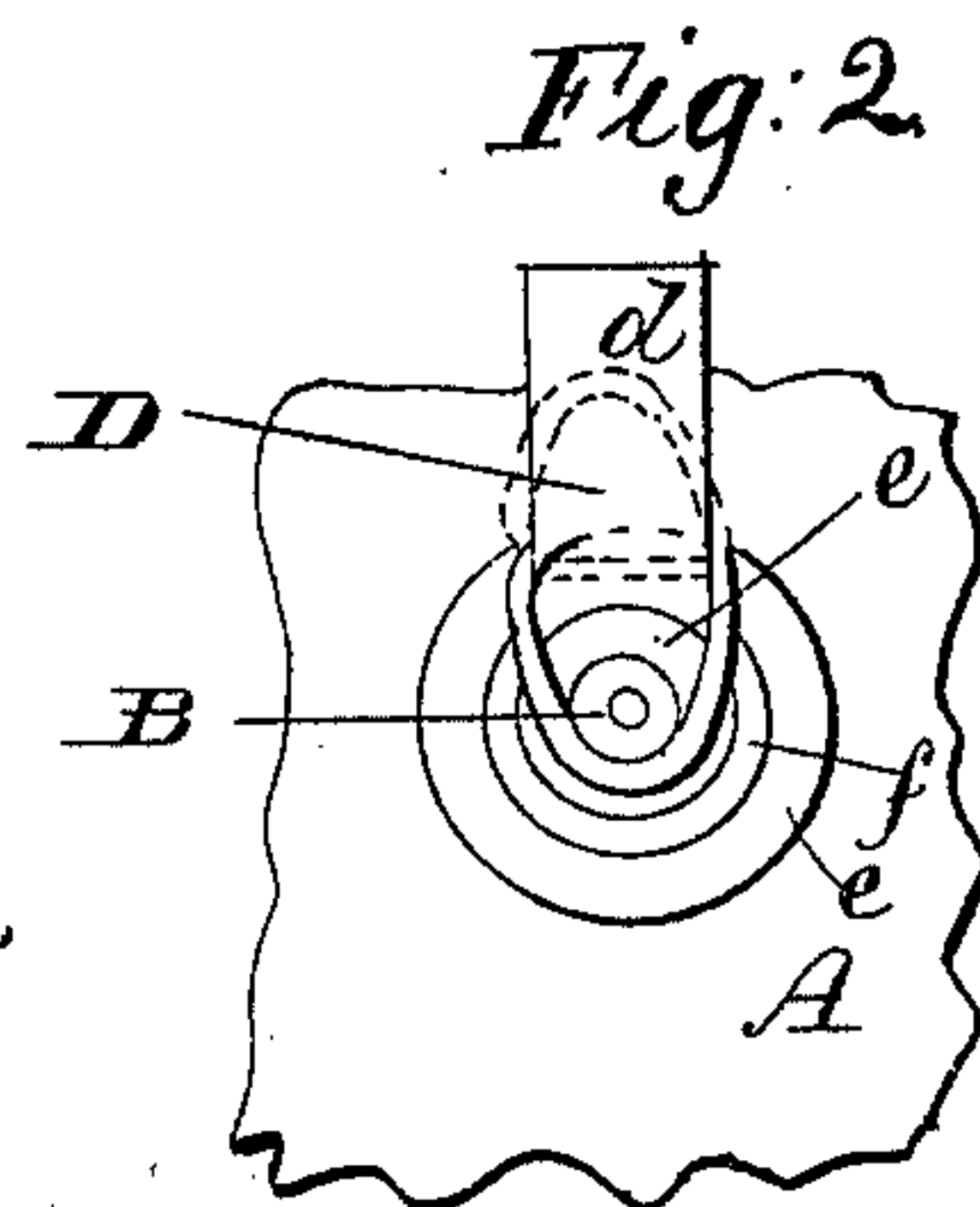
