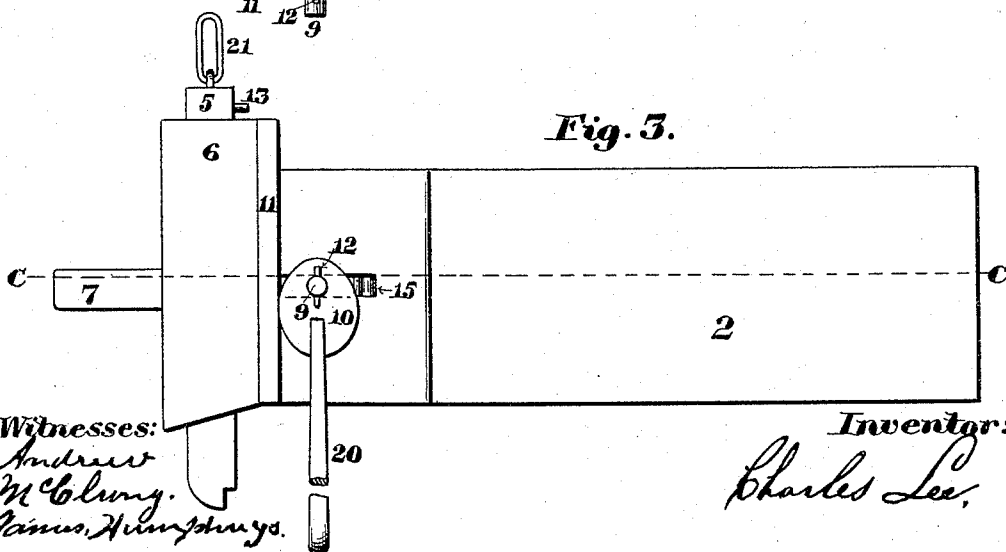
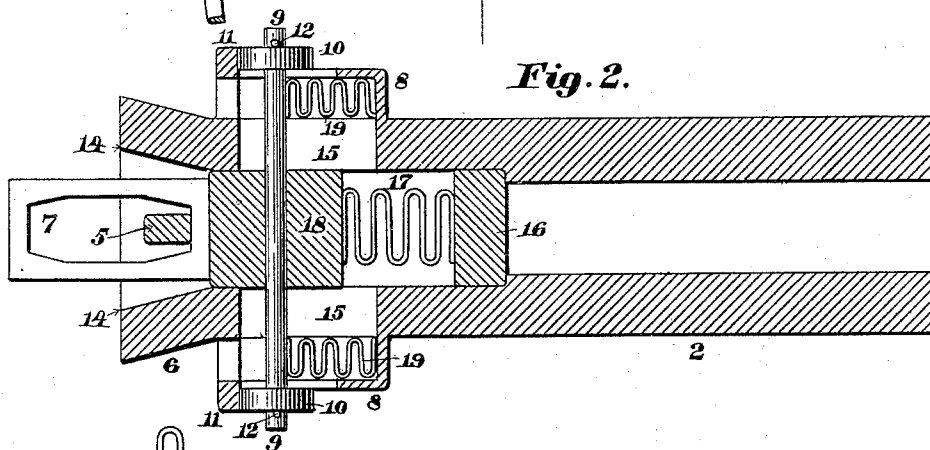
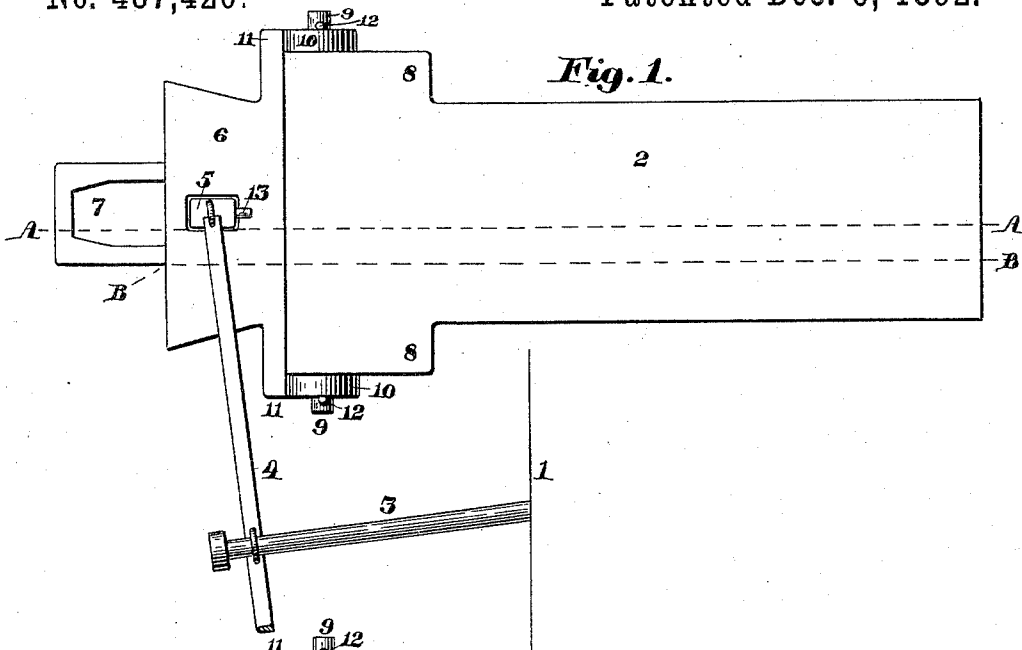


