May 17, 1932. J. SULLIVAN 1,858,646

HOSE COUPLER

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Fig. 1.

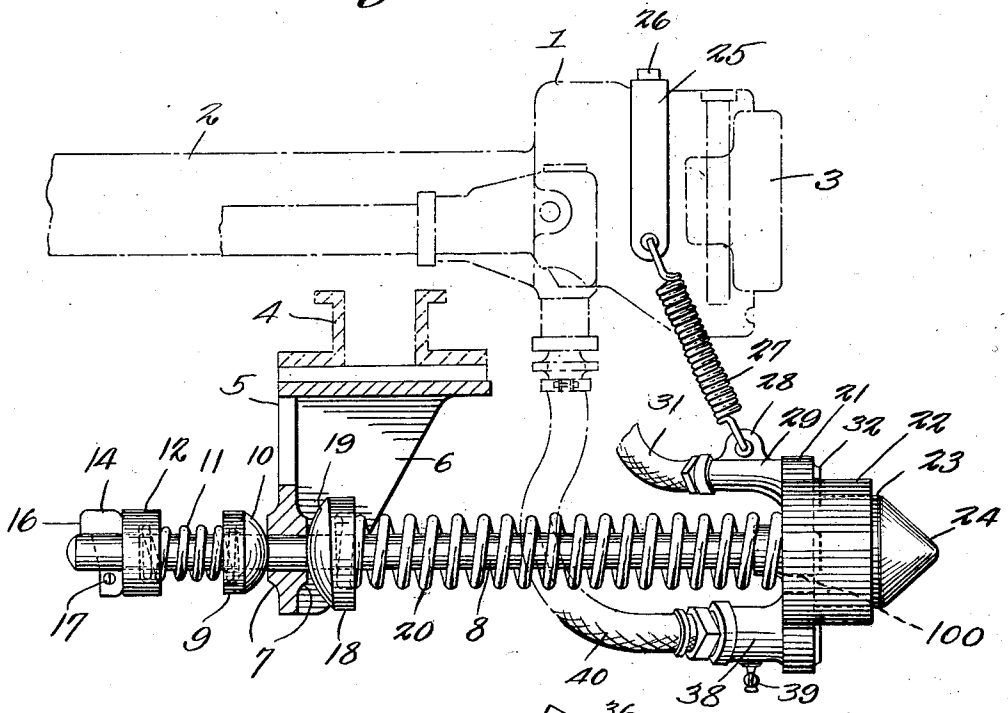
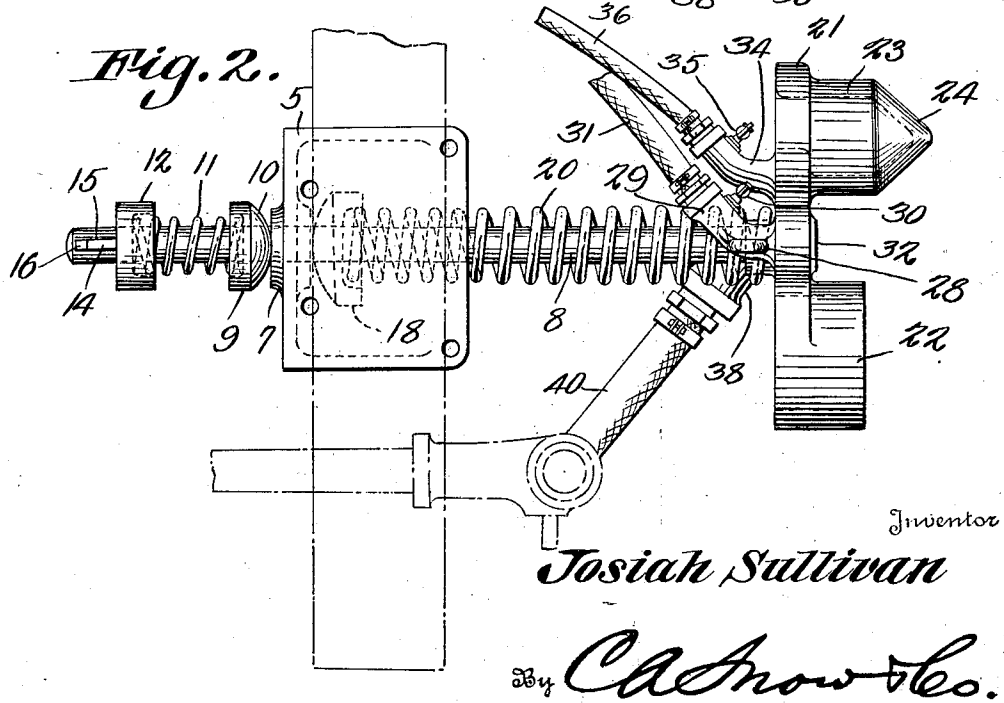


Fig. 2.



