J. & C. E. SULLIVAN.

TRAIN PIPE CONNECTOR.

APPLICATION FILED SEPT. 11, 1913.

1,166,559.

Patented Jan. 4, 1916.

Fig. 1.

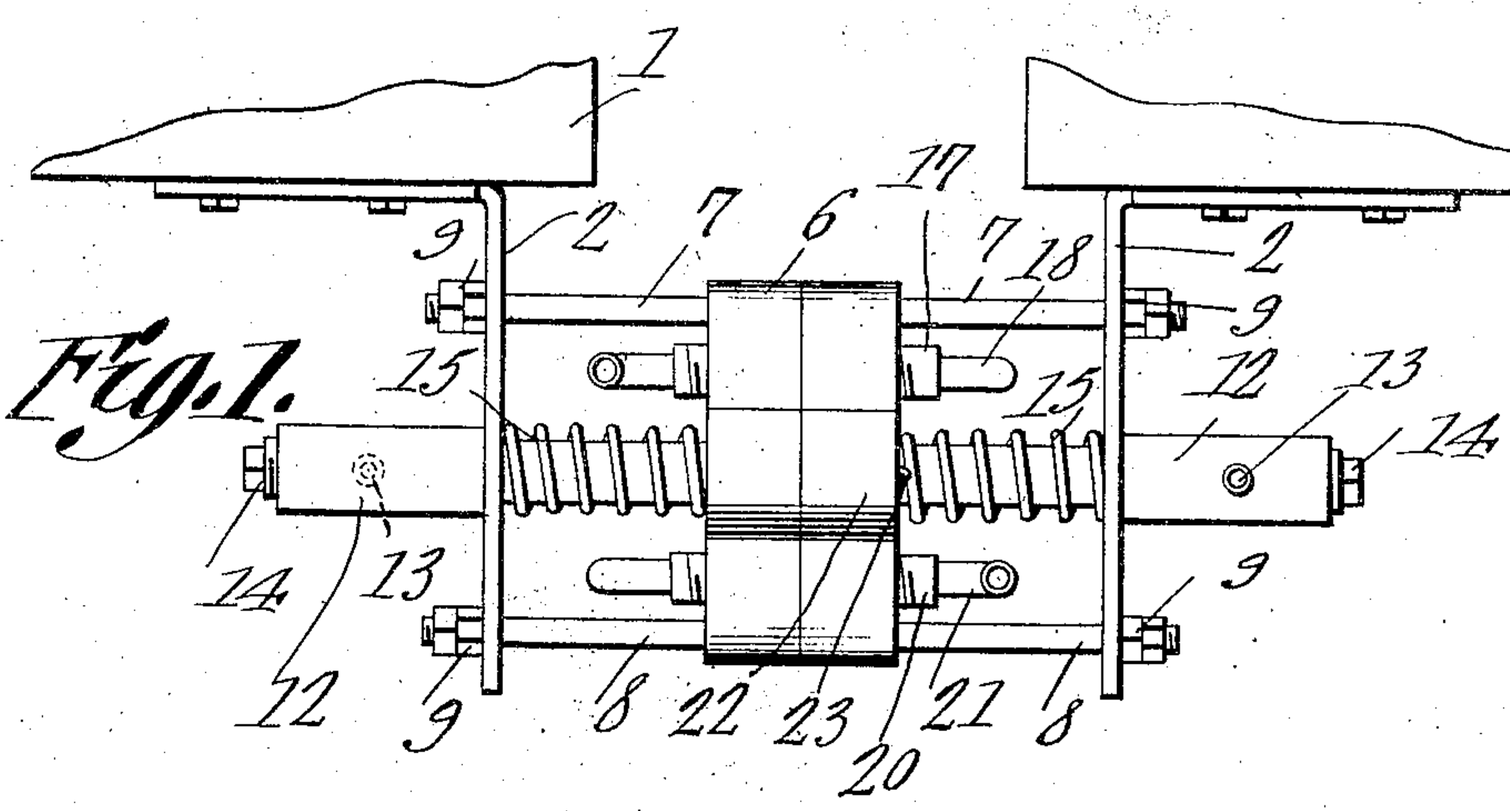


Fig. 2.

