(No Model.) 2 Sheets—Sheet 1.

J. ZILIUS.

CAR COUPLING.

No. 504,015. Patented Aug. 29, 1893.

Fig. 1.

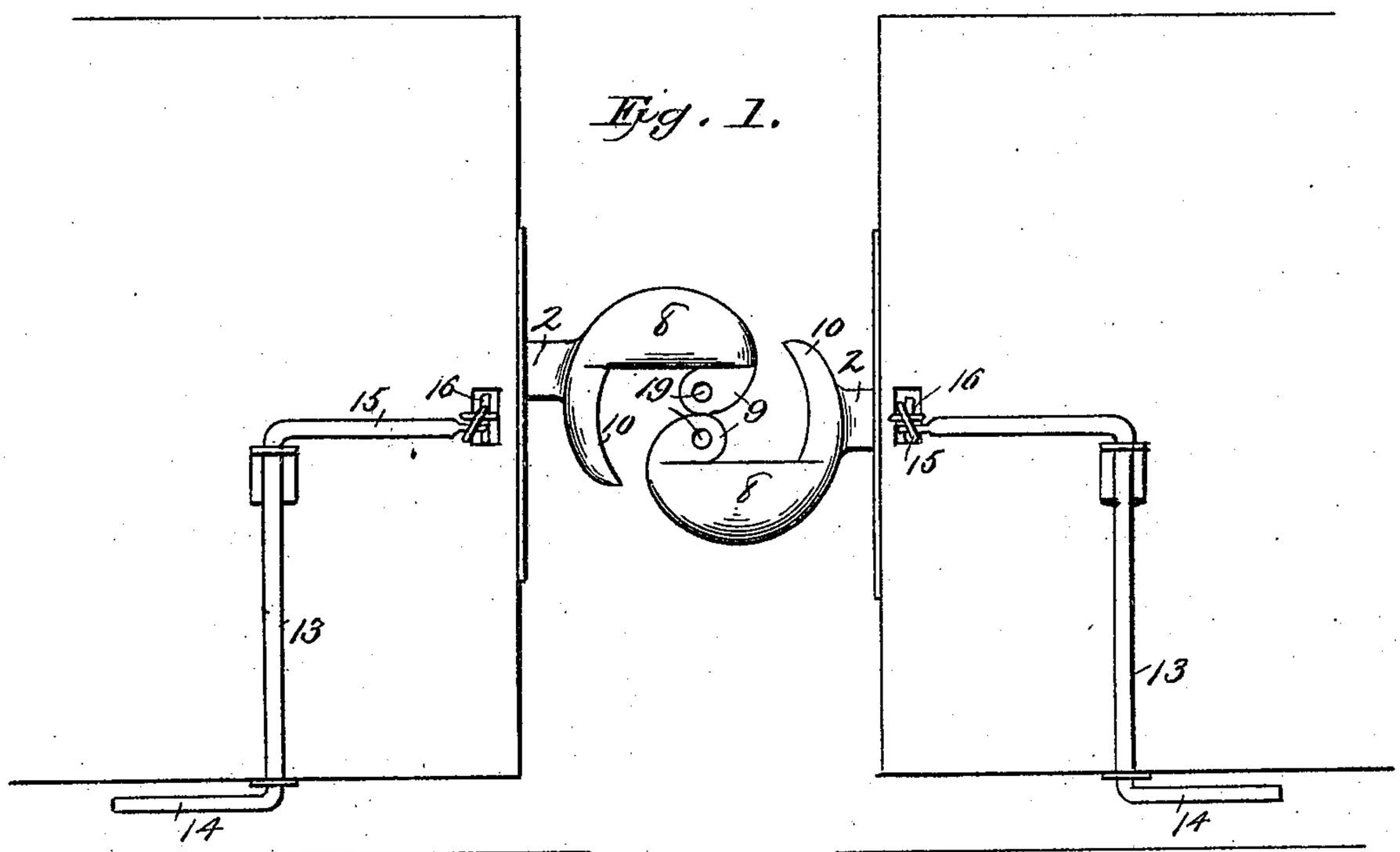


Fig. 2.

