

(No Model.)

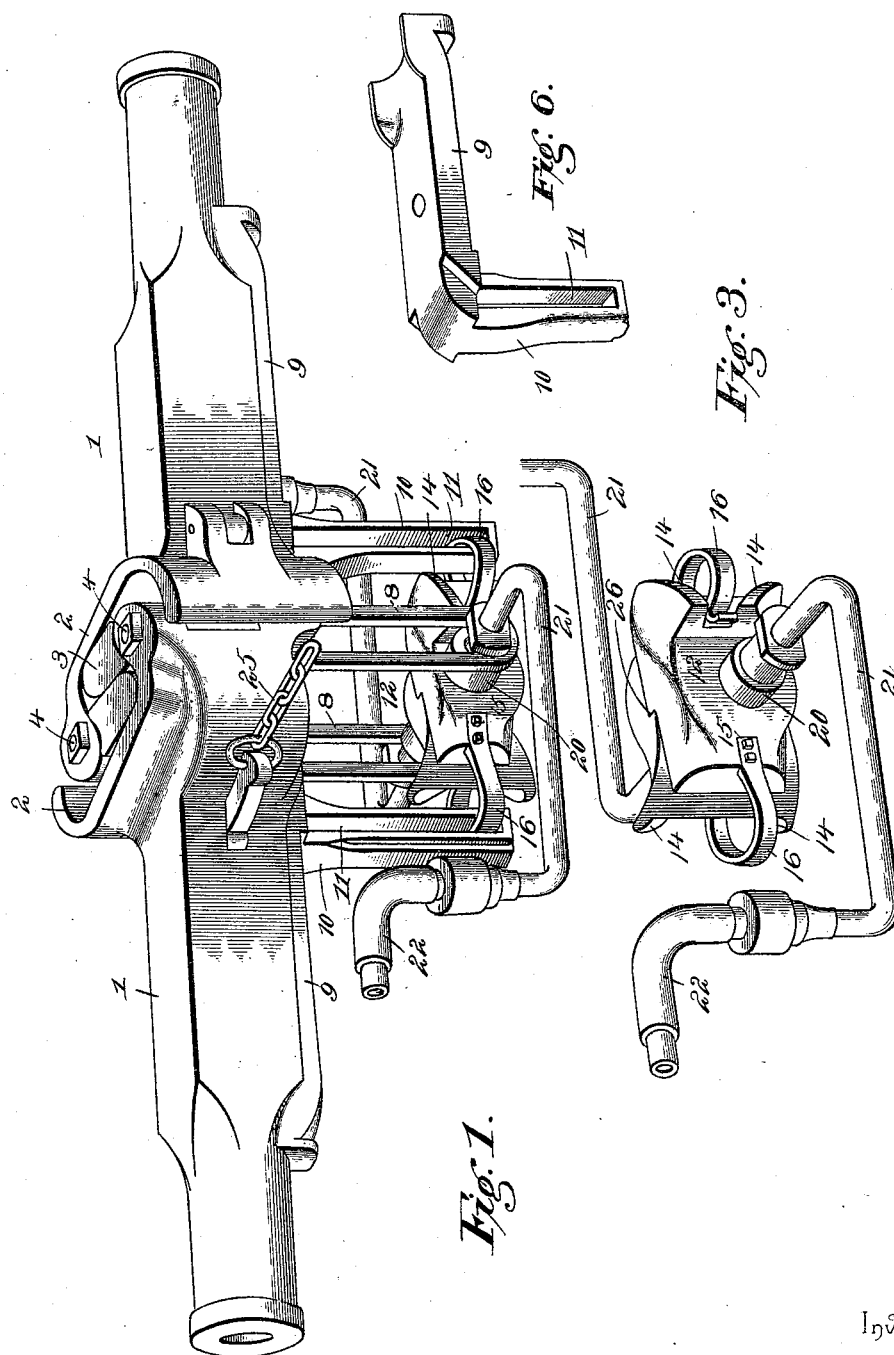
2 Sheets—Sheet 1.

