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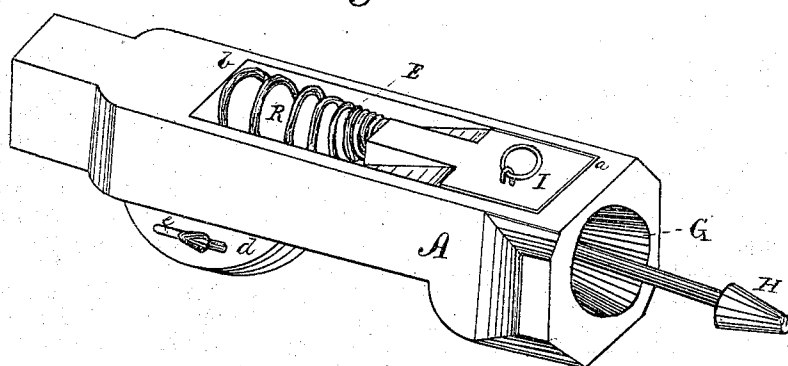
T. G. HUGHES, A. NUTTING, & L. ALDRICH.

Improvement in Car Coupling.

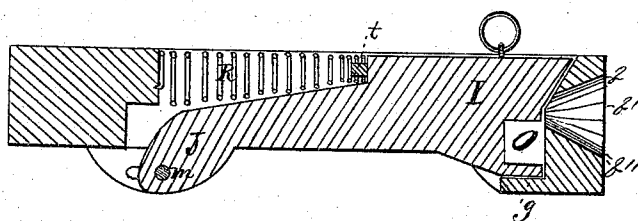
No. 122,610.

Patented Jan. 9, 1872.

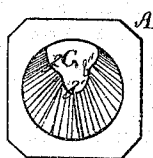
*Fig 1.*



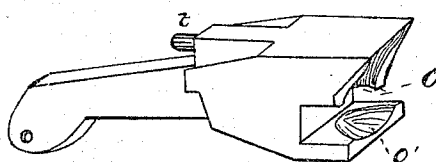
*Fig 2.*



*Fig 3.*



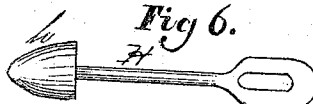
*Fig 4.*



*Fig 5.*



*Fig 6.*



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# UNITED STATES PATENT OFFICE.

THOMAS G. HUGHES, ADRAIN NUTTING, AND LORENZO ALDRICH, OF  
HORTON, IOWA.

## IMPROVEMENT IN CAR-COUPPLINGS.

Specification forming part of Letters Patent No. 122,610, dated January 9, 1872.

*To all whom it may concern:*

Be it known that we, THOMAS G. HUGHES, ADRAIN NUTTING, and LORENZO ALDRICH, all of Horton, in the county of Bremer and State of Iowa, have invented a new and useful Improvement in Self-Adapting and Self-Extracting Car-Coupling; and we do hereby declare that the following is a full, clear, and exact description thereof, sufficient to enable those skilled in the art to make and use the same, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is a perspective view of the improved self-adapting and self-extracting car-coupling, with the connecting-link in position. Fig. 2 is a longitudinal central section. Fig. 3 is a front view of the buffer or car-head, showing the formation of the coupling-link guide. Fig. 4 is a detached view of the clamping or pressure-jaw. Figs. 5 and 6 are detached views of the coupling-links.

In each figure like letters of reference indicate corresponding parts.

This invention relates to self-attaching and detaching car-couplings; and to this end our present invention is designed to improve upon such, and at the same time produce a cheap, reliable, and effective device—one that will automatically couple and uncouple, and that can be readily attached to old as well as new cars without any alterations of the platforms; and our invention consists of the combination of parts, also in forming the end of the draw-head or bumper which receives the coupling-link with an opening, the bottom and side walls of which, owing to their convexity or flaring nature, form a connecting-seat and guide for the coupling-link where it is desired to couple two cars together, and at the same time permits the coupling-link to have a free motion in any direction so as to adapt itself to the various motions of the cars. The body of the draw-head is produced so as to have a central longitudinal opening to receive a pressure-jaw of novel and peculiar construction, which is pivoted therein, and is acted upon by a reacting-spring in such a manner that, when the coupling-link is forced into or against the sloping sides of the front end of the said pressure-jaw, as when making up a train of cars or coupling

two cars together, the said pressure-jaw will be thrust backward and elevated, the concussion being deadened by the reacting spring, when the shoulder of the head of the coupling-link interlocking with the wall of the draw-head or its rear side will be forced down by the action of the spring aided by its own gravity, and the cars be securely and automatically connected together.

To enable others to fully understand and be able to construct and use our improved self-adapting and self-extracting car-coupling, we will now describe the same more fully in detail.

In the drawing hereto annexed like letters of reference indicate corresponding parts in each figure.