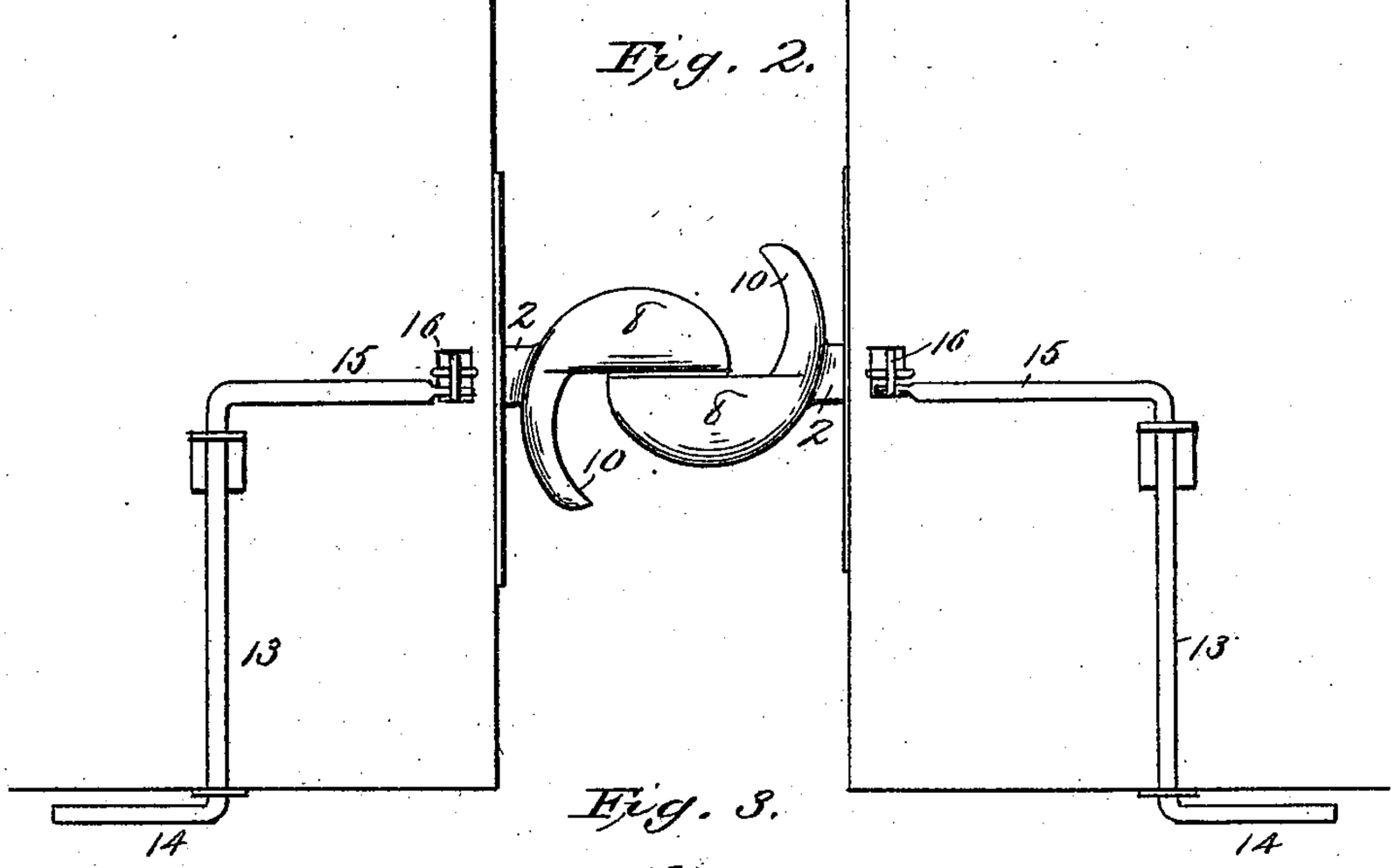
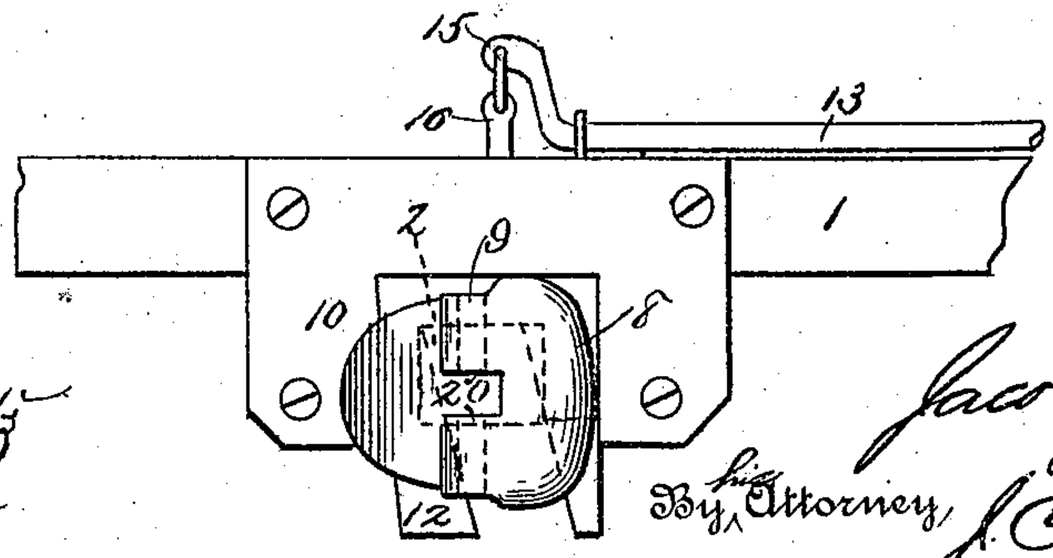


