(No Model.)

H. K. SMITH.

CAR COUPLING.

No. 481,071. Patented Aug. 16, 1892.

Fig: 1.

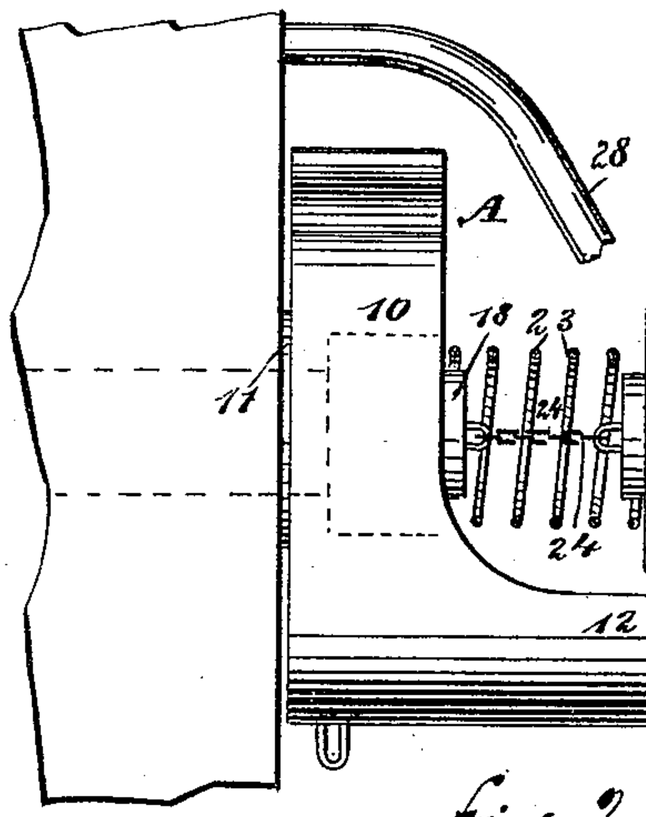


Fig: 2.

