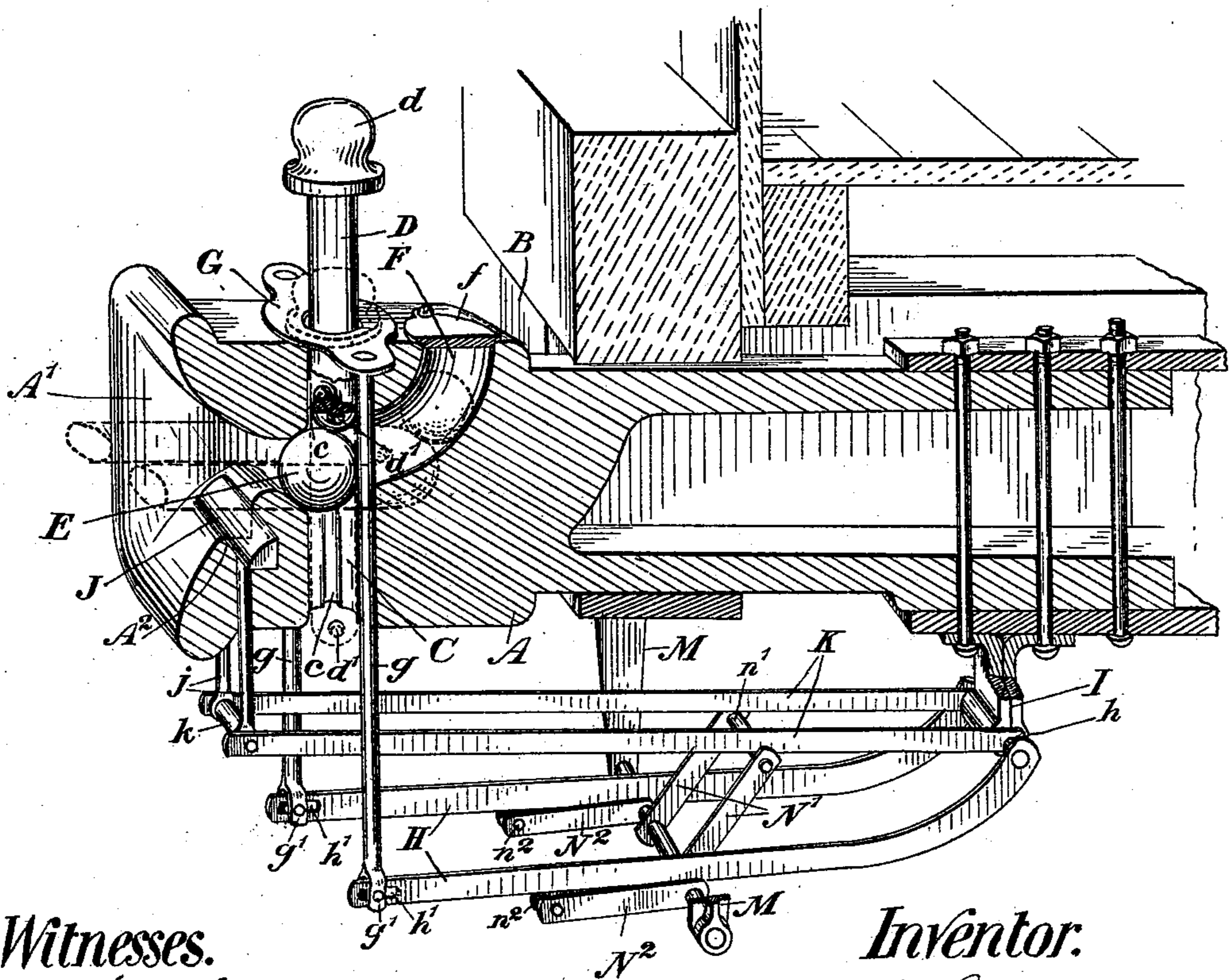
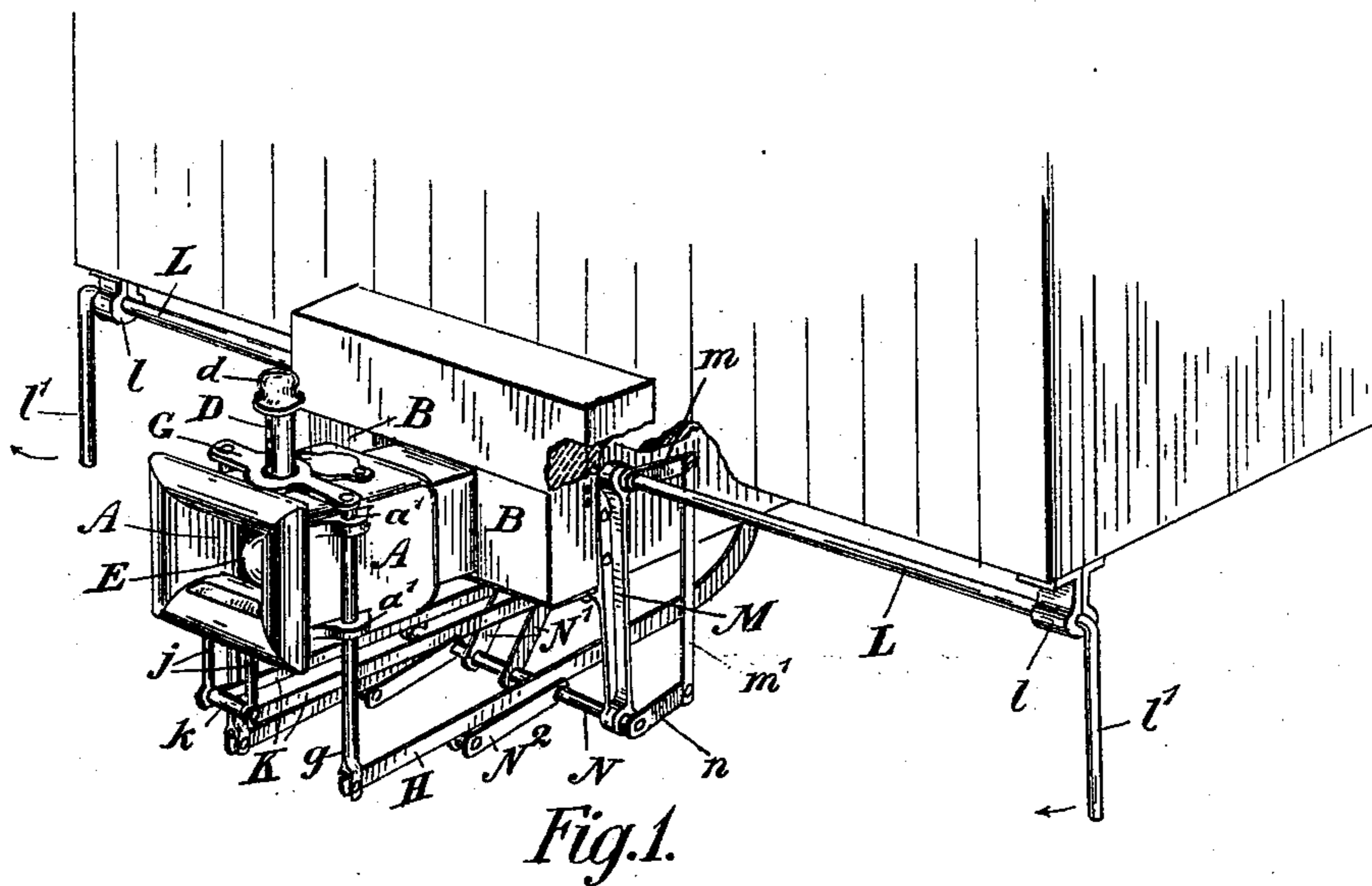