Fig. 3.



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By his Attorney, J. Fred. Reily.

(No Model.) 2 Sheets—Sheet 2.

J. ZILIUS.

CAR COUPLING.

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Fig. 4.

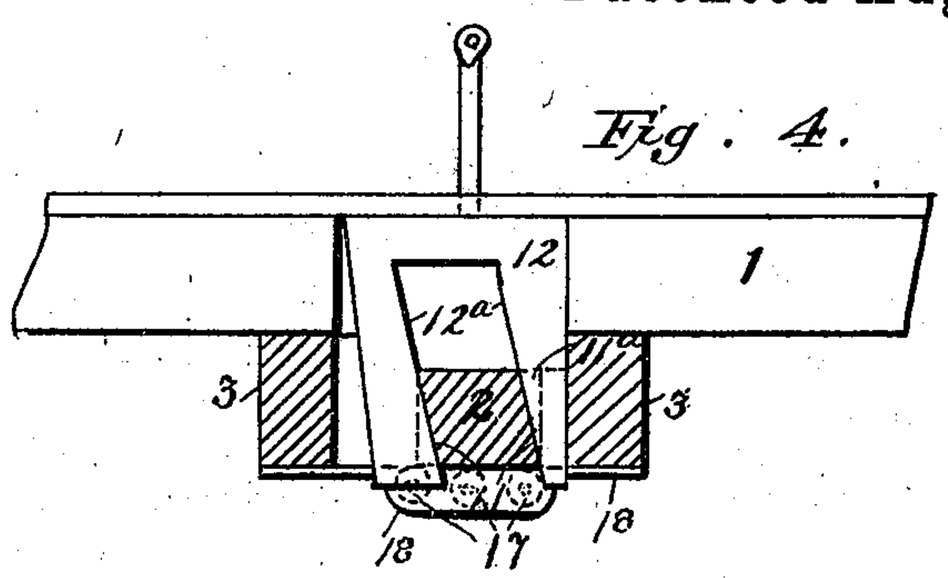


Fig 5.