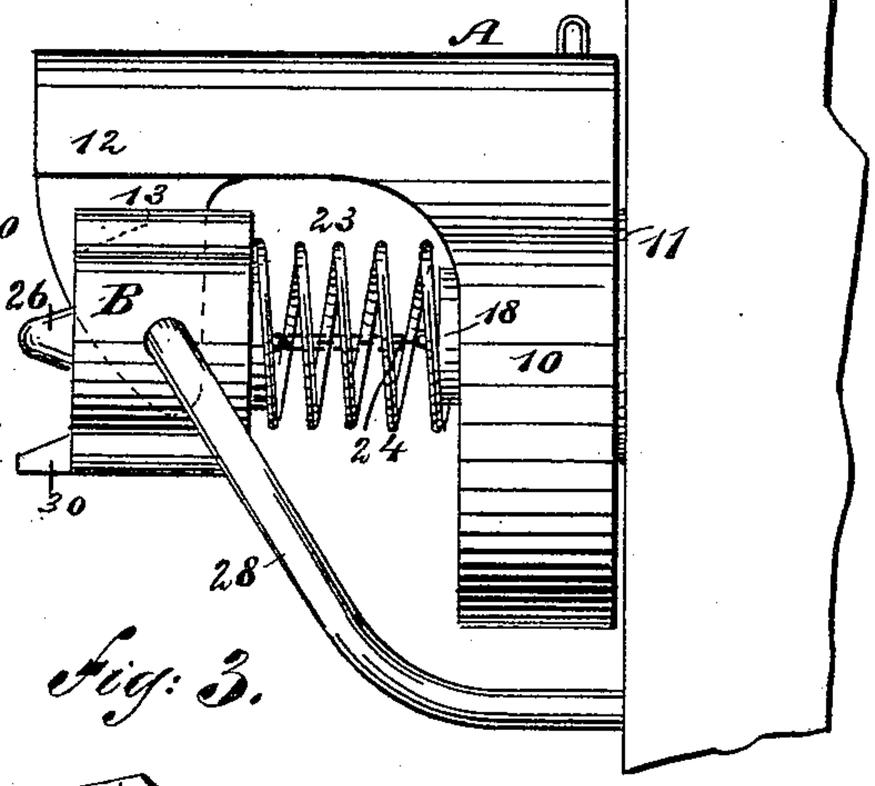
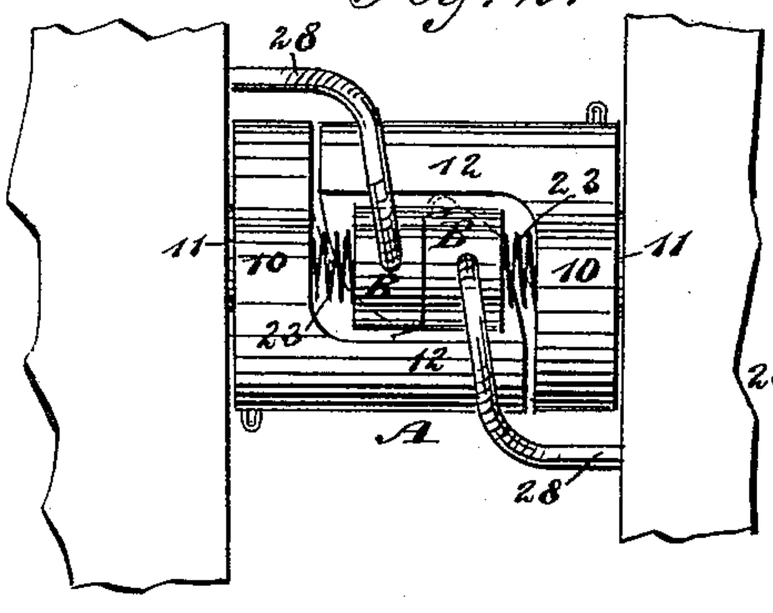


Fig: 3.



