

(No Model.)

2 Sheets—Sheet 1.

M. I. WELCH.
CAR COUPLING.

No. 496,026.

Patented Apr. 25, 1893.

Fig 1

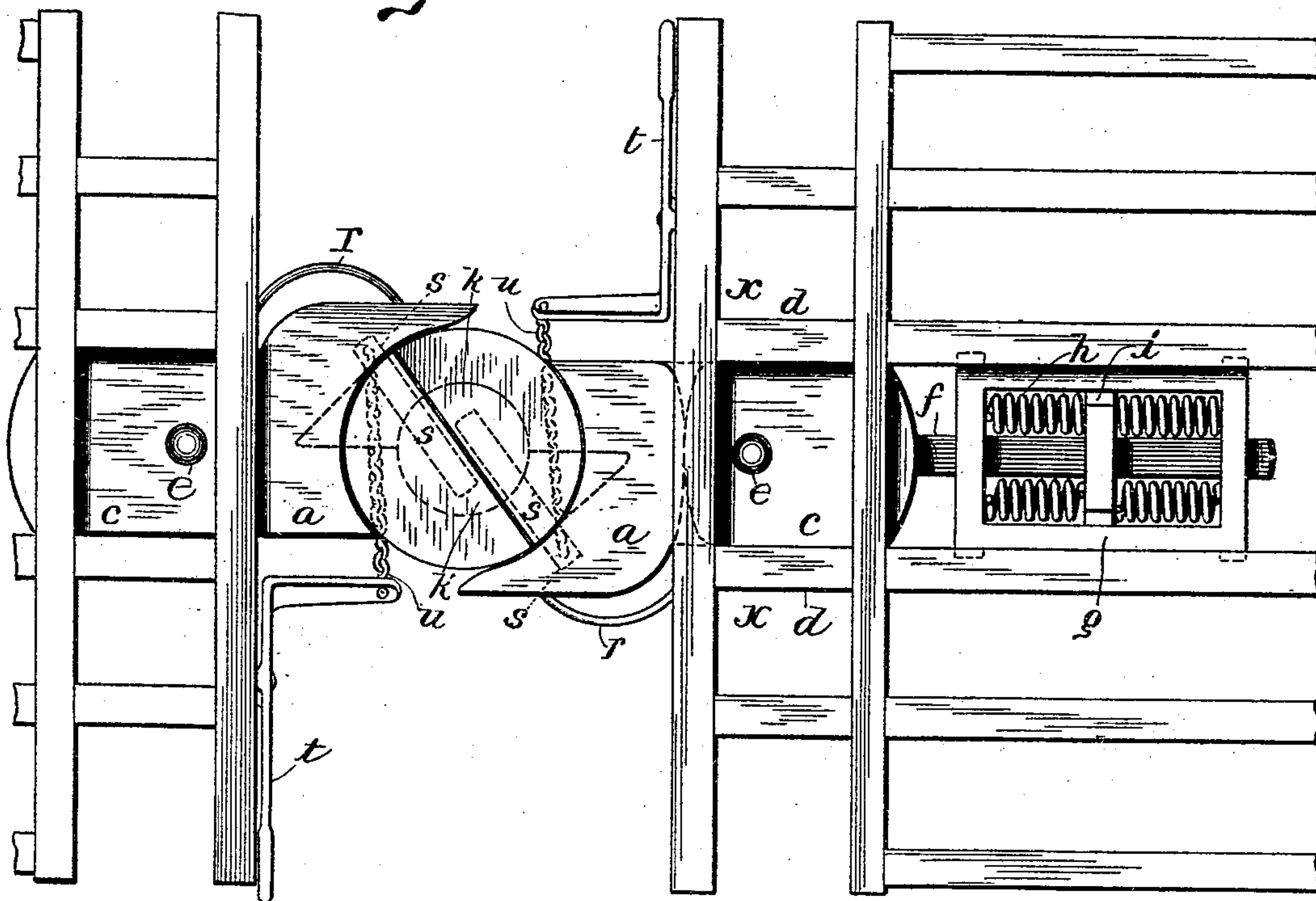


Fig 2

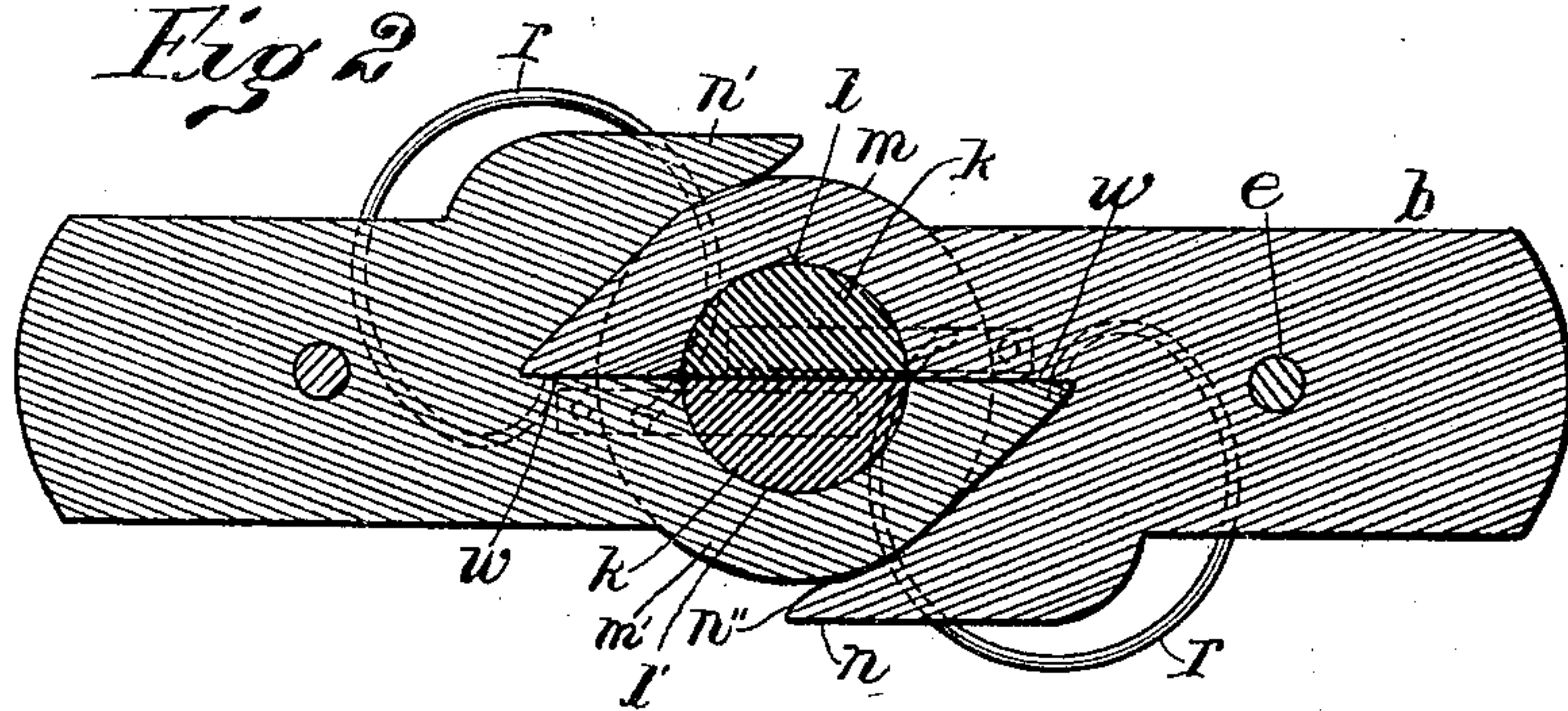
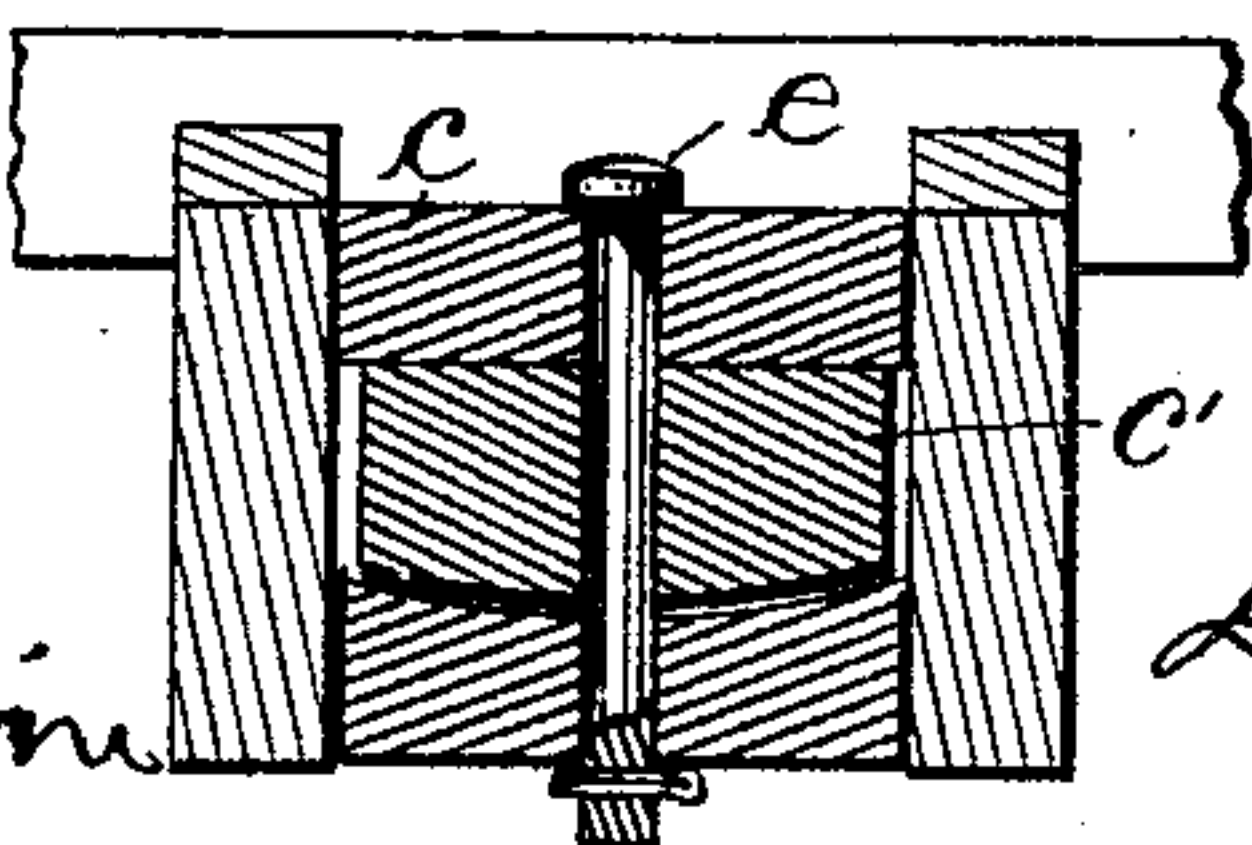