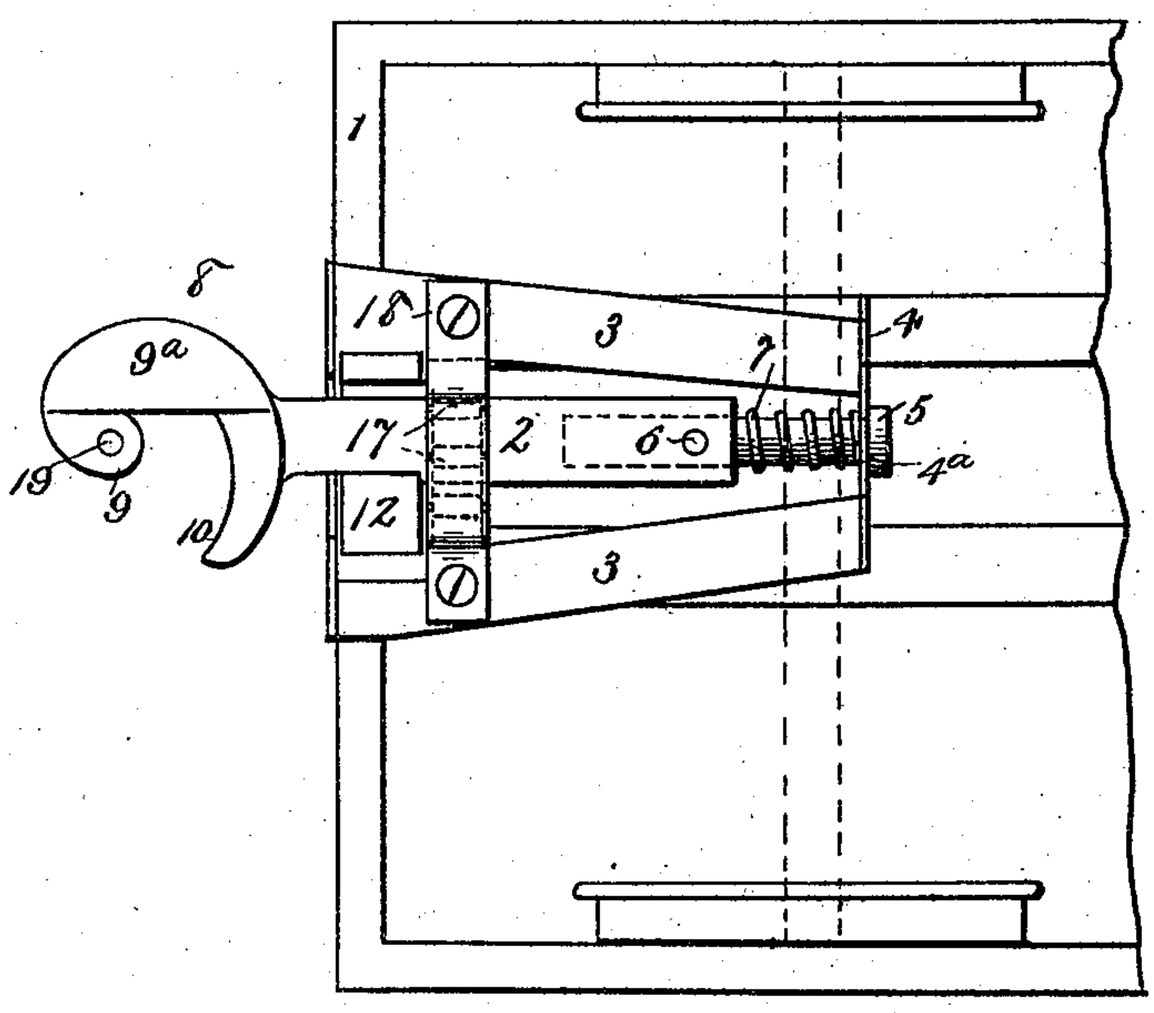
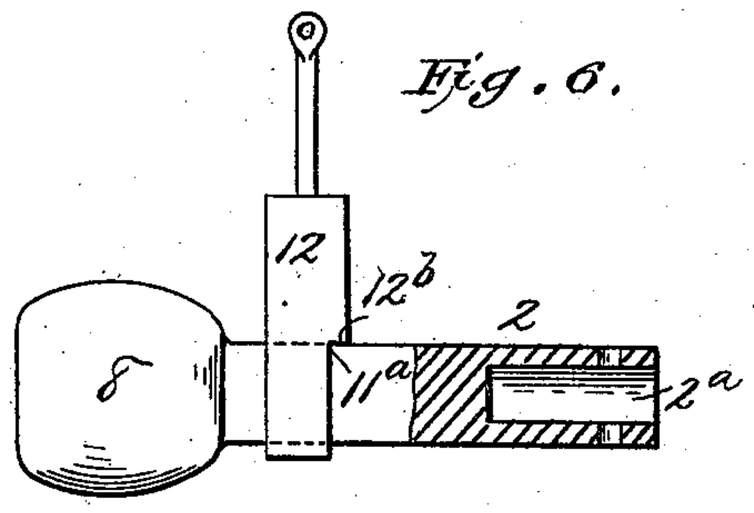