(No Model.)

J. SOMERVILLE.  
CAR COUPLING.

No. 547,898.

Patented Oct. 15, 1895.



Witnesses.

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# UNITED STATES PATENT OFFICE.

JOHN SOMERVILLE, OF MILTON, CANADA.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 547,898, dated October 15, 1895.

Application filed December 17, 1894. Serial No. 532,094. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN SOMERVILLE, carpenter, of the town of Milton, in the county of Halton, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Car-Couplers, of which the following is a specification.

My invention relates to improvements in car-couplers, and the object of the invention is to design a simple car-coupler in which the link held in one coupler may be automatically coupled to the opposing coupler without entirely removing the pin; and it consists, essentially, of supporting the pin of the coupler to which the link is to be connected upon a ball which has its seat in the center of the link-opening between the upper and lower portions of the pin-hole, an arc-shaped passage-way extending rearwardly and upwardly in the coupler, into which the ball is thrown when the link is forced into its opening, so as to allow the pin to drop within the link, the pin being raised and the coupler being otherwise constructed by means hereinafter described.

Figure 1 is a perspective view of the end of a freight-car provided with my improved coupler. Fig. 2 is a sectional perspective view through the draw-head, showing the form of my coupler and means for raising the pin and link when required.

In the drawings like letters of reference indicate corresponding parts in each figure.

A is the draw-head, and A' is the opening in the end of the draw-head through which the link is inserted. The draw-head A is supported in the usual manner between the longitudinal timbers B. C is the pin-hole, which extends vertically through the draw-head and is provided with a side groove c.

D is the pin, which is oblong in cross-section lengthwise with the draw-head. The coupling-pin D is provided with a head d at its upper end and has a pin d' extending through its lower end. (See Fig. 2.) The minor pin d' is intended to extend at each side into grooves c, which extend to a point above the opening A' and serve to limit the upward movement of the coupling-pin.

