

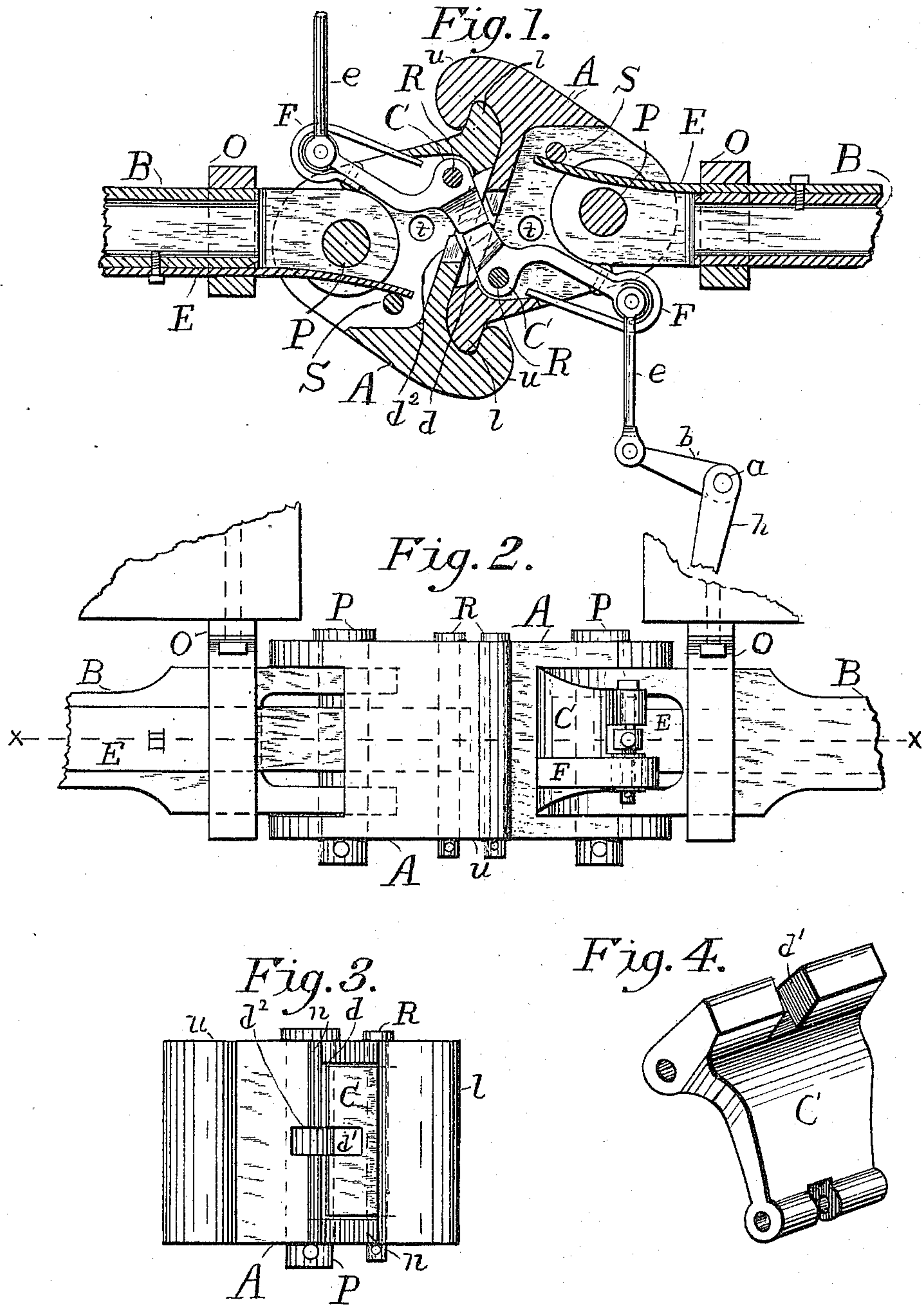
(No Model.)

2 Sheets—Sheet 1.

W. JOHNSON.
CAR COUPLING.

No. 572,999.

Patented Dec. 15, 1896.



Witnesses.
Morgan D. Tracy
William J. Baxter

Inventor.
Wm. Johnson.
per Wm. Johnson & Co.,
Attorneys

(No Model.)

2 Sheets—Sheet 2.

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Fig. 5.

