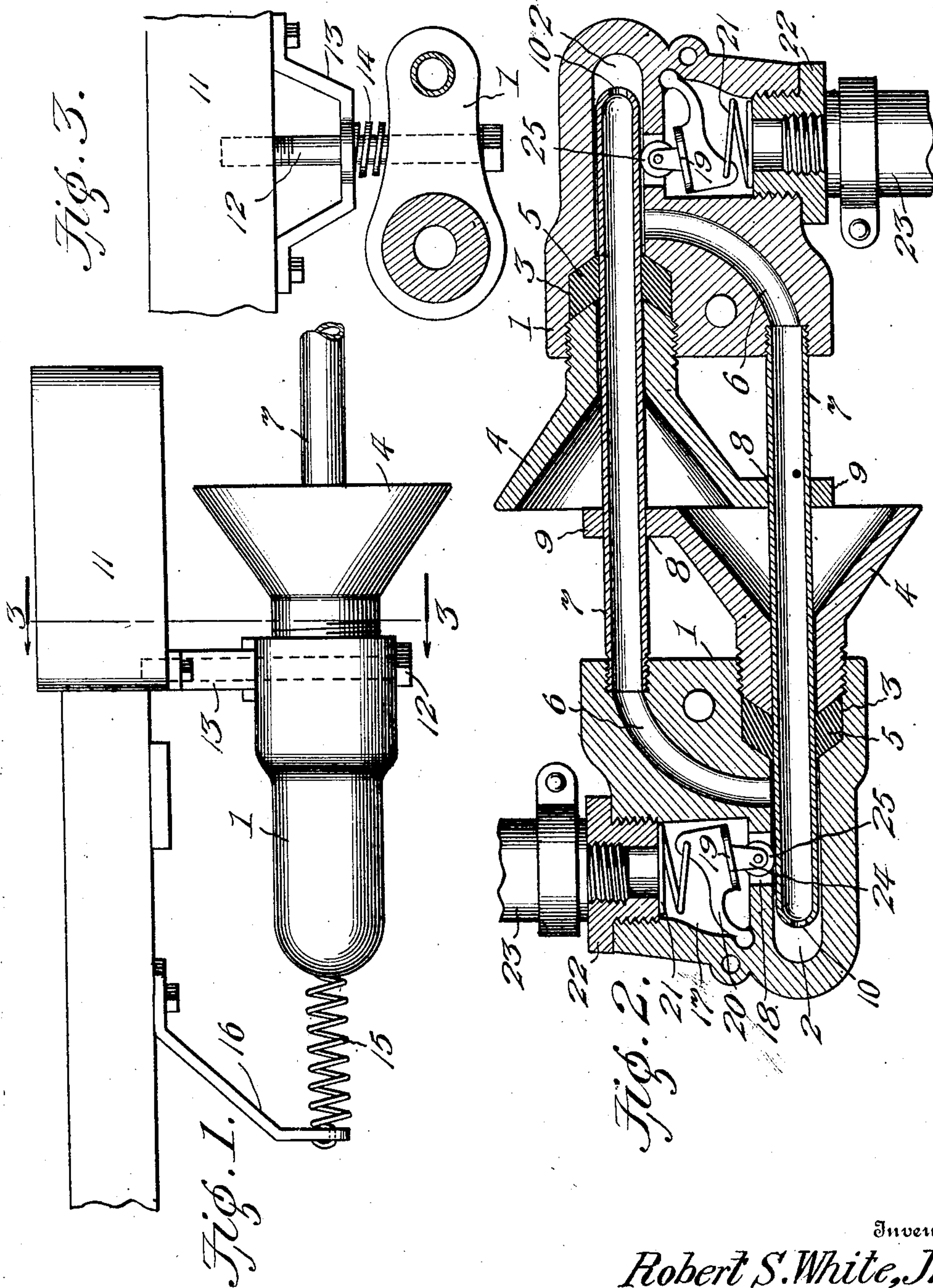


No. 856,119.

PATENTED JUNE 4, 1907.

R. S. WHITE, JR.  
AIR PIPE COUPLING.

APPLICATION FILED MAR. 29, 1907.



Witnesses  
*Frank B. Hoffmann*  
*Wm. Bagger*

Inventor  
*Robert S. White, Jr.,*  
By *Victor J. Evans*  
Attorney



# UNITED STATES PATENT OFFICE.

ROBERT S. WHITE, JR., OF OSCEOLA, OKLAHOMA TERRITORY.

## AIR-PIPE COUPLING.

No. 856,119.

Specification of Letters Patent.

Patented June 4, 1907.

Application filed March 29, 1907. Serial No. 365,384.

*To all whom it may concern:*

Be it known that I, ROBERT S. WHITE, JR., a citizen of the United States, residing at Osceola, in the county of Custer and Territory of Oklahoma, have invented new and useful Improvements in Air-Pipe Couplings, of which the following is a specification.

This invention relates to couplings or connections for the air pipes or ducts of railway car brakes, and it has for its objects to simplify and improve the construction and operation of this class of devices and to insure the certainty of connections being automatically established when the cars come together.

With these and other ends in view which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts which will be hereinafter fully described and particularly pointed out in the claims.

In the accompanying drawings has been illustrated a simple and preferred form of the invention; it being, however, understood that no limitations is necessarily made to the precise structural details therein exhibited, but that changes, alterations and modifications within the scope of the invention may be resorted to when desired.

In the drawing, Figure 1 is a side elevation of one of the couplings or connecting devices. Fig. 2 is a horizontal sectional view showing two of the couplings or connecting devices in operative relation. Fig. 3 is a transverse sectional view taken on the plane indicated by the line 3—3 in Fig. 1.

