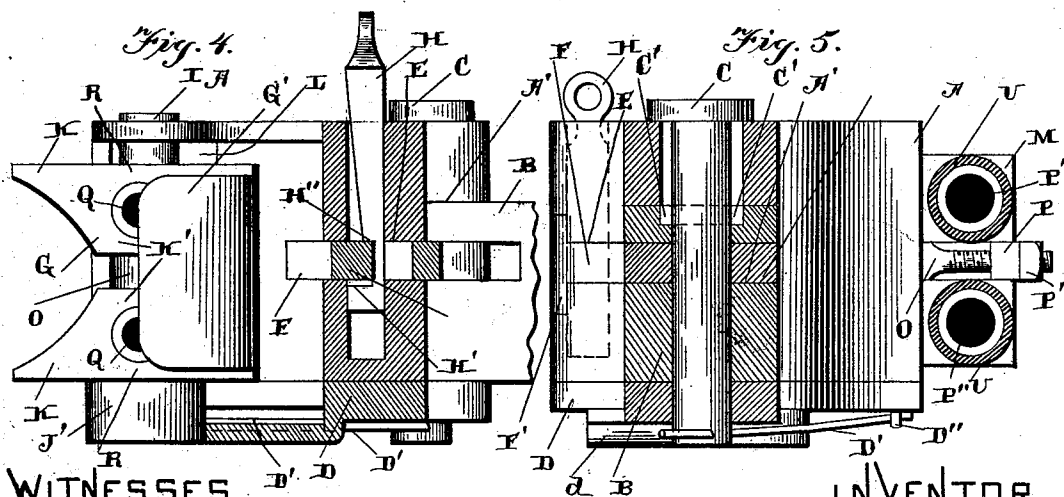
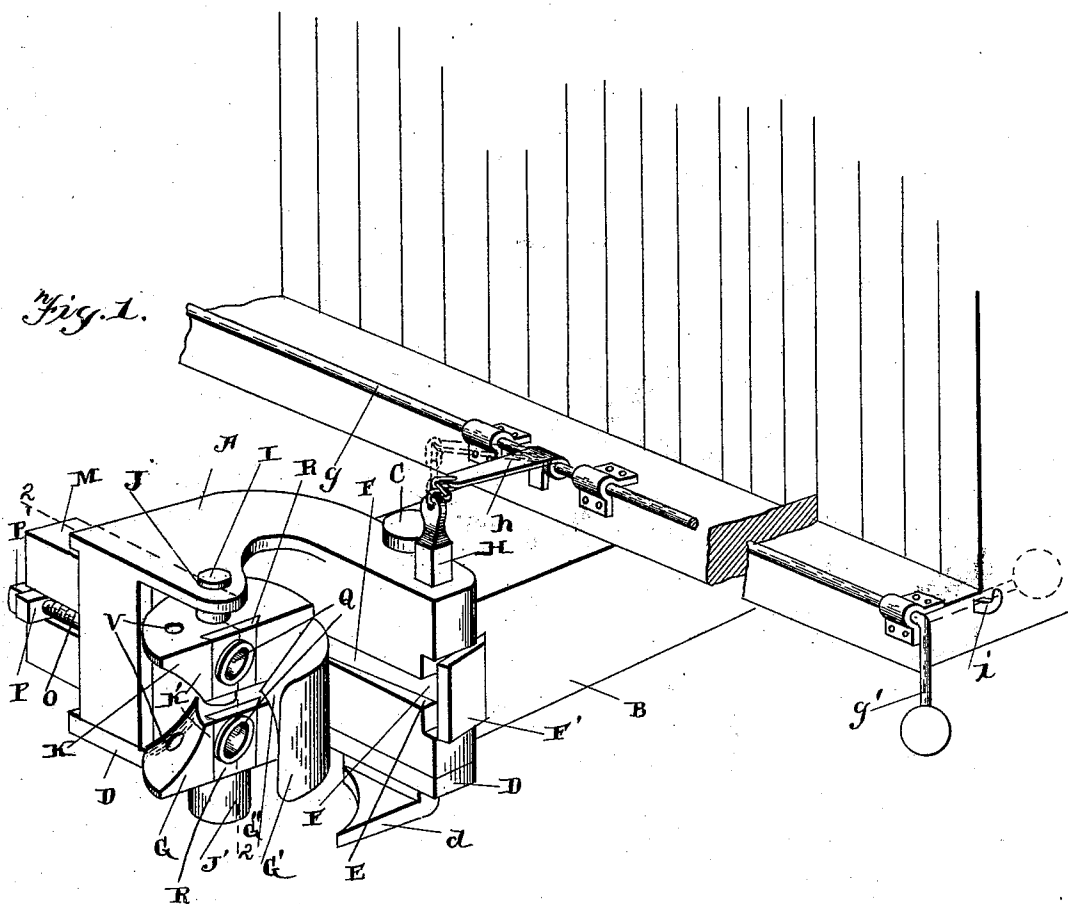


