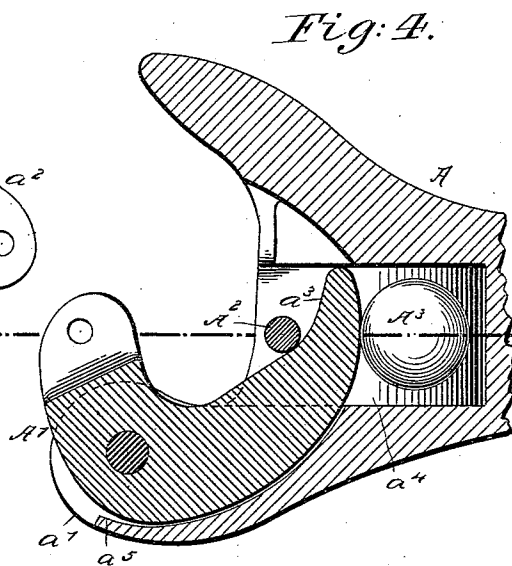
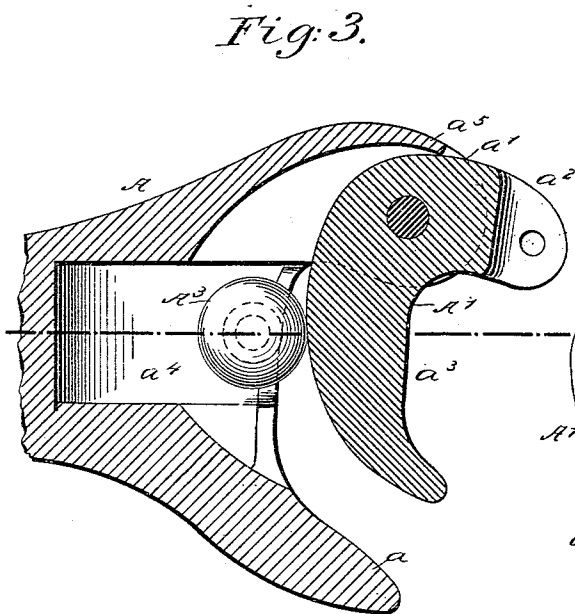
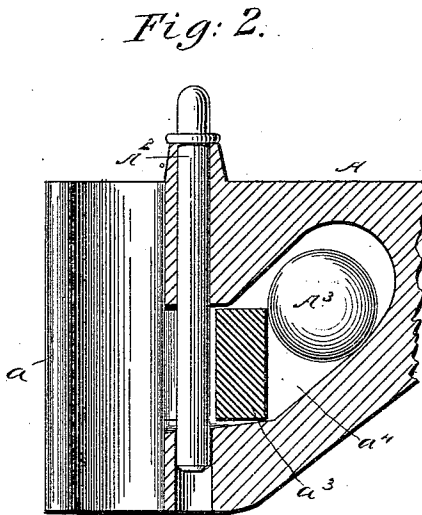
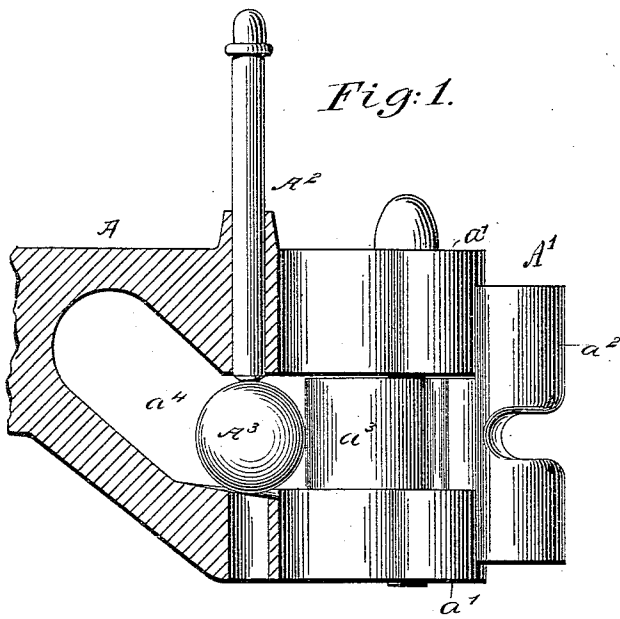


(No Model.)

D. COLLEN.
CAR COUPLING.

No. 555,364.

Patented Feb. 25, 1896.



WITNESSES:

John A. Rennie.
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UNITED STATES PATENT OFFICE.

DANIEL COLLEN, OF INWOOD, CANADA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 555,364, dated February 25, 1896.

Application filed July 8, 1895. Serial No. 555,259. (No model.)

