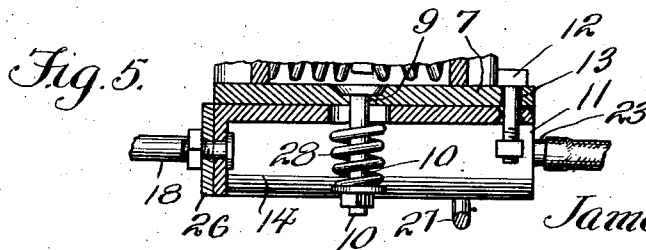
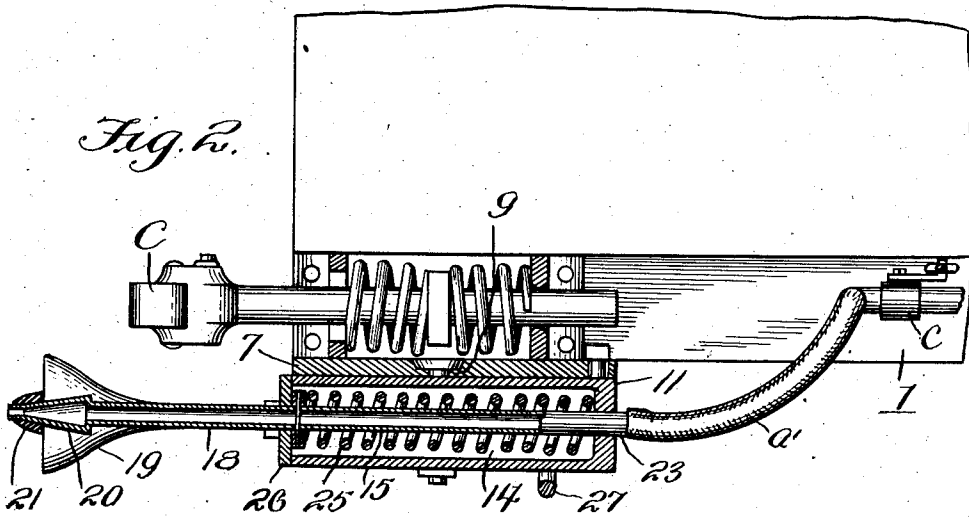
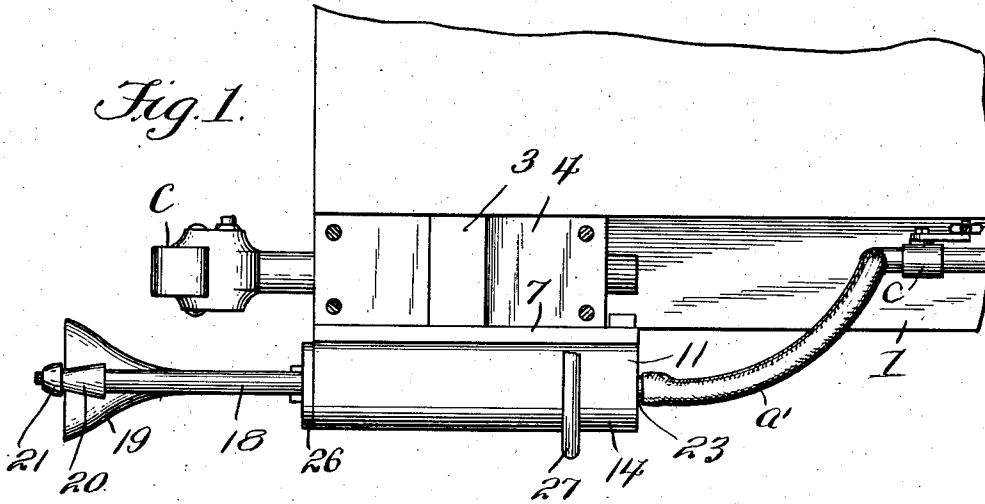


J. BRANT.
 AUTOMATIC AIR COUPLING.
 APPLICATION FILED MAY 9, 1911.

1,027,314.