2 Sheets—Sheet 1.

No. 512,619.

Patented Jan. 9, 1894.



WITNESSES.

Geo. E. Trech.

Roland A. Fitzgerald.

INVENTOR-

G. J. McCreary

G. T. McCrea,
Lebanon, Tenn. & Night-
att'y.

(No Model.)

2 Sheets—Sheet 2.

G. T. McCREA.
COMBINED CAR AND PIPE COUPLING.

No. 512,619.

Patented Jan. 9, 1894.

Fig. 2.

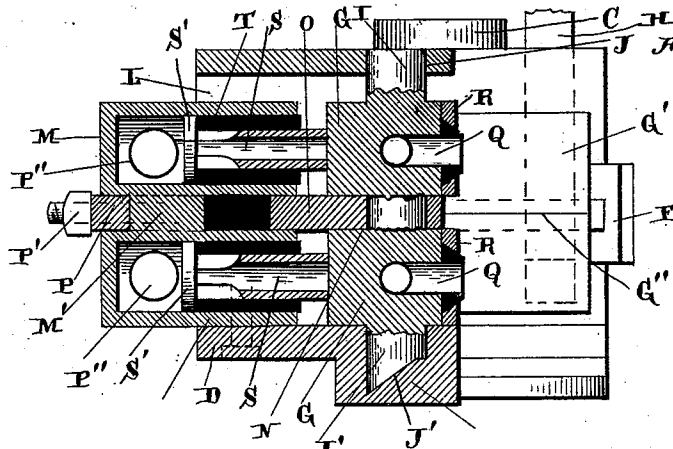
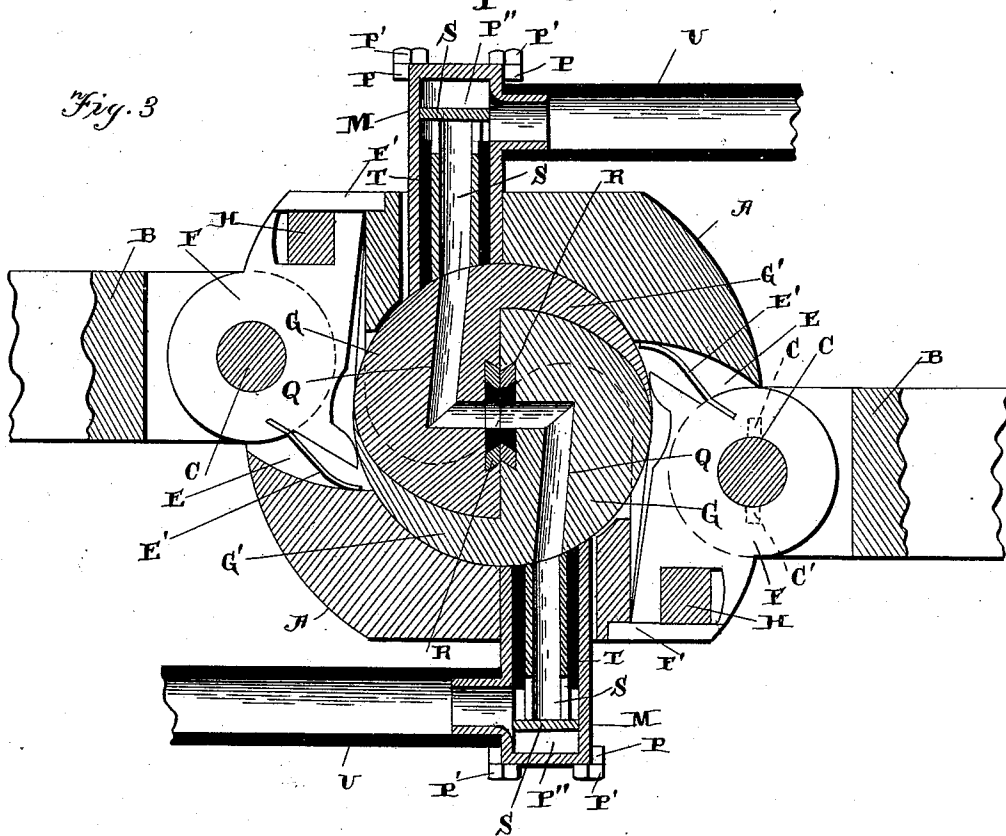