To all whom it may concern:

Be it known that I, DANIEL COLLEN, of Inwood, in the Province of Ontario and Dominion of Canada, have invented a new and Improved Car-Coupler, of which the following is a full, clear, and exact description.

The object of my invention is to provide a simple and effective coupler for freight and passenger cars which will couple automatically, and wherein the weight is greatly reduced relatively to car-couplers of a similar type.

My invention consists in the combination, with a draw-head and a gravity locking device, of a movable body adapted to support the locking device when the knuckle of the coupler is open, and also adapted to move the knuckle to an open position when the locking device is released from the knuckle.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a partial vertical section and a partial elevation of a coupler embodying my improvement. Fig. 2 is a similar view but looking in the opposite direction to that of Fig. 1. Fig. 3 is a horizontal section showing the coupler in its open position, and Fig. 4 is a horizontal section showing the coupler closed.

Referring by letter to the drawings, A designates the coupler-head comprising a horn a at one side and the forwardly-projecting lugs a' at the opposite side, and A' indicates a swinging knuckle having the coupling portion a^2 and a locking-arm a^3 extended substantially at right angles to the part a^2 . This knuckle is pivoted at its angle portion between the lugs a' . The coupler so far described is similar in form to the knuckle-couplers now in use.

The head A is provided with a chamber a^4 , the lower wall of which is inclined downward and outward, as is plainly shown, and the chamber has an outer opening through the front of the coupler-head.

I employ a gravity locking device for the knuckle. As here shown, this locking device is a pin A^2 , movable through a vertical opening in the upper and lower walls of the head A. A^3 is a spherical or rolling body adapted

to move by gravity in the line of movement of the locking device and support the same out of contact with the arm a^3 of the knuckle, as plainly indicated in Fig. 1. This device A^3 is preferably of metal and of sufficient weight to swing the knuckle A' when the locking device is raised to its outer loosening position, as shown in Fig. 3.

The operation of the device is as follows: When uncoupling a car, the gravity locking device or pin A^2 is raised to release it from engagement with the front side of the portion a^3 of the knuckle, and then the spherical body A^3 will roll underneath the locking device and support the same in its upper position, and during this movement, by contacting with the inner side portion a^3 of the knuckle, it will swing the said knuckle on its pivot into an unlocked position. In the act of coupling cars the pin A^2 will be inserted in the aperture in the top of the draw-head with its lower end resting on the ball A^3 , as seen in Fig. 1, and when the part a^3 of the knuckle A' is swung in by its engagement with the coupling on the other car the ball or spherical body will be rolled back into the chamber a^4 , and then after the portion a^3 of the knuckle shall have passed the lower end of the pin A^2 the said pin will drop by gravity and engage the front of said portion a^3 of the knuckle and lock the same in position.

It will be seen that I not only provide a very simple device for automatically opening a coupler-knuckle, but also automatically assuming the position to support a gravity locking device.

The part a^5 of the wall of the coupler-head A forms a stop to limit the outward movement of the knuckle, and the portion a^3 thereof will prevent the accidental removal of the spherical body A^3 , but said device may be removed by first removing the knuckle.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. In a car-coupler, the combination with a head, of a swinging knuckle, a gravity locking device for said knuckle, a spherical body in a chamber formed in the coupler-head and adapted to automatically move beneath the locking device after the same shall have been raised, and also by impinging against the in-

side of a portion of the swinging knuckle, to move the said knuckle to an open position, substantially as described.

2. In a car-coupler, the combination of a
5 draw-head having a recess and an aperture in
its top to receive a coupling-pin, a knuckle
mounted to swing on said draw-head with one
end adapted to enter said recess, a ball in said
10 recess having means for holding it normally
in position to be engaged and moved by con-
tact with said knuckle when the same enters
said recess, and a coupling-pin arranged to
15 pass through the aperture in the top of the
draw-head, and adapted to lock said knuckle
against movement, said pin having its lower
end arranged to be engaged and held up out
of operative position by said ball when the
same is in its normal position, substantially
as set forth.

20 3. In a car-coupler, the combination of a
draw-head having a recess and an aperture in

its top to receive a coupling-pin, the bottom
of said recess being inclined downward toward
the front open end of the draw-head, a knuckle
mounted to swing on said draw-head with one 25
end adapted to enter said recess, a ball in said
recess adapted to stand normally at the front
lower end of the inclined bottom thereof, in
position to be engaged and moved up said in-
clined bottom by contact with said knuckle 30
when the same enters said recess, and a coup-
ling-pin arranged to pass through the aper-
ture in the top of the draw-head and to lock
the knuckle against movement, said pin hav-
ing its lower end arranged to be engaged and 35
held up out of operative position by said ball
when the same is in its normal position, sub-
stantially as set forth.

DANIEL COLLEN.

Witnesses:

ROSWELL B. WARNER,
SMITH A. PRATT.