Fig 3



Witnesses

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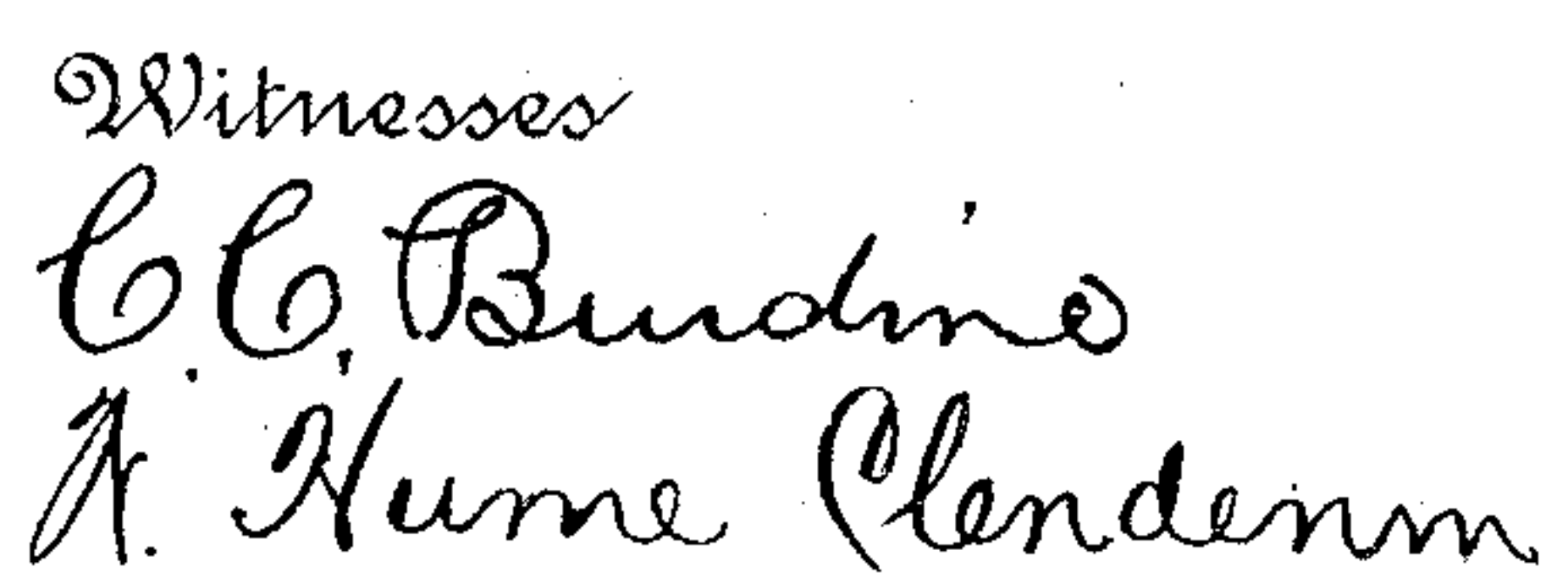
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2 Sheets—Sheet 2.