Fig. 3.



WITNESSES—

Geo. C. Truch,

Poland A. Fitzgerald

INVENTOR—

G. T. McCrea,

By Lehman Patterson & Micht
attys.

UNITED STATES PATENT OFFICE.

GILBERT T. MCCREA, OF BRUSH VALLEY, PENNSYLVANIA.

COMBINED CAR AND PIPE COUPLING.

SPECIFICATION forming part of Letters Patent No. 512,619, dated January 9, 1894.

Application filed June 3, 1893. Serial No. 476,464. (No model.)

To all whom it may concern:

Be it known that I, GILBERT T. MCCREA, of Brush Valley, in the county of Indiana and State of Pennsylvania, have invented certain new and useful Improvements in a Combined Car and Pipe Coupling; 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 pertains to make use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in a combined car and pipe coupling, and it consists in the novel features of construction hereinafter more fully described and especially referred to in the claims.

The object of my invention is to provide an improved coupling of the twin jaw type which while coupling the cars together will also effect a coupling between the air pipes of the adjacent cars, which connection remains sealed or unbroken until the cars become separated, thus affording a most simple and effectual means of joining the fluid pipes of adjacent cars.

Referring to the accompanying drawings: Figure 1, is a perspective view of my improved coupling in position on the end of a car. Fig. 2, is a vertical cross sectional view on line 2—2, of Fig. 1. Fig. 3, is a sectional plan view of two of the couplers connected. Fig. 4, is a vertical sectional view of the latch locking mechanism. Fig. 5, is a similar view of the connection between the draw-head and the draw-bar.

A designates the draw-head having recess A' in its rear side into which extends the end of draw-bar B which is secured in position by the vertical bolt C. This bolt is provided with feathers C' which extend down into recesses formed in the draw bar for the purpose of preventing the bolt from turning therein. Secured to the under side of the draw-head is the bottom plate or section D, through which said bolt extends and projecting through the lower end of the bolt is the longitudinal spring D', which is secured at its outer end to the pillow stop D'' on plate D, and in this manner the draw-head is held normally in a given position with relation to the draw-bar as will be readily understood.