S. W. SUMMERS.

COMBINED CAR AND AIR BRAKE COUPLING.

No. 526,119.

Patented Sept. 18, 1894.



Witnesses

*John C. Shaw.*  
*W. S. Duval.*

By *his* Attorneys.

*Smith & W. Summers*

*Chas. H. Snow & Co.*

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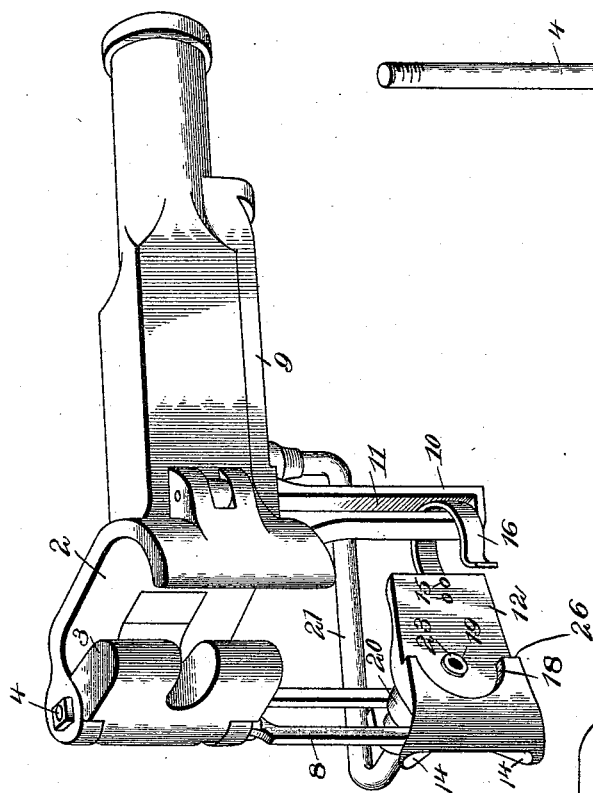


Fig. 2.

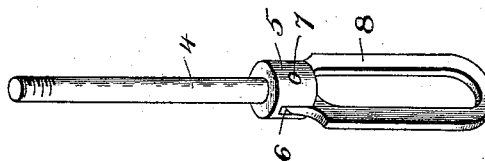


Fig. 5.

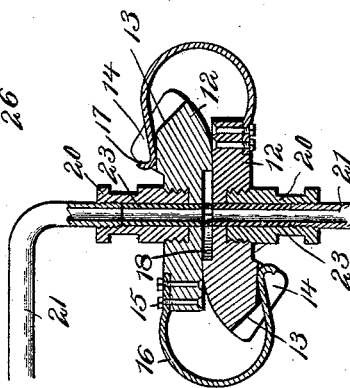


Fig. 4.

Inventor

Smith W. Summers,

Witnesses

John Shaw.  
M. S. Duwall.

By his Attorneys.

C. A. Snow & Co.

# UNITED STATES PATENT OFFICE.

SMITH WHITE SUMMERS, OF ST. LOUIS, MISSOURI, ASSIGNOR TO THE INTERNATIONAL AUTOMATIC AIR BRAKE COUPLER COMPANY, OF SAME PLACE.

## COMBINED CAR AND AIR-BRAKE COUPLING.

SPECIFICATION forming part of Letters Patent No. 526,119, dated September 18, 1894.

Application filed December 7, 1893. Serial No. 493,037. (No model.)

*To all whom it may concern:*

Be it known that I, SMITH WHITE SUMMERS, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented a new and useful Combined Car and Air-Brake Coupling, of which the following is a specification.

My invention relates to air-brake couplings for cars, and the objects in view are to provide an automatic coupling that may be effected without the necessity of an attendant stepping between the cars for this purpose, but which will be automatic in its nature; to adapt the same to couple simultaneously with the coupling of the cars and for support by any of the ordinary styles of couplings now in use.

