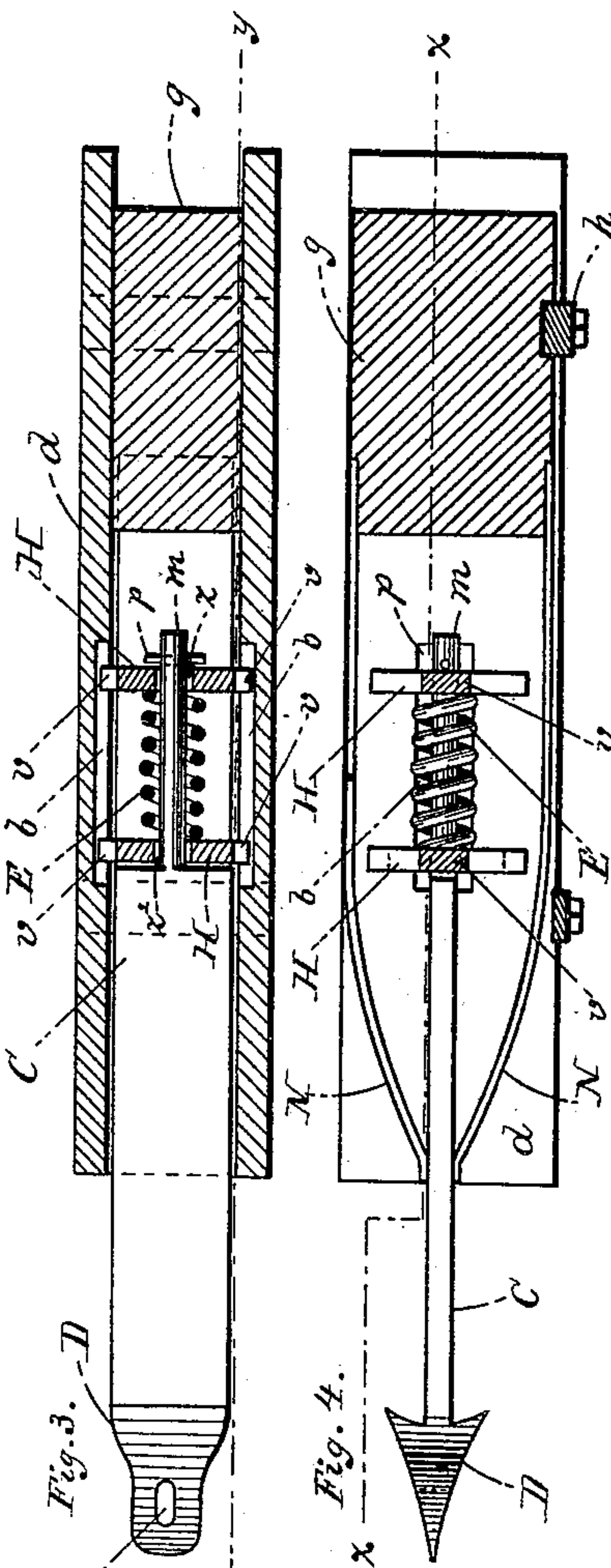
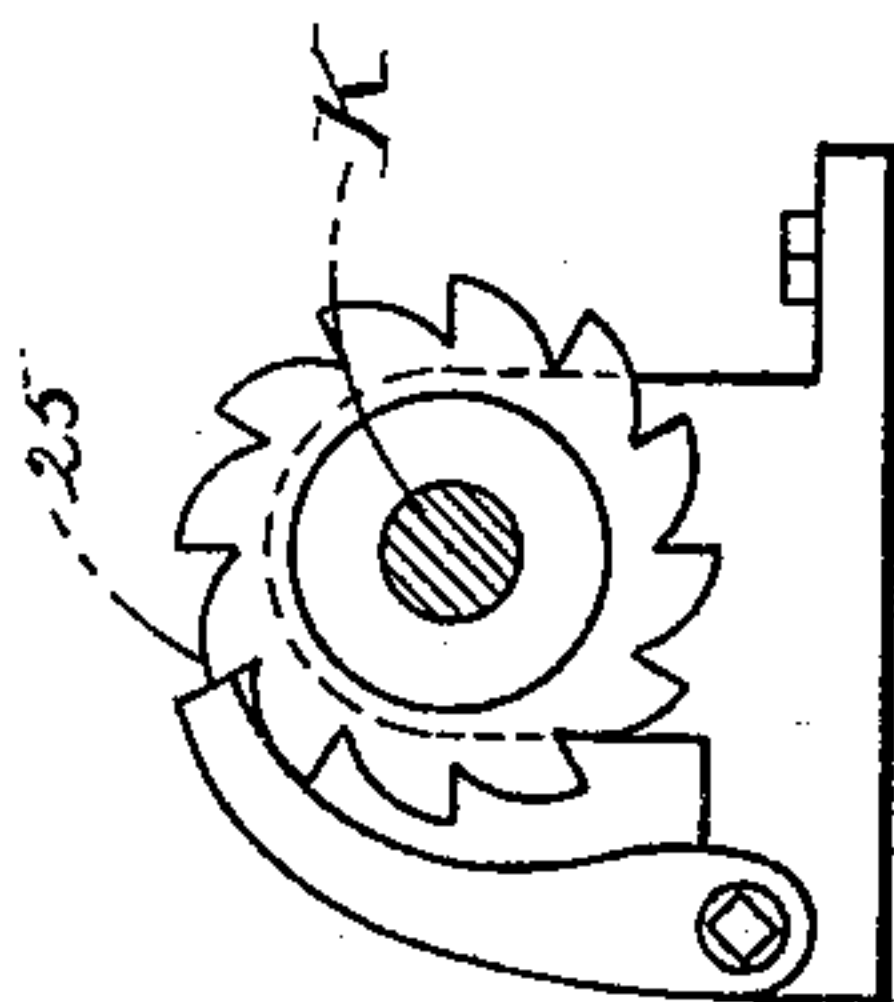
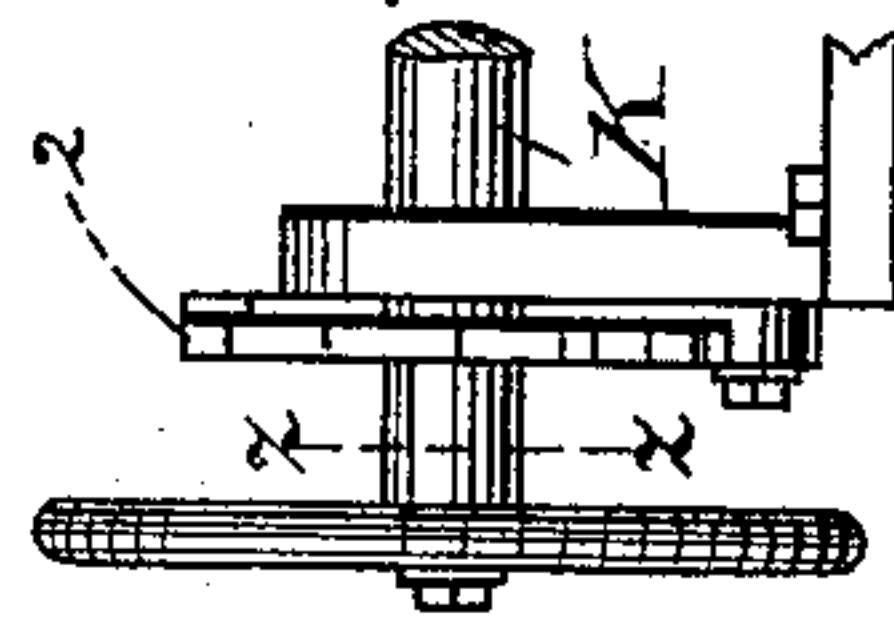


