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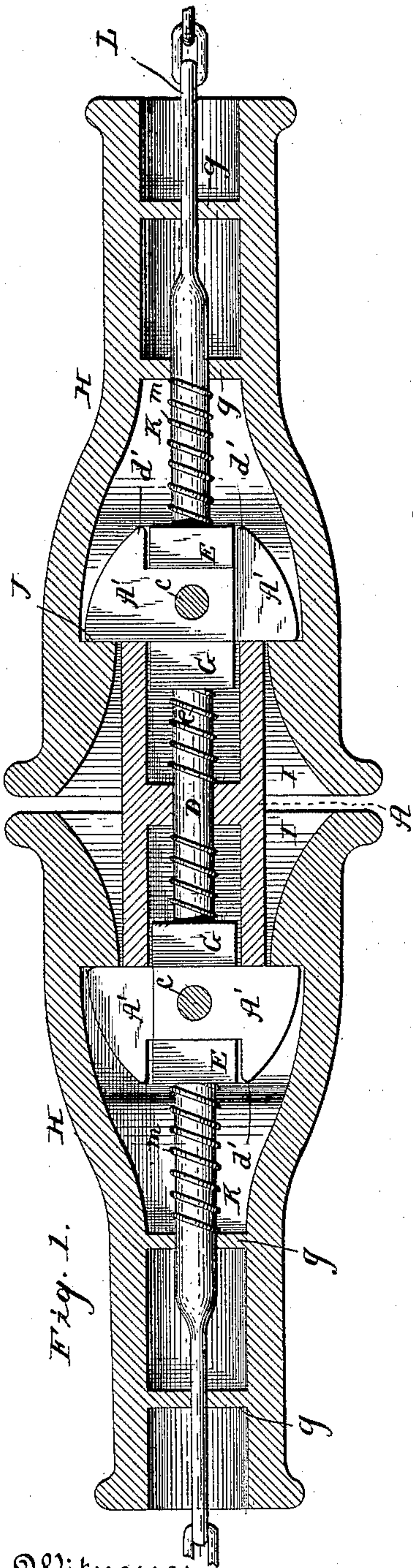
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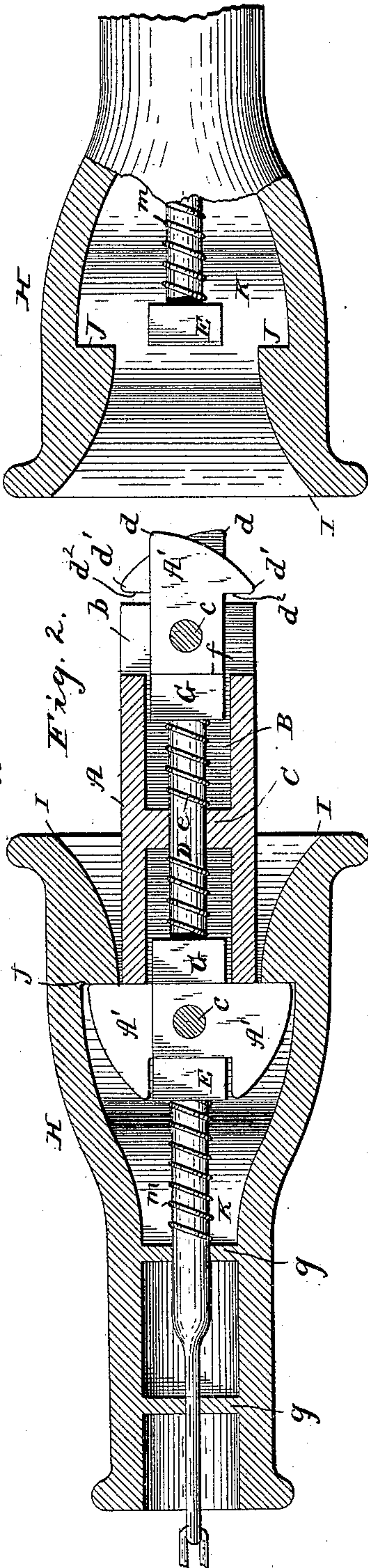
CAR COUPLING.

No. 392,104.

