2 Sheets—Sheet 1.

E. R. HOLLENBECK.

Car-Coupling.

No. 218,531. **Patented Aug. 12, 1879.**

Fig. 1.

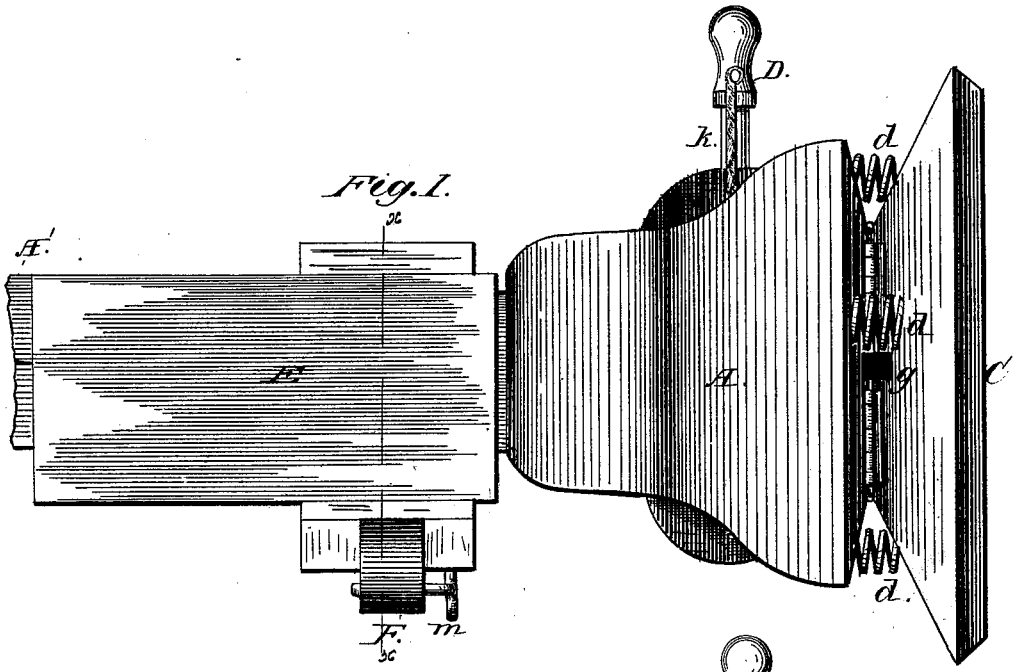
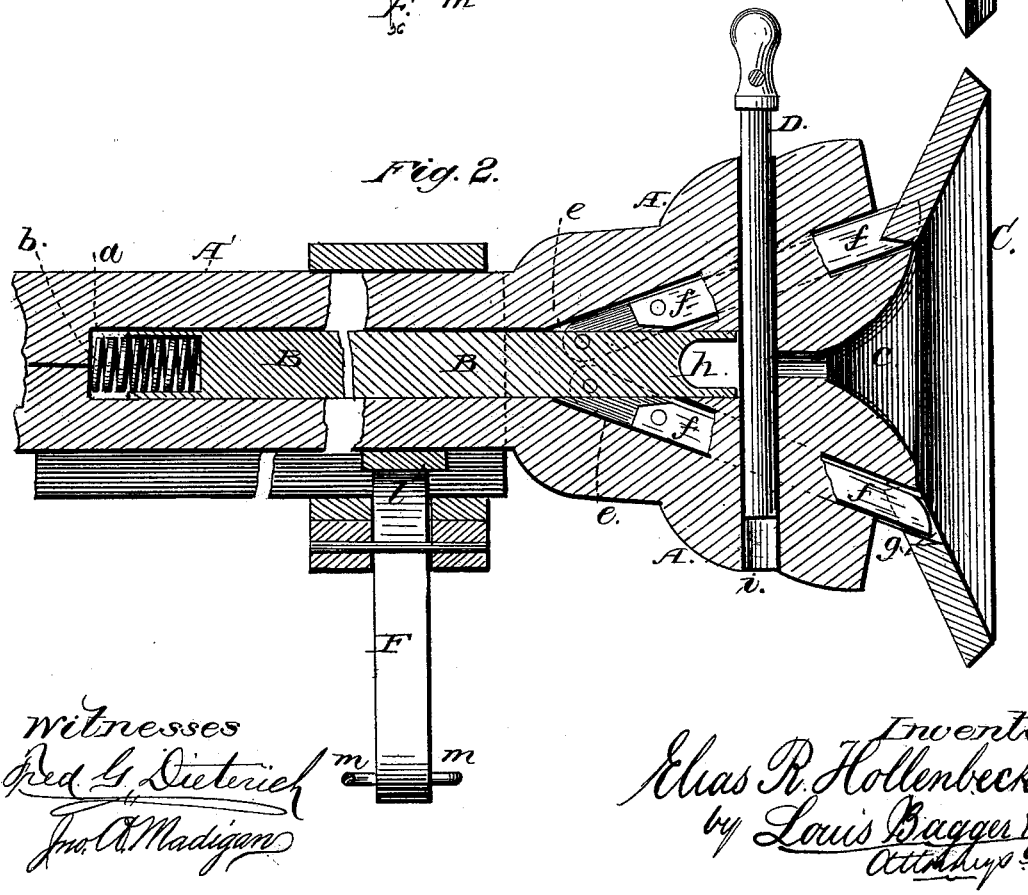