C. LEE.
CAR COUPLING.

No. 487,420.

Patented Dec. 6, 1892.



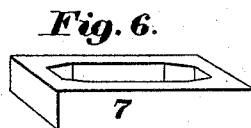
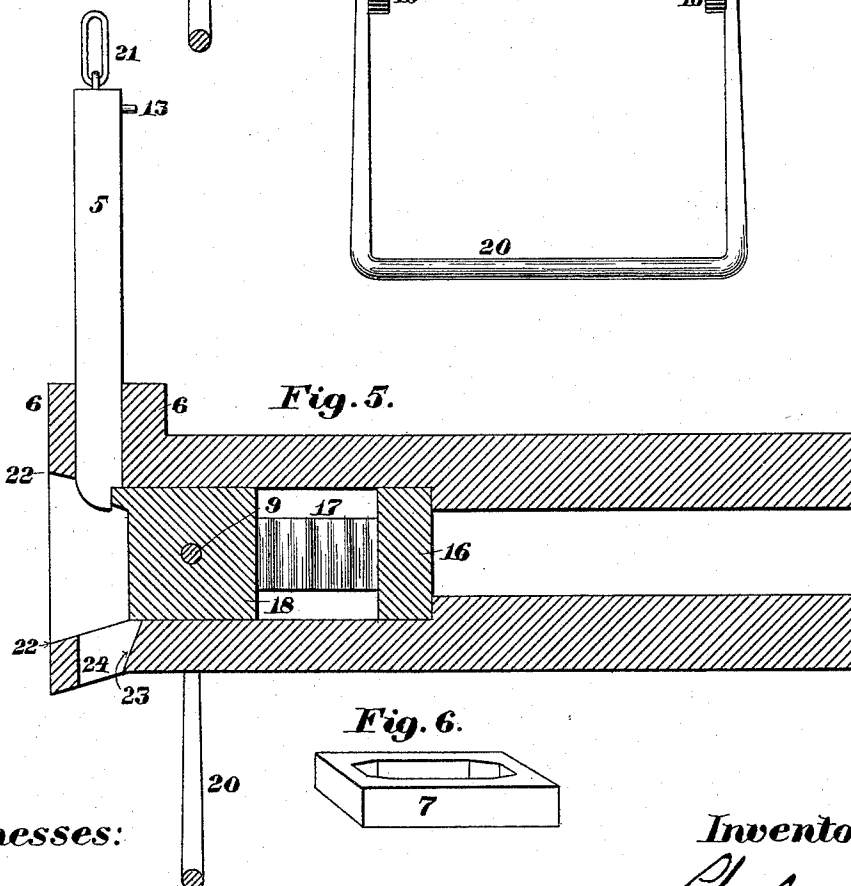
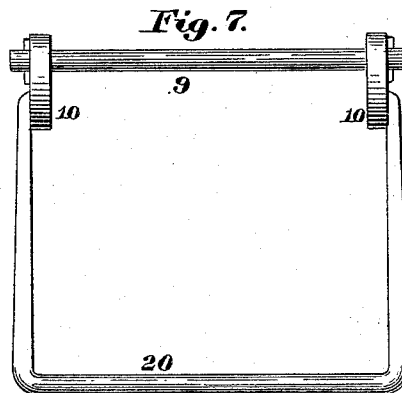
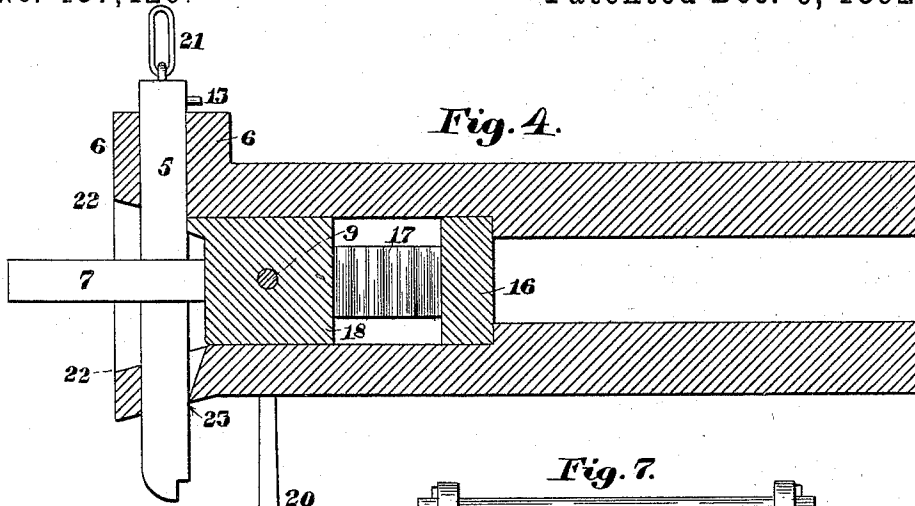
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Inventor:
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UNITED STATES PATENT OFFICE.