Patented Oct. 30, 1888.

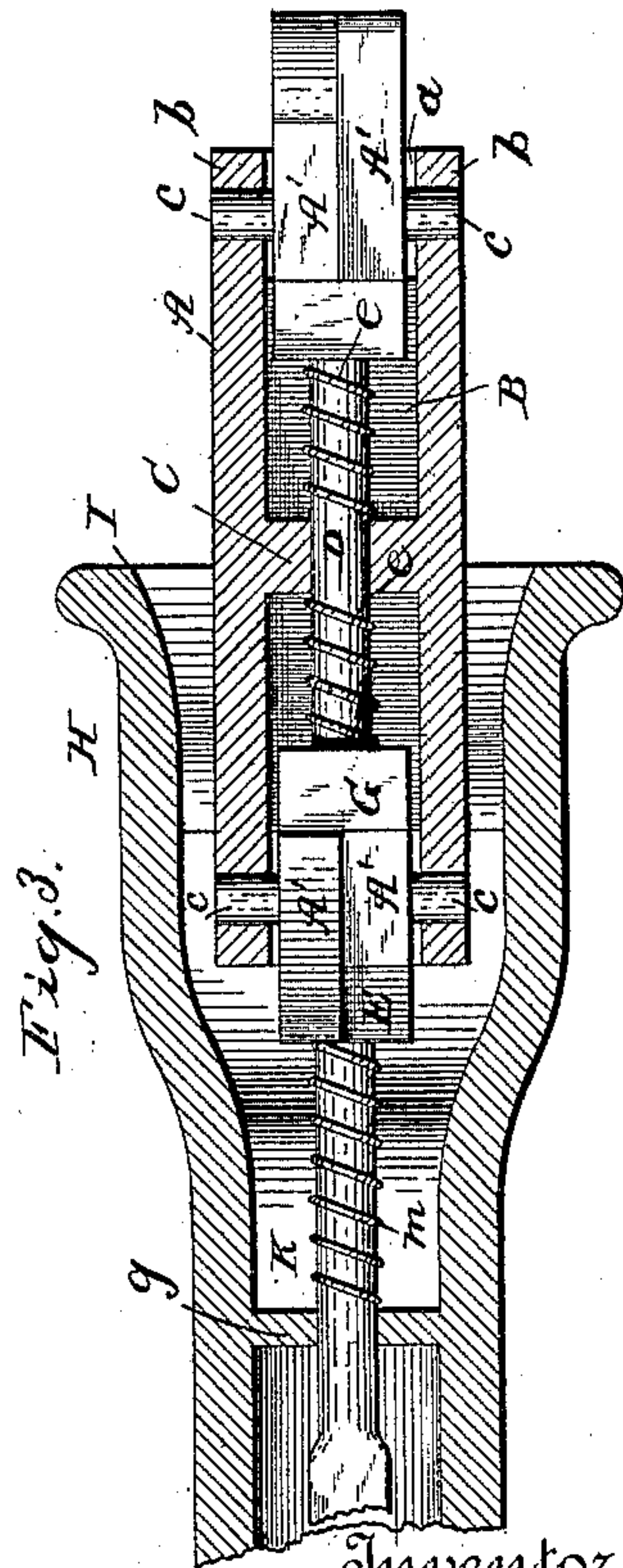