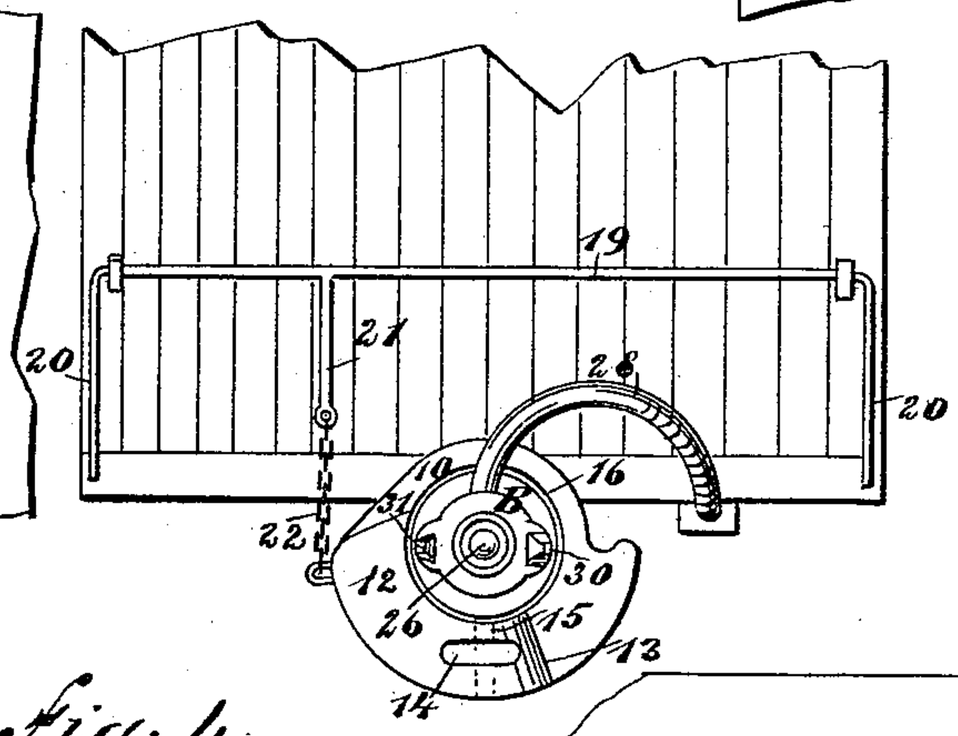
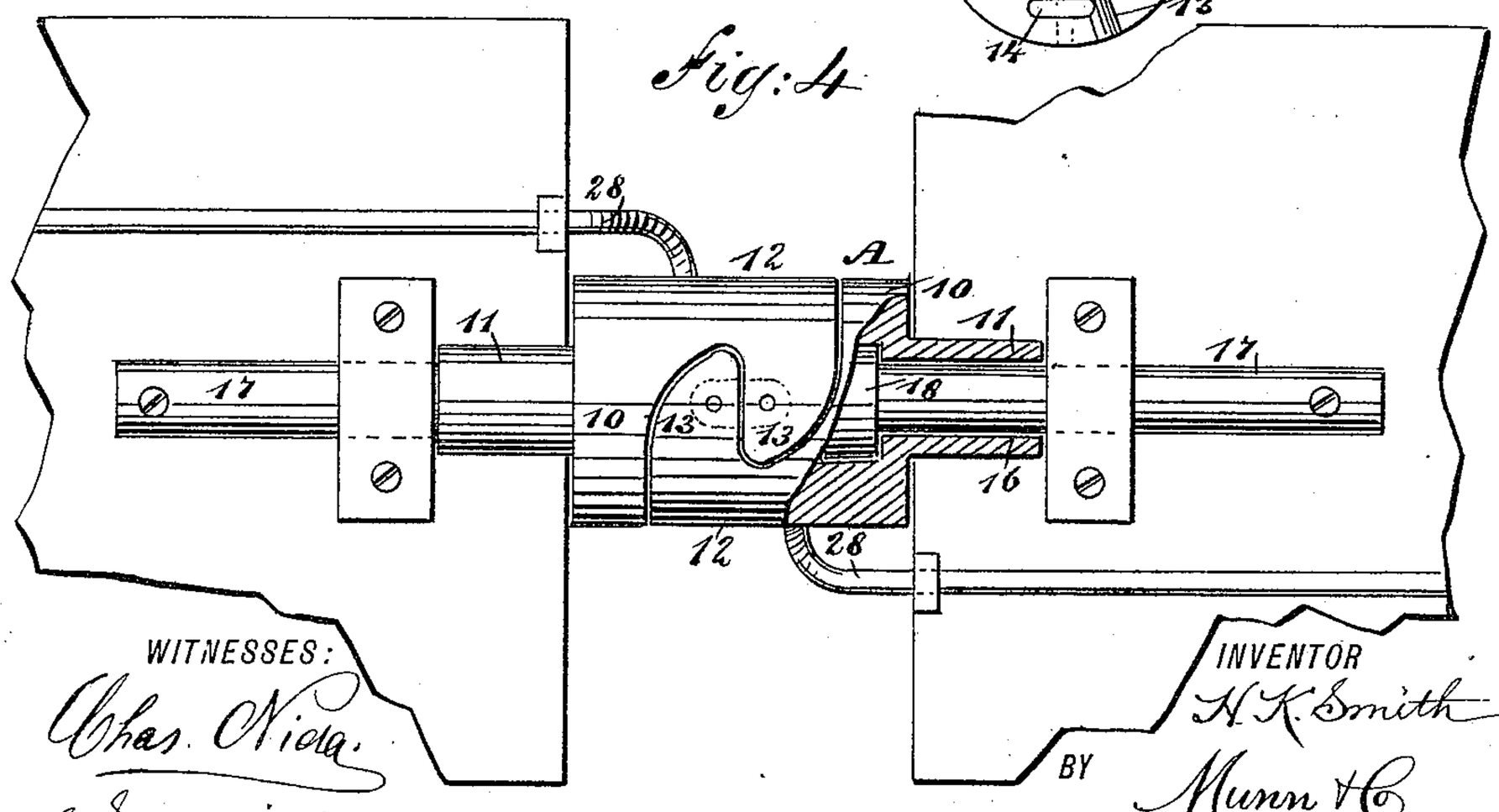