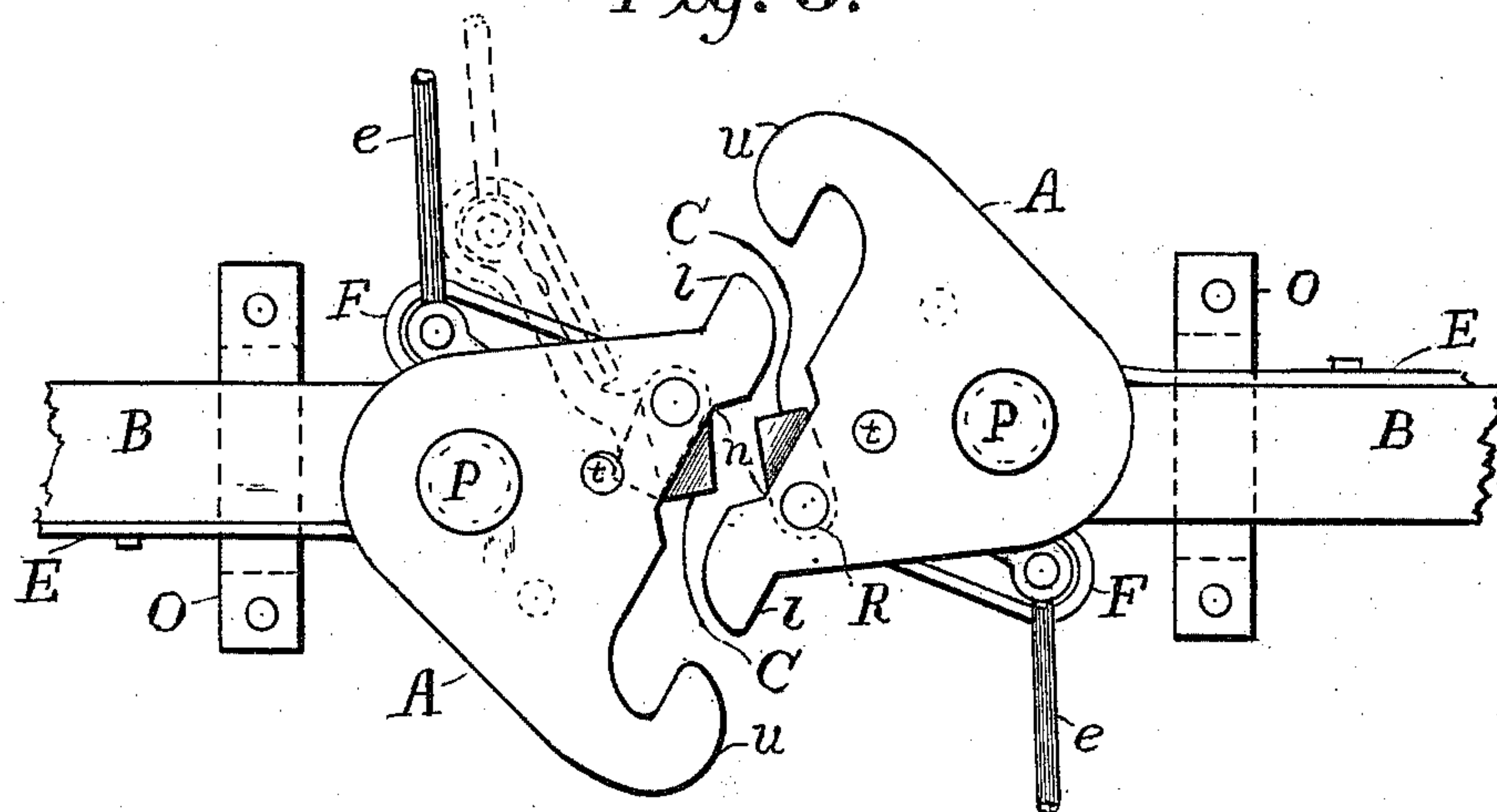