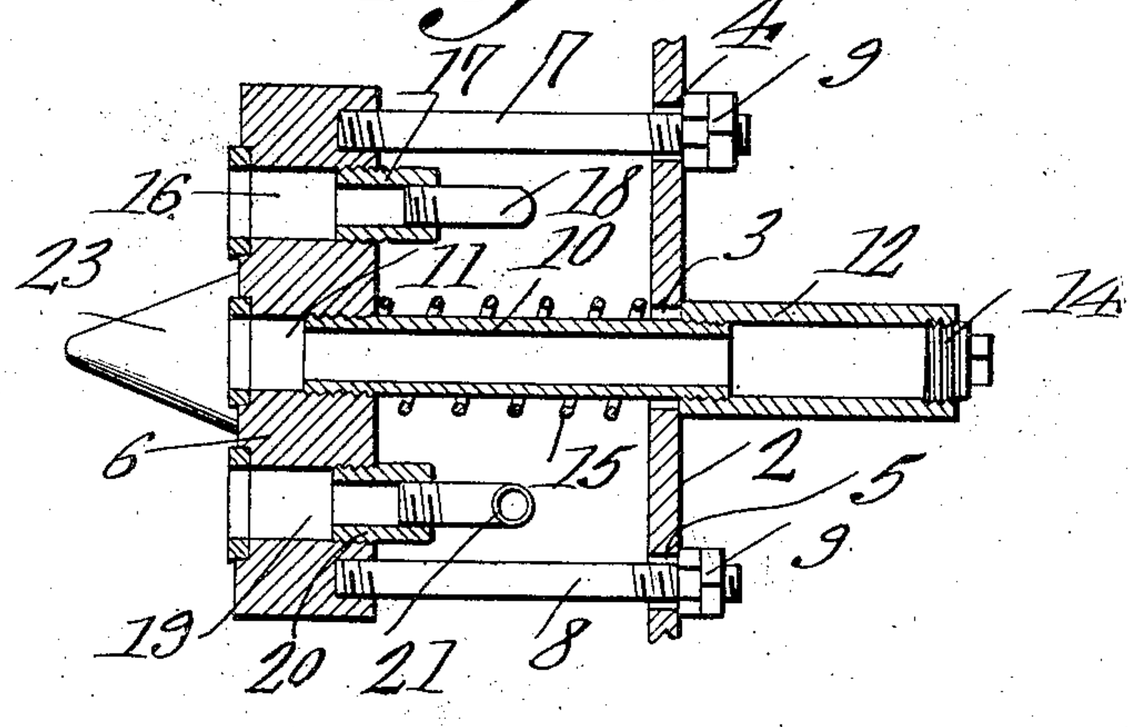


Fig. 3.