Fig: 4.



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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 481,071, dated August 16, 1892.

Application filed October 17, 1891. Serial No. 409,078. (No model.)

To all whom it may concern:

Be it known that I, HAMPTON K. SMITH, of Union, in the county of Union and State of South Carolina, have invented a new and useful Improvement in Car-Couplers, of which the following is a full, clear, and exact description.

My invention relates to an improvement in car-couplers, and has for its object to provide a car-coupler comprising a durable and simple draw-head capable of an interlocking connection with an opposing draw-head, and also to provide valve-heads to be carried by the draw-heads, the said valve-heads receiving the air-pipes for air-brakes or steam-pipes, as may be elected.

Another object of the invention is to so construct the valve-heads that when the heads of two opposed couplers are brought together a connection will be established between the steam or air pipes of said heads, and whereby as soon as opposed draw-heads are uncoupled the valves in the heads will automatically seat themselves and prevent the escape of air or steam.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully described, and set forth in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of two opposed draw-heads, the valve-head of one draw-head being in vertical section. Fig. 2 is a plan view of two opposed couplers in a coupled position. Fig. 3 is a front elevation of a coupler, and Fig. 4 is a bottom plan view of two opposed draw-heads in a coupled position.

The draw-head A consists of a body-section 10, which is somewhat circular in cross-section, a hub 11, projecting from the rear of the head, and a wing 12, extending horizontally from one side, the said wing terminating in a hook 13, which hook is located at the lower portion of the wing and extends diametrically in front of the head. The outer end of the wing, and likewise the hook, is beveled downward and inward from the top, and the hook-section of the wing has an opening 14 produced therein and a vertical aperture 15, (shown in dotted lines in Fig. 3,) which crosses the opening 14, the opening being adapted for the reception of the link and the aperture for the reception of a pin when the coupling is to be used with an opposed link-coupler. The head is provided with a horizontal circular bore 16, which extends through the hub, the said bore being eccentrically located in the head, the greatest thickness of metal being between the bore and the lower portion of the head.

In mounting the draw-head upon a car a circular bar 17 is attached to the bottom of the car in any suitable or approved manner after said bar has been passed through the bore in the draw-head. The bore in the head proper is larger than that in the hub, and the rod or bar 17 is provided with a head or enlargement 18 at its outer end, which loosely fits into the bore of the draw-head, being capable of a rotary movement upon the bar 17, which may be termed the "draw-bar."

The draw-head is rocked to uncouple it from an opposed draw-head through the medium of a shaft 19, journaled at the end of a car, which shaft is preferably provided at its ends with arms 20 and with an intermediate arm 21, the latter arm being connected by a chain 22 or like device with the wing side of the draw-head.

In connection with the draw-head a valve-head B is employed, the said valve-head being somewhat circular in cross-section, and it is located over the hook portion of the head wing, as is shown in Fig. 1. The valve-head is connected with the head 18 of the draw-bar through the medium of a spring 23 and a chain 24 or the equivalent thereof passing through the spring and attached to the inner face of the valve-head and to the outer face of the head of the draw-bar. Within the valve-head a chamber is formed opening out at the front of the head, the said chamber being provided with a lining consisting of a cylindrical metal barrel 25, rigidly secured in the head in any suitable or approved manner. The interior diameter of this barrel at its outer end is reduced and is of conical shape to receive a conical valve 26, the said valve being normally forced in the conical seat of the bearings through the medium of a spring 27. An opening is made in the valve-head

extending through into the barrel, into which opening one end of the air or steam pipe 28, utilized for the air-brakes or for steam-heating, is introduced, as shown in Figs. 2 and 3.