Patented May 21, 1912.

2 SHEETS—SHEET 1.



Witnesses

J. L. Wright
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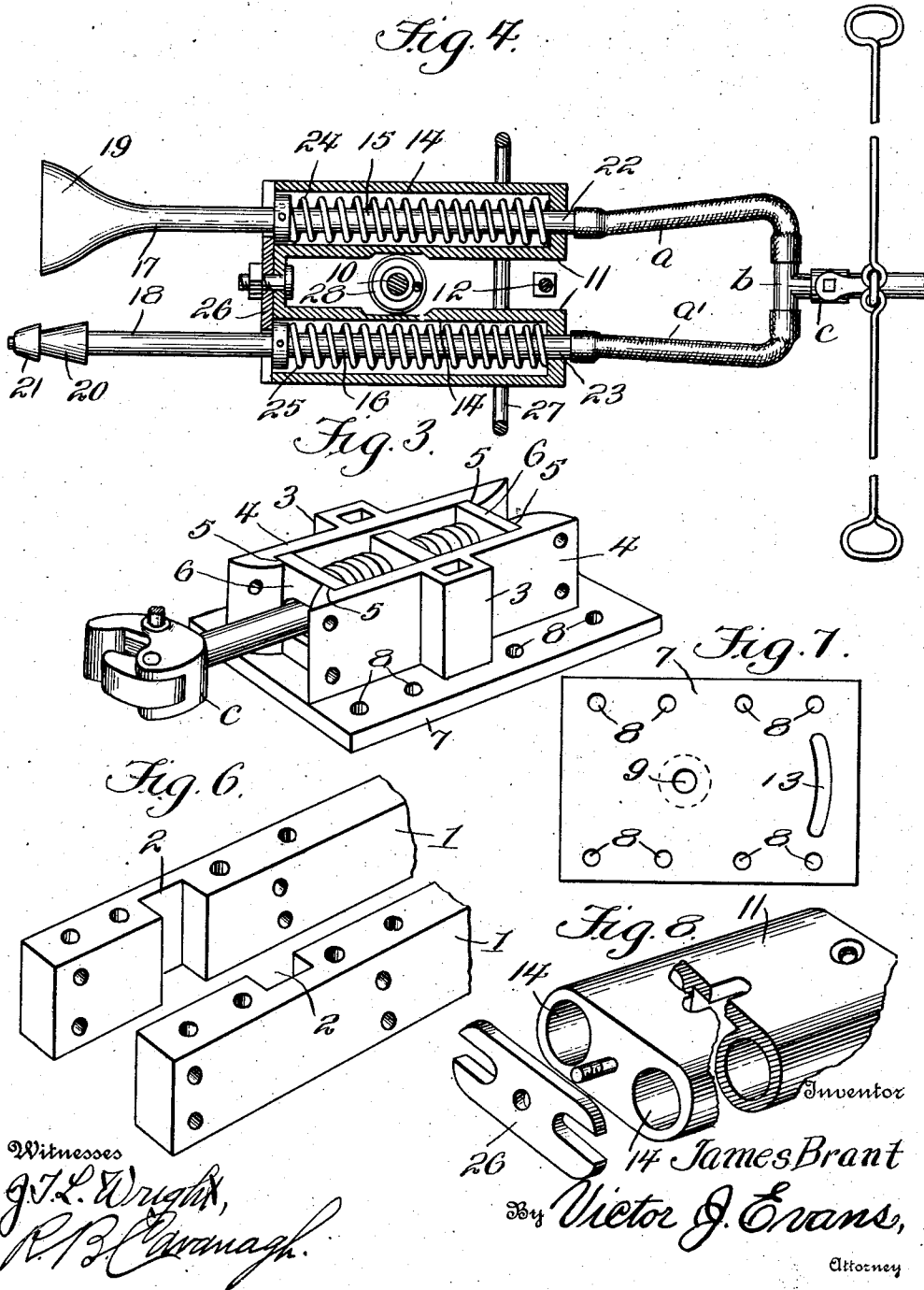
Attorney

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UNITED STATES PATENT OFFICE.

