

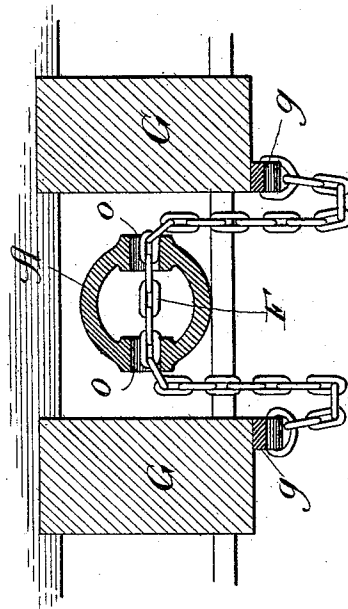
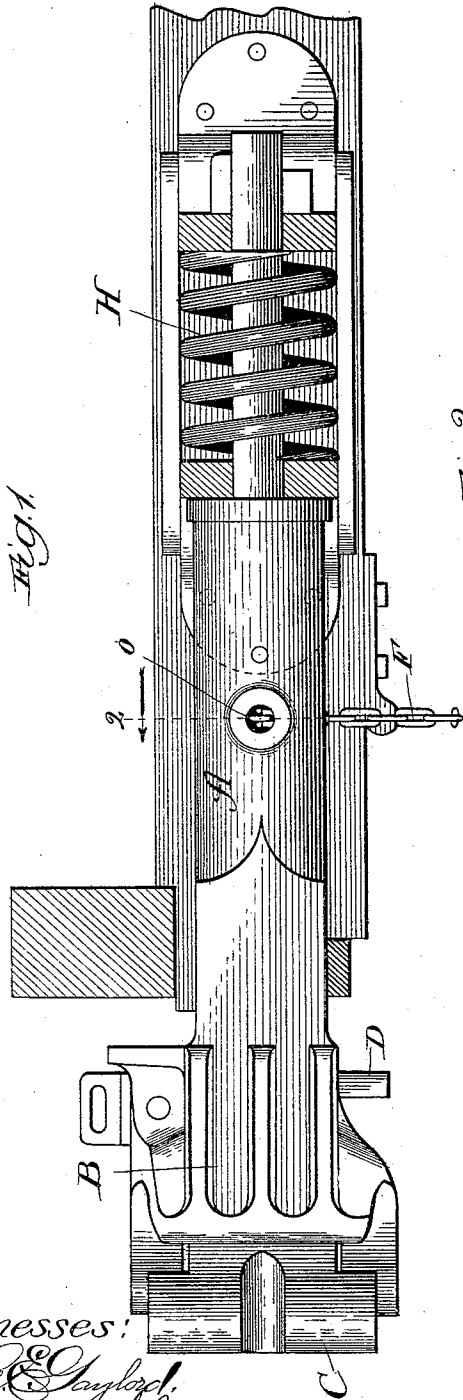
(No Model.)

2 Sheets—Sheet 1.

J. E. FORSYTH & E. R. MERRELL.
CAR COUPLING.

No. 488,551.

Patented Dec. 27, 1892.



Witnesses:

Chas. C. Gaylord,
Clifford A. White.