Around the outer end of the barrel 25 a rubber washer or cushion 29 is located, the said cushion or washer being flanged preferably at its inner end, which flange portion fits in a recess in the valve-head, and the outer end of the washer or cushion extends beyond the outer face of the head. The valve-head in its outer face is provided near its periphery with a guide-lug 30, somewhat tapering, and near the opposite periphery a correspondingly-shaped socket or recess 31 is formed.

When two opposed draw-heads are brought together for the purpose of coupling two cars, the beveled or inclined face of the wing of one draw-head will ride upon the corresponding face of the wing of the opposite draw-head, and one draw-head will rock upon the draw-bar a sufficient distance to permit the hook of one draw-head to cross the other, whereupon, as the greatest weight of the draw-head is at the bottom, their heads will as their hooks pass one another gravitate to the closed and locking position shown in Fig. 4. As the draw-heads come together and lock, the valves of the opposed valve-heads will also engage and the lug 30 of one head will enter the recess of the opposite head. This locking connection between the two heads is effected in order to direct the valves 26 in a manner to engage fairly one with the other. As the valves engage they are pressed inward, and communication is thereby established between the pipe 28 of one car and the corresponding pipe of the other. A leakage of steam or air is prevented by the rubber or flexible washers or cushions of one draw-head engaging tightly with the cushions or washers of the opposite head. Thus it will be seen that simultaneously with the coupling of the cars a coupling is effected between the steam or air pipes carried by the cars.

The valve-head B may be provided with two openings, one to receive a steam and the other an air pipe. The draw-bar may be secured to the car-body in any approved manner and the valve-block and valve may be used in connection with any other style of draw-head.

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

1. The combination, with a car-coupler, of a valve-head containing a chamber having a conical outer end and an aperture leading into said chamber and adapted to receive a steam or air pipe, a spring-controlled conical valve located in the chamber, a cushion or washer surrounding the chamber and extending beyond its forward end, and guide devices attached to the outer faces of the valve-heads, as and for the purpose specified.

2. In a car-coupling, the combination, with a draw-bar and a coupling-hook mounted to rock thereon, of a valve-head yieldingly connected to the draw-bar and adapted for connection with a steam or air pipe and a valve in said head, substantially as described.

3. In a car-coupling, the combination, with a draw-bar and a coupling-hook mounted to rock thereon, of a valve-head, a valve in said head, a flexible connection connecting the valve-head to the draw-bar, and a spring interposed between the valve-head and the draw-bar, substantially as described.

4. In a car-coupling, the combination, with a draw-bar and a coupling-hook mounted to rock thereon, of a valve-head provided with a guide-lug, a flexible connection between the valve-head and draw-bar, and a conical and spring-pressed valve in the valve-head and projecting beyond the outer face of the same, substantially as described.

5. In a car-coupler, the combination, with a draw-bar, of a draw-head consisting of a body-section having a hub, the said body-section being provided with an eccentrically-located bore extending through the hub, and a wing extending from one side of the body, terminating in a hook the direction of which is diametrically across the front face of the body, substantially as shown and described.

6. In a car-coupler, the combination, with a draw-bar having a head at its outer end, of a draw-head provided with a hub at one end and an eccentrically-located bore extending in reduced form through the hub, the said head through the medium of the said bore being loosely mounted upon the draw-bar, and a wing extending horizontally over the outer face of the body at one side, terminating in a hook the direction of which is diametrically of the body of the draw-head and the outer end of which wing and hook is beveled or inclined, as and for the purpose specified.

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