JAMES BRANT, OF DUBUQUE, IOWA.

AUTOMATIC AIR-COUPLING.

1,027,314.

Specification of Letters Patent.

Patented May 21, 1912.

Application filed May 9, 1911. Serial No. 626,035.

To all whom it may concern:

Be it known that I, JAMES BRANT, a citizen of the United States, residing at Dubuque, in the county of Dubuque and State of Iowa, have invented new and useful Improvements in Automatic Air-Couplers, of which the following is a specification.

The present invention relates to coupling mechanism, and has particular application to certain novel and useful improvements in mechanism for coupling the air hose or pipes of railway car air brakes.

In carrying out my invention it is my purpose to provide a type of coupling which will be automatic, positive and efficient in its operation, and one wherein the sections of hose will be coupled in such manner, that the liability of such sections becoming accidentally disconnected during the travel of the train, and especially when the train is subjected to twists and strains, as in weaving, taking switches and curves, or traveling over a rough or uneven roadway.

It is further my purpose to provide a coupling mechanism for the air hose which will act in conjunction with the ordinary draw-bar coupling, for in my invention the coupling is preferably mounted beneath and adjacent to the car coupling, and connected to the drawbar sills, so that the air brake coupling is detained in coupled position by the car coupling.

It is further my purpose to provide a coupling of the class described embodying in its construction the desired features of simplicity, durability and strength, and still another object of my invention is to provide a coupling which while possessing many advantages over the pipes now in use, will compare favorably with the same in the matter of cost of production and installation.

With the above recited objects and others of a similar nature in view, my invention consists in the construction, combination and arrangement of parts set forth in and falling within the scope of the appended claims.

In the accompanying drawings—Figure 1 is a view in side elevation, showing my invention, and is positioned relative to the car coupling, one of the drawbar sills being omitted. Fig. 2 is a longitudinal sectional view. Fig. 3 is a perspective view of the drawbar and plate for carrying the air brake coupling. Fig. 4 is a top plan view showing the manner of connecting the air

pipes to the coupling, the coupler casing being in section. Fig. 5 is a view of the coupler casing showing the manner of connecting the same with the suspending plate. Fig. 6 is a perspective view of a portion of the car or drawbar sills and showing the manner of recessing the same for the reception of the casting for the car coupler. Fig. 7 is a bottom plan view of the base plate. Fig. 8 is a detail perspective view, showing a portion of the coupling casing and the end plate therefor.

Referring now to the accompanying drawings in detail, the numerals 1—1 designate the car or drawbar sills which are recessed or cut away as at 2, for the reception of the shoulders 3, carried by the vertical plates 4, the latter being provided with the shouldered end sections 5—5 forming abutments or stops for the plates 6 of the car coupler C. Preferably formed or cast integral with the plates 4 is a relatively wide flat plate 7 provided with bolt holes 8 for the reception of bolts to fasten the plate to the under side of the sills. This plate is further provided with a central aperture 9, through which is designed to extend a relatively large bolt 10, designed to secure the coupler casing 11 to the plate. This coupler casing is further provided with a T-bolt 12 designed to lie in locking engagement with the segmental slot 13 in the plate 7. The casing is formed with a plurality of parallel cylinders 14 through which extend the tubular shanks 15 and 16 of the coupler members 17 and 18 respectively. It will be noted by reference to the drawings that one end of the coupling member 17 is formed with a bell mouth, as at 19, while the member 18 is provided with a conical head 20 surmounted by a rubber cap 21. The opposite ends of the members 17 and 18, are, as shown at 22 and 23 in the form of ordinary tubular extensions designed to receive the hose pipe sections *a—*a'** the opposite end of said pipe sections being connected to the head of the T-pipe *b* of the system. The letter *c* indicates a cut off valve in the system which may be operated in any preferred manner.

