Sept. 20, 1927. 1,643,229

C. E. SULLIVAN ET AL

STEAM, AIR, AND SIGNAL LINE CONNECTION

Filed Oct. 29, 1926 2 Sheets-Sheet 1

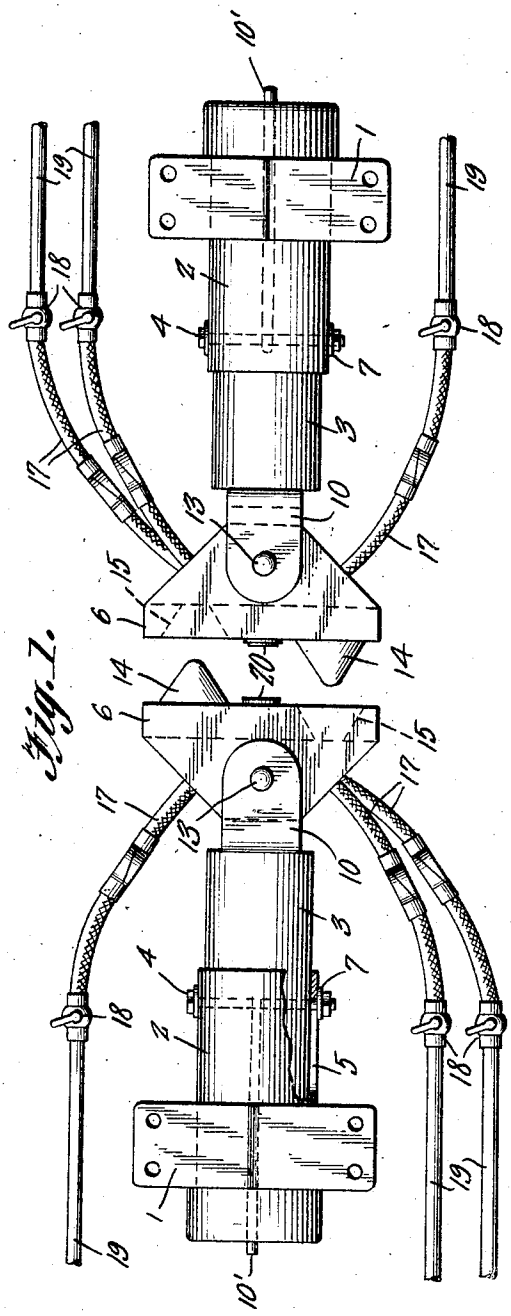


Fig. 1.

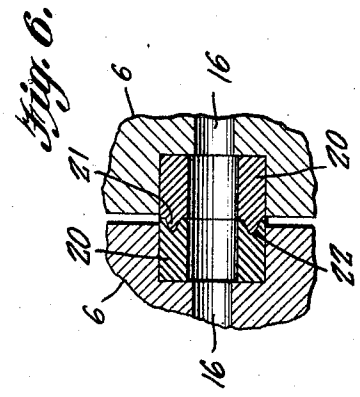


Fig. 6.

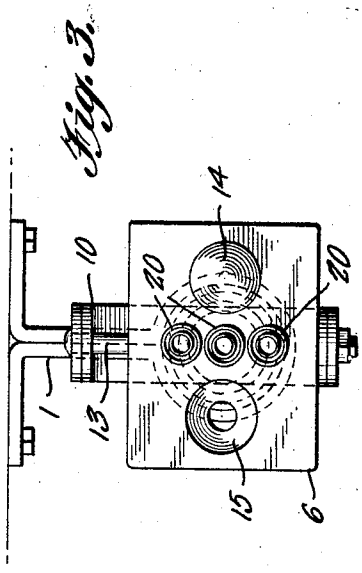


Fig. 3.