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Fig. 3.

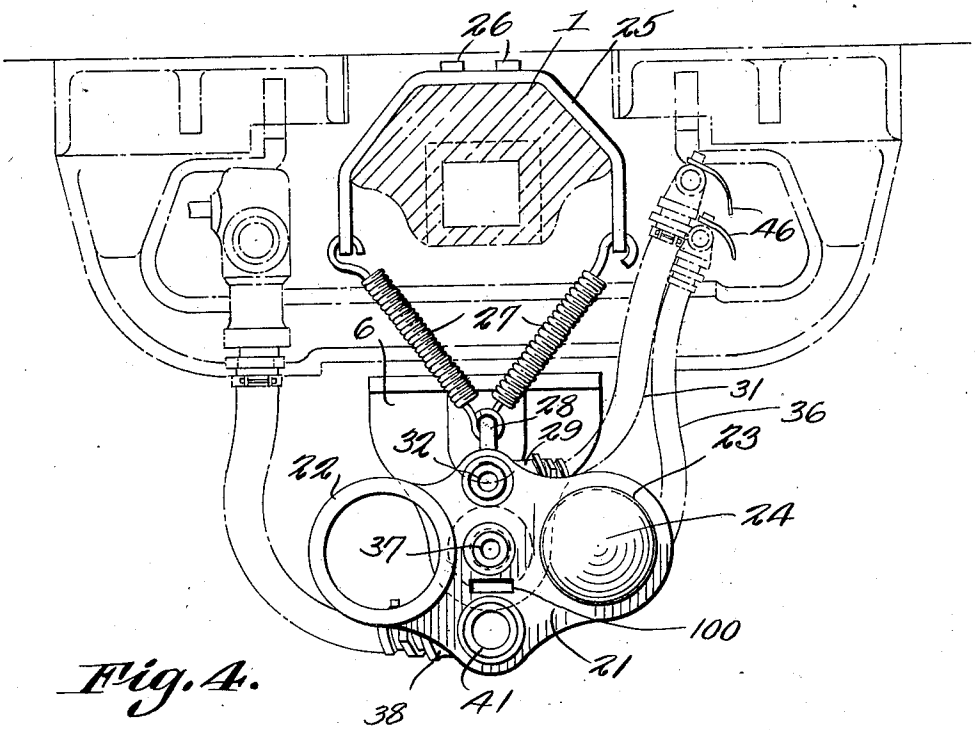
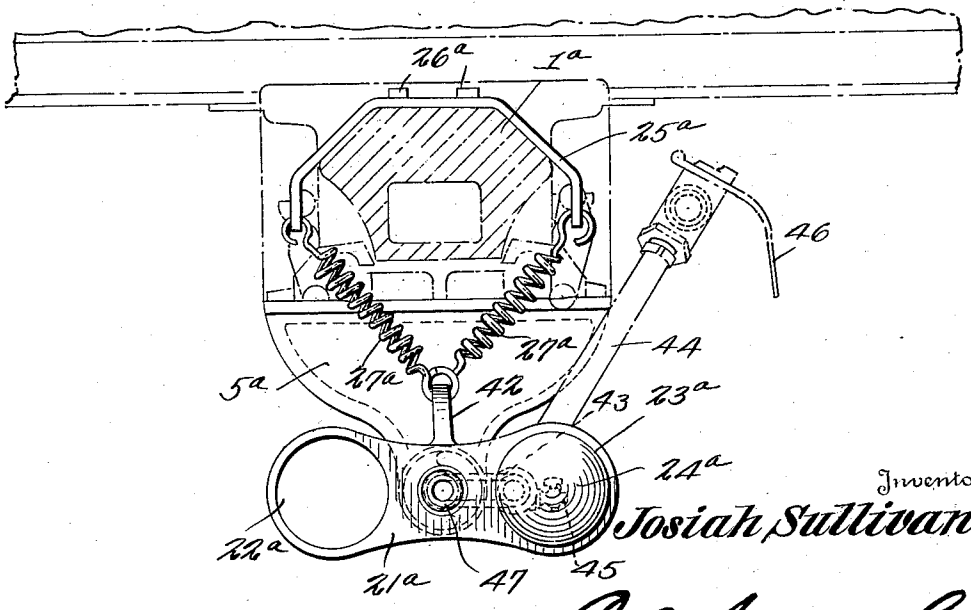


Fig. 4.



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Fig. 5.