Fig. 2.



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2 Sheets—Sheet 2

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Fig. 3.

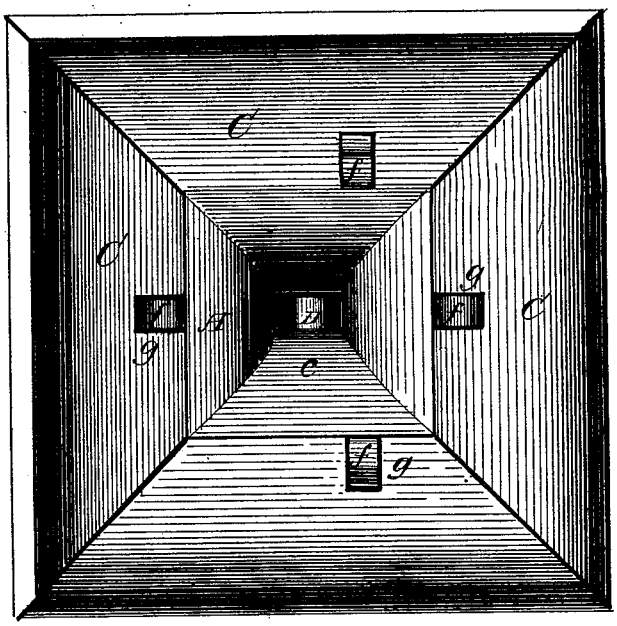


Fig. 4.