Arranged within each cylinder and surrounding the tubular shank of the members 17 and 18 respectively, are the coil springs 24 and 25, the springs tensioning the members when subjected to pressure as in the coupling of the cars. The front end of

the cylinder is preferably closed by a plate 26, bolted thereto, said plate preventing the members 17 and 18 from being accidentally withdrawn. In order to guide or limit the movement of the coupler casing, and at the same time permit the latter to sway or swing when the train is taking curves, switches and the like, I fasten to the base plate 7, a yoke 27, which extends over the casing and yet is of a sufficient width to permit a certain play or movement of the casing laterally. The bolt 10 which fastens the casing to the plate 7 is surrounded within such casing by a coil spring 28, normally maintained under a predetermined tension, so that it compensates for any variation in the alinement of brake couplings of the coupled cars such, for instance, as when one car is loaded and is coupled to an empty car, or one car has settled more than another as is frequently the case. In such instances the coupling casings and plates might not be in alinement were it not for the spring.

From the above description, taken in connection with the accompanying drawings, the construction and operation of my invention will be readily apparent to those skilled in the art. When two cars to be coupled come together, the conical shaped end of the member 18 of one coupler enters the bell mouth member of the other car, and, when the car couplings meet the heavy pressure of the cars forces the coil springs back, as the car couplings snap in place. As the air couplings meet first it will be readily seen that the members are securely coupled so long as the car coupling holds. As soon as the car couplings are disconnected, the air brake couplings may also be released.

While I have herein shown and described one particular embodiment of my invention, I wish it to be understood that I do not confine myself to all the precise details herein set forth by way of illustration, as modification and variation may be made without departing from the spirit of the invention or exceeding the scope of the claims.

What I claim is—

1. In a mechanism of the class described, the combination of the sills of a car, of a car coupling casing mounted between the sills, a base plate beneath the casing having a slot formed therein, of an air-pipe coupling casing comprising a plurality of cylinders beneath the base plate and provided with an upwardly extending projection adapted to work in the slot in the base plate, a coupling member formed with a widened mouth portion and a tubular shank portion, said shank extending entirely

through one of the cylinders and connecting to an air pipe at its inner end, a second coupling member provided with an enlarged head portion, a cap portion at the end of the head portion, and a tubular shank extending from the enlarged head portion through another of the cylinders, the inner end of the tubular shank being connected to a secondary pipe, and tension means surrounding the tubular shank portions within the cylinder.

2. The combination with the sills of a car, of a base plate connected to said sills, a casing comprising a plurality of cylinders arranged beneath the plate, spring tension connection between the casing and plate, a bolt carried by the casing and working in a segmental slot formed in the plate, whereby the casing may move relative to the plate to compensate for movement of the car, air brake coupling members provided with tubular shanks extending entirely through the cylinders and connected at their inner ends to the air pipes of the system.

3. In a mechanism of the class described the combination with a support, of a casing comprising a plurality of cylinders suspended therefrom, a coupling member having a relatively wide mouth portion, and a tubular shank portion adapted to extend in and through one of the cylinders, and to have an air pipe connected to its narrow end, a second coupling member having an enlarged head portion, and a tubular shank portion extending through the other cylinder and also adapted to have an air pipe connected thereto, tension springs within the cylinders and surrounding the shank portions of the member therein.

4. In a mechanism of the class described the combination with the sills of a car, of a car coupling casting mounted between the sills, a plate located beneath the casting, a casing suspended from said plate and comprising a plurality of cylinders, coupling members extending within and through the cylinders and adapted to have the air pipes of the system connected to the ends thereof, one of said members having a bell mouth, the other of said members having an enlarged head portion, and tension means within the cylinders and surrounding the portions of the member lying therein.

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

JAMES BRANT.

Witnesses:

F. L. OHMERT,
T. J. PAISLEY.