No. 496,026.

Patented Apr. 25, 1893.



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UNITED STATES PATENT OFFICE.

MICHAEL I. WELCH, OF CORDELE, GEORGIA, ASSIGNOR TO THE AMERICAN SAFETY CAR COUPLING COMPANY, OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 496,026, dated April 25, 1893.

Application filed December 23, 1892. Serial No. 456,171. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL I. WELCH, a citizen of the United States, residing at Cordele, in the county of Dooly and State of Georgia, 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 letters of reference marked thereon, which form a part of this specification.

My invention relates to that class of automatic car couplers especially adapted for use upon coaches, and street cars, although it is applicable to freight cars. Heretofore automatic couplers have employed a rotary split pin having a vertical axis and embraced by jaws so that when the dividing line between the two halves of the pin is shifted parallel to the movement of the cars the jaws would uncouple and when thrown to bring said line transverse to the movement of the cars they would lock the parts securely together.

The purpose of my invention is to greatly simplify the foregoing construction, to render the operation of the parts more easy, and to so construct the whole that it will form a safer and more secure coupling than any thing of the kind hitherto produced.

To this end my invention consists of a rotatable split pin or head in combination with the other peculiar constructions and arrangements of parts more fully described hereinafter and pointed out in the claim.

In the accompanying drawings—Figure 1, represents a top view of the framing of the car, equipped with my improvement; Fig. 2, a horizontal section of the parts in uncoupled adjustment; Fig. 3, a front end view of one of the twin drawheads, and its co-operative parts; Fig. 4, a vertical section through $x-x$ Fig. 1; Fig. 5, a perspective view of the drawhead with the rotary pin removed; Fig. 6, a perspective view of one of the halves of the rotary pin, and, Fig. 7, a transverse section through $y-y$ of Fig. 1.

The reference letter a represents a drawhead of a peculiar construction, and to which my improvements are applied. The parts

upon the opposite drawhead are exactly the same in construction and operation, so that a description of one will suffice for both. The shank b of the drawhead is pivoted to swing laterally on a buffer-block c , which moves back and forth between the frame-bars d . The rear end of the shank is rounded and enters a corresponding chamber c' within the buffer-block. The outer end of the buffer-block is rounded to permit the oppositely curved shoulders b' on the rear of jaw n to press against and roll laterally thereon, whereby the drawhead will be free to swing laterally when rounding curves in the track. The means by which the drawhead is coupled to the buffer-block consists of a removable bolt e which forms the pivot on which the drawhead swings.

The cushioning mechanism consists of a stem f attached to the rear of the buffer-block, which stem extends backward through a spring-containing frame g . Within this frame are located two pairs of springs h , between which is interposed a sliding presser-block i , secured to move with the stem f . This arrangement of the springs and presser-block gives the drawheads a limited cushioned movement either way to effect an easy coupling operation.