Fig. 6.



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UNITED STATES PATENT OFFICE.

JACOB ZILIUS, OF HUNTINGDON, PENNSYLVANIA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 504,015, dated August 29, 1893.

Application filed January 3, 1893. Serial No. 457,045. (No model.)

To all whom it may concern:

Be it known that I, JACOB ZILIUS, a citizen of the United States, residing at Huntingdon, in the county of Huntingdon and State of Pennsylvania, have invented certain new and useful Improvements in Car-Couplers; and I do declare the following to be a full, clear, and exact description of the invention, such as 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 figures of reference marked thereon, which form a part of this specification.

My invention consists in an automatic car coupler, which possesses the practical advantages of simplicity of construction, strength and durability in all its working parts, and extreme effectiveness in operation; and the invention will be hereinafter fully described and claimed.

Referring to the accompanying drawings, Figure 1 is a top plan view of the ends of two cars provided with my invention, showing the same uncoupled. Fig. 2 is a similar view showing the draw-heads coupled together. Fig. 3 is an end elevation showing the sliding actuating plate lowered. Fig. 4 is a similar view showing the said plate raised. Fig. 5 is a bottom plan view; and Fig. 6 is a detail view.

The same numerals of reference indicate corresponding parts in all the figures.

Referring to the several parts by their designating numerals, 1 indicates the end-sill which extends transversely beneath the end of a car.

The draw-bar, 2, of my car coupler extends beneath the end-sill, preferably, running back between the two frame-pieces, 3, 3, which converge toward their inner ends, across which a bearing-plate, 4, is secured. A headed rod, 5, extends through the central opening, 4^a, of the bearing plate into a longitudinal opening 2^a formed in the stem of the draw-bar, being held in place therein by a retaining-bolt, 6. A buffer-spring, 7, encircles the rod 5 between the rear end of the draw-bar and the bearing-plate 4. The outer end of the draw-bar is formed with the draw-head 8, having on one side the locking-lip 9, and on the other the outwardly-extending curved lip 10. The draw-bar, just back of the draw-head, is beveled or inclined on its opposite sides, at 11, in the same inclined plane, to adapt it to fit with, and be readily actuated by, the slotted actuating-plate 12. This plate or casting, which is of sufficient thickness to give it the desired weight, fits loosely within a recess formed in the end-sill, and is formed with the oblique opening 12^a, to adapt it to fit and slide down upon the draw-bar. A lever, 13, mounted in suitable bearings on the end of the car, has its cranked inner end, 14, connected by a short chain, 15, with an eyed stem, 16, which rises from the top of the actuating-block.