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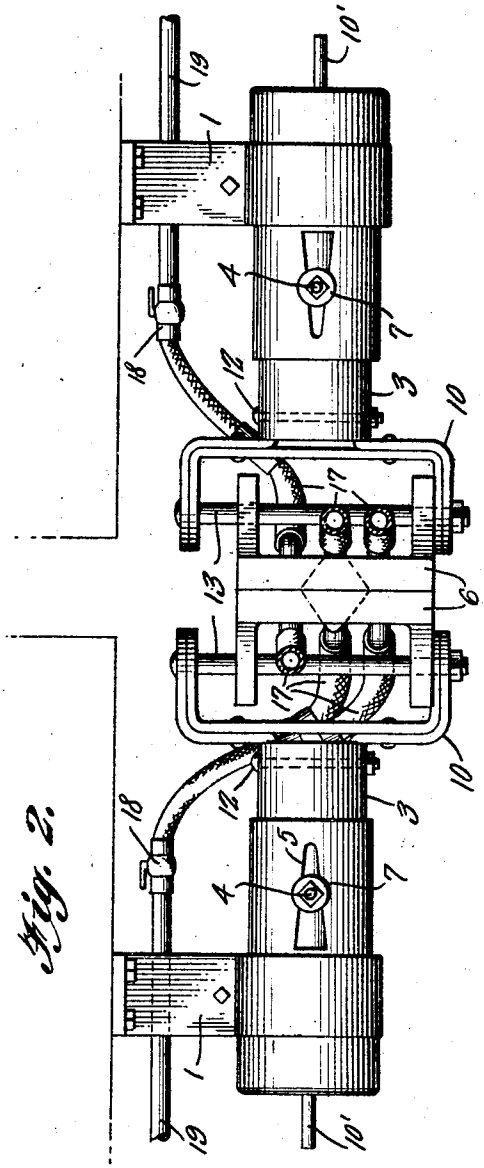


Fig. 2.

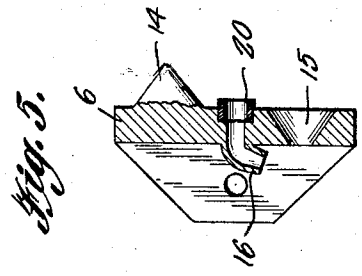


Fig. 3.

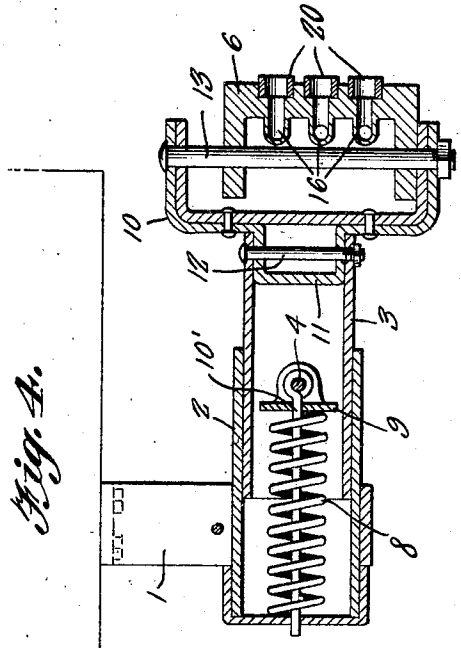


Fig. 4.

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UNITED STATES PATENT OFFICE.

CHARLES E. SULLIVAN AND LOUIS ZABOLITZKY, OF COLORADO SPRINGS, COLORADO.

STEAM, AIR, AND SIGNAL LINE CONNECTION.

Application filed October 29, 1926. Serial No. 145,090.

This invention relates to coupling means for the air, steam and signal lines of trains, the general object of the invention being to provide automatic means for coupling these lines when two cars come together so that it is not necessary for a trainman to go between the cars to couple the lines.

Another object of the invention is to make the coupling means movable so that there will be no trouble when the train is rounding a curve.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

In describing our invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:—

Figure 1 is a plan view showing two of the couplings in uncoupled relation.

Figure 2 is an elevation showing the two couplers in engagement.

Figure 3 is a front view of one of the couplers.

Figure 4 is a longitudinal sectional view through one of the couplers.

Figure 5 is a transverse sectional view through one of the coupling heads.

Figure 6 is a detail sectional view showing how the gaskets of two heads come together when the parts are in coupling relation.

