J. H. HILLS.
Car-Coupling.

No. 203,912. Patented May 21, 1878.

Fig. 1

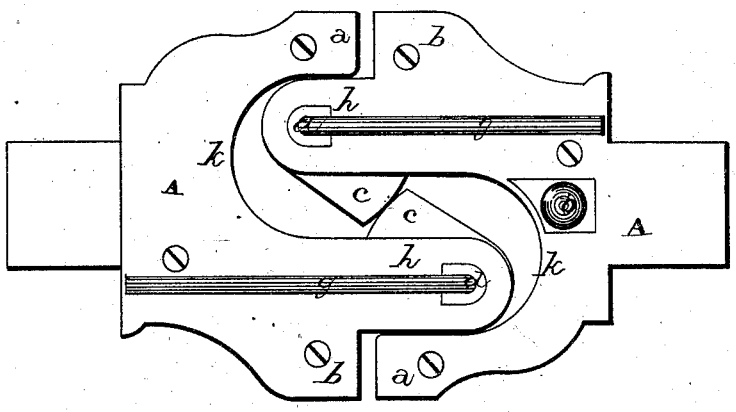


Fig. 2.

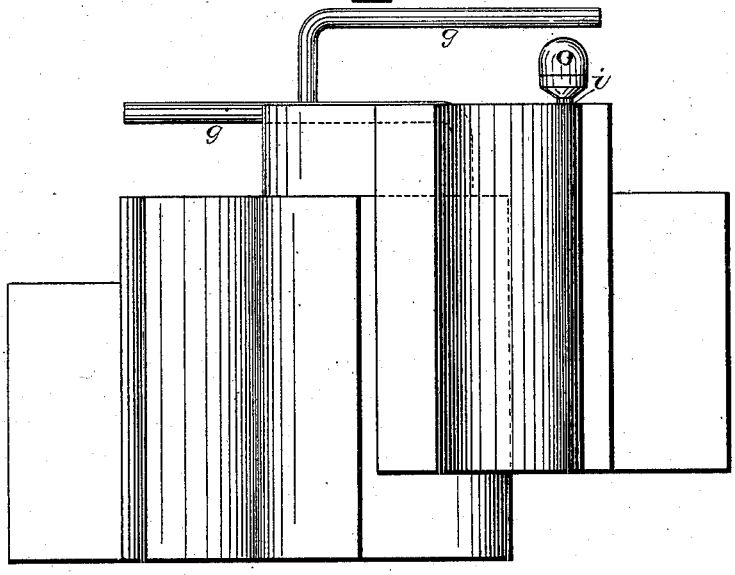
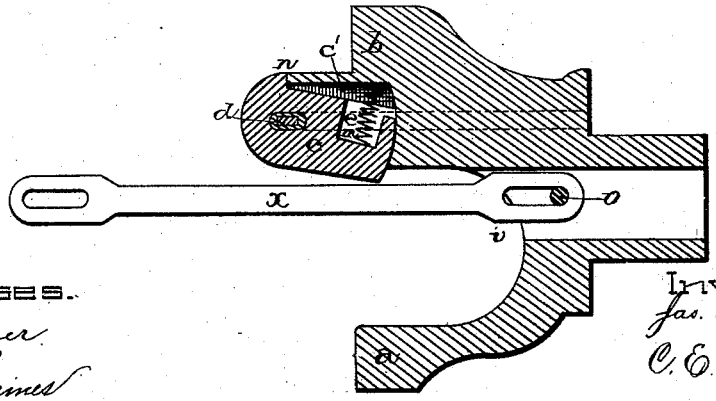


Fig. 3.



Witnesses.
J. W. Garner
Wm. D. Haines

Inventor.
Jas. H. Hills
per
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atty

UNITED STATES PATENT OFFICE.

JAMES H. HILLS, OF BURLINGTON, VERMONT.

IMPROVEMENT IN CAR-COUPLINGS.

Specification forming part of Letters Patent No. **203,912**, dated May 21, 1878; application filed May 4, 1878.

To all whom it may concern:

Be it known that I, JAMES H. HILLS, of the city of Burlington, in the county of Chittenden and State of Vermont, have invented certain new and useful Improvements in Automatic Car-Couplings; and I do hereby declare that the following is a full, clear, and exact description of the invention, which 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 letters of reference marked thereon, which form a part of this specification.