The rear wall of the draw head is provided with a horizontal recess E and located therein is the latch F having a pivotal movement on bolt C, as shown. The outer end of the latch is formed with a projecting head F' which engages the adjacent draw-head, as shown in Fig. 3, thus preventing the withdrawal or separation of the draw-head while this engagement exists. A spring E' is secured to the inner end of latch F and serves to hold the said end normally projected from slot E with the forward end of the latch drawn rearward, so that when the latch is not locked with the mechanism presently to be explained, it will at all times be in position for coupling. When however the pivoted jaws G of the adjacent couplers interlock the tongue G' of the jaw is turned backward against the said inner end of the latch pushing it inward and consequently forcing outward or forward the end F' of the latch into positive engagement with the draw-head, thus preventing their separation until released from the automatically locking mechanism. This last referred to mechanism consists of the bolt H movable vertically in a recess in the draw-head directly behind the said latch. A recess H' is formed in the forward side of the bolt adjacent its lower end in which the latch springs when allowed to do so by the vertical movement of the bolt. When in this position the latch is unlocked. But however when the inner end of the latch is forced backward as before described, the forward end is forced outward from beneath the shoulder H'' of the said bolt, thus permitting the body of the bolt to slip down behind the latch and hold it in its extended position. It will be noticed that the said bolt body is formed in the shape of a wedge so that the latch is gradually pushed outward and its hold upon the adjacent draw-head increased as the coupler is jolted or worked, thus securing a most rigid connection between the sections of the couplers.

g is a shaft extending across the end of the bar having upon its ends the weighted crank arm g', and projecting laterally from this shaft is the arm h, which is connected as shown, to the upper end of bolt H. The said weighted crank arm serves to hold the said arm normally projected forward but not elevated, so that there

is no danger of the bolt being raised by the motion or jolting of the car. A bracket *i*, is secured to the car side, as shown, for the purpose of holding the weighted arm when turned backward with the arm *h*, in an elevated position as shown in dotted lines. An extension *d* projecting from the bottom *D* serves as a shelf or support for the adjacent draw-head.

The jaw *G* is provided on its upper and lower ends with trunnions *I* and *I'*, respectively, which bear in projections *J* and *J'*, the former being integral with the draw-head *A*, while the latter forms part of bottom *B*. The bearing *J'* consists of a beveled socket, while the trunnion *I'* is correspondingly formed upon its lower end so that when the adjacent coupler sections are in the act of interlocking either one may move vertically to a slight degree in order to accommodate itself to the other, but when the interlocking has been completed and the jaws are completely turned backward the same will occupy a raised position between its bearings *J* and *J'*, and in this position it is held positively from any vertical displacement owing to the fact that the extreme of the beveled trunnion *I'* is resting upon the highest point on the beveled socket *J'*, as will be readily understood. The forward side of the jaw is formed into prongs *K* having their adjacent surfaces curved backward and inward toward the vertical center of the jaw, while the inner side of the tongue *G'* of the jaw is curved outward from a central longitudinal rib *G''*, which fits snugly between the prongs *K* of the jaw of the adjacent coupler section. Thus when the jaws are interlocked, as shown in Fig. 3, their combined form is cylindrical with a tightly fitting joint at every interlocking point. The side of the draw-head is formed with the vertical recess *L* in which is adapted to move laterally the head *M* curved upon its inner end to conform with the curvature of the jaw. The jaw *G* is provided with the central transverse slot *N* and loosely secured therein is the inner end of yoke *O*, its point of connection being eccentric to the pinions of the jaw, so that when the latter is swung upon the pinions the said head is moved inward or outward, as will be readily understood. The opposite sides of the head *M* are grooved or recessed to take the forks of said yoke which latter are secured together by the binding plate *P* and nut *P'*, as will be readily understood.

Packing is arranged between the central web *M'* of the head and the yoke so that the connection between the two may yield slightly, yet be substantially of a fixed character. The said head being connected to the jaw eccentrically by means of the yoke, as above described, it will be seen that when the jaw is turned backward while interlocking with the adjacent jaw the head will be drawn inward and against the curved surface of the jaw, so that a very tight joint is formed. On the other hand when the jaw is swung outward

this eccentric connection serves to push the head outward and away from the jaw.