In these views, 1 indicates a hanger which is suitably supported one at each end of each car and 2 indicates a cylinder which is horizontally supported by the hanger. A tubular member 3 is telescopically supported in the cylinder 2 and a bolt 4 passes transversely through the cylinder 2 and the member 3, the cylinder having wedge-shaped slots 5 in its side walls for receiving the ends of the bolt. Washers 7 are arranged at the ends of the bolt and overlap the walls of the slots. A spring 8 is arranged in the cylinder and has one end bearing against the end of the cylinder and its other end bears against a plate 9 which is carried by the bolt 4 and a rod 10' has an eye at its inner end which engages the bolt 4 and the said rod passes through a hole in the plate 9 and through a hole in the end of the cylinder, the rod acting as supporting and guiding means for the spring. This spring tends to hold the member 3 in its forward position, with the bolt in the narrow parts of the slots 5.

A yoke-shaped frame 10 is fastened to the outer end of the member 3 by having a boss 11 extending into the member and fastened therein by the bolt 12. A coupling head 6 is pivotally held in the frame 10 by means of the bolt 13 so that the head has rocking movement in the frame.

The head 6 is provided with a conical projection 14 adjacent one end thereof and an opening 15 having beveled walls, adjacent the other end, these parts being so designed that the opening 15 of one head will receive a projection 14 on another head when two cars are coupled together.

Each head is provided with the three ports 16 to which the tubes 17 are connected, these tubes being connected by the usual couplings 18 with the train pipes 19. Each port ends in an enlargement in which is placed a gasket 20 which projects beyond the outer face of the head so that when two heads come together, the gaskets in one head will engage those in the other and will be compressed and thus make a tight joint to prevent leakage between the heads. We prefer to form a projection 21 on one gasket to engage a groove 22 in the opposing gasket, as shown in Figure 6.

From the foregoing, it will be seen that when two cars come together, the coupling heads 6 on the two cars will strike each other and the members will move apart, compressing the springs 8 which act as shock absorbers and as means for holding the heads in engagement with each other. Thus the gaskets 20 will be compressed and provide a tight joint between the ports of the heads. By rotatably mounting the heads on the frames, the coupling means will not be interfered with when the train rounds curves. The bolt 4 will engage the small ends of the slots to hold the head rigid while not connected to another head, and when connected, the bolt is shoved back in the larger ends of the slots, thereby taking up the side motion in the cars. When two cars are uncoupled, the heads will simply move away from each other and thus there is no necessity for a trainman to come between the cars to couple the train pipes or uncouple the same.

As will be seen, there is no change whatever in the present braking system and the same hose connections are used that are in use at the present time. The coupling heads must project beyond the draw bars so that the springs will be compressed when two cars are in coupled condition. The projections 14 and their seats 15 are arranged right and left so that there will be no trouble when the cars are turned around. This device will couple on a curve of about thirty to thirty-five degrees.

It is thought from the foregoing description that the advantages and novel features of our invention will be readily apparent.

We desire it to be understood that we may make changes in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claims.

What we claim is:—

1. Coupling means for train pipes comprising a cylinder horizontally supported from a car, a member telescopically supported by the cylinder, a frame connected with the outer end of said member, a coupling head pivoted in the frame, said head having ports therein, means for connecting the train pipes to said ports, gaskets in the outer ends of the ports for engaging similar gaskets on another head, a bolt passing through the member, and the cylinder having wedge-shaped slots in its side walls through which the ends of the bolt pass, the apexes of the slots being adjacent the forward end of the cylinder, a spring in the cylinder bearing against the rear end of the cylinder and against a part carried by the bolt for holding the telescopic member in its forward position with the bolt in the small ends of the slots.

2. Coupling means for train pipes, comprising a cylinder horizontally supported from a car, said cylinder having wedge-shaped slots in its side walls, the apexes of the slots being adjacent the forward end of the cylinder, a member telescopically and rotatably supported by the cylinder, a bolt passing through the member and through said slots for limiting the rotary movement of the member, a coupling head carried by the outer end of said member, said head having ports therein, means for connecting the train pipes to said ports, spring means in the cylinder and engaging a part of the member for resisting the rearward movement of the said member.

In testimony whereof we affix our signatures.

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LOUIS ZABOLITZKY.