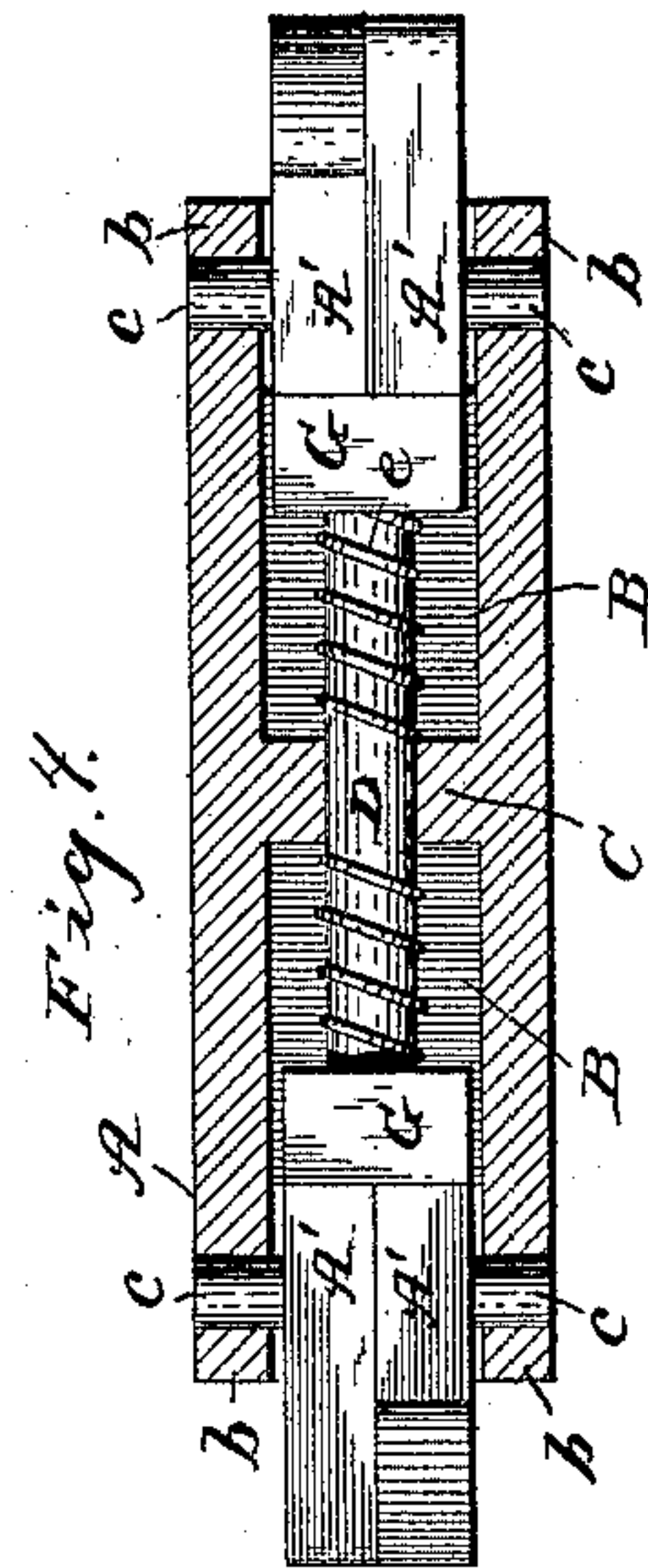