E is a ball which is supported within the opening, which is narrowed sufficiently to prevent the ball from coming out.

F is an arc-shaped passage-way which extends rearwardly from the ball to the top of the draw-head, where it is stopped by a cap f.

G is a cross-plate through which the pin extends. The cross-plate G projects at each side beyond the draw-head and is connected by rods g g, through lugs a', to a double lever H H, pivoted on the spindle h, extending through each side of the bracket I, which is securely bolted to the draw-head. The lower ends of the rods g g are forked and have pins g' extending through them and slots h' in the ends of the lever H H, so as to prevent any binding or straining of the rods g g when raised or lowered, as hereinafter described.

J is a link-lifter which rests in the notch A<sup>2</sup>, made in the lower lip of the opening of the draw-head. The link-lifter has secured to it downwardly-extending rods j j, which extend through holes in the draw-head and are connected to a cross-bar k, preferably secured in the end of the double lever K K. The lever K K is pivoted at the rear end upon the spindle h.

In order to provide a means for raising the pin so as to set the ball in position to permit the link to be inserted to couple, and in order to provide means for raising the link when held in the coupler, so as to bring it into a desired position in reference to the opposite coupler, I provide the following mechanism:

L is a rod which extends across beneath the end of the car and is supported intermediately in the longitudinal timbers B and at the outer ends in the brackets l. The outer ends of the rods L are bent to form arms l'.

M represents brackets secured to the side of the timbers B. One only is shown in Fig 1, the other being on the opposite side and shown in Fig. 2.

m is an arm secured to the rod L and extending rearwardly. The arm m is connected by a bar m' to an arm n, secured at one end of the rod N, which is journaled in the lower ends of the brackets M.

N' is a double arm provided with a cross-bar n'. The double arm N' extends obliquely up, so that the cross-bar normally comes close to the levers K.

N<sup>2</sup> represents double arms extending forwardly and having cross-bars n<sup>2</sup>, which extend under the double lever H H and close to it.

When it is desired to raise the pin in order to permit of the link being withdrawn, the arm  $l'$  is thrown in the direction indicated by the arrow, so that the double lever  $H H$ , by means of its connection by rods  $g g$  to the cross-plate  $G$ , will raise the pin by its head into the position shown in full lines in Fig. 2, so that the link may be withdrawn and the ball fall down from the position it is shown in in dotted lines to the position shown in full lines. Should, however, the link be in this coupler in the position shown in dotted lines, and the pin be also down in the position shown in dotted lines in this figure, and it is desired to raise the link to meet the opposing coupler of the next car, it will be seen that by throwing the arm  $l'$  in the opposite direction to that before indicated the double arms  $N'$  will by their cross-bars  $n'$  rest on the double lever  $K K$ , so as to throw the link-lifter  $J$  up into any desired position which the operator may require in order to bring it to the center of the opening of the opposing coupler. When the cars are then brought together, the link will push the ball up into the arc-shaped passage-way and allow the pin to drop down within the link and thereby securely couple the cars together. Although I show the double levers  $K K$  and  $H H$  and double arms  $N'$  and  $N^2$ , it will of course be understood that a single arm might be utilized and accomplish the object which I have in view. From this description it will be seen that I provide a very simple coupler, which will be automatic in its action in coupling and will only require the attention of the brakeman if it should be necessary to lift the link in coupling. In uncoupling, the coupling-pin will have to be lifted in the manner here-

inbefore described; but this is done without the necessity of the brakeman having to go between the cars.

What I claim as my invention is—

1. In a car coupler the combination with the draw head having the open mouth and pin hole extending vertically through the draw head in the center of the mouth, of a ball having its seat within the contracted inner end of the mouth, a coupling pin designed to normally rest upon the ball when the car is uncoupled, an arc-shaped passage-way leading rearwardly and upwardly from the bar, a cross plate through which the pin passes and which extends laterally to each side of the draw head, downwardly extending rod,  $g$ , secured at the upper end of the cross plate and at the bottom end to the double lever  $H$ , and a cross rod  $L$ , arm  $m$ , rod  $m'$ , arm  $n$ , and rod  $N$ , provided with arms  $N^2$ , having cross bars  $n^2$ , all arranged as and for the purpose specified.

2. The combination with the draw head having an open mouth for the reception of the link as specified, of a link lifter fitting in a recess in the lower lip of the draw head, downwardly extending rods secured to the same and a double lever,  $K$ , connected to the end of the downwardly extending rods and pivoted at,  $h$ , and the rod,  $L$ , arm,  $m$ , rod,  $m'$ , arm,  $n$ , rod,  $N$ , double arms,  $N'$ , provided with a cross bar,  $n'$ , all arranged as and for the purpose specified.

JOHN SOMERVILLE.

Witnesses:

W. J. DICK,  
W. R. BELL.