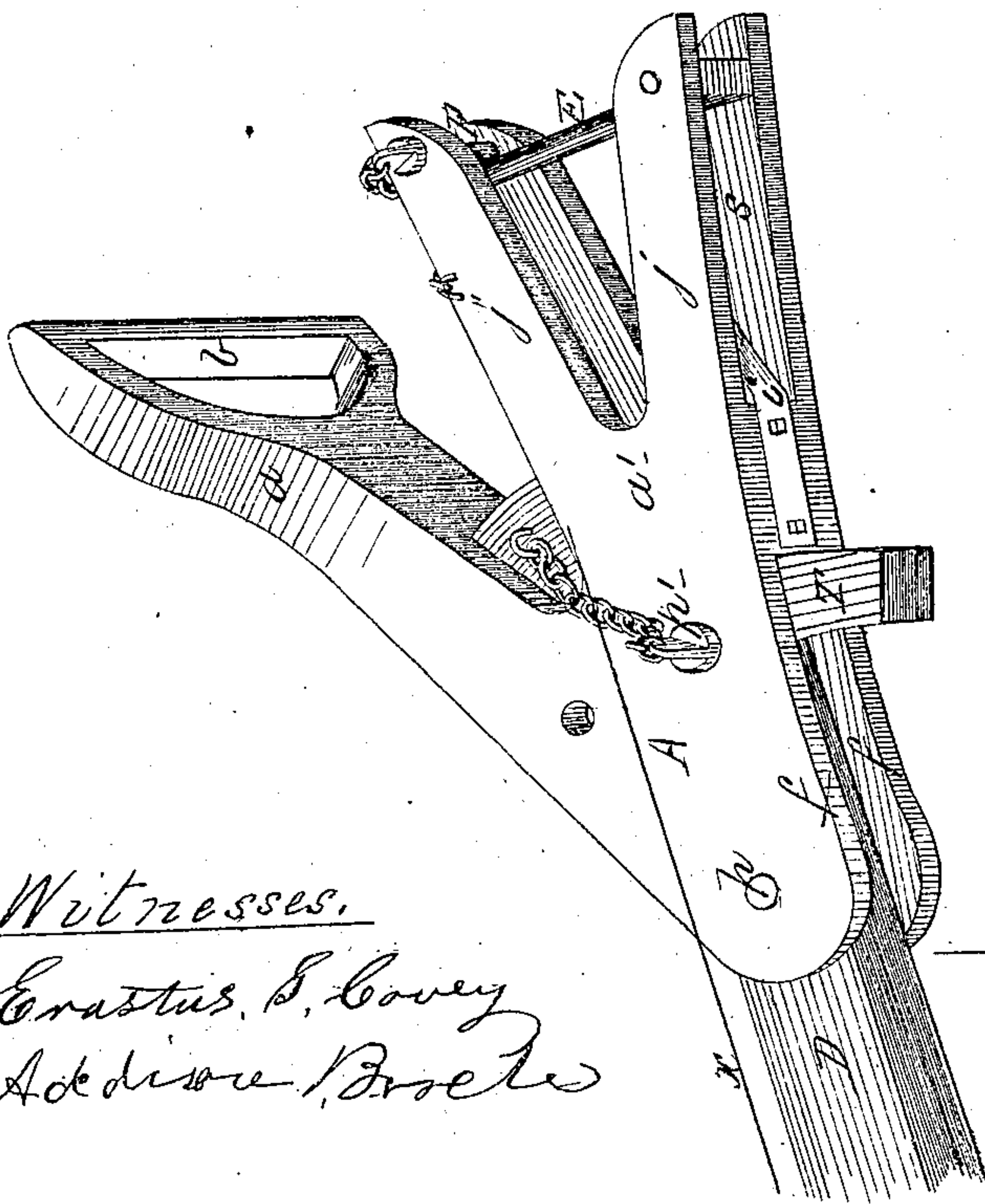
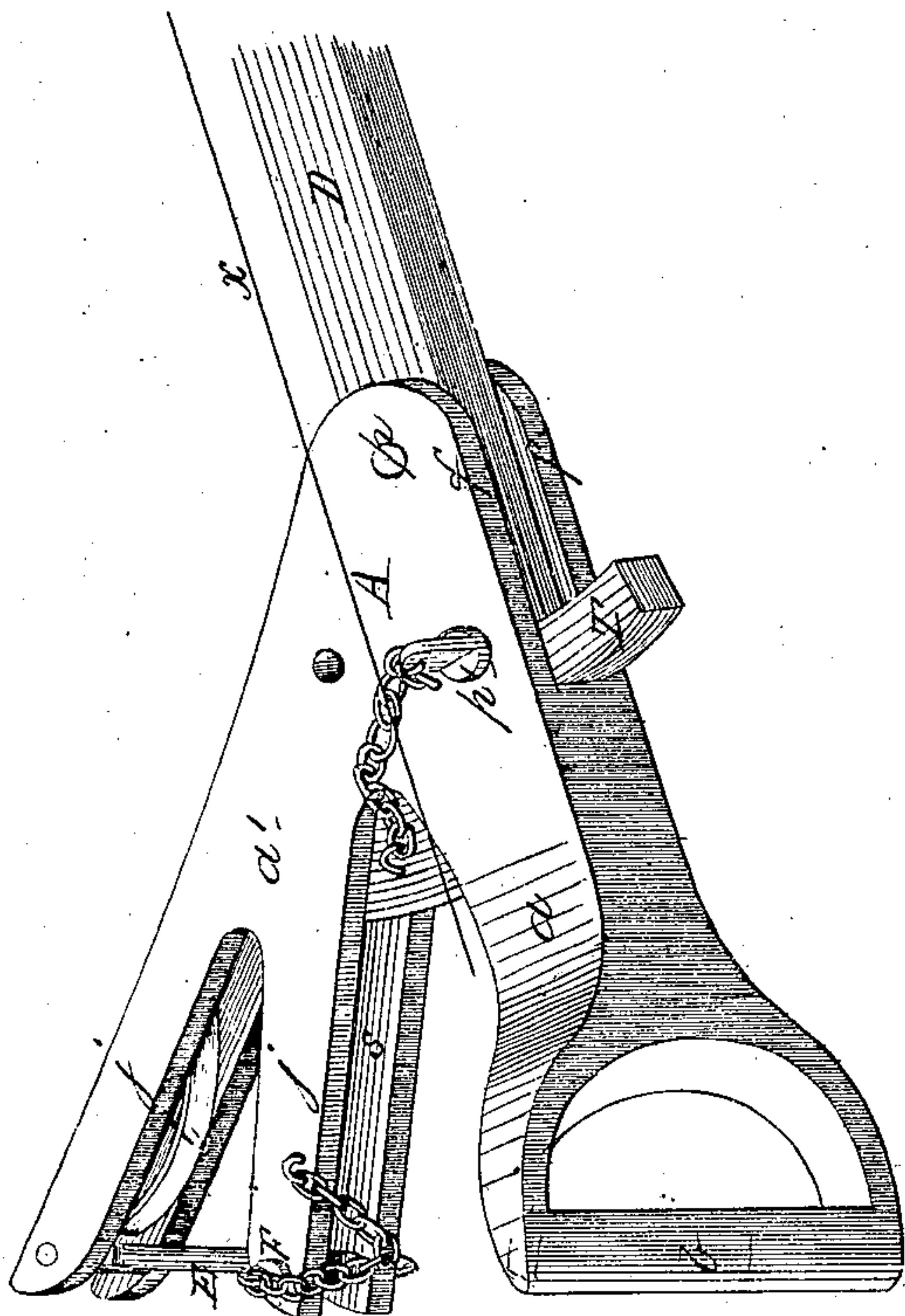