In operation, when the actuating-block or plate 12 is raised by the lever 13, it will be seen that its inclined sides, formed by the oblique opening 12^a, will slide the outer end of the draw-bar outward, the opening in the bearing-plate 4 being of sufficient size to admit of this movement; and a series of small rollers, 17, are mounted in a bearing-plate, 18, beneath the outer part of the draw-bar, as shown, and support the weight of the draw-bar and take up the friction as the bar slides from side to side. When the actuating-plate 12 has been raised to its highest point, the pressure of the spring 7 pushes the draw-bar slightly out so that the upper end of the shoulder 11^a on its side engages under a shoulder, 12^b, formed on the inner side of the actuating-plate. The plate is thus locked and held in its raised position, holding the draw-head moved outward to one side. When the two cars to be coupled come together, the curved ends of the locking-lips 9 strike against the curved faces 10, and the draw-bars are pushed back sufficiently to clear their shoulders 11^a from the locking-shoulders 12^b of the actuating-plates, when the latter drop by their own weight, and as they slide down upon the draw-bars their inclined sides slide the draw-bars inward, until the locking-lips 9 are closely engaged with each other, as shown in Fig. 2, thus securely locking the draw-heads together. The upper and lower sides of each locking-lip, or hook, back of its point or end, are closed by an integral hood-piece, 9^a, beneath which the point of the other draw-head hook fits, and this construction will effectually prevent either hook dropping

or becoming disengaged while the cars are running over uneven grades.

To uncouple the cars, it is only necessary to turn the levers to raise the actuating-plates 12, when their inclined sides slide both draw-heads outward, until their locking-hooks will clear each other; and the shouldered draw-bars, pushed out by their buffer-springs, engage the shoulders 12^b of the actuating-plates, and the couplings are thus locked or "set" in their uncoupled positions ready to automatically couple when two of the cars are brought together.

In order to enable a car provided with my coupler to couple with one having the old style of link and pin coupling, the end of the hook is formed with a horizontal slot, adapted to receive the end of an ordinary link, and with a vertical aperture, 20, for a common coupling-pin. It will be seen that by removing the retaining-bolt 6 which holds the headed rod 5 in the draw-bar stem, said bar can be readily removed when the buffer-spring becomes worn, and the spring thus readily replaced; or the draw-bar itself can be removed with equal readiness.

It will be seen, that all the parts of my automatic car coupler are simple, strong, and durable in their construction, while the coupler is exceedingly effective and satisfactory in its operation.

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

1. A car coupler comprising a draw-bar loosely secured at its inner end, capable of lateral movement at its outer end, and having a hooked draw-head, and a vertically movable actuating-plate formed with an inclined opening, 12^a; substantially as set forth.

2. In an automatic car coupler, the combination of the draw-bar loosely secured at its inner end, supported near its outer end on a transverse bearing, and having the hooked draw-head at its outer end, and the vertically moving actuating-plate 12 formed with the inclined opening 12^a and engaging with the outer end of the draw-bar; substantially as set forth.

3. In an automatic car coupler, the combination of the draw-bar loosely secured at its inner end, capable of lateral movement at its outer end, and having the draw-head formed with the outwardly-extending curved lip 10 and the hook 9 having the integral hood-pieces 9^a beyond which the point of the hook extends, and the vertically movable actuating-plate 12 having the inclined opening and engaging with the outer end of the draw-bar; substantially as set forth.

4. In an automatic car coupler, the combination, of a suitable bearing plate, as 4, the draw-bar having a headed rod extending from its rear end loosely through said plate and a bumper-spring encircling the rod between the plate and draw-bar, the draw-bar being formed at its outer end with the inclined sides 11 and shoulder 11^a, and with the hooked draw-head, and the vertically moving actuating-plate 12 formed with the inclined opening 12^a and the stop-shoulder 12^b, adapted to engage the shoulder 11^a of the draw-bar; substantially as set forth.

5. In an automatic car coupler, the combination of the draw-bar loosely secured at its inner end, capable of lateral movement at its outer end, and having the hooked draw-head, the bearing-frame 18 having the series of small rollers journaled transversely in it, and secured transversely beneath the laterally-movable outer end of the draw-bar, and the vertically movable actuating-plate having the inclined opening and engaging with the outer end of the draw-head; substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JACOB ZILIUS.

Witnesses:
CHRIST. MAIER,
JOHN ZILIUS.