The coupling mechanism comprises an oscillating split pin or head composed of two equal semi-cylindrical sections $k k'$, placed base to base to form a cylinder when assembled. These fit within semi-cylindrical concavities l formed in the jaw m the latter being fixed to and projecting forward from the drawhead. The drawhead is further provided with an outward extending tapering jaw n having a bevel n' against which the curved outer surface of the opposing recessed jaw m' comes in sliding contact as the jaws approach in the coupling operation. This jaw n extends forward opposite the recessed jaw m , the two forming an approximately wedge-shaped mouth for the reception of said recessed jaw. In the top and bottom of the jaws $m m'$ are formed arc-shaped recesses o which receive curved lugs p upon the top and bottom flanges q of the pin sections. This construction gives each section a limited oscillatory movement. The flanges q are made

semi-circular so that when the pin sections are coupled together they form a circular disk-like top and bottom, the contiguous straight edges of which come in contact with and are confined between the opposite jaws *n*. When in this position the parts are so neatly fitted together that no openings are left in or about the top of the coupling parts sufficiently large to receive a person's foot, in case the parts should be stepped upon in passing from one car to another. The free end of a spring *r* is attached to each of the pin sections *k k'*, for the purpose of automatically giving them a partial rotation and thereby throwing them into coupling position, as shown in Fig. 1. When in this position the dividing line between the pin sections will extend at more or less of an angle to the line of draft upon the coupler.

The means for throwing the parts in uncoupling position, consist of levers *t t'* fulcrumed on the opposite ends of the cars and connected to the sections *k k'* by means of chains *u* and arms *s* upon the under sides of the sections.

The preferred construction of my invention having been set forth, I will now proceed to describe its operation.

As the coupling jaws approach, the jaws *m m'* pass each other and simultaneously strike against the flat sides *k k'* of the pin sections, and against the curved end *n'* of arm *n*, forcing them around into a position that will bring the dividing line between the said sections in line with the path of movement of the draw-heads, and as soon as the jaws pass completely into each other, so that the curved recesses *l l'* are brought into coincidence, as shown in Fig. 2, the force of the springs *r* will throw the pin sections back so that the dividing line between them will lie across said path of movement as in Fig. 1. These sections render the uncoupling of the parts impossible, because the opposite jaws *m m'* pull directly upon the vertical sides of the pin, and the separable sections thereof cannot move apart because their flanges are confined between the short jaws *n n'*. In the opening and closing actions of the pin sections *k k'*, the lugs *p* on the flanges *q* come in contact with the end walls of the arc-shaped slots *o* and prevent said sections from moving beyond a predetermined

position. These lugs *p* and slots *o* also serve to confine the pin sections upon the jaws. The uncoupling operation is performed by pushing forward the hand lever *t*, which causes the chain *u* to draw upon the arm *s* thereby turning the pin sections *k k'* to a position that will bring them in line with the vertical walls *w* of the jaws *m m'* and hence in line with the longitudinal movement of the drawhead, as shown in Fig. 2, whereupon the jaws will be free to fall apart. As soon as the ends of the jaws *m m'* pass out and beyond the axis of the split pin, the halves or sections of the latter will automatically spring back into the position shown in Fig. 3, and in readiness to be again coupled. It will further be observed in the operation of the pin sections that the end of the jaw *m* strikes against the flat surface of the opposite pin section at a point *x* beyond its axis, thereby pushing the section around against the tension of the spring *r* until the flat surface *w* thereof passes beyond the body of the pin section, at which moment the curved recesses *l l'* are brought into coincidence and the force of the spring causes the pin sections to make a partial turn back and lock the parts together, as in Fig. 2.

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

The herein described car coupler consisting of the combination with a pair of draw-heads pivoted to and oscillating laterally from a buffer block, jaws on said head, one of said jaws being provided with a semi-circular pin socket, and recesses in its top and bottom, a semi-cylindrical pin section provided with flanges projecting laterally from its upper and lower ends, inwardly extending lugs upon the inner sides of the flanges, righting springs attached to the draw-heads, and having their free ends attached to said sections, laterally extending arms also attached to the sections, and manipulating mechanism attached to the free ends of said arms, substantially as described.

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

MICHAEL I. WELCH.

Witnesses:

I. B. OWENS,

W. HUME CLENDENIN.