Inventors,
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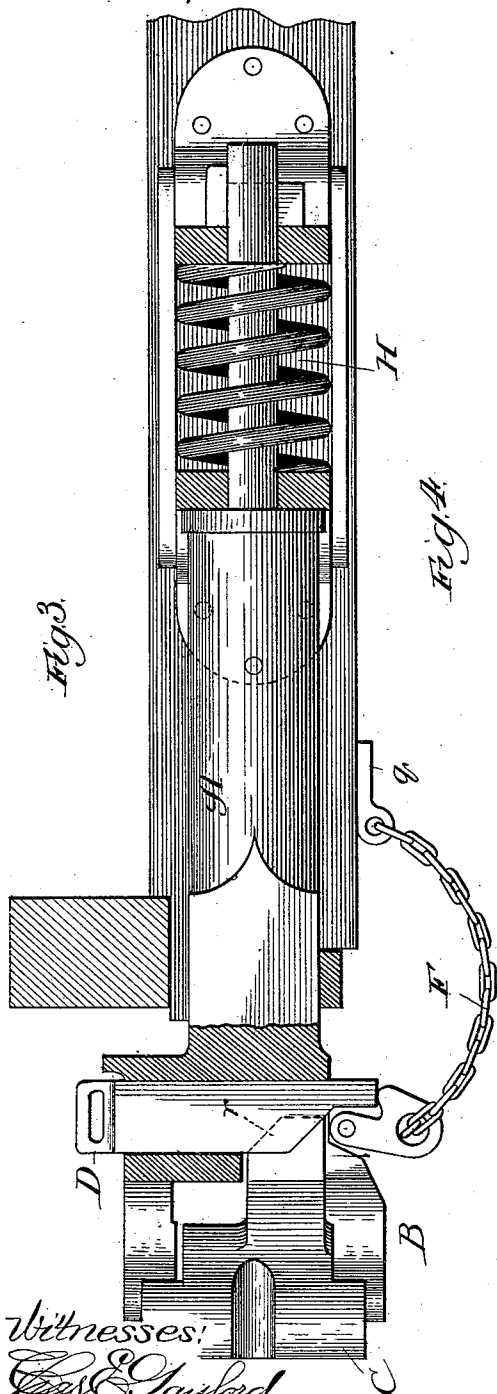
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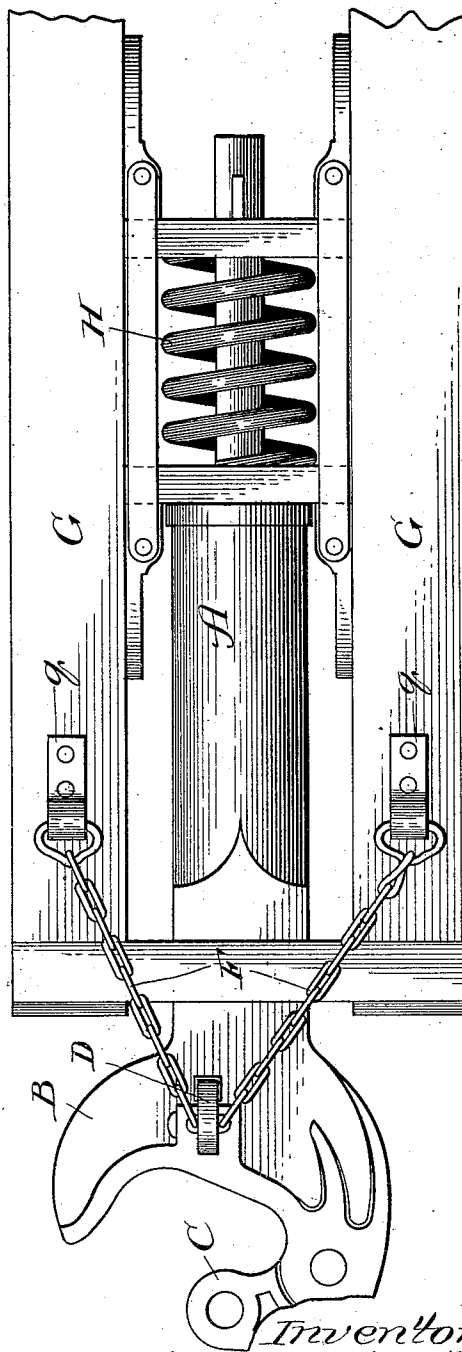
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UNITED STATES PATENT OFFICE.

JOSEPH E. FORSYTH AND ERSKINE R. MERRELL, OF CHICAGO, ILLINOIS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 488,551, dated December 27, 1892.

Application filed March 1, 1892. Serial No. 423,355. (No model.)

To all whom it may concern:

Be it known that we, JOSEPH E. FORSYTH and ERSKINE R. MERRELL, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Car-Couplers, of which the following is a specification.

Our invention relates to an improvement, particularly, in the so-called "Janney" class of coupler; and it relates, more definitely stated, to an improved safety-means against pulling out the draw-bar in case of its fracture or that of the mechanism normally operating to secure it in place.

Our object is to provide effectively operating, but simple, means which shall, without interfering with the necessary longitudinal play of the draw-bar, permanently secure the coupler to the car, and thus prevent it, in case of fracture, particularly of the draft-rigging which holds it in place, from being pulled out so far as to permit it to fall on the track where it would be liable to produce derailment of one or more of the cars behind the damaged coupler.

A further object is to adapt our aforesaid coupler-securing means to perform the additional function of effecting the unlocking of the coupler in case of fracture, thereby to cause separation of the car or train at the end of which the coupler has been broken, and, as a consequence, permit automatic operation of the air-brakes.