G. GREENWOOD.
CAR COUPLING.

Patented Oct. 18, 1887.



Inventor:

E. J. Jordan
Thomas A. Gallon

Inventor:
George Greenwood,
per C. A. Shawtles,
Atty's.

UNITED STATES PATENT OFFICE.

GEORGE GREENWOOD, OF DOVER, NEW HAMPSHIRE, ASSIGNOR OF ONE-HALF TO MARCEL JOUBERT, OF LAWRENCE, MASSACHUSETTS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 371,682, dated October 18, 1887.

Application filed August 11, 1887. Serial No. 246,684. (No model.)

To all whom it may concern:

Be it known that I, GEORGE GREENWOOD, of Dover, in the county of Strafford, State of New Hampshire, have invented a certain new and useful Improvement in Car-Couplings, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of portions of two railway-cars provided with my improved coupler represented as in use; Fig. 2, an end elevation of one of the cars shown in Fig. 1, the draw-bar being represented as elevated; Fig. 3, an enlarged horizontal section of the box or ways for the draw-bar, taken on line $x x$ in Fig. 4, the draw-bar being shown in top plan view; Fig. 4, a vertical section of the same, taken on line $y y$ in Fig. 3, some of the parts being shown in side elevation; Fig. 5, an enlarged side elevation of the windlass, and Fig. 6 an elevation showing the ratchet mechanism of the windlass.

Like letters of reference indicate corresponding parts in the different figures of the drawings.

My invention relates to that class of couplings which act automatically in coupling the cars; and it consists in a novel construction and arrangement of parts, as hereinafter more fully set forth and claimed, the object being to produce a simpler and more effective device of this character than is now in ordinary use.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation.