Other objects and advantages of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings: Figure 1 is a perspective view of a pair of ordinary coupling-heads, the same being provided with my brake-pipe coupling. Fig. 2 is an inner perspective view of one of the heads. Fig. 3 is a detail in perspective of the attachment. Fig. 4 is a transverse sectional view through the coupling-shoes. Fig. 5 is a detail of the improved knuckle-pin. Fig. 6 is a detail view of one of the slotted hangers.

Like numerals of reference indicate like parts in all the figures of the drawings.

I have illustrated my invention in connection with the ordinary automatic master car builders' coupling, but it will be understood that the invention hereinafter described may be applied to any of the couplers now in use, but slight modification being necessary for the adaptation. In the present instance the draw-bar 1 is provided at its front end with the fixed jaw 2, and the pivoted knuckle 3 which is mounted on the head of the exterior opposite the fixed jaw by the knuckle-pin 4. The knuckle-pin in the present instance has a head 5 at its lower end and at its upper end is provided with nuts. The head 5 is transversely slotted at 6, and loosely pivoted therein at 7 is a slotted link 8 that depends vertically therefrom.

Bolted, banded, or otherwise secured to the under side of the draw-bar 1 is a bar 9 of inverted L-shape the same having a depending hanger-portion 10 that is provided with a vertical or longitudinal slot 11.

12 designates a self-adjusting coupling-shoe, and the same has an inner convexed face, whereby the two shoes of a coupling may ride by each other. The front edge of the shoe is provided with a bevel or wedge portion 13, and upon its exterior with a pair of converging guide flanges or ribs 14. The rear end of the shoe at its outer side is secured by bolts 15 to a curved or bowed spring 16 that extends through the slot 11 of the hanger 10, and around to the inside of the shoe, terminating opposite the same and some distance therefrom, at which point its extremity is outwardly deflected as at 17. The shoe is provided back of its convexed portion and at its inner side with a slightly recessed or shallow face 18, and is also provided with a series of perforations to correspond with the number of pipes to be connected thereto. In the present instance I have illustrated but one perforation 19, and threaded in the same is the coupling-tube or nipple 20. The exterior of this nipple between its ends is annularly reduced, and the same takes within the lotted link 8, so that the latter acts as a support for the shoe in addition to the slotted hanger 10. In the outer end of this nipple there is threaded the pipe 21, which extends outward, rearward, and upward to a point under the car-body, where it is connected by a flexible hose 22 to the brake-pipe of a train. In front of the nipple, or in other words, seated in the perforation 19, is the usual rubber gasket 23.

The present coupler, as is well known, is operated through impact alone, the two heads coming together and the pivoted jaws interlocking and themselves becoming locked automatically within the head. In order to unlock the jaws levers and chains are usually provided, the former being pivoted to the sides of the car and the latter connecting the lock of the knuckles therewith. In the present instance I have illustrated the chain and indicated the same by the numeral 25. The

parts being in the position described it will be seen that two approaching draw-heads will couple and that the convexed faces of the shoes 12 will be brought together and ride against each other until the beveled edges 5 13 come in contact with the springs 16. Here the beveled edges take under the bent extremities of the springs, or rather between the same and their respective shoes, and force the 10 springs away from said shoes, so that the extremities of the latter will pass between the ribs 14 and embrace the shoes. At this point the rubber gaskets will have impact one upon the other and a tight joint effected. It will 15 therefore be seen that simultaneous with the coupling of the cars an automatic coupling of the train-pipes will be effected. It will be seen that, furthermore, the coupling will take place regardless of the relative positions of 20 the trains upon which the shoes are located, and that the same is entirely automatic requiring no attention upon the part of the brake-man. As soon as the car-couplings are unlocked and the coaches pulled apart the 25 springs will yield and permit of a separation of the shoes.

I do not limit my invention to the precise details of construction herein shown and described, but hold that I may vary the same 30 to any degree and extent within the knowledge of the skilled mechanic.