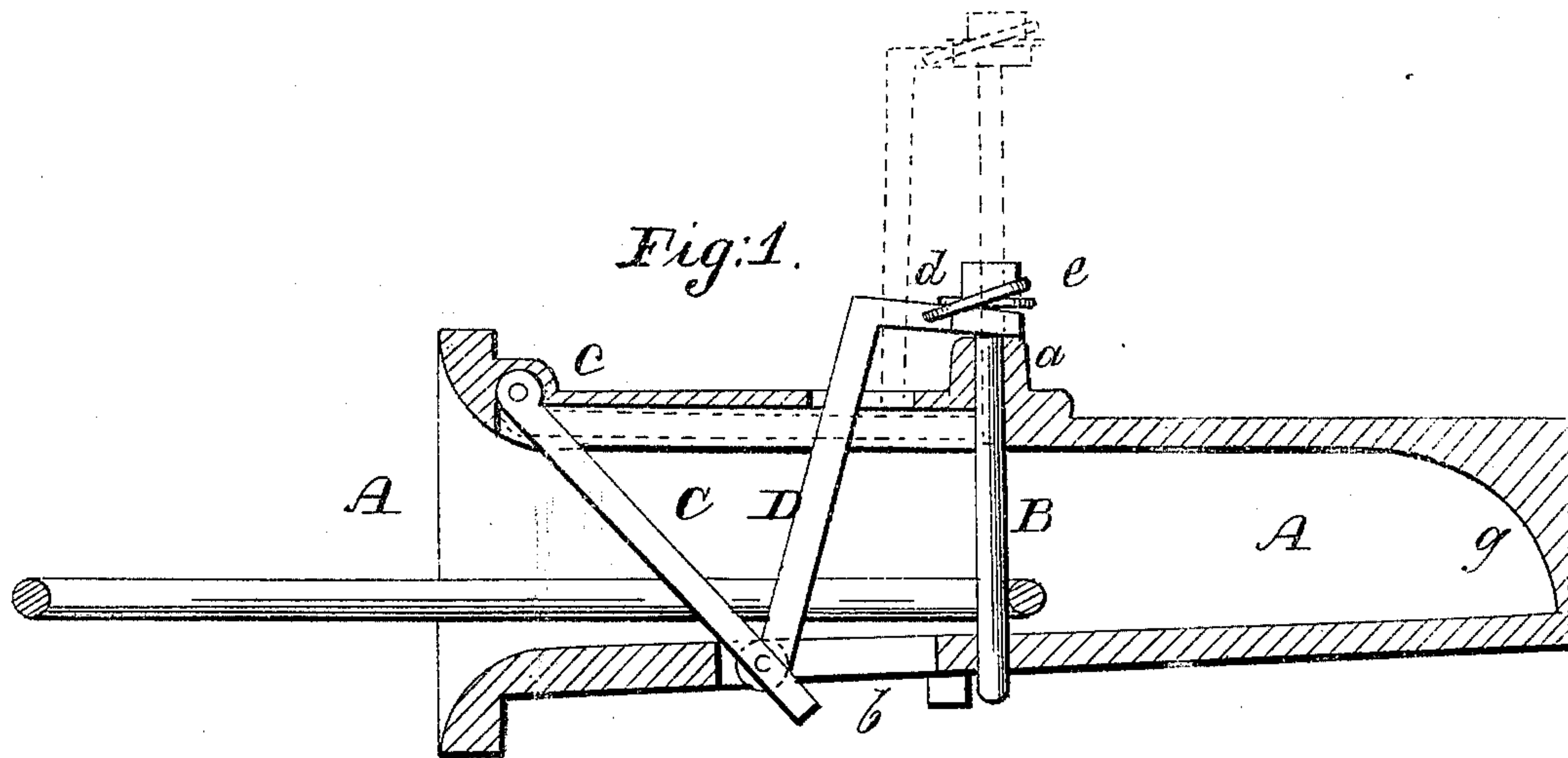