CHARLES LEE, OF SAN ANTONIO, TEXAS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 487,420, dated December 6, 1892.

Application filed March 15, 1892. Serial No. 425,067. (No model.)

To all whom it may concern:

Be it known that I, CHARLES LEE, of San Antonio, in the county of Bexar and State of Texas, have invented certain new and useful

5 Improvements in Car-Couplers, of which the following is a specification.

This invention relates to that class of railroad-car couplers termed "automatic;" and the character of the invention will be defined

10 in the following description and claims.

My car-coupler comprises inventions and improvements in what are known as the "draw-head," the "coupling-link," and the "coupling-pin" and comprises, also, one sliding rod, one

15 perforated sliding block, one movable block, two side springs, one rear spring, two eccentrics, with attached handle for moving them, all in their proper combinations; also, the combination of lever with my improved coupling-pin for raising coupling-pin, all as described, and shown in drawings herewith.

Figure 1 gives a top or horizontal view of my car-coupler. It shows, also, attached lever with fulcrum for raising coupling-pin. Fig. 2 gives a horizontal section view of my

25 car-coupler with improvements. (Dotted section-line shown at C on Fig. 3.) Fig. 3 gives a side view of the car-coupler with improvements. Fig. 4 gives a vertical section view of the car-coupler with improvements. (Dotted section-line shown at B, Fig. 1.) Fig. 5

30 gives a side section view of the car-coupler with coupling-pin elevated ready for coupling. (Dotted section line shown at A, Fig. 1.) Fig. 6 gives a perspective view of my improved coupling-link. Fig. 7 gives a front view of the continuous-bent lever-handle 20

35 with attached eccentrics 10 10 partially revolving on the sliding rod 9.

1 indicates a portion of the end of a car.
2 is the top of part of car-coupler.
3 is a fulcrum extending from end of car, carrying hand-lever 4, attached to head of coupling-pin.

45 5 is the coupling-pin, which is rectangular in form, having the lower portion of its outer face beveled to a point at the bottom end to insure its entrance into the bottom orifice, and its inner face notched at the bottom end, as shown, to enable it when elevated to hold

50 against and rest upon the outer top edge of

the perforated sliding block when the coupling-link is away.

6 is a raised portion of car-coupler.

7 is improved coupling-link with external ends squared and flattened perpendicularly and rectangularly to the link in the direction of its length, and the internal ends of the inside part or opening squared rectangularly to the link in the direction of its length or right line centered through its length.

8 8 are slotted receptacles for holding side springs

9 is a sliding rod running loosely through eccentrics, slotted spring-receptacles, slotted sides of car-coupler, and perforated sliding block. (See Fig. 2.)

10 10 are two eccentrics partially revolving on the sliding rod and bearing at their circumferences against the fixed blocks 11 11.

12 12 are pins through the sliding rod to hold it in place.

13 is an annular projection on the coupling-pin to receive the end of a check-chain.

14 14 are side bevels to mouth of car-coupler.

15 15 are section views of slots in which the sliding rod travels backward and forward.

16 is a movable block for support of rear spring 17, which presses against the perforated sliding block 18, which also presses against the flattened end of the coupling-link, the inside end of which is forced against the coupling-pin, and the link thereby compelled to assume a position parallel to the car-coupler in the direction of its length.

19 19 are side springs made to bear against the sliding rod and force it forward along the slots, thus insuring an equalized motion of the sliding rod.

20 is a side view of bent lever-handle which passes under the car-coupler and is attached at its ends to the eccentrics on the sliding rod.