The head is provided with the air passages *P''* leading inward to its curved inner end which register with the rear end of passages *Q* arranged in the jaw *G*, when the latter is swung backward in an interlocking position. The passages *Q* lead through the jaw *G* and outward through the vertical faces *K'* of prongs *K*, where they register with the corresponding openings in the adjacent interlocking jaw when the coupling is effected. The inner ends of passages *D*, as well as the ends of passages *Q* are faced with washers of packing material so that air tight joints are formed when the sections are brought together. The washers upon the jaw *G* are mounted upon the dove-tailed slide *R*, which holds them securely in position and at the same time simplify greatly the operation of renewing them. Within the passage *P* is arranged a longitudinally movable valve *S* having a cap *S'* upon its outer end which is located as shown, adjacent the inlet end of said passages, while its opposite end is adapted to project from the inner end of the passage *P* and through the rubber packing *T* with which a portion of the said passage is lined. By this arrangement, when from any cause the cars become uncoupled the air passing through the pipes forces outward the said valve with its inner cap end *S'* against the inner end of the said packing *T*, thus preventing the escape of the fluid in the pipes beneath the cars. When a coupling is again effected the outer end of the valve is forced inward by its contact with the jaw *G*, thus opening the valve and permitting the passage of the air. The hose *U* leading from the head *M* backward to the pipes beneath the car, not shown, affords the coupler a vibratory movement without in any way interfering with the proper passage of the fluid through the pipes and couplers.

The projected portions of prongs *K* of jaw *G*, are formed with the vertical passage *V* through which an ordinary pin may be passed for effecting a connection with a coupler of different type.

The peculiar construction of the prongs *K*, the tongue *G'*, of the inner end of the head *M* and the eccentric connection of the latter with the jaw, all assist materially in the formation of a coupler which not only secures together the cars, but effects an air tight connection between the fluid pipes and enables me to so hold the said parts with relation to each other that it is quite impossible for the said connection to be broken by lateral or vertical displacement.

The advantages of my improved coupler are many and obvious. The car and air coupling is effected by one and the same operation, as is also the disengagement of the same. The desired end is accomplished in a manner thoroughly automatic while the number of the parts are few and simple.

The passages here shown and described

may be used for air as applied to the brakes or for pneumatic signaling or for steam for heating the cars, as may be desired.

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

1. An improved coupler comprising a draw head, a swinging jaw therein formed with transverse fluid passages, a fluid carrying connection carried by the head and adapted to register with the said passages of the jaw when the latter are brought to an interlocking position, substantially as shown and described.

2. An improved coupler comprising the adjacent draw heads, interlocking jaws swinging in the said heads which are formed with fluid passages which register when the said jaws interlock, and fluid carriers supported by the draw heads which register with the passages in the jaws, substantially as shown and described.

3. An improved coupler comprising the adjacent draw heads, swinging jaws carried by the same having registering fluid passages formed therein, forks and tongues projecting from the said jaws which interlock when the coupling is effected, fluid carriers supported by the draw heads which register with the passages in the jaws, and a means for securing the draw heads together, substantially as shown and described.

4. An improved coupler comprising the adjacent draw heads, swinging jaws mounted therein, forks K formed on each jaw, tongue G' projecting from the jaws which interlock with said forks, registering fluid passages in the jaws, fluid carriers supported by the draw head and adapted to register with the passages in the said jaws, and a means for holding the draw heads together, substantially as shown and described.

5. An improved coupler comprising adjacent draw heads, jaws swinging therein formed with registering fluid passages and a means for elevating the said jaws while turning to an interlocking position for the purpose of arresting vertical play, substantially as shown and described.

6. An improved coupler comprising adjacent draw heads formed with depressions having beveled bottoms, swinging jaws carrying fluid passages adapted to register, and trunnions upon which the jaws turn having beveled lower ends which turn upon the beveled bottoms of the draw head depressions, for the purpose substantially as shown and described.

7. An improved coupler comprising a draw head, bearings projecting therefrom, a jaw having formed therein fluid passages, trunnions projecting from the upper and lower ends of the said jaw and extending into the said bearings, the lower bearing being formed with a beveled bottom and the lower trunnion formed with a correspondingly beveled end, for the purpose stated, and a fluid car-

rier supported by the draw head and adapted to connect with the passages in the draw-head, substantially as shown and described.