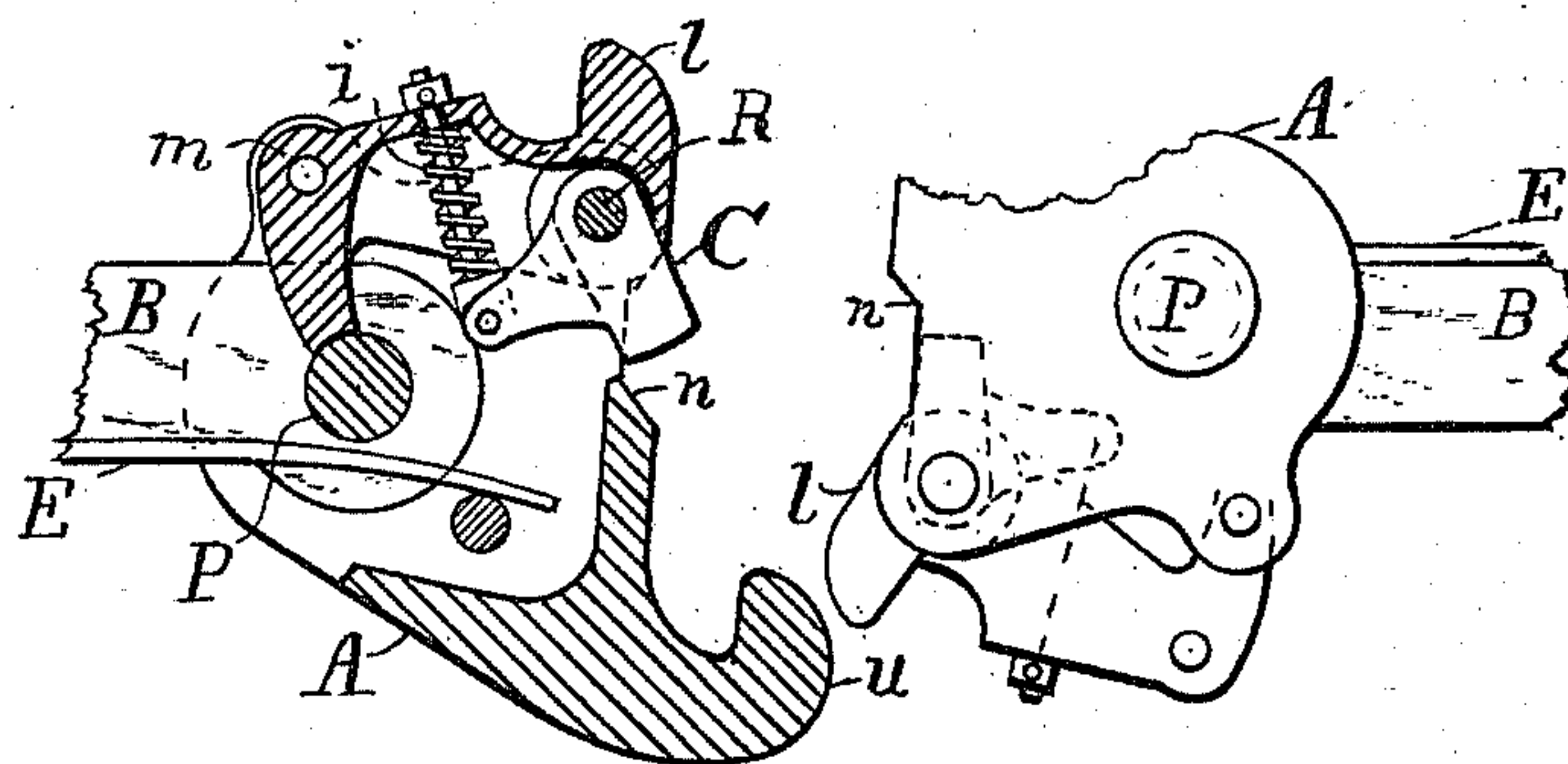