Having described my invention, what I claim is—

1. In a combined car and air brake coupling, 35 the combination with a knuckle-coupler; of a slotted standard depending vertically from the same in rear of the head, a slotted hanger connected to the lower extremity of the knuckle-pin of the coupler and located in 40 front and at one side of the rear standard, the self-adjusting coupling shoe having separate parts thereof loosely supported respectively in the slots of the standard and the hanger, and means for automatically coupling 45 said shoe with a companion shoe, substantially as set forth.

2. The combination with a car-coupling of the knuckle-joint pattern, the knuckle-pin of which is provided with a lower slotted end, 50 a slotted link pivoted at its upper end in the slotted end of the knuckle pin, a slotted hanger in rear of the link and to one side of the same, of a convexed brake-shoe, connections between the rear end of the same and 55 the slotted hanger for a vertical movement in the slot of the latter, a perforation in the brake-shoe, a gasket in the perforation, a nipple connected with the perforation and loosely working in the slotted link, and connections 60 between said nipple and the train-pipe, substantially as specified.

3. In a combined car and air brake coupling, the combination with the car coupling head of a coupling-shoe suspended from the head 65 and having a front wedge-shaped end, and an inner convexed side, a curved spring secured

to the outer side of the shoe at the rear end thereof, and terminating opposite the face of its shoe in an outwardly bent end, a perforation in the coupler, a gasket therein, a nipple 70 secured to the perforation and adapted to be connected to the train-pipe, substantially as specified.

4. The combination with the opposite car-coupling heads, the rear inverted L-shaped 75 slotted hangers secured thereto and depending therefrom, the separate hangers in front and at one side of the slotted hangers, of the opposite coupling-shoes having convexed inner faces, front beveled edges, converged 80 outer ribs, a perforation in each shoe, a nipple connected with each perforation, a gasket for each perforation, and curved springs connected to the rear ends of the shoes, passing through the slotted hangers, and overlapping 85 the inner sides of the shoes, substantially as specified.

5. In a combined car and air brake coupling, the combination with the opposite coupling heads; of the coupling shoes adjustably supported 90 beneath said heads and provided with front wedge shaped ends, and converging flanges on such ends, and a curved or bowed spring catch secured fast at one end on each shoe and adapted to have its other free end 95 automatically engage and disengage the wedge shaped end of the opposite shoe, the spring catch on one shoe being reversely disposed to that on the other shoe, substantially as set forth. 100

6. In a combined car and air brake coupling, the combination with the opposite coupling heads; depending slotted hangers removably arranged in rear of the coupling heads, front 105 depending slotted hangers arranged at one side of and in advance of the rear hangers and pivotally suspended from the knuckle pins of said coupling heads, the coupling shoes arranged to have separate parts thereof loosely work respectively in the slots of the 110 front and rear hangers, said shoes being provided with perforations, gaskets arranged in the perforations, annularly recessed nipples fitted in said perforations and adapted to be the part of the coupling shoes that loosely 115 works in the front hangers connected to the knuckle pins, and means for automatically coupling the shoes, substantially as set forth.

7. The combination with a twin jaw car coupling; of the slotted hanger links 8, pivotally connected at the upper ends to the 120 lower extremities of the knuckle pins of the coupling head, the coupling shoes 12, adapted to be coupled together between the opposite links, and the train pipes 21 connected to the 125 shoes and having annularly reduced portions loosely working in the links 8, substantially as set forth.

8. In a combined car and air brake coupling, the combination with the opposite car-coupling heads; of the rear vertically disposed 130 slotted hangers 10 depending from said coup-

ling heads, the duplicate coupling shoes 12,  
the train pipes connected to said coupling  
shoes, the separate springs attached to each  
coupling shoe and adapted to embrace the  
5 opposite shoe, said springs loosely working  
in the slots of the hangers 10, and separate  
front hangers for said shoes, substantially as  
set forth.

In testimony that I claim the foregoing as  
my own I have hereto affixed my signature in  
the presence of three witnesses.

SMITH WHITE SUMMERS.

Witnesses:

ISAAC B. ROSENTHAL,

J. L. ATCHISON,

JAMES BRYANT THOMAS.