8. An improved coupler comprising a draw head, a swinging jaw therein having fluid passages, a laterally movable fluid carrier connected to the jaw adapted to register with the passages therein, substantially as shown and described.

9. An improved coupler comprising a draw head, a swinging jaw therein having fluid passages a laterally movable fluid carrier supported by the head and an eccentric connection between the said carrier and the jaw whereby when the latter is swung inward the said carrier will also be drawn inward so as to register with the passages in the jaw, substantially as shown and described.

10. An improved coupler comprising a draw head, a swinging jaw therein having fluid passages, a laterally movable fluid carrier, an eccentric connection between the latter and the jaw, whereby when the jaw is turned inward the carrier will also be drawn inward so as to register with the passages of the said jaw, and a packing or yielding connection between the said eccentric connection and the fluid carrier, substantially as shown and described.

11. An improved coupler comprising a draw head, a swinging jaw therein having fluid passages, a fluid carrier supported by the draw head and adapted to register with the said passages in the said jaw, and valves in the said fluid carrier which are adapted to close the same when the connection between the carrier and the jaw is broken, substantially as shown and described.

12. An improved coupler comprising a draw head, a swinging jaw therein having fluid passages, a fluid carrier supported by the draw head and adapted to register with the passages of the jaw, longitudinally movable valves in the fluid carrier which are adapted to be pushed outward so as to protrude from the said carrier when the connection between the said jaw and the latter is broken thus closing the said fluid carrier, substantially as shown and described.

13. An improved coupler comprising a draw head, a swinging jaw therein having fluid passages, a fluid carrier supported by the draw head and adapted to register with the passages in the jaw, a packing arranged at the end of the passages of the said carrier, longitudinally movable valves within said passages and the heads upon the rear end of the valves which are adapted to be operated upon by the fluid under pressure thus forcing outward the said valves when the connection between the said carrier and jaw is broken, and closing the carrier by means of the said valve head resting against the inner ends of the packing, substantially as shown and described.

14. An improved coupler comprising a draw head, a swinging jaw therein having fluid passages, a fluid carrier supported by the draw head and adapted to register with the passages of the jaw, dovetailed slides at the ends of the jaw passages, and washers or packing material secured to the outer faces of the said slides, substantially as shown and described.

15. An improved coupler comprising a draw head, a revoluble jaw mounted therein, a latch pivoted in the draw head which is adapted to be operated upon at its inner end by the jaw and at its outer end engage the draw head of the adjacent car, substantially as shown and described.

16. An improved coupler comprising a draw head, a swinging jaw therein, a latch pivoted between its ends in the draw head and adapted to normally protrude at its inner end where it is operated upon by the said jaw and which is adapted at its outer end to engage the draw head of the adjacent car, and a means for holding the latch in the said engagement, substantially as shown and described.

17. An improved coupler comprising a draw head, a swinging jaw therein, a latch pivoted between its ends in the draw head and adapted to be pushed backward at its rear end by the said jaw, a head upon the forward end of the latch which is adapted to engage the draw head of the adjacent car and a vertically mov-

able locking bolt behind the latch, substantially as shown and described.

18. An improved coupler comprising a draw head, a swinging jaw therein, a latch pivoted in the draw head for holding it in engagement with the adjacent draw head, and a wedge shaped bolt behind the latch for holding it in said engagement, substantially as shown and described.

19. An improved coupler comprising a draw head, a swinging jaw therein, a latch in the draw head for holding it in engagement with the adjacent draw head, and a vertically movable wedge shaped bolt behind the latch having a recess adjacent its lower end, for the purpose substantially as shown and described.

20. An improved coupler comprising a draw bar, a draw head, a bolt connecting the same, a swinging jaw within the draw head, a latch pivotally mounted between its ends on said bolt and which is adapted to be operated upon at its inner end by the said jaw, a head upon the outer end of the latch for engaging the opposite draw head, and a means for holding the latch in the said engagement, substantially as shown and described.

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

GILBERT T. McCREA.

Witnesses:

J. VERNON SHANNON,

C. A. OVERDORFF.