Fig. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM JOHNSON, OF PENN YAN, NEW YORK.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 572,999, dated December 15, 1896.

Application filed December 15, 1890. Serial No. 375,047. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM JOHNSON, a citizen of the United States, residing at Penn Yan, in the county of Yates and State of New York, have invented certain new and useful Improvements in Car-Couplings; and I do hereby 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.

My invention relates to improvements in car-couplings.

The object of my invention is to produce a simply-constructed and strong automatic car-coupling adapted to form a substantial buffer as well as draw-head, and which will couple cars of unequal heights without undue slack, and which is also adapted to be uncoupled from a safe position.

My invention is set forth in the following specification and claims, reference being had to the accompanying drawings, in which—

Figure 1 is a transverse section of a pair of my improved car-couplings, taken on the plane indicated by the dotted line *xx* of Fig. 2, shown in a coupled position. Fig. 2 is a side view of the same, also in a coupled position. Fig. 3 is a front or face view of my improved car-coupling. Fig. 4 is a detached perspective view of the locking and releasing lever. Fig. 5 is a top view of a pair of my improved car-couplings shown in an uncoupled position. Fig. 6 is a modified form of my improved car-coupling.

Referring to the drawings, A represents the body of the draw-head and buffer of the coupling. Said draw-head is pivotally attached or hinged to the outer end of the draw-bar B by means of a knuckle-joint and pin or bolt P and is adapted to turn horizontally thereon. The said draw-head has a hook projection *u* formed at one end of its face, extending vertically across said face, and a flange projection *l* at the opposite end of said face. The said hook and flange projections are adapted to interlock one with the other of a like interchangeable draw-head, that is to say, the flange projection of one coupling slides into the hook projection of the other or mating coupling upon opposite sides of the center line of the cars, as shown in Fig. 1. The said interlocking draw-head is also pro-

vided with an opening *d* cut in its face through which the short arm of the locking and releasing lever C passes, and is further provided with a groove *n* in said face, said groove being adapted to permit the engagement of the said locking-levers when a pair of the draw-heads or couplings couple at unequal heights. The slot-opening *d*², shown in the face of said draw-head, and the perforation *t* are for the insertion of a link and pin adapted to couple with the ordinary link-and-pin coupling, when desired.

The draw-bar B is attached to the body of the car by the usual spring arrangement, the outer end being held in place by means of the yoke O, also in the usual manner.

C represents the locking and releasing lever, which is pivotally attached to the draw-head A by means of the pin or bolt R. The short arm of said locking-lever is adapted to extend out through the opening *d* in the face of the draw-head a short distance beyond said face and to form an abutment against which a like end of the locking-lever of the mating coupling abuts or acts, the end of one locking-lever abutting against the end of the other in the direction to securely hold the pair of draw-heads or couplings interlocked or from separating by slipping out the flange projection of one draw-head from under the hook projection of the other when the pulling strain is thrown thereon. The said locking-lever C is thrown into a locked position by means of the spring F, attached to the long arm of said locking-lever, and is drawn back to an unlocked or releasing position to uncouple the cars by means of the connecting-rod *e* and levers *b* and *h*, and which may be arranged to be operated either from the ground, platform, or top of the car, as may be desired. The said locking-lever is provided with a slot-opening *d* in its short arm to admit the insertion of a link, when desired.

E represents a spring, one end of which is solidly attached to the draw-bar B of the car, while the free end extends out beyond the center upon which the draw-head turns and is adapted to press against the fixed stud S and turn the said draw-head to an uncoupled position, (shown in Fig. 5,) the action of the said spring being also adapted to facilitate the separation of the interlocking draw-

heads as the cars are moved apart and are uncoupled.

From the foregoing description it will be seen that when a pair of the described couplings are in an uncoupled position, as shown in Fig. 5, and are forced together for the purpose of coupling the faces will slide one against the other and will at the same time turn upon the pin in the draw-bar and will continue thus to slide and turn until the flange projection of one draw-head or coupling strikes against the bottom of the hook projection of the other coupling, when the faces of said couplings will be brought to their normal coupled position. (Shown in Fig. 1.) The short arms of the locking-levers will then have passed each other and will have been thrown into a locked or abutting position, in which position the greatest pulling strain cannot cause the couplings to separate or uncouple. It will be seen that in the operation described the short arms of the locking-levers will have been pressed down to the face-line of the couplings, by which action the springs attached to the said locking-levers will have been compressed and will then react to throw the said locking-levers into a locked position as soon as they have passed by one another, the action being automatic. It will further be seen that to uncouple a pair of the described couplings it will only be necessary to move back one of the locking-levers to an unlocked position, (shown by dotted lines in Fig. 5,) the other locking-lever being free to slide along in the opening *d* and groove *n* without contact with the face of the coupling until the interlocked ends of the couplings separate.

In carrying out my invention it will be observed that the center upon which the coupling turns is upon one side of the center line of the cars, with the hook end of the coupling upon the same side; also that the faces of the couplings form an oblique angle with the center line of the cars when in a coupled position, as shown in Fig. 1. This arrangement is preferred for the reason that it gives greater length and leverage to the flange end of the coupling and facilitates the engaging and disengaging of the interlocking ends of the couplings. The long end or arm of the locking-lever C should extend back beyond the pivot-center of the coupling to admit of the locking in one direction of the operating-lever, as by this arrangement the pull upon said operating-lever to uncouple the cars does not prevent the turning of the coupling to disengage with the mating coupling as the cars move apart.

The draw-head should be a steel or malleable-iron casting and may have great strength without being unduly heavy, as the pulling strain is equally divided upon either side of the center line and the interlocking pulling-faces are never at cross-angles one with the other. The locking and releasing lever C should also be of steel or malleable iron and

the abutting faces hardened. The pivot-bolt upon which the coupling turns should be steel and of ample size.