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(No Model.)

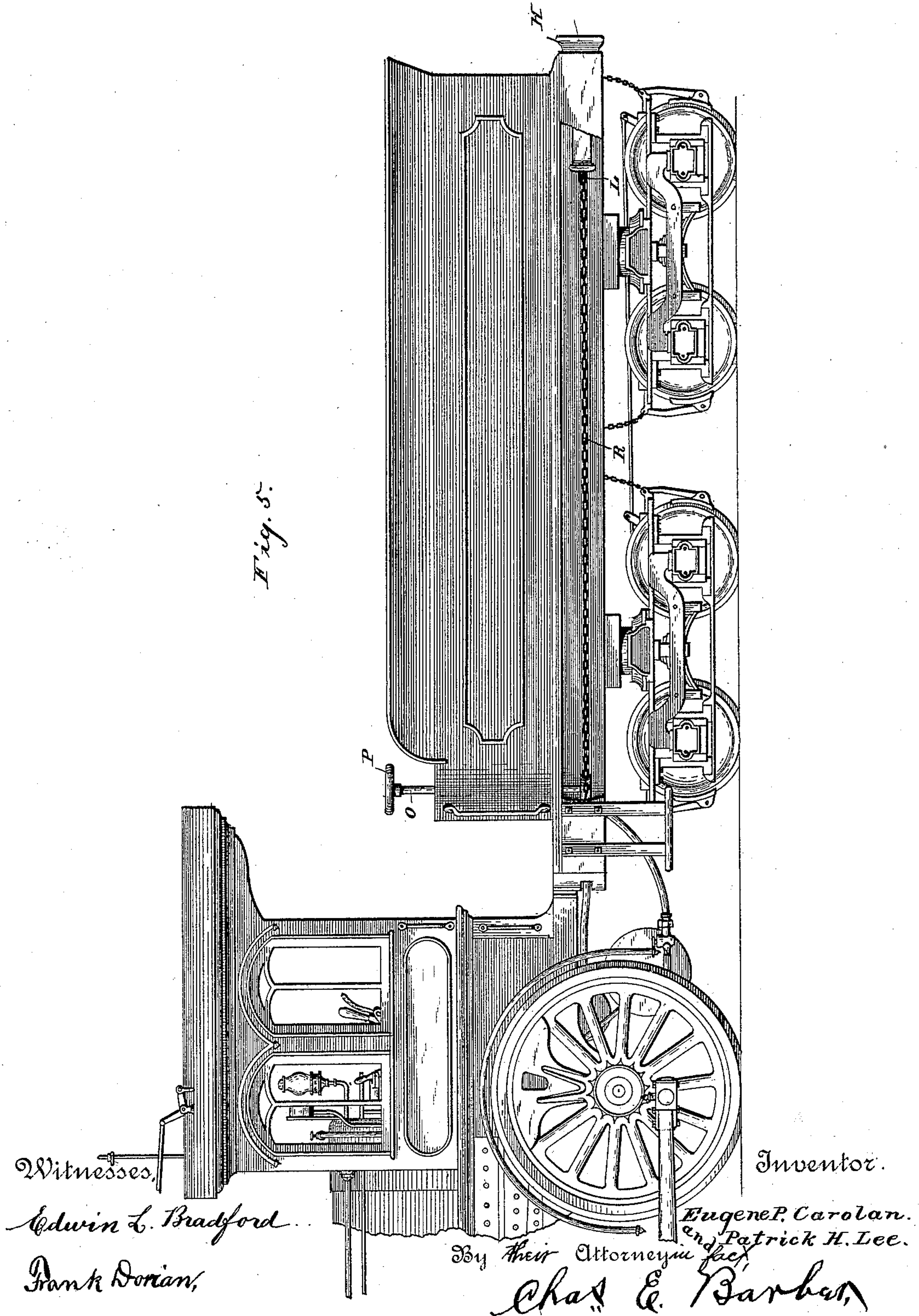
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UNITED STATES PATENT OFFICE.

EUGENE P. CAROLAN AND PATRICK H. LEE, OF SAN ANTONIO, TEXAS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 392,104, dated October 30, 1888.

Application filed October 5, 1888. Serial No. 276,082. (No model.)

To all whom it may concern:

Be it known that we, EUGENE P. CAROLAN and PATRICK H. LEE, citizens of the United States, residing at San Antonio, in the county of Bexar and State of Texas, have invented a certain new and useful Improvement in Automatic Car-Couplers and Positive Uncouplers for Use therewith, of which the following is so full, clear, and exact a description as will enable others skilled in the art to which our invention appertains to make and use the same, reference being had to the accompanying drawings.

The object of our invention is to provide a car-coupler which will be automatic in its operation in coupling the cars as they come together on the track, and at the same time to provide a positive uncoupling device which may be operated on any part of any of the cars, as well as by the engineer, when it is desired to uncouple the cars or a car from the engine.

Another object of our invention is to construct an improved car-coupling which, when uncoupled, will automatically resume such a position that it is normally in condition to be automatically coupled when the cars stand away from each other on the track.

Another object of our invention is to provide a car coupler and uncoupler which may be operated by the fireman or engineer in the engine to uncouple the engine from the train at the yard in time of accident, or at any time when it is desired to detach the engine from the train.

In a word, the intent of our invention is to provide a car-coupler and uncoupler by the use of which cars may be automatically coupled and positively uncoupled from any desired point on the train without the necessity of the operator's endangering life and limb, and to do this in the shortest possible time and in the most effectual manner with the least expense of material and complication of mechanical devices, and with the slightest outlay of physical force.