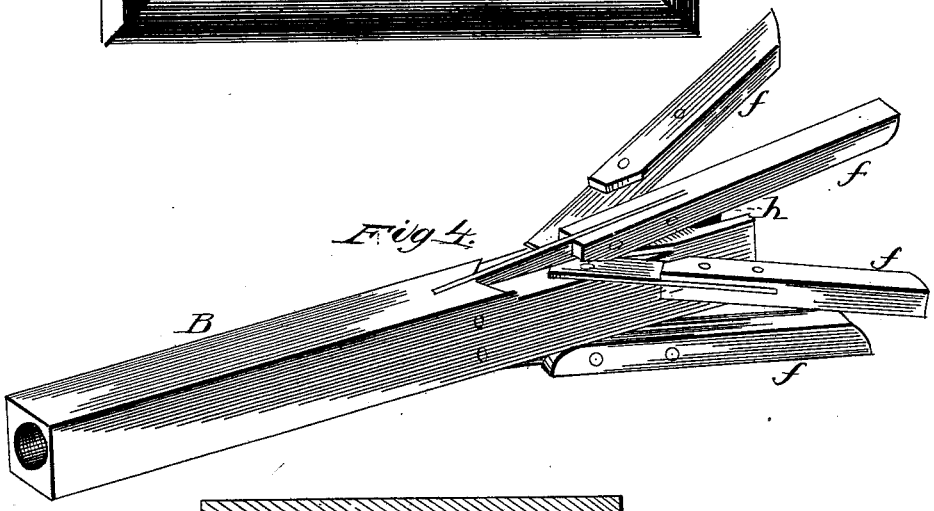
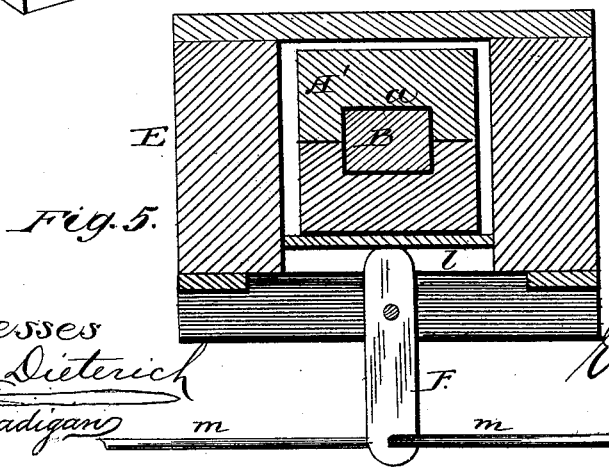


Fig. 5.



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UNITED STATES PATENT OFFICE.

ELIAS R. HOLLENBECK, OF DENISON, IOWA.

IMPROVEMENT IN CAR-COUPLINGS.

Specification forming part of Letters Patent No. **218,531**, dated August 12, 1879; application filed June 5, 1879.

To all whom it may concern:

Be it known that I, ELIAS RANSOM HOLLENBECK, of Denison, in the county of Crawford and State of Iowa, have invented certain new and useful Improvements in 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, which form a part of this specification.

This invention has relation to so-called "automatic car-couplings," or that class of couplings in which the draw-heads are coupled or connected automatically by contact; and it consists in the detailed construction and arrangement of parts of the draw-head, substantially as and for the purpose hereinafter more fully described.

In the drawings, Figure 1 is a draw-bar and draw-head embodying my improvements in side elevation. Fig. 2 is a longitudinal vertical section of the same. Fig. 3 is a front elevation. Fig. 4 is a perspective view of the spring-bar lock or slide detached from the draw-head and draw-bar, and Fig. 5 is a cross-section on line *x x* in Fig. 1.

Similar letters of reference indicate corresponding parts in all the figures.

A is the draw-head, and A′ the draw-bar. The latter is made with a longitudinal recess or chamber, *a*, to receive the sliding bar B, the rear end of which is provided with a recess, into which is inserted a spring, *b*, the projecting end of which impinges upon the closed end of the chambered or hollow draw-bar A′, as shown in Fig. 2, thus having a tendency to impel the sliding bar B in a forward direction.

The forward end of the draw-head A has a flaring mouth, *c*, as usual, to receive the coupling-link, which said mouth is encircled by a projecting flange or shoulder, forming bearings for the hinged buffer-plates C, preferably four in number—viz., one upon each side, and one at the top and bottom of the mouth *c*. These plates are so shaped and arranged as to permit them to work independently of one another, their edges meeting without touching one another, as shown in Fig. 3. A spring, *d*, is inserted back of each of the hinged buffer-plates C, between it and the face of the draw-head, in a recess in which it is secured, throwing the plate forward, its forward throw or motion being limited by the shoulder, upon which it is hinged. In this manner the four plates C, impelled by their respective springs, will form a hopper or funnel surrounding the mouth of the draw-head, with yielding or elastic sides, working independently of one another.

