No Model.)

2 Sheets—Sheet 1.

E. D. BRONNER.

CAR COUPLING.

No. 520,765. Patented June 5, 1894.

Fig. 1.

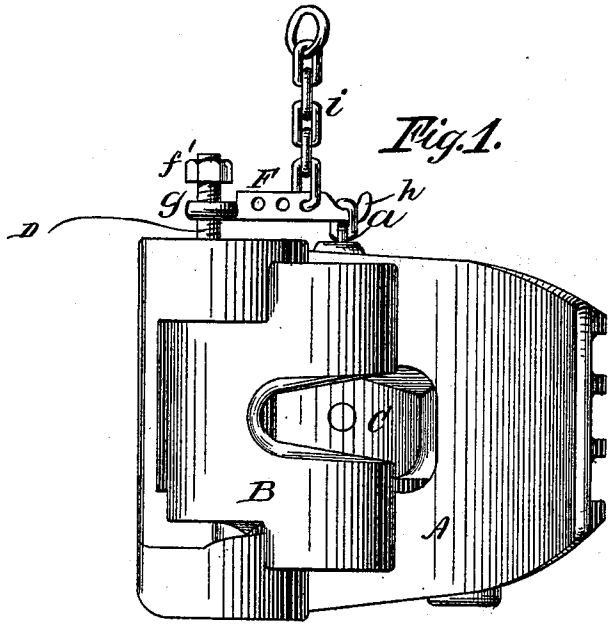


Fig. 2.

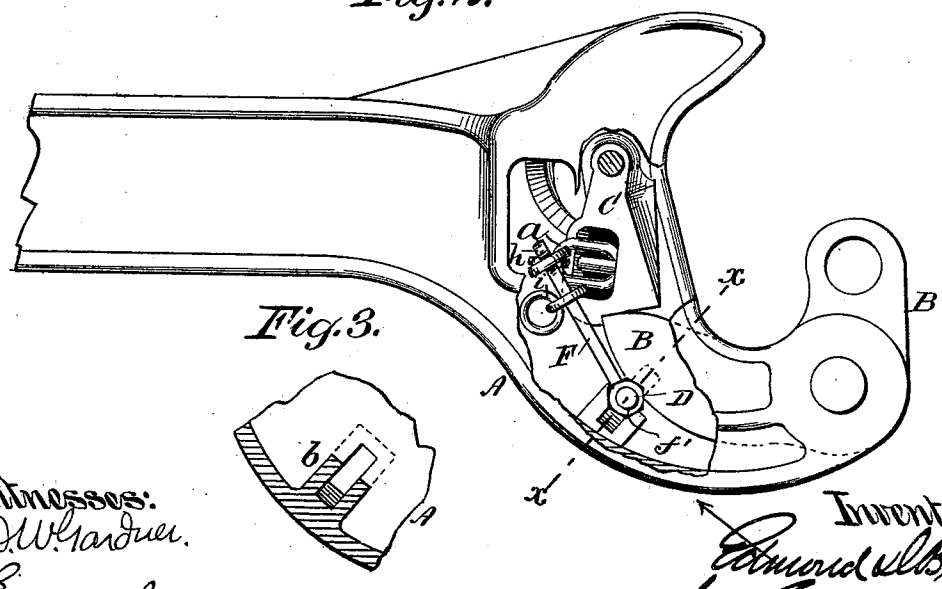


Fig. 3.

Witnesses:
D. W. Gardner.
Eugene F. Myers.

Inventor:
Edmund D. Bronner
by Ernest Gorba
his Atty

THE NATIONAL LITHOGRAPHING COMPANY,
WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

E. D. BRONNER.

CAR COUPLING.

No. 520,765. Patented June 5, 1894.

Fig. 4.

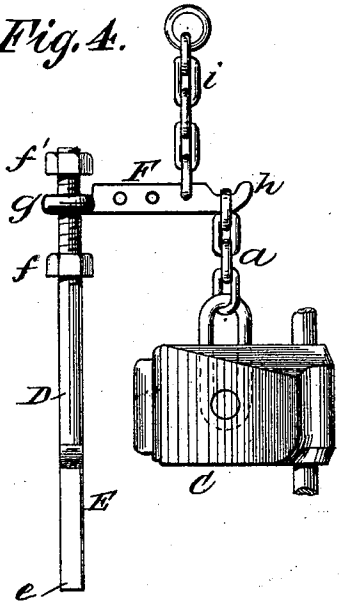


Fig. 5.