These objects we accomplish by the device which will be hereinafter described, and which is illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal vertical section of our improved coupler, showing the same in position when coupled. Fig. 2 is a similar

view showing the same in position when uncoupled. Fig. 3 is a longitudinal horizontal section of one of the draw-heads and the coupling-bar. Fig. 4 is a horizontal longitudinal section of the coupling-bar and the coupling mechanism located therein. Fig. 5 is a view of a locomotive-tender and a portion of the cab of a locomotive, showing one method of operating our improved uncoupler.

Throughout the accompanying drawings and in the following specification the same reference-letters designate corresponding parts in the various views.

The coupling-bar is designated by the letter A. This coupling-bar is preferably made of a single piece, and is provided with a depression or chamber, B, within each of its ends. These chambers are separated by a partition, C, which supports the pins D D, upon which are mounted locking-heads E E, which are held normally in an extended position by the coiled springs e e. The outer ends of the coupling-bar A are provided with recesses a a, each side of which extend wings b b, which wings are perforated to receive a bolt, c, upon which are pivotally secured or mounted the locking-jaws A' A'. These locking-jaws have inclined faces at their outer ends running from the point d back in an oblique slant to the point d' at the opposite side of the jaw. From the point d' the jaw is reduced, which forms a locking-recess, d². The jaws A' A' are arranged parallel with each other, with their notched sides arranged opposite each other—that is to say, they extend in opposite directions in such a manner that when they are forced back to lock the coupling-bar between the draw-heads as the cars are coupled together the locking-bolt head E rests between the projections d' d' and within the recesses d² d². From the nature of the construction it will appear that the rear corners, f, of the locking-jaws A' will move back a slight distance within the recesses in the ends of the coupling-bar until they get to a point in direct alignment with the pivotal bearing of the locking-jaws A'. From that time on until the locking-jaw reaches a perpendicular position the point f will move forward, and when the jaw is in a perpendicular position it will be held there by the yielding follower G.

The draw-heads H H are constructed with

flaring mouths I I, and are provided a slight distance back of the outer opening with recesses J J, into which are adapted to fit the longer portions of the locking-jaws A' A' when the cars are coupled together, as is clearly shown in Figs. 1 and 2. To the rear of a chamber, K K, which is formed back of the recesses J J for the reception of the locking-jaws and the locking-heads E E, are guide-bridges g g, which serve to guide the bolt L, upon which is secured the locking-head E. This locking-head E is held normally forward by a spring, m. The use of the locking-head E is to keep the locking-jaws A' A' in an extended position vertically when the cars are coupled together. The locking-jaws A' A' move back into the recesses a a, where they are held by the combined action of the locking-heads E E and the follower G.

From the foregoing it will be readily understood that a coupler constructed in accordance with our plans will couple automatically as the cars come together on the track.

In Fig. 5 we show a draw-head, H, secured to the rear of a locomotive-tender, while at the opposite end of the tender we show an ordinary brake-rod, O, provided at the top with a hand-wheel, P. To the lower end of the brake-rod O is secured a cable, R, which in turn is secured to the bolt L, upon which is secured the locking-head E. By a partial rotation of the hand-wheel P the locking-head E will be drawn back away from the recesses between the projections d' d' on the locking-jaws A' A'. This will leave the jaws free to straighten out and effect the uncoupling of the train as soon as one of the cars is moved away from the other with sufficient force to overcome the slight resistance of the spring e. Thus it will appear that the cars may be easily and quickly uncoupled from the opposite end of the tender with slight inconvenience and expense of physical force.

It is obvious that this uncoupling mechanism may be located at any desired point on or within the cars, and it may be operated by a lever or a hand-wheel, which may be extended up through the floor in the bottom of a passenger-coach, express, mail, or other car, as may be deemed desirable and expedient. In yards where trains are made up and where much switching is done a coupling of this kind will be found to possess advantages of prime importance, as it will facilitate the coupling and uncoupling of cars by the fireman or engineer without the necessity of the operator's leaving the engine.

The wheel of the brake on a freight-car may be utilized to operate the uncoupler, if so desired.

