F, to which the said coupling-pins are connected by the yielding partitions, may be braced by an arm, *k*, projecting from the rear end of the draw-head, as shown in Fig. 5.

There are several advantages arising from the use of the yielding partitions or guides D in the coupling-heads, which may be enumerated and referred to as follows: First, they permit

the cars to be self-coupling, as before described; second, they retain the links in a horizontal position, as seen in Fig. 1, when cars are approaching each other, and thus facilitate the automatic coupling of the same; third, they enable cars of different heights to be readily coupled together, as the link may be held between the uppermost partitions of one draw-head and inserted between the two lowermost partitions of the opposite draw-head, or vice versa; and fourth, they serve as braces for the coupling-pins and prevent injury or straining of either the pins or links, and, while maintaining the latter in a proper horizontal position, are yet capable of yielding readily to any sudden shocks or jars.

Care should be taken in carrying out my invention to employ coupling-links of a less length than the distance between the bolts F of two draw-heads when the latter are brought together. Otherwise the links would, in "bumping," strike and bend the said bolts, and become themselves spread or bent. It is not absolutely necessary that the slide or retainer *d* should be operated through the medium of the sliding bolt F, as it can be readily arranged to be operated directly by the yielding partitions in such a manner as to retain and release the coupling-pin. In Fig. 6, for instance, the retainer takes the form of a bent plate hinged to the interior of the draw-head resting upon the uppermost partition D′, and having a hole cut in it for the passage of the coupling-pin. This hole, however, is only brought to a position directly beneath the pin so as to permit the latter to fall through it when the hinged retainer is raised by the upward movement of the partitions on the introduction of a link between the latter. In this modification the sliding bolt F serves merely to connect the partitions together and to retain them in proper position. In the modification of my invention shown in Fig. 7 the sliding bolt F and coupling-pin are represented as consisting of a single bent rod, and the slide or hinged plate *d* is dispensed with, the coupling-pin being retained in an elevated position by means of a pawl or catch, *d′*, pivoted to the top of the draw-head, adapted to notches cut in the sliding bolt and having a sleeve, *r*, which embraces the bolt and rests on the uppermost partition D′. When the latter partition is raised, owing to the introduction of a link, the catch is disengaged from the notches of the sliding bolt and the latter and the coupling-pin descend. A rod, T, adapted to a plate, *s*, and connected by a chain, *s′*, to the lower end of the sliding bolt, is used in connection with this latter arrangement for the purpose of preventing the descent of the coupling-pin when cars are to be pushed or backed onto sidings, &c., or wherever it is not desired to effect a coupling. The movable partitions or guides can be used with advantage in connection with ordinary draw-heads and independently of any automatic coupling devices, for the purpose of holding, guiding, and protecting the coupling-links.

Claims.

1. The combination, substantially as herein described, of the independent partitions or guides with the sliding bolt F, for the purpose specified.

2. The combination of the said independent partitions or guides with a hinged retaining and releasing device for the coupling-pin, substantially as described, and as illustrated in Fig. 6 of the drawing.

3. The combination of the said independent partitions or guides with the sliding bolt F and with the devices connected therewith, or any equivalent to the same, through the medium of which the separation of the partitions on the introduction of a link may be caused to release the pin B and effect an automatic coupling of the cars.

4. The combination and arrangement, substantially as herein described, of the said partitions or guides, a sliding bolt and coupling-pin connected together at the top or formed of a single bent rod and a catch, *d′*, adapted to notches on the sliding rod, and having a sleeve, *r*, resting upon the uppermost partition.

5. The combination, with the subject-matter of the fourth claim, of a chain and rod or retainer, T, arranged substantially as described.

6. The bracing-arm *k* adapted to the sliding rod F, and arranged in respect to the partitions D, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN JOS. LAHAYE.

Witnesses:
MARCUS BEHM,
WILLIAM SETLY.