21 is split link for attaching the coupling-pin to the hand-lever 4.

22 22 are top and bottom bevels to mouth of car-coupler.

23 indicates a bevel extending backward and upward from the bottom of the lower orifice 24 for the reception of the coupling-pin. This orifice is so beveled to insure the more certain entrance of the pin.

The action of my automatic car-coupler is

as follows: When a car having one of my car-couplers with coupling-link in rolls forward to make a coupling with another car fitted with a like coupler having no coupling-link, 5 then the coupling-link of the rolling car is in a horizontal position parallel in direction to the length of the car. As the car rolls forward its coupling-link enters the beveled mouth of the opposite car-coupler ready 10 for its reception, as shown in Fig. 5. As the rolling car closes upon the standing car the coupling-link of the former is forced against the face of the perforated sliding block in the car-coupler of the latter, these positions being indicated in Fig. 4, where the contact approach of the coupling-link and sliding block appears. With the further advance of the 15 first car the perforated sliding block in the coupler of the second car is forced back upon its rear spring, carrying with it, also, the sliding rod in its perforation (shown at Fig. 2) along the slots, thus pressing the side springs back, also. By this backward movement of the perforated sliding block its hold and support are withdrawn from the bottom end of the 20 notched coupling-pin 5, (shown at Fig. 5,) and the coupling-pin immediately drops through the top or upper orifice, through the advanced coupling-link, into the nether orifice, thereby 30 completing the coupling of the two cars. The nether orifice, with back inside bevel, is shown at 23 and 24, Fig. 5. The attached end of the lever 4 (shown at Fig. 1) also drops with the coupling-pin. The coupling action of two 35 cars fitted with these car-couplers is of course reciprocal, one link coupling both from each to either.

The uncoupling action is as follows: The two cars, coupled as above described, being 40 pressed together, the perforated sliding block 18, Fig. 4, is forced back by the coupling-link to the relative position shown at Fig. 4. This forcing back removes the pressure of the coupling-link against the coupling-pin, which is then raised by the attached hand-lever 4, 45 Fig. 1, to the position shown at 5, Fig. 5, and the coupling is complete. Upon the withdrawal of one car the rear spring 17, Fig. 5, and the two side springs 19 19 (shown in Fig. 50 2) force the perforated sliding block 18, Fig. 5, under and against the bottom end of the coupling-pin 5, Fig. 5, which has been raised by the hand-lever 4, Fig. 1, and the coupling-pin then remains fixed in such position till another coupling is made. The coupling-link 7, 55 Fig. 4, (shown, also, at 7, Fig. 2,) is forced into coupling position by the pressure of the per-

forated sliding block 18 against the flattened end of the coupling-link and the pressure of the coupling-link against the coupling-pin 5, 60 Fig. 4. The coupling-link, as shown at 7, Fig. 4, and 7, Fig. 2, is thus made to assume a horizontal position parallel in direction to that of the car in the direction of its length. The purpose of the eccentrics (shown in Figs. 3 65 and 7) is to force back the perforated sliding block 18, Fig. 4, for the more easy insertion or removal of the coupling-link when required. This forcing back is accomplished by bringing forward and upward the continuous-bent 70 lever-handle 20, Fig. 3, which again brings the largest parts of the eccentrics against the resisting-blocks, one of which is shown at 11, Fig. 3. The sliding rod 9, Fig. 3, upon which these eccentrics turn, is thus forced back along the slot 15, Fig. 3, and the corresponding slot 75 on the opposite side. (Not here shown.) As the sliding rod passes through a perforation in the sliding block 18, Fig. 4, it necessarily carries back with it the perforated sliding 80 block itself. By lowering and pushing back the handle 20, Fig. 3, attached to the eccentrics, the action of the eccentrics is of course reversed and the perforated sliding block allowed to come forward. 85

What I claim as my invention is—

1. The coupling-link 7, with squared and flattened ends, as shown and described, in combination with the notched coupling-pin 5, the perforated sliding block 18, back spring 17, 90 and movable block 16, all as shown and described.

2. The combination of the slotted receptacles 8 8 with the side springs 19 19, sliding rod 9, and perforated sliding block 18, all as 95 shown and described.

3. The two eccentrics 10 10, with attached bent handle 20, in combination with the sliding rod 9, all as shown and described.

4. The rectangular coupling-pin 5, with 100 notched and beveled end, in combination with the perforated sliding block 18, all as shown and described.

5. The perforated sliding block 18, in combination with the sliding rod 9, as shown and 105 described.

6. The back or rear spring 17, in combination with the perforated sliding block 18 and the movable block 16, all as shown and described.

CHARLES LEE.

Witnesses:

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JAS. K. STUART.