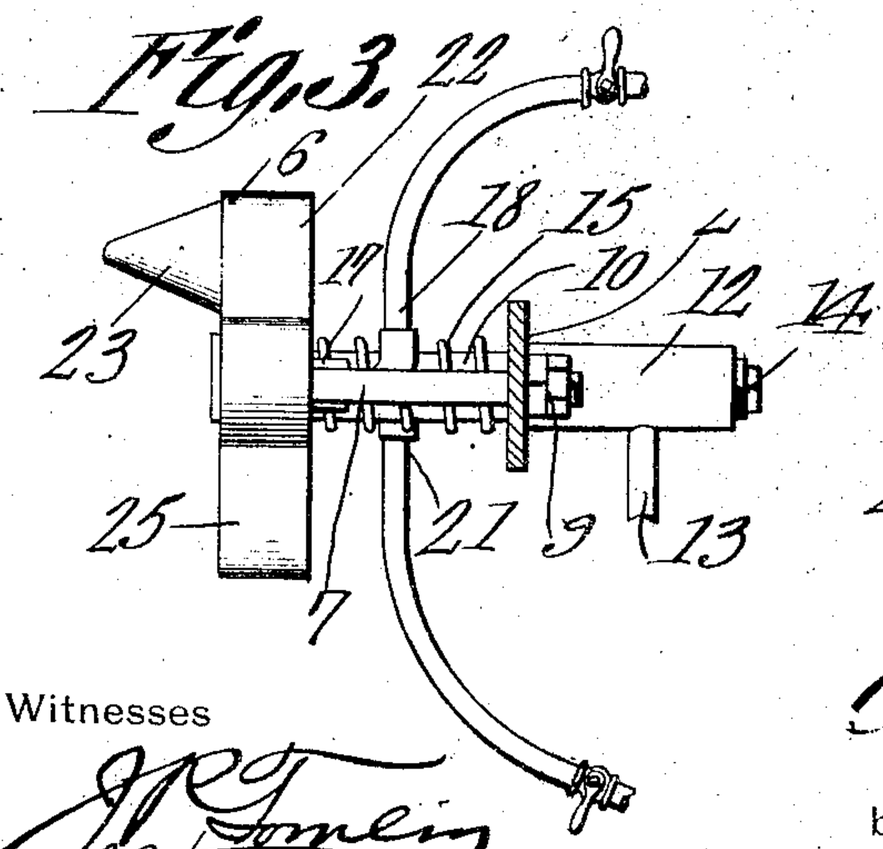
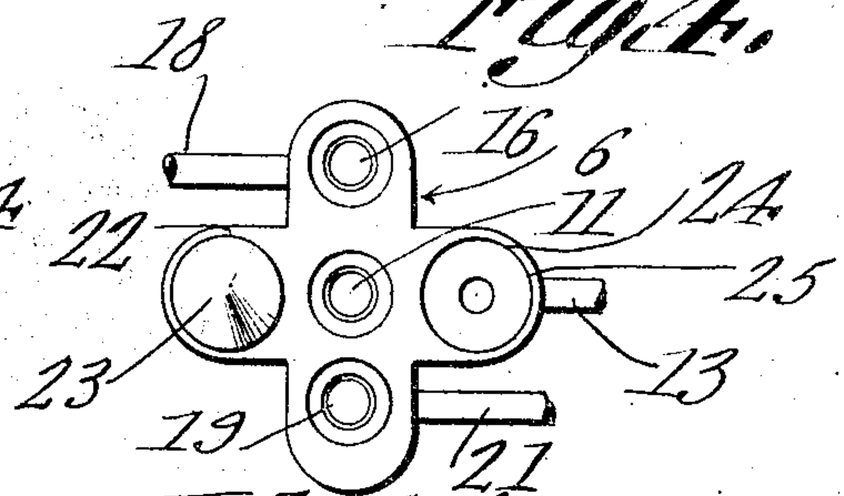


Fig. 4.



Witnesses

J. Jones

L. Wilson

J. Sullivan AND
C. E. Sullivan Inventors

by Church & Co.

Attorneys

UNITED STATES PATENT OFFICE.

JOSIAH SULLIVAN, OF McCOOK, NEBRASKA, AND CHARLES E. SULLIVAN, OF PUEBLO, COLORADO.

TRAIN-PIPE CONNECTOR.

1,166,559. Specification of Letters Patent. Patented Jan. 4, 1916.

Application filed September 11, 1913. Serial No. 789,356.

To all whom it may concern:

Be it known that we, JOSIAH SULLIVAN and CHARLES E. SULLIVAN, citizens of the United States, residing, respectively, at McCook and Pueblo, in the counties of Redwillow and Pueblo, States of Nebraska and Colorado, have invented a new and useful Train-Pipe Connector, of which the following is a specification.

The present invention relates to improvements in train pipe connectors, one object of the present invention being the provision of a novel form of collector head connected to and carried by the super-structure of the car independently of the car coupler, which, however, is so disposed as to readily register regardless of the angularity or positioning of the car couplers and the abutting ends of the cars, the head of the connector being of relatively thick metal, to constitute a heat retaining means heated by the steam heat connection therewith so as to prevent the freezing of the ports thereof and the connections adjacent thereto.

Another object of the present invention is the provision of a novel form of hanging for a pipe connector, by means of which a single spring is employed to normally hold the connector head projected, there being provided coöperating guiding means to permit of the proper gyratory movement of the head both into registration position and after registering and connected due to the motion imparted thereto by the moving train.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings—Figure 1 is a side elevation of the connectors of two abutting cars in assembled position. Fig. 2 is a central longitudinal sectional view through one connector head and support. Fig. 3 is a top plan view thereof. Fig. 4 is a front elevation thereof.

As each connector head and its support is identical, the description of one will suffice for both.

Referring to the drawings, the numeral 1 designates the super-structure of the car to which is connected the L-shaped bracket 2, provided with the superposed apertures 3, 4 and 5, the central one of which is of the larger diameter, the purpose of which will presently appear.

The connector head 6, has connected thereto and extending rearwardly toward the bracket or support 2, the two parallel rods or bars 7 and 8, which are disposed for a sliding and slight gyratory movement through the apertures 4 and 5 of the bracket 2, there being the two retaining nuts 9 disposed upon the inner ends thereof to limit the outward thrust of the connector head and thus assist in holding the same in proper relation to the support 2.