Corresponding parts in the several figures are denoted by like characters of reference. The improved coupling or connecting device comprises two parts or members that are supported for operation upon the ends of two separate cars, but as the construction is identical the description of one of said members will apply equally to both. Each of said members then comprises a body 1 having a longitudinal recess or pocket 2, expanded at its front end to form a recess 3 which is screw threaded for the adjustment therein of a funnel shaped guide member 4 between the inner end of which and the bottom of the recess is fitted an elastic washer 5. An arcuate duct or passage 6 extends from the pocket 2 to the front end of the body 1, the forward end of said duct being threaded for the adjustment therein of a forwardly extending nipple 7

which is guided through an aperture 8 in a flange 9 formed upon the funnel shaped guide member; the forward extremity of the nipple is of less diameter than the inner end of the pocket 2 and it is provided with an aperture 10 forming a port for the passage of the air.

The body 1 is supported beneath the draw bar or coupling head 11 upon a pivotal bolt 12 in such a manner as to be capable of swinging in an approximately horizontal plane; said bolt being guided through a bracket 13 upon the underside of the draw bar or coupling head; a spring 14 being interposed between the body 1 and the bracket 13 for the purpose of sustaining the body in its proper position without interfering with its freedom of movement when the cars with which the device is connected come together, when they are rounding curves, or when other exigencies arise that call for some degree of freedom of movement of the body of the connecting device; the rear end of said body is connected by means of a spring with a supporting bracket 16 whereby the said coupling device will normally be sustained in such a position that the mouth of the funnel shaped guide shall be presented in a forward direction to insure certainty of operation when the cars come together.

The body 1 is provided at its inner or rear end with a recess forming a chamber 17 which communicates with the inner end of the pocket 2 through a port 18 which is adapted to be closed by a valve 19 carried by a lever 20 which is pivoted within the recess; the free end of said lever being subjected to the action of a spring 21 whereby the valve will be automatically closed to the passage of air when the members of the coupling or connecting device are not in operative engagement with each other. The outer end of the chamber or casing 17 is provided with a reducing plug 22 with which the air pipe or hose 23 is connected in the usual manner; the inner end of the plug 22 affords a seat for the valve actuating spring 21.

The valve 19 is provided on its face with lugs or brackets 24 carrying an anti-friction roller 25 which is adapted to project through the port 18 into the pocket 2.

When the cars equipped with the members of the improved coupling or connecting device come together, the nipple 7 of each member will be guided by the funnel 4 into the pocket 2 of the mating member, the elas-



tic washers 5 serving to prevent leakage of air around the nipples. Each nipple 7, on entering the pocket 2 of the mating member of the coupling device will displace the spring actuated valve 19 by engagement with the anti-friction roller 25, thus opening the port 18 to the passage of air which will then be free to pass through the nipple 7 and duct 6 to the pocket 2 and port 18 of the mating member, thus establishing the desired communication. When the cars are separated, the ports 18 will be instantly and automatically closed by the action of the springs 21; the tendency of the air pressure, when in excess, being to seat the valves more firmly.

From the foregoing description taken in connection with the drawings hereto annexed, the operation and advantages of this invention will be readily understood by those skilled in the art to which it appertains. The construction of the improved air coupling is very simple, and its operation is at all times certain, and thoroughly effective. It is moreover entirely automatic in its operation, and the train crew will not have to be depended upon to operate air cups and other connections.

Having thus fully described the invention, what I claim as new is:—

30 1. In an air pipe coupling a pivotally supported body member, a tension spring engaging the same to take up slack upon the pivotal supporting member, a hanger disposed adjacent to the body member, and a spring connecting the hanger with the body member to sustain the latter in proper alinement for operation.

2. In an air pipe coupling a body member having a longitudinal pocket enlarged at its forward end and a duct extending from the pocket to the forward end of the body member, a nipple connected with said duct, a funnel shaped guide mounted in the enlarged forward end of the pocket and an elastic washer seated in the enlarged forward end of the pocket adjacent to the inner end of the funnel shaped guide.

3. In an air pipe coupling a body member having a longitudinal pocket and a duct connecting said pocket with the forward end of the body member, a funnel shaped guide

mounted in the forward end of the pocket and having a laterally extending apertured flange, and a nipple connected with the forward end of the duct and guided through the apertured flange.

4. In an air pipe coupling a body member having a longitudinal pocket and a lateral duct connecting the pocket with the forward end of the body member, a funnel shaped guide at the forward end of the pocket, an air pipe opening into a recess or chamber in the body member adjacent to the inner end of the pocket, and communicating therewith through a port or passage, and a spring actuated valve seated upon said port or passage and having an engaging member projecting therethrough.

5. In an air pipe coupling a body member having a longitudinal pocket and a duct connecting said pocket with the forward end of the body member, a funnel shaped guide at the front end of the pocket, a nipple connected with the duct and of less diameter than the inner end of the pocket, an air pipe opening into a recess or chamber in the body member adjacent to the pocket and communicating therewith through a port or passage, a spring pressed lever pivoted in the chamber, a valve carried by said lever and operating to close the port or passage and an anti-friction member carried by the valve and projecting through the port or passage.

6. In an air pipe coupling a body member having a longitudinal pocket and a recess or chamber adjacent thereto, the partition between said pocket and chamber being provided with a port, a lever pivoted in the recess or chamber, a valve carried by said lever and having an anti-friction member extending through the port or passage, a reducing plug at the outer end of the chamber, an air pipe connected with the reducing member, and a spring seated upon the reducing member and operatively engaging the valve carrying lever to close the port or passage.

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

ROBERT S. WHITE, JR.

Witnesses:

F. R. BULL,

A. A. COUPLAND.