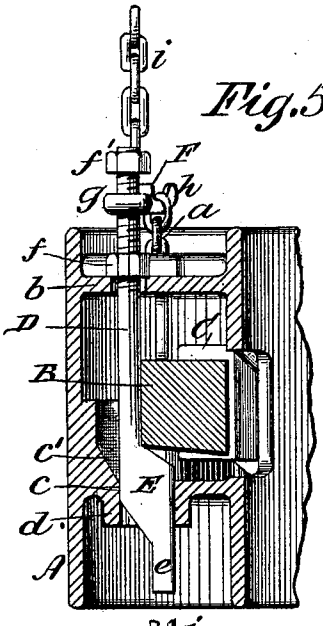


Fig. 6.

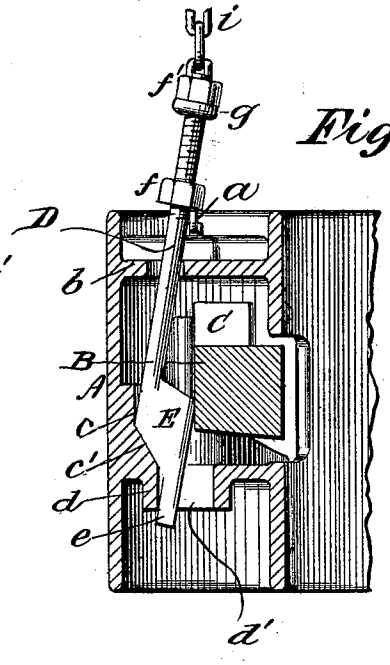
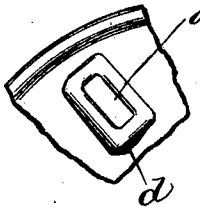


Fig. 7.



Witnesses:
D. W. Gardner.
Eugene V. Myers

Inventor:
Edmund D. Bronner
by Emery & Webb
his Attys.

THE NATIONAL LITHOGRAPHING COMPANY,
WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EDMOND D. BRONNER, OF DETROIT, MICHIGAN, ASSIGNOR TO THE GOULD COUPLER COMPANY, OF BUFFALO, NEW YORK.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 520,765, dated June 5, 1894.

Application filed May 23, 1893. Serial No. 475,207. (No model.)

To all whom it may concern:

Be it known that I, EDMOND D. BRONNER, a citizen of the United States, and a resident of Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Car-Couplers, of which the following is a specification.

This invention relates to certain new and useful improvements in car couplers, and particularly to that class known as "twin jaw couplers," and exemplified by the master car builders, and analogous types. In this class of couplers, a rotary swinging coupling arm or knuckle is held in its closed or coupled position by a locking block, which is manipulated through the medium of a chain to release said knuckle or coupling arm, and several means have been devised to automatically swing the knuckle or coupling arm outwardly to its open or uncoupled position immediately upon releasing the locking block; one of these means consisting in providing the lower bearing for the knuckle and the under side of the knuckle itself, with corresponding inclines, upon which the knuckle swings outwardly to its open position by gravity, as soon as the locking block is released.

It is the object of my invention to render this action more positive and rapid, and to eliminate entirely the necessity of going between the cars to pull open by hand a knuckle which has become stuck, or which does not respond rapidly to the attraction of gravitation.

To these ends my invention consists in mechanism for automatically first releasing the locking block and then positively throwing forward and outward the knuckle or coupling arm, all as hereinafter more fully described and pointed out in the claims.

In the accompanying drawings, illustrating my invention, in the several figures of which like parts are similarly designated, Figure 1, is a front elevation showing the parts in locked relation. Fig. 2, is a plan view, partly broken away to show the locking block and trip. Fig. 3, is a plan view showing the upper guide walls within which the lifter or trip works. Fig. 4, is a view in elevation of the lifter or trip with its connection and attachment to the locking block. Fig. 5, is a sectional elevation on the line x—x, Fig. 2, looking in the direction of the arrow, and showing the parts in their locked position. Fig. 6, is a similar view showing the parts in their raised or unlocked position; and Fig. 7, is a bottom view of the guiding slot, showing its surrounding walls.