In the accompanying drawings, illustrating our invention, Figure 1 is a broken longitudinal sectional view of the draw-bar and coupler mechanism of a car. Fig. 2 is a section taken on the line 2 of Fig. 1 and viewed in the direction of the arrow. Fig. 3 is a view like that presented in Fig. 1 except that the coupler-portion is in section to display its internal construction, the view representing our improvement applied in a manner to effect unlocking of the coupler as well as retention thereof against falling on the track in case of fracture. Fig. 4 is a bottom plan view of the mechanism illustrated in Fig. 3.

A denotes the draw-bar terminating in the coupler-head B, at one side of which is pivoted, in the usual or any suitable manner, the knuckle or jaw C, the tail-piece *r* of which is

adapted to swing across the plane of a lock-bolt D. In the present instance the lock-bolt D is represented as of the vertical kind, that is to say, of the kind supported to hang in the path of the knuckle tail-piece *r*, which moves it to one side, or backward, in passing it to reach its locked position, whence the bolt obstructs its return and thus locks the jaw in its position of coupling. The lock-bolt may, however, be of any one of various forms, to which our improvement is adaptable to perform its function equally as well as with the form of lock-bolt illustrated.

On the lower side of the head B is pivoted a dog E in position to engage the bolt D at its lower forward end, whereby a backward pulling strain exerted against the dog below its pivot will press it against the lower protruding end of the lock-bolt and force it out of the path of the tail-piece of the jaw C.

We fasten the coupler, constructed as thus explained, from the dog E, by a chain, F, or equivalent flexible and adequately strong means, to the body of the car, meaning thereby any part of the car from which the coupler may be held by the chain from withdrawal as to the beam or beams G between which the draw-bar A is confined; the manner of fastening the chain illustrated in Figs. 3 and 4 being to pass it through an eye in the dog E and securing it at its ends to suitable clips *q* fastened on the lower sides of the beams G. The requisite slack in the chain, to avoid its interference with the normal longitudinal play of the draw-bar, is provided for by the length of chain employed. With the construction described, should the coupler be broken, as by fracture of its draft-rigging H, which would, in the absence of our improvement, permit the draw-bar to be pulled out far enough to drop and, probably, become uncoupled and fall on the track, the chain F will operate to hold it, and the continued draft, then exerted on the chain, will cause it to exert such a pull on the dog E as to press it against the lock D and force the latter out of the path of the tail-piece of the jaw C, thereby permitting the draft-strain to turn the jaw outward and effect uncoupling of the broken coupler from its companion and thus separation of the train with consequent setting of the air-brakes.

Under some conditions, particularly when a train is ascending an incline, it may be desirable that the fracture of a coupler shall not be attended with the uncoupling operation described, but that the chain F shall, then, form, as it were, a supplemental "safety" coupler. For that purpose we omit the dog E and connect the slack chain F, as represented in Figs. 1 and 2, with a rigid part of the coupler, as at the head B, and fasten its ends in the manner already described; it being preferred, with the last-named construction, to pass the chain through the hollow draw-bar at openings *o* provided in its opposite sides, and lead the ends to the points of fastening them to the beams G.

In the event of fracture of the draw-bar, with the construction of our improvement last described, the draft-strain can only pull out the draw-bar as far as the slack in the chain will permit, without effecting uncoupling; and the continued draft will be exerted on the car carrying the broken coupler through the medium of the chain-connection of the broken coupler with the car.

What we claim as new and desire to secure by Letters Patent is—

1. In combination with a car and a car-coupler thereon, a chain attached to the coupler, extending thence backward and fastened to a beam G, the chain being sufficiently slack

to avoid interference with the longitudinal play of the coupler, but insufficiently slack to permit withdrawal of the draw-bar, whereby, in case of fracture of the coupler, the chain shall form a supplemental safety coupler, substantially as described.

2. In combination with a car and a car-coupler thereon having a lock for the pivotal jaw of the coupler, a dog pivoted on the coupler in position to engage the lock, and a chain, or the like, connecting the coupler from the dog with the body of the car and slack to avoid interference with the longitudinal play of the coupler, substantially as and for the purpose set forth.

3. In combination with a car and a car-coupler thereon having a lock D for the pivotal jaw C, a dog E pivotally supported on the coupler-head B to engage the lock, and a chain F, or the like, connected between its extremities with the dog and extending, thence, backward and fastened at its ends to the body of the car at opposite sides of the draw-bar, the said chain being slack to avoid interference with the longitudinal play of the coupler, substantially as and for the purpose set forth.

JOSEPH E. FORSYTH.

ERSKINE R. MERRELL.

In presence of:—

J. N. HANSON,

M. J. FROST.