The draw-bar where it passes through the yoke should have considerable depth, proportioned to the width of the coupling and to the variation in the heights of cars it is designed to couple.

The modification shown in Fig. 6 will be understood from an inspection of the drawings with but brief description. The flange projection *l* is pivotally attached to the body of the draw-head by means of the pin *R* and is held in an interlocking position by means of the pin *m*, the said pin dropping automatically as the long arm of the flange projection *l* is pushed back by the contact of the faces of the couplings and is withdrawn by means of levers to uncouple and to allow the flange projection to open outward to release the interlocking draw-heads or couplings. The locking-lever C is pivotally attached to the draw-head and to the knuckle or flange projection *l*, having an independent motion upon the pin *R*. Said locking-lever is pulled back from a locked position by the opening of the flange projection and is thrown into a locked position by the action of the flange end in closing and by the coiled spring *i*, the action of the locking-lever and of the draw-head and coupling being in other respects similar to that first described, except that the face of the coupling in a coupled position may approach more nearly to a right angle with the center line of the cars.

It is evident that my invention is susceptible of various modifications without departing from the spirit thereof and does not depend upon the form of the locking and releasing device, whether sliding or rolling, or in the number or arrangements of levers and rods adapted for uncoupling. I do not therefore restrict myself to the precise form or construction or proportions of all or of any of the parts as shown herein.

Having described my invention, I claim—

1. In a car-coupling the combination of a draw-head and buffer provided with the described interlocking hook and flange projections formed integral therewith, and adapted to interlock with a like mating or interchangeable draw-head, and to be pivotally attached to a draw-bar or body of a car, the abutting face of said draw-head being formed normally at an oblique angle to the center line of the car and coupling, and means adapted to automatically lock and to securely hold a pair of said coupling or draw-heads interlocked or coupled, and to resist the pulling strain thereon substantially as and for the purpose specified.

2. In a car-coupling the combination of the described interlocking draw-head adapted to be pivotally attached to a draw-bar or body of a car, the face of said draw-head formed to stand normally at an oblique angle to the center line of the car and draw-head, and pro-

vided with an automatic locking device attached thereto and adapted to hold a pair of said draw-heads coupled together to couple the cars, and means adapted to prevent said draw-head from being turned to an inoperative position upon said draw-bar or car, when not coupled together, substantially as and for the purpose specified.

3. In a draw-head or coupling formed with the described interlocking projections and adapted to be pivotally attached to a draw-bar or car, the combination therewith of a locking and releasing lever pivotally attached to said draw-head upon one side of the center line thereof, the outer end of said lever adapted to abut against a like end of the lever of a mating draw-head to couple the cars, and the other end of said lever being formed of sufficient length to extend back of and beyond the center of the pivot by which said draw-head is attached to a car, to prevent the pulling strain on said lever end from operating to hold a pair of said draw-heads interlocked when it is desired to uncouple the cars, substantially as and for the purpose specified.

4. In a car-coupling of the kind described, the combination of the described interlocking draw-head, and buffer A, pivotally attached, or hinged to the draw-bar B, provided with a locking and releasing device, and the spring E, adapted to move or turn said draw-head to an uncoupled position, as shown in Fig. 5, substantially as and for the purpose specified.

5. In a car-coupling, the combination of the described interlocking draw-head and buffer A, pivotally attached or hinged to the draw-

bar B, adapted to turn horizontally thereon, the pivot pin or bolt P, the spring E, adapted to move or turn said draw-head as described, and the locking and releasing lever C, pivotally attached to the said draw-head A, and adapted to hold said draw-head, interlocked with a like interchangeable draw-head or coupling, to couple the cars, and to release said draw-heads, or couplings, from an interlocked position, to uncouple the cars, substantially as and for the purpose specified.

6. In a car-coupling, adapted to couple cars automatically, the combination comprising the described, interlocking draw-head and buffer A, provided with the groove *n*, and openings *d*, and *d*² and pivotally attached, or hinged to the draw-bar B, adapted to turn horizontally thereon, the spring E, adapted to turn the said draw-head or coupling as described, the locking and releasing lever C, pivotally attached to the said draw-head A, by means of the pivot pin or bolt R, and provided with the slot-opening *d'*, said lever C, being adapted to be moved out, through the opening *d*, in the face of said draw-head by means of the spring F, and to be withdrawn therefrom, by means of the connecting-rod *e*, and levers *b*, and *h*, substantially as and for the purpose specified.

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

WILLIAM JOHNSON.

Witnesses:

MORGAN D. TRACY,
WILLIAM J. BAXTER.