In the drawings, A A represent the cars, and C the draw-bars. The draw-bars C consist of flat metal plates provided at their outer ends with wedge-shaped or arrow heads D. A longitudinally-arranged rectangular box or casing, d , is secured centrally to the bottom of the car A in which the draw-bar C is disposed. The inner end of said bar is reduced to form a rod, m , which is disposed in openings $z z^2$, formed in the slides H, and secured therein by a bolt or rivet, p , the opening z^2 being slightly

larger than the opening z , to allow a vertical movement of the draw-bar. The slides H are provided with studs or projections v , which are fitted to work in longitudinal grooves or ways b , formed in the sides of the box d . A stiff coiled spring, E, is disposed between the slides H, around the rod m , the purpose of said spring being to "cushion" the draw-bar or lessen the strain thereon in stopping and starting the cars.

Two flat curved springs, N, are respectively secured at their inner ends to the upper and lower sides of a block, g , said block being disposed in the box d behind the slides H and secured therein by a key or cleat, h . The free ends of the springs N respectively press against the upper and lower faces of the draw-bar C, near the mouth of the box d , (see Fig. 4,) and tend to hold said bar in a horizontal position.

Two levers, J, are pivoted at i to the end of the car, (see Fig. 2,) the inner ends of said levers being jointed at t to the head of a vertically-arranged loop or link, k , which encircles the draw-bar, the outer ends of the levers extending somewhat beyond the sides of the car.

The purpose of the link k and levers J is to enable the brakeman to elevate the draw-bar C and disconnect the coupling-hooks D without going between the cars.

Hooks or catches l are provided on the car to keep the levers J depressed and the draw-bar elevated when desired.

A vertically-arranged bar, r , is jointed at its lower end to the link k , and provided at its upper end with a chain, w , which passes over a windlass, K, disposed on top of the car, by means of which said link can be raised and the cars uncoupled by a brakeman on the top of the car. The windlass is provided with an ordinary ratchet mechanism, 25, to prevent the chain w unwinding from said windlass and to hold the draw-bar elevated when desired.

The coupling-hook D is provided with a slot, f , (see Fig. 3,) to receive a pin, should it become necessary to attach a car provided with my improvement to one using the ordinary link-and-pin coupling.

Centrally disposed near the bottom of each of the cars there is a buffer, G, of such length

as to prevent the coupling-hooks D from accidentally striking the cars.

In the use of my improvement, when the cars are run together in forming the train, one of the coupling-hooks D is forced over its companion hook on the opposite car until the barbs of said hooks engage each other, said barbs being held in engagement by the pressure of the curved springs N.

It will be obvious that the use of the coiled spring E greatly lessens the strain on the coupling-hooks, rendering them less liable to break when a heavy train of cars is started, and that it also prevents in a great measure the concussion produced by pushing the cars together to make up the train.

When it is desired to unshackle the cars, the lever J on the car whose coupling-hook is uppermost is depressed, thus overcoming the pressure of the spring N, raising the draw-bar C, and disengaging the coupling-hooks, in a manner which will be readily obvious without a more explicit description. By means of the windlass K at the top of the car the cars may be unshackled when the train is in motion, if desired.

It will be readily seen that the use of my improvement obviates the necessity of the brakeman going between the cars to couple or uncouple them.

I do not confine myself to providing the slides H with studs *v*, as the grooves *b* may be made of such width as to receive the slides, or said slides may be fitted to work in any suitable ways. Neither do I confine myself to using the slot *f* in the coupling-hook D, as it may be omitted, if desired; nor to the use of the flat springs N, as any springs which will serve to keep the draw-bar C in a horizontal position may be employed.

Having thus explained my invention, what I claim is—

1. In a car-coupling, the combination of a vertically-oscillating arrow-headed draw-bar, slotted slides through which the rear end of said draw-bar passes, the slot of the front slide being elongated vertically to permit the vertical oscillations of the draw-bar, supports for said slides attached to the car-body, a spring between said slides, springs on the upper and lower sides of said draw-bar for holding it in horizontal position, and an elongated buffer located vertically above said draw-bar and attached to serve as a stop therefor, substantially as described.

2. In a car-coupling, the combination of a vertically-oscillating arrow-headed draw-bar, slotted slides through which the rear end of said draw-bar passes, the slot of the front slide being elongated vertically to permit the vertical oscillations of the draw-bar, supports for said slides attached to the car-body, a spring between said slides, springs on the upper and lower sides of said draw-bar for holding it in horizontal position, an elongated buffer located vertically above said draw-bar and adapted to serve as a stop therefor, a vertically-movable loop grasping said draw-bar, and a vertical rod and lateral levers, all attached to said loop for actuating said draw-bar to uncouple the cars from either side or from the top thereof, substantially as described.

GEORGE ^{his} × GREENWOOD.
mark.

Witnesses:

A. P. VORHOLZ,
M. H. AMES.