J. F. NAGEL.  
Car Coupling.

No. 90,290.

Patented May 18, 1869.



Witnesses:  
Geo. B. Bicknell  
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by Underhille  
attys



# United States Patent Office.

JOHN F. NAGEL, OF LIGONIER, PENNSYLVANIA.

*Letters Patent No. 90,290, dated May 18, 1869.*

## IMPROVED CAR-COUPLING.

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

*To all whom it may concern:*

Be it known that I, JOHN F. NAGEL, of Ligonier, in the county of Westmoreland, and State of Pennsylvania, have invented a new and useful Improvement in Car-Couplings; and I do hereby declare the following to be a clear and exact description thereof, sufficient to enable others skilled in the art to which my invention appertains, to fully understand and use the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a vertical longitudinal section of the device illustrating my invention.

Figure 2 is a top or plan view of a detached portion thereof.

Similar letters of reference indicate corresponding parts in the two figures.

The subject of my invention is a self-coupling for railroad-cars; and

It consists in a block or lever, which is pivoted to the draw-head, and has hinged to it an elevating-arm, which is connected to the coupling-pin, so that when the shackle or link strikes the block or lever, the pin is raised, and remains raised until the link clears it, when it drops and holds the shackle, and the cars are thereby coupled.

Should the coupling-pin break, the elevating-arm will bear the link, and should both break, the block or lever will then take their places, as will be hereinafter more fully described.

In the drawings—

A is a draw-head, and B, the coupling-pin, both of which generally are of ordinary form and construction.

The opening through which the pin enters, and has its upper bearing, is reinforced by a boss, or projection *a*, and the lower bearing by a cross-bar, or enlargement *b*, so that there is less liability of fracture or breakage of the draw-bar at these points.

C is a block or lever, which is constructed of proper form, and is, by preference, of a thickness equal to that of the coupling-pin. Its upper end *c* is pivoted to the draw-head, and its lower end protrudes through the bottom of the cross-head, at a point to the rear of the upper joint *e*, so that the lever extends diagonally towards the rear of the draw-head, and is capable of an upward and downward-swinging motion on its axis.

An arm, D, is hinged to the block or lever, at or near its lower end. This arm consists of a piece of metal of suitable size and form. It extends vertically and through a slot in the upper end of the draw-head, where it is formed with an angular extension, *d*, having an opening, through which passes the coupling-pin.

In the present case a ring, or loop *e* is hinged to the arm D, or its extension, and is adapted to swing over

the head of the coupling-pin, and rest on a shoulder, notch, flange, or equivalent device *f*, formed on said pin.

In order that the draw-head shall not be of more than ordinary size, I form a groove on the inner side of the top of the draw-head, so that the lever C may always be swung sufficiently high to elevate the coupling-pin.

To prevent any accidental catching of the link on the arm D, I form the lever C of such dimensions, that as it swings upward, it will gradually come in close proximity with the coupling-pin, and thereby allow but little space between the two at the moment when the pin has cleared the lower end of lever C.

The operation is as follows:

When the link is in position on one draw-head, and the cars are backing, its free end strikes the lever C, and thus elevates the arm D, and with it the coupling-pin sufficiently high to allow said link to clear the pin; then the latter drops, and the cars are coupled.

The operation of uncoupling is accomplished by hand, by merely raising the swinging ring, which now acts as a handle, and elevating the pin and arm, when the link has no obstruction, and is readily withdrawn from the draw-head.

Should the pin break, the strain of the link is transferred to the arm D, which is firmly held against the upper part of the draw-head and the lower part of the lever C, which in return is braced by the lever and upper parts of the draw-head; and should the arm also break, dependence yet exists in the lever C, which will hold as readily as the coupling-pin or arm.

The lever C may be suspended perpendicularly from its joint, but it is desirable that it be diagonal, in order to act with more readiness and ease in admitting the link and elevating the coupling-pin.

The arm may be otherwise hinged to the coupling-pin than by means of the ring *e*, but the latter is preferable, from its practicability and simplicity.

The internal face of the rear of the draw-head is rounded upwardly in a forward direction, as at *g*. The object of this is to prevent strain or sudden jerks to the coupling-link during the vertical rocking and jumping-motions of the train when the cars come closely together.

The end of the link bears against this rounded portion, and the friction produced thereby, causes the link to gradually overcome the shock.

Without the rounded part, the link would suddenly strike the top or bottom of the draw-head, and be liable to fracture thereby.

The link should be made sufficiently large, that when cars come together, it will lie perfectly horizontal on the bottom of the draw-head, and thus be guided in its play during the varying distances between the cars.

My invention is simple and practical, and the construction of the parts may be modified, so long as the operation remains the same.

I do not claim an inclined lever supporting a pin, and hinged thereto; but

What I do claim as new, and desire to secure by Letters Patent, is—

The levers C D, constructed and pivoted as described, the latter being bent, and provided with a hole, for the passage of the pin, and a ring to retain

the pin, in combination with the flange-headed pin, and operated by the link, as and for the purpose set forth.

To the above specification, I have signed my name, this 1st day of March, 1869.

JOHN F. NAGEL.

Witnesses:

JOHN A. WIEDERSHEIM,  
H. T. METZGAR.