S. GREGORY.

Car Coupling.

No. 113,160.

Patented March 28, 1871.



Witnesses.  
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# United States Patent Office.

STEPHEN GREGORY, OF JONESVILLE, MICHIGAN.

Letters Patent No. 113,160, dated March 28, 1871.

## IMPROVEMENT IN CAR-COUPPLINGS.

The Schedule referred to in these Letters Patent and making part of the same.

I, STEPHEN GREGORY, of Jonesville, in the county of Hillsdale and State of Michigan, have invented certain Improvements in Automatic Car-Couplings, of which the following is a specification.

My invention relates, mainly, to the combination of a link-head (connected with the draw-bar of one car) with a draw-head formed with two flaring jaws, connected with the draw-bar of the car to be coupled with, the flat and deep sides of the link-head and the inner sides of the draw-head jaws standing in a vertical plane, in order that there may be no impediment to the coupling of cars having great inequality in height.

My invention also relates to combining with such draw-head a transverse spring-actuated coupling-pin and a check or uncoupling-pin, so that the said draw-head and link may be automatically coupled in a reliable manner, and to obviate the necessity of having to change the couplings on roads where the cars are liable to be reversed end for end, and so get mixed. My invention further provides for combining the link and draw-head in one bifurcated coupling, either branch of which may be adjusted readily to match a misplaced car.

