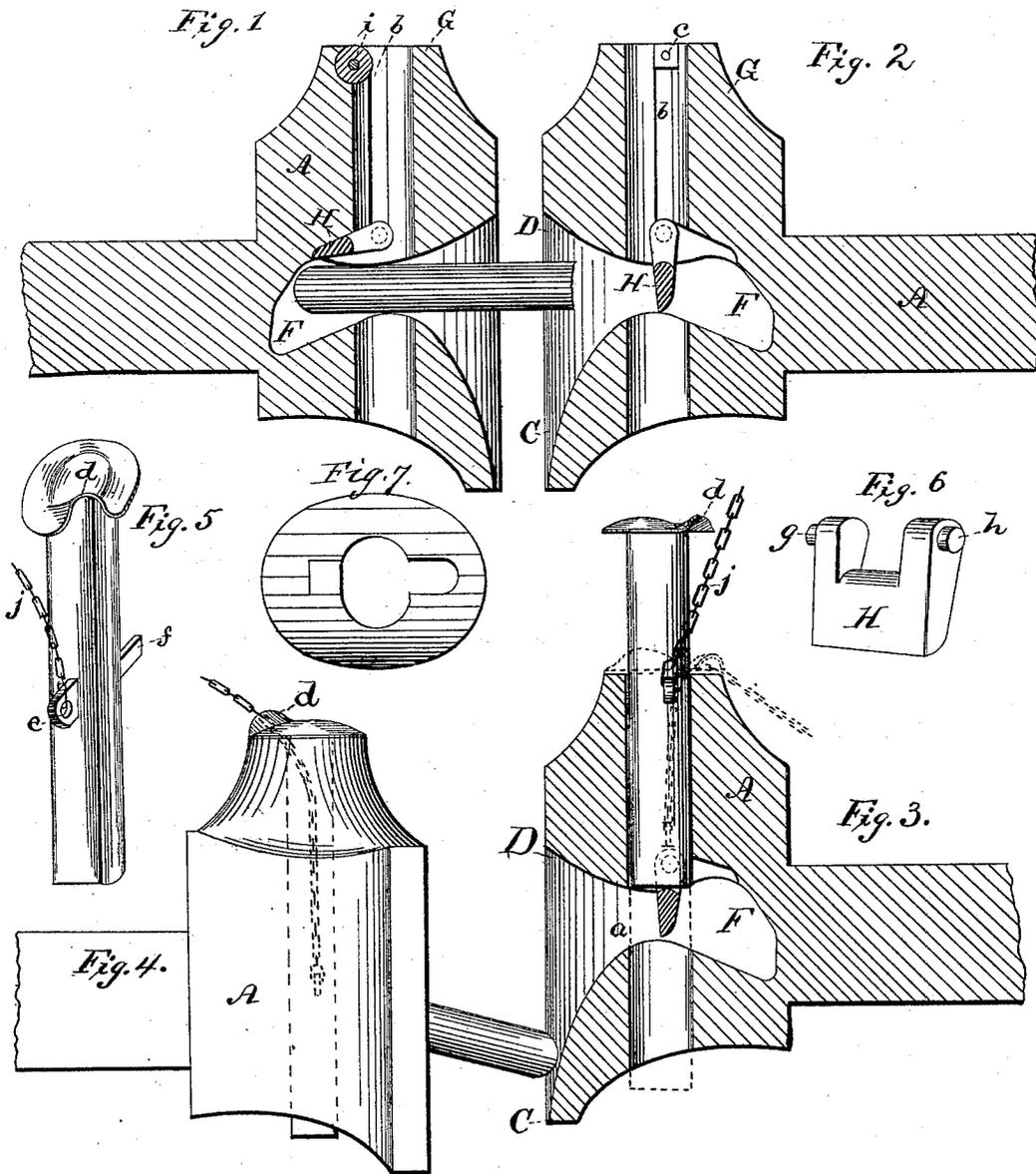


(No Model.)

N. BARR.
CAR COUPLING.

No. 277,828.

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WITNESSES
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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 277,828, dated May 15, 1883.

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To all whom it may concern:

Be it known that I, NICHOLAS BARR, of Cayuta, in the county of Schuyler and State of New York, have invented certain new and useful Improvements in Car-Couplings; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

This invention relates to that class known to the art as "car-couplings," and has for its object the ready and safe coupling of cars, by which the cars are coupled together automatically either from a plane below the draw-head or above it, or from the inside thereof, and to hold the coupling-pin in such position that it is always ready to be coupled by the uncoupling action of the operator.

A further object of the invention is to construct the draw-head in such manner as to cause the coupling-links of cars of irregular heights to readily enter the draw-head of the adjacent car, and when in position to hold at the desired plane without strain to the link.

To these ends my invention consists in providing the coupling-pin with raising devices located at a point near its middle, so that when it is desired to raise the pin either from a point below the plane of the draw-head or above it, it may readily be done by pulling the chain or wire rope, as shown in the drawings.

It further consists in constructing what I term the "mouth" of the draw-head in such manner that cars of irregular heights may be readily coupled together—*i. e.*, by extending the lower lip of the mouth of the draw-head sufficiently down as to cause the link to come in contact with it, and curving the said lip in such manner as to guide the link to the mouth, when the upper side of the link comes in contact with the upper lip of the draw-head, which is also curved in such manner that it guides the link into the mouth of the draw-head, the lower lip forming a fulcrum or bearing when the link is in contact with the upper lip, so that while the link is sliding in, its other or free end is automatically raised and held in this position without intermediate mechanism, the inner portion of the mouth of the draw-

head being of such contour as to permit the link to readily yield to any up-and-down or side movement of the cars when in motion or turning curves, and in other details of construction, as will be hereinafter described.