A in the drawing designates the draw-head or bumper of a railroad car; I, the pivoted pressure-jaw; R, the reacting spring; and H, the coupling-link. The draw-head or bumper is made of suitable material—say such as cast-iron—and is formed with a central longitudinal opening, E, commencing at about the point *a* and terminating at or about the point *b*. At or near the bottom of the side walls F F', on the inside, are provided shoulders or seats *c c'*, and depending lugs or ears *d d*, the latter formed with elongated slats *e e*, within which are journaled and play loosely back and forward the journals of the pressure-jaw hereinafter mentioned. G represents the opening in the front part of the draw-head, the portions marked *f f'* being formed with inwardly-sloping or inclined surfaces in such a manner that the said portions are caused to contain a greater portion of metal—hence greater strength than the portion *f'''*—so that the same will be capable of resisting the great strain and wear of the coupling-link, which is an important feature, as will be more apparent hereinafter. Immediately in the rear of the inclined portion marked *f*, and at a suitable distance below its edge on the inside of the draw-head, is formed a seat or lug, *g*, which receives the front part of the jaw and prevents its passage down through the opening E, and at the same time strengthens the front part of the draw-head. H is the coupling-link, formed of suitable metal and in one piece, and has at each end cone-shaped heads *h h*, the base *i i* of which is of much greater diameter than the diameter of

the rod carrying the same, so that the rear faces *ii* of the base form the locking-shoulders between the link and the portion of the wall *f f' f''* of the draw-head. *J* represents the shank of the pressure-holding jaw *I*, formed with an opening, *m*, by which means the jaw is pivoted within the central opening by a bolt passing through the slots *ee* of the lugs *dd*. The front part of the holding-jaw *I* is formed with the recess *O*, the top portion of which is provided with the concave guide-groove *o*, while the lower leaf *o'* has a similar groove, so that, unless the head of the coupling-link is placed in position in the recess *o*, it can adapt itself to the various motions of the cars and not become disengaged by jars, &c. The front part of the jaw *I* is formed with an inclined surface, *p*, which has its seat upon a corresponding surface, *q*, formed with the draw-head, the surface of the said jaw being formed with a guide-groove, *s*, against and in which the point of the coupling-link moves when a train of cars is being made up or coupled together. *R* is a reacting spring, of suitable material and construction, preferably a metallic coiled spring, which is fastened at one end of the draw-head within the opening *E*, and at the other to a projection or knob, *t*, of the jaw *I*. This spring not only serves the important office to force down quickly the jaw when the coupling-link is forced into its seat, but also deadens, to a considerable degree, the concussion and jars incident upon coupling cars, or what is termed "making up the train." The jaw *I* is adapted to move back and forward in the central opening *E*, since the bolt by which it is pivoted works in the elongated slots *e*.

An important characteristic feature in our coupling is, that the coupling-link is held in a rigid and straightforward horizontal position when in one draw-head. By this means, in connection with the pivoted jaw, our coupling is rendered self-attaching and automatic in its nature; the attention and services of an attendant being dispensed with, and the dangerous necessity of getting between the cars overcome. When it is desired to uncouple or detach the cars, it will only be necessary to raise or elevate the pivoted jaw, as the bottom portion of the said jaws will carry upward the

coupling-link, bringing the shoulder of the same above the wall of the draw-head and leaving it free to pass out. This operation can be effected from the platform of the cars, by hand if desired; but in freight-cars it will be found convenient to elevate the jaw by means of a lever or other suitable connection, so as to be operated from the top of the car or from its side. It will also be seen that by the construction of our device the coupling-link will always be free to assume the different motions of the cars without becoming detached or any of its parts strained, as when on curves; but should either of the cars by accident be displaced from the track the pressure exerted by the conical heads of the coupling-link upon the inclined portion of the jaw will elevate the same, which causes the link to rise and leave the same free to fly out and thus detach itself from its confined seat. It will also be noticed that we dispense with all coupling-link bolts, and that only about one-half of the shoulder of the coupling-link is brought into requisition at a time. The draw-head may be secured upon the platform of the cars in any suitable or desired manner.

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

1. The jaw *I* provided with the inclined face, recess *O*, and stud *m*, operating in connection with the slot *e*, coupling-link *H*, opening *G*, draw-head *A*, and spring *R*, substantially as herein shown, and for the purpose specified.

2. The coupling-link *H*, provided with conical ends, in combination with the inclined grooved face of the pressure-jaw *I*, recess *O*, and draw-head *A*, the said jaw *I* holding the conical ends in position by means of pressure upon their incline surfaces.

To the within specification we have signed our names this 26th day of September, A. D. 1871.

THOMAS G. HUGHES.  
ADRAIN NUTTING.  
LORENZO ALDRICH.

Witnesses:

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F. M. MCCORMACK.

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