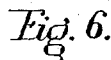
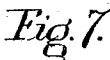
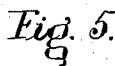
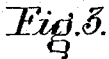
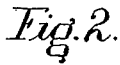
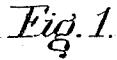


CAR-COUPLING.

No. 176,861.

Patented May 2, 1876.



Witnesses
Richard L. Gardiner
Harry Smith

Henry Howson
by his Attorneys
Howson and Son

UNITED STATES PATENT OFFICE.

HENRY HOWSON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
WILLIAM WHARTON, JR., OF SAME PLACE.

IMPROVEMENT IN CAR-COUPPLINGS.

Specification forming part of Letters Patent No. **176,861**, dated May 2, 1876; application filed
April 20, 1876.

To all whom it may concern:

Be it known that I, HENRY HOWSON, of Philadelphia, Pennsylvania, have invented certain Improvements in Car-Couplings, of which the following is a specification:

The object of my invention is to combine, with a coupling-head, a pivoted arm, by the weight of which the link is retained in a proper position for entering the adjoining coupling-head, a projection or dog for retaining and releasing the link, in place of the usual coupling-pin, a shoulder on the said arm for resisting the end thrust of the link, excepting when excessive pressure is imparted to the same, and an enlargement on the said arm for riding on the link when the latter is thrust into the head, and for permitting the subsequent withdrawal of the link.

In the accompanying drawing, Figure 1 is a longitudinal section of my improved coupling; Fig. 2, the same, showing the arm in a different position; Fig. 3, a sectional plan of the coupling; Fig. 4, a top view of the same; Fig. 5, a perspective view of the arm, and Figs. 6 and 7 views representing a modification of my invention.

The coupling-head A is connected to the car in the ordinary manner, and has the usual flaring mouth *a*. In the interior of the coupling-head is an arm, B, which is loosely pivoted, by a pin, *x*, to the upper portion of the interior of the head, at a short distance from the front of the same. This arm has a projection or dog, *b*, which takes the place of the usual coupling-pin. The front edge *c* of this projection is inclined, as shown, the rear edge *d* being made in the arc of a circle, of which the pivot *x* is the center, so that there can be no difficulty in raising the arm B, and releasing the coupling-link D when the latter is subjected to tensile strain.

I may here remark that I make no claim to this special feature, as a link-retaining, pivoted dog, with one edge made in the arc of a circle, may be found in other couplings.

The arm B is continued rearward from the projection or dog *b*, and has a shoulder, *e*, formed by an enlargement, *f*. This shoulder should be so formed, in relation to the link, that it will require a greater effort for the lat-

ter to raise the arm B, by bearing against the shoulder *e*, than to raise the same arm by bearing against the inclined front edge of the projection or dog *b*. The depth of the dog or projection *b* is such that when the link D is coupled to the head, as shown in Fig. 1, the lower edge *i* of the arm B will bear on the end of the link, which will, consequently, be maintained, by the weight of the said arm, in a position to enable it to enter the flaring mouth of the draw-head of the adjoining car.

I prefer to make the enlargement *f* at the rear end of the arm B of such depth that when the said arm is bearing on the link, as in Fig. 1, the enlargement will be partially contained in a slot or recess, *h*, in the bottom of the coupling-head; and I also prefer to make the arm comparatively loose on the pivot, so that when there is a pull on the link the enlargement *f* will bear against the front end of the slot or recess *h*, thereby relieving the pivot from excessive strain.

When the link is in the position shown in Fig. 1, and is about to be coupled to the head of the adjoining car it will at first yield until it reaches the shoulder or abutment *e*, which is shaped to afford sufficient resistance to insure the coupling of the link to the adjoining coupling-head; but, should the link be unusually long, or should the approaching cars tend to force the link farther into the coupling-head, the excessive pressure of the end of the link against the shoulder *e* will cause the arm to rise, and permit the link to pass beneath the enlargement of the arm, (see Fig. 2,) and this enlargement being nearly as wide as the link the arm will remain in an elevated position until the link is withdrawn from beneath it.

In the modification shown in Figs. 6 and 7 the arm is made in two parts, both of which, however, are connected to the pivot *x*, the two parts consisting of the arm proper B', and the retaining and releasing dog *b'*, contained within a slot in the said arm. While in this modification the dog is capable of acting independently of the arm as far as regards the retaining and releasing of the link, a portion of the dog overlaps the arm, and, by adding to the weight of the same, will assist it in maintain-

ing the link in a proper position for entering the mouth of the coupling-head of the adjoining car. The arm B may be so loose on its pivot *x* that when the end of the link is bearing against the shoulder *e* the rear of the arm (which may be made in the arc of a circle of which the said pivot is the center) will bear against the rear end of the slot *h*, from which bearing the arm cannot be elevated without excessive pressure of the link against the shoulder *e*. The arm B should be provided with a suitable device by which it can be elevated when it becomes necessary to release the link.

I claim as my invention—

The combination, in a car-coupling, of the pivoted arm B, the retaining and releasing dog *b*, the shoulder *e* on the said arm, and the enlargement *f*, wide enough to ride on the coupling-link, all being constructed and adapted to a coupling-head, A, substantially as and for the purpose herein set forth.

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

HENRY HOWSON.

Witnesses:

HARRY HOWSON, Jr.,
HARRY SMITH.