Referring more particularly to the accompanying drawings, Figure 1 represents a vertical transverse section of my coupler, showing the link in position and the pin inserted, the draw-head being provided with an anti-friction roller, over which the draw-chain passes. Fig. 2 shows a vertical section with the tripping device in position and provided with the groove for inserting the tripping device, the bottom of which forms journal-bearings in which it works; Fig. 3, a vertical section, showing the pin in position for coupling. Fig. 4 shows an elevation with the coupling-pin in dotted lines and also the raising device and upwardly-projecting lip in the bolt-head, through which the chain is drawn. Fig. 5 is an elevation of the bolt detached; Fig. 6, a detached view of the tripping device; and Fig. 7, a top view of draw-head, showing link-pin hole.

The same letters denote like parts in all the figures.

A is the draw-head of a car, and B its mouth, having what I term "lips"—C the lower lip, and D the upper lip. The lip C extends downwardly, and is so curved that when the link E strikes it, it is guided up to the mouth until it comes in contact with the upper lip, D, which guides it back into the rear cavity, F, the link in the meanwhile resting upon the high curving point *a* of the lower lip. Thus, while the link is sliding into the mouth the inner end of the link is depressed. The point *a* of the lower lip, forming a bearing, causes the free end to be elevated to the required position for coupling the cars without the interposition of intermediate mechanism. The cavity F is so formed that the link holds its relative position to correspond with the varying heights of the draw-heads of the next adjacent cars, and will yield to their position without bending or straining the link. The upper portion of the draw-head, as seen at G, is higher than the ordinary kind, and is provided with slots or grooves *b b'* for the insertion of the tripping device H. The groove *b* is provided at its top with a stop-piece, *e*, for preventing the entire withdrawal of the bolt when drawn up, and

the groove *b'* is open at its top for the pin-raising chain or rope to pass out under the hood-like projection *d* on the top of the bolt. These grooves also serve for guides for the lugs *e f* on the link-bolt. The bottom of slots or grooves *b b'* form journal-bearings for the tripping device *H*, which is provided with journals or trunnions *g h*. The tripping device *H* hangs vertically by gravity, and is provided with a recess in its center, so that when the bolt is raised the device *H* falls into and holds the bolt in an elevated position. When the link is inserted the device *H* flies back into a recess in the cavity *F* in such manner that it forms a part of the roof of said cavity, it being curved to correspond to the corner thereof.

i is an anti-friction roller, which may be inserted in the stop on top of the draw-head; but simply rounding the shoulder will be found sufficient for all practical purposes.

I am aware it is not new to automatically couple cars and to suspend the link-bolt which will drop upon the insertion of the link, and that flaring mouths are not new; but I am not aware that the tripping device was ever inserted and suspended like mine, and so located that it forms a part of the roof or crown of the rear cavity, and a guide for the entering pin; nor am I aware that the mouth of a draw-head having lips formed like mine and designed to perform the same functions that mine does has heretofore been used.

When the parts are put together for operation the tripping device is inserted from the top of the draw-head into the slots *b b'*. The link-bolt is then inserted, first fastening the draw-chain *j* to the eye-lug *e*. The piece *e* is then secured, when the coupler is ready for use.

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

1. A car-coupling consisting of the draw-head having link-pin hole which is provided with the vertical slots, the bottom of which forms journal-bearings for and in combination with the tripping device, and with the link-pin having a stop, *f*, arranged to come in con-

tact with stop *e*, located in the top of one said slots, as described, whereby the link-pin is prevented from being drawn out.

2. A draw-head for car-couplers, provided with a link-pin hole having vertical slots *b b'*, the bottom of which forms journal-bearings for a tripping device, and the top of one of them a stop, the slots or grooves also forming guides for and in combination with the link bolt or pin, provided with stop *f* and eyebolt *e*, and the lifting rope or chain *j*, substantially as set forth.

3. The combination, with the draw-head of a car-coupler, provided with link-pin hole and retaining device, the sides of said hole being provided guide-slots, and a slot for the lifting rope or chain, of the link-pin having a stop, an eyebolt, and a hooded aperture formed in its head, whereby the chain avoids friction in its withdrawal, substantially as described.

4. A car-coupling having the tripping device, the coupling-pin adapted to rest upon said device, and provided with a retaining-lug, in combination with the draw-head provided with the lower curved lip, its rear cavity having a curved roof, and with the coupling-link relatively arranged to the two draw-heads in such a manner that when the link is brought in contact with the lower lip of the uncoupled draw-head it is pushed into the coupled draw-head, by which the disengaged end is automatically coupled by means of the said tripping device, as set forth.

5. The combination, in a car-coupling consisting of the draw-heads provided with the lips curved as described, and having the rear curved cavity, as shown, in combination with the link-pin having the eyebolt and uncoupling-chain, said draw-heads having an upper extension for forming a fulcrum for the chain by which the pin is raised, substantially as set forth.

In testimony that I claim the foregoing as my own invention I affix my signature in presence of two witnesses.

NICHOLAS BARR.

Witnesses:

B. F. MORSELL,
O. E. DUFFY.