The operation of our device is as follows: The coupler is to be put in position, or, rather, it will automatically assume the position shown in Fig. 2, and as the cars are moved toward each other the locking-head E will strike against the inclined faces of the locking-jaws

A' A', and will cause them to partially rotate on their pivotal bearings until they assume a perpendicular position, (shown in Fig. 1,) when the locking-head E will slip in between the projections d' d' and rest within the recesses d' d' of the locking-jaws A' A', where the coupling will be held firmly in position against accidental uncoupling. When it is desired to uncouple the cars, the bolt L, carrying the locking-head E, is withdrawn a sufficient distance to clear the projections d' d' on the locking-jaws A' A'. The cars are then moved a sufficient distance apart and with sufficient force to overcome the slight resistance of the spring e, which abuts against the bridge or partition C and the follower G, and as the cars move away from each other the locking-jaws A' A' will be straightened out into alignment with the sides of the locking-head, and they will be held there by the force of the resiliency of the spring e and the follower G.

We do not wish to limit ourselves to the exact construction shown and described, as it is obvious that minor details of construction may be altered or varied and mechanical equivalents substituted therefor without departing from the spirit of our invention and without materially interfering with the usefulness of the same.

Having now described the objects, uses, and advantages of our invention, and having set forth a preferred method of construction, what we believe to be new, and desire to secure by Letters Patent of the United States, and what we therefore claim, is—

1. In an automatic car-coupler of the character described, the combination of a coupling-bar, provided with pivotal locking-jaws having inclined faces and a yielding follower, with a draw-head recessed for the reception of the locking-jaws and a longitudinally-sliding locking-head to hold the locking-jaws in a locked position, substantially as and for the purposes specified.

2. In an automatic car-coupler of the character described, the combination of a coupling-bar, provided with pivotal locking-jaws having inclined faces and yielding follower, with a draw-head recessed for the reception of the locking-jaws and a longitudinally-sliding locking-head provided with a spring which holds it automatically in an extended position, substantially as and for the purposes specified.

3. In an automatic coupler of the character described, the combination of a coupling-bar provided with pivotal locking-jaws having inclined outer faces and provided with straight vertical and horizontal bearings for a follower, and a follower which yields automatically as the locking-jaws are opened and closed, with a recessed draw-head and an automatically-yielding locking-head, substantially as and for the purposes specified.

4. In an automatic car-coupling of the character described, a coupling-bar provided with a central partition supporting pins and having

recesses in its ends for the reception and accommodation of said pins and a spring and automatically-yielding followers, and also provided with locking-jaws pivotally secured within the ends of the coupling-bar, in combination with recessed draw-heads provided with yielding locking-heads, all constructed and combined to operate substantially as and for the purposes specified.

5. In an automatic car-coupling of the character described, a coupling-bar provided with depressions at its ends and slots and projections, which projections are provided with pivotal pins and a pair of locking-jaws pivotally secured to said pins and adapted to move back into the recesses between the projections provided with the pivotal pins, in combination with a recessed draw-head having a movable locking-head located therein, substantially as and for the purposes specified.

6. In an automatic car-coupler of the character described, a coupling-bar provided with pivotal locking-jaws, in combination with recessed draw-heads provided with movable locking-heads, and a cable and lever or wheel for operating the same to move the locking-heads back for the purpose of uncoupling the cars, substantially as and for the purposes specified.

7. In an automatic car-coupling of the character described, a coupling-bar provided with pivotal locking-jaws, in combination with a recessed draw-head and a movable locking-head, and a cable secured to the locking-head, and a

hand-lever located on the engine within easy reach of the fireman and engineer, and secured to a brake-rod which operates the cable secured to the locking-head, all constructed and combined to operate substantially as and for the purposes specified.

8. In an automatic coupling of the character described, a coupling-bar provided with locking-jaws having inclined faces and pivotally secured to the coupling-bar, and having yielding followers which abut normally against the locking-jaws when opened or closed, in combination with draw-heads provided with recesses and enlarged chambers for the reception and accommodation of the locking-jaws, and having shoulders against which the locking-jaws abut when the cars are coupled, and also provided with a locking-head provided with a spring which keeps it normally extended, and also having a cable and a lever secured to it and to a car or locomotive in a position to be quickly and easily operated by one of the train-men or fireman and engineer for positively uncoupling the cars, substantially as and for the purposes specified.

In testimony whereof we affix our signatures in the presence of witnesses.

EUGENE P. CAROLAN.
PATRICK H. LEE.

Witnesses:

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