A, is the coupler head provided with the rotary coupling arm or knuckle B, and the locking block C, from which extends the usual chain a. The interior walls of the coupler head A, are provided with the webs b, c, which are slotted, as shown particularly in Figs. 3, 5, 6 and 7; the web b, being provided with either a round, oval or rectangular slot, and the web c, being provided preferably with a rectangular slot, terminating upwardly toward the rear of the coupler in the inclined surface c', and having the downwardly projecting surrounding walls d. The position of these slots with reference to the knuckle or coupling arm B, is illustrated in Fig. 2. The trip device consists of a reduced upright portion D, and lower enlarged extension E, which as shown in the drawings, is in the general shape of a rhomboid, having the downwardly projecting finger or extension e. I have shown this trip as having the circular rod D, the upper end of which is screw threaded and is provided with the stop f, and the retaining nut f', which also acts as a stop. I have also shown between the stop f, and the nut f', a link or connecting lever F, having formed at one end the collar or ring g, surrounding the rod D, and of considerably greater diameter than said rod; said lever F, having its opposite end formed into a hook h, to engage the chain a, of the locking block C. In practice, however, I may substitute for the circular rod D, a flattened strip or portion, rectangular or oval in cross section, and of course preferably integral with the extension E. When this construction is used I omit the stops f, f', and replace the connecting lever F, with a link or links, secured at one end in an eye or aperture formed in the rod or flattened portion D, and at the other end to the chain a. i, is a chain, through the medium of which the mechanism is operated in the manner to be presently described.

The operation of my device is as follows,

assuming the coupler to be in its locked or closed position, as shown in Figs. 1, 2 and 5:—The chain *i*, is raised, preferably by means of an ordinary uncoupling lever (not shown), and as the trip D, E, cannot raise until the locking block C, is released, and raised to permit the knuckle B, to swing forward and outward, the first action is to raise the locking block C, through its chain *a*, away from, and out of contact with, the knuckle or coupling arm B, and as the uncoupling lever is still further manipulated, the trip D, E, is raised, through the connecting lever F, or the substituted links, bringing the front part of the enlarged portion E, in contact with the knuckle or coupling arm B, throwing the same forward and outward to its open or uncoupled position. When the uncoupling lever is released, the rod D, guided by the slots in the webs *b*, *c*, and the projecting finger *e*, of said rod, falls by gravity to its normal position, as clearly shown in Fig. 5, and is immediately followed by the locking block C. In switching cars from one part of the yard to another, and in making up trains, it is a frequent practice to retain the locking block C, in its withdrawn or uncoupled position, by fastening the uncoupling lever so that the cars may come in contact without coupling. When my improvement is used, and the locking block is fastened in its uncoupled position, through the uncoupling lever, as just described, the trip device D, E, will also be maintained in its raised position, and to prevent breakage said trip is raised a sufficient distance so that when its extension E, is struck by the inner end of the coupling arm B, it will assume the position shown in Fig. 6; the lower side of the enlarged portion E, being thrown backward and resting upon the corresponding incline *c'*, of web *c*, permitting the knuckle B, to swing inward without danger of breakage either to the trip, the wall of the coupler or the knuckle, and allowing said knuckle to assume its most inward position, where, however, it is prevented from being locked, by reason of the withdrawal of the locking block C. Upon releasing the uncoupling lever, the lower side of the enlarged portion E, slides down the incline *c'*, and as the projecting finger *e*, is in the elongated slot *d'*, the trip is accurately guided to its normal position.

It is obvious that my invention is practical and capable of use, whether the coupling B, slides outwardly upon spiral inclines on the coupler head, as before described, or whether these inclines are omitted. It will also be obvious that many changes in form or shape of the trip D, E, may be made without requiring invention and involving merely the skill of a mechanic.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A trip for rotary head car couplers, comprising an upright portion carrying near its lower end a forwardly projecting extension, the upper and lower sides of which are inclined or oblique, said extension terminating in a depending finger or lug, substantially as described.

2. An automatic trip for rotary head car couplers, comprising an upright portion and a downwardly inclined extension; a link or connecting lever extending between said upright portion and the locking block of the coupler, and means, such as a chain and a lever for actuating the device, substantially as described.

3. A rotary head car coupler provided with the slotted webs *b*, and the inclined slotted web *c*, in combination with a rotary coupling arm or knuckle, means for locking the same in its closed position, and a trip working within said webs *b*, *c*, and consisting of an upright portion and a forwardly projecting extension, the upper and lower sides of which are inclined or oblique, and means substantially such as described for operating said trip for the purposes set forth.

Signed at Detroit, in the county of Wayne and State of Michigan, this 1st day of February, A. D. 1893.

EDMOND D. BRONNER.

Witnesses:

W. K. BUSH,

D. C. ROSS.