A pipe 10 is connected in registration with the air port 11 of the connector head 6, and extends through the enlarged aperture 3 of the bracket 2, there being disposed upon the outer end thereof, a sleeve 12 which is of a larger diameter than the pipe 10 and also of the aperture 3. The coupling 12 is provided with the connecting pipe 13 for the air brake system of the train, while disposed in the inner free end thereof is the plug 14, which permits free access to the coupling 12 and pipe 10 for cleaning. By this means any condensation that may settle in the pipe 14 may be readily removed.

A spring 15 is disposed upon the pipe 10 and abuts the inner face of the connector head 6 and the adjacent portion of the bracket 2 so as to normally hold the connector head extended or away from the bracket 2, such movement being limited by the locking nuts 9 of the rods 7 and 8 and the inner end of the coupling 12 adjacent the bracket 2, and as particularly shown in Fig. 2.

The connector head 6 in front elevation as clearly shown in Fig. 4, is preferably cruciform, the port 11 being the central port, while formed therein and disposed thereabove is the air signal port 16 having connected in the rear end thereof, the threaded coupling member 17 to which is connected the flexible hose 18 led to the usual pipes of the car. Directly below the port 11 is formed the steam port 19, having disposed therein, the coupling 20 for the reception of the steam pipe 21. With this form of connector it will be seen that the hose

connections used for the air brake, air signal and steam are not cast away, as the same are employed in connection with the present connector, utilizing the various connections now employed, it simply being necessary to connect the brackets or supports 2 to the under-side of the super-structure of the car below the coupler head, and connect in any well known manner to the coupling 12, and the couplings 17 and 20 the air pipe, air signal pipe, and steam pipe of the car. By this means it will be seen that the equipment generally employed is put into use with the present structure, it simply being necessary to add the connector head 6 and its support with the port rings of the ports 11, 16 and 19, which may be constructed of rubber, hard fiber or metal, as may be found most desirable.

In order to insure the proper mating of the members of the connector the arm 22 of the connector head is provided with the collecting pin 23, while the arm 24 is provided with the conical shaped open ended bore or receptacle 25, which constitutes a funnel for the reception of the pin 23. It will be noted that the pin 23 is longer than the thickness of the arms 22 and 24, and that therefore any accumulation of dirt or dust will be forced through the bore 25 by the pins 23 as such when seated therein has its apex beyond the opposite face of the arm 24.

From the foregoing description, it will be seen that the rods 7 and 8 hold the head 6 properly supported in coöperation with the spring 15, and under normal conditions, the outer face of the head 6 will be held in the proper plane for meeting and registering with the mating connector head of an abutting car. Also it will be noted that by mounting the rods 7 and 8 and the pipes 10 as indicated, that the connector head will be permitted the necessary gyratory movement for properly registering the pin and funnel collector with a mating connector, and will also conform to the various movements of the cars so as to be maintained in proper connected relation.

It will be noted that the pipe 10 is permitted longitudinal and gyratory movements in the opening 3, and that the pipe 12 holds the same from movement too far longitudinally or in opposition to the spring 15, while the rods 7 and 8 are also mounted for longitudinal and gyratory movement, but prevent the connector head from rotating upon the pipe 10 as its axis.

What is claimed is:

In a device of the class described, a support having upper, lower and intermediate openings; a coupling head; arms projecting rearwardly from the head and loosely received in the upper and lower openings; a pipe projecting rearwardly from the head and loosely received in the intermediate opening; a spring interposed between the support and the head and surrounding the pipe; an extension threaded onto the pipe and engaging the rear face of the support to limit the forward movement of the pipe under the action of the spring, the extension being rotatable on the pipe to adjust the compressive effort of the spring on the head; a closure for the rear end of the extension; and a nipple projecting laterally from the extension, the nipple constituting at once a pipe connection and a means whereby the extension may be rotated to adjust the compressive effort of the spring; and nuts on the ends of the arms at the rear of the support, the nuts being adjustable to bear on the rear face of the support when the arms are slid rearwardly due to a longitudinal adjustment of the pipe by means of the extension.

In testimony that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses.

JOSIAH SULLIVAN.
CHARLES E. SULLIVAN.

Witnesses:
HIRAM E. TEDROW,
RICHARD D. MEIGS.