The accompanying drawing represents the bifurcated couplings in perspective in a proper relative position for coupling.

I will first proceed to describe the compound or double-branched arrangement, as shown in the drawing, where the body of the bifurcated coupling-head is indicated at A, one of such couplings being adjustably connected to each draw-bar, as hereinafter explained.

The coupling-head is formed with two branches, *a* and *a'*, diverging horizontally from a common base.

The branch *a*, which I term the link-branch, terminates in a wide link-shaped head, standing edgewise; or, in other words, the bar portion *b*, which draws on the coupling-pin, stands vertical, and it is made stronger than would be needed for mere draft, as it must resist impact; and the branch *a'*, which constitutes the draw-head and carries the coupling and uncoupling-pins, terminates with flaring jaws, so arranged as to admit the vertical link-head between them, said jaws being shown at *jj*.

*D* is a broken section of the draw-bar, the outer end of which is inserted between the flanges *ff* of the coupling-head, and is secured thereto by the pivot-pin or bolt *p* and the adjusting-pin *p'*, which secures either branch of the coupling-head in line with the center of the track.

I usually form the end of the draw-bar inserted in the coupling with a T-head, as shown at *T*, the outer edge forming a circular arc concentric with the point *p*, and abutting against a concavity formed in the

central solid portion of the coupling-head to support and strengthen it.

*E* is the coupling-pin, hung to the draw-head jaw so as to oscillate horizontally back and forth within slots *s* in said jaws if made solid, or within the intervening space, as shown, if the coupling-head is constructed with rolled-iron plates united to a central section.

*i* is a spring, acting against the coupling-pin so as to drive it within the opening in the link-head in the act of coupling. This spring may be as shown, or coiled around an extension of the pin-journal, or made, hung, and operated in any other suitable and effective way.

*F* is the uncoupling-pin, inserted vertically in the opposite jaws, so that, in drawing, the free end of the coupling-pin will abut against it.

The operation is as follows:

The two pins *E* *F* are always (except in the immediate act of uncoupling) kept in the position shown in the drawing, and when the car is to be coupled its link, or draw-head branch, as the case may be, is first (if required) put in line, by means of the adjusting-pin, with the match branch that happens to be in the track-line on the car of the train to be coupled to—that is, the link-head must be opposite the draw-head, or *vice versa*.

When the train is backed the bar of the link-head and the coupling-pin impinge, and the pin is swung back against the spring until liberated by said bar passing beyond its free end, when the spring forces the pin to swing back through the opening in the link-head and the coupling is automatically effected.

To uncouple, the pin *F* is withdrawn and the coupling-pin is then free to swing outward; but on the disengagement of the link it should always be returned to its first position and the uncoupling-pin reinserted in place, excepting in case of training, when coupling is not desired, and then the coupling-pin may be swung so as to bear outside of the uncoupling-pin, which will prevent the link-head from entering the jaws.

The impact of the link-bar and draw-head may be relieved, if deemed necessary, by the insertion of an elastic blocking (not shown) at the internal angle formed by the diverging jaws of the draw-head.

The description of the preliminary adjustment of the bifurcated coupling-head has, of course, no application to a single-branched head, as defined in the drawing, where the extra link and draw-head are supposed to be cut off in the lines *z*, for in this single arrangement each male and female coupling is unadjustably but removably attached to its respective draw-bar, and then, in case of the reversal of any cars on the track, the couplings would necessarily require changing.



My coupling is simple and strong in the arrangement of its parts, cheap in construction, and thoroughly reliable in its operation. Its adaptability to couple together automatically cars of varying heights is only limited by the link-space vertically, and this can be increased to any desired extent with but small extra expenditure of metal. Its employment will entail but little additional expense over the common link and pin, and will prevent the frequent crushing injuries to employes who couple by hand.

I claim as my invention—

1. The bifurcated coupling A, having the part  $\alpha$  provided with the vertical bar  $b$ , while the branch  $\alpha'$  has the flaring jaws  $j j$ , pins E F, and spring, the coup-

ling being pivoted to the draw-bar D, so that either branch  $\alpha$  or  $\alpha'$  can be brought into line with the center of the track, all operating substantially as described.

2. The arrangement and combination of the transverse coupling-pin E, spring  $i$ , and uncoupling-pin F with the draw-head  $\alpha'$ , substantially as set forth, for coupling the link and draw-head automatically together, when arranged relatively, as provided in the preceding clauses.

STEPHEN GREGORY.

Witnesses:

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OTTO L. JOHNSON.