My invention consists of a bifurcated draw-head, in which is pivoted a tumbler having a spring behind it to cause it to interlock with a corresponding tumbler on another draw-head of similar character, whereby the coupling is made automatic.

The object of my improvement is to render draw-heads more effective and reliable, and avoid all danger in coupling and uncoupling cars.

The device is simple, and has no parts that are liable to get out of order, and can be made at a cheap price, and is adapted to all sorts of cars, and even those having the usual draw-heads. It is particularly effective where cars are to be coupled when the draw-head of one is higher than the other, as with my device the difference in height does not affect the easy, ready, and automatic coupling of such. Being self-acting in its operation, it does not demand that great exposure of life and limb which belongs to the use of couplers not automatic.

In the drawings, Figure 1 is plan view. Fig. 2 is a side view. Fig. 3 is a longitudinal section through one of the draw-heads.

Similar letters of reference indicate corresponding parts.

A A are the two draw-heads, constructed substantially alike, each having a projecting arm, *h*, and bumper-heads *a b*, with a concavity, *k*, between the parts *a* and *h*. In each of the arms *h* is pivoted a tumbler, *c*, resting in its normal position in a cavity, *c'*, and in this cavity a spring, *e*, is arranged, one end resting against the arm *h* and the other in a recess, *m*, in the tumbler.

The purpose of the spring is to keep the tumbler out of the cavity *c'*, and the distance thereof is limited by a shoulder, *n*, on said tumbler striking against the arm *h*. As the draw-heads impinge the dogs *c* are driven inward, compressing spring *e* into recess *m*, which prevents said spring from being broken, and after their faces pass the springs throw the dogs out. As soon as traction is applied the faces bear against each other and the shoulders *n* catch against the edges of the cavities, and thereby secure the intimate and strong locking of the dogs.

Levers *g* or other suitable devices are connected to the tumblers at their pivotal point, or at other suitable place, to operate the tumblers against the springs *e*, in order to uncouple the draw-heads or cars. The tumblers, when the heads come together, yield until they pass each other, when the springs cause them to interlock instantly, as shown in Fig. 1, in which position the draw-heads cannot be separated save by the turning of one or both of the levers which draw the tumbler into its socket, and thus permitting the heads to draw apart.

There is a space left between the arms *h* to permit a rocking movement, and the form thereof may be varied, if desired. The arms *h* may serve as the bumpers in some cases; but I prefer the form substantially as shown.

The tendency of the draft is to draw the tumbler still more intimately together, and all liability of the cars becoming detached is avoided, as the strength of the jaws is greatest at the point of greatest strain. The tumbler is shown as having a hole in it for the insertion of the end *d* of the lever *g*, whereby it may be turned easily; but other means of turning it may be adopted.

By extending the draw-heads vertically, as shown in Fig. 2, they are adapted for cars of different heights, as a small bite of the tumblers is sufficient for the purpose of draft.

In operation, the arms *h*, whose respective faces have the same angle of inclination and correspond in all respects to each other, are so designed that when the draw-heads impinge in the act of coupling the arm of each coupler enters into the recess between the jaws of the opposing draw-heads, by which it is held, thus pressing the corresponding faces of their tum-

blers *c* against each other until they pass their respective points of contact, when, being mutually relieved from pressure, the tumblers spring forward into place.

By this simple arrangement the draw-heads will always couple with each other under all circumstances. Should they be required to couple with draw-bars provided only with the ordinary link, a hole, *i*, to receive the coupling-pin, is passed through the draw-heads near the inner extremity of the concavity *k*. A horizontal slot is made in the head to receive the end of the link, through which the pin *o* may pass.

The link which I prefer to use is constructed with slotted ends, as seen in Fig. 3, (marked *x*,) in order to avoid the play incident to the link ordinarily employed.

I claim—

1. The bifurcated draw-head A, in combination with the recessed and spring-acted dog *c*, substantially as shown.

2. The bifurcated draw-head A and spring *e*, in combination with dog *c*, having shoulder *n* and recess *m*, substantially as described.

In testimony that I claim the foregoing as my own I do affix my signature in presence of two witnesses.

JAMES H. HILLS.

Witnesses:

CHARLES E. ALLEN,

SERENO A. BOWERS.