The draw-head A has a series of channels, (denoted by the letter *e*,) which reach from its front face, surrounding the mouth, obliquely down into the central recess or chamber, *a*, of the draw-bar A′. Pivoted upon the sides of the sliding bar B is a series of pivoted or hinged arms, (denoted by *f*,) which project up into and through the inclined channels *e*, their forward ends projecting out through slots *g* in the hinged buffer-plates C. The forward end of bar B, which projects into the mouth *c* of the draw-head, has a horizontal slot or recess, *h*, which will fit and receive the coupling-link as this is inserted through the mouth.

D is the coupling-pin, which works in a vertical slot, *i*, crossing or intersecting the chamber *a* at right angles. This pin has a cross-head, the ends of which are connected to two springs, *k*, on opposite sides of the pin, the other ends of which (said springs) are secured in the draw-head, one on each side of the pin, and the tendency of which is to pull the coupling-pin downward through its slot or perforation *i*.

The forward end of draw-bar A′ is inserted through a frame, E, which is rigidly attached to the bottom of the car, even with the end, by bolts, or mortised into the frame-work of the car, as circumstances may direct. Frame E is of sufficient depth to allow the draw-bar passing through it vertical play, as well as lateral motion, in turning curves, &c., and has hinged upon its under side a lever, F, one end of which works against a vertically-adjustable bar or plate, *l*, forming a support or bolster for the under side of the draw-bar. In the other end of lever F are secured two rods, *m m*, passing in opposite directions, and reaching one to each side of the car, where they connect with levers that may readily be operated from the platform or roof of the car, if desired. By

this arrangement the forward end of the draw-bar carrying the draw-head may be adjusted vertically (by moving lever F to either side) to fit high or low draw-heads on opposite cars, and this adjustment may be effected while the cars are in motion, and without loss of time or danger to life and limb.

By the construction of the draw-head as herein described, it will couple automatically by contact with the opposite draw-head and link, requiring vertical adjustment before coupling in the manner described only in very exceptional cases.

The hinged plates C, with their operating-springs, serve a threefold purpose—viz., first, they act as buffers to receive and break the jar or shock of contact when the cars to be coupled come together; second, they receive and guide the link of the coupling opposite into the mouth of the draw-head; and, third, their slots *g* serve as guides for the projecting beveled ends of the oblique pivoted arms *f* of the lock-bar B. This bar, impelled by the spring *b*, will, with its forward end, project in under the slot *i*, into which the coupling-pin is inserted and works, thus preventing the pin from passing through the slot; but when bar B is forced back by the link entering the draw-head, springs *k k* will impel the pin down into its slot and through the link, thus effecting the coupling. Again, the opposite draw-head, striking against the buffer-plates C and forcing these back, will strike against the projecting heads of the arms *f*, push them into their channels *e*, and thus throw the lock-bar B back from under the pin, in like manner as when the bar is pressed back by the coupling-link, thus allowing the pin to drop into place.

The cars are uncoupled by withdrawing pin D, which is easily effected by a system of suitably-arranged rods and levers connecting with the platform or roof of the car, the springs *k k* being of such tension as to readily be overcome in uncoupling. This draw-head can be used with the common link and draw-head without requiring any change or alteration, is reliable in its operation, can be used on any grade or curve, and with high or low draw-bars, and is, withal, strong and durable in its construction, which is such that any damaged part can readily be removed and replaced with very little trouble.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

In combination, the chambered draw-bar A′ and draw-head A, having mouth *c*, vertical slot *i*, and oblique channels *e*, hinged spring-plates C, having slots *g*, sliding spring-bar B, having pivoted arms *f*, and coupling-pin D, provided with the springs *k k*, all constructed and combined to operate substantially in the manner and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

ELIAS RANSOM HOLLENBECK.

Witnesses:

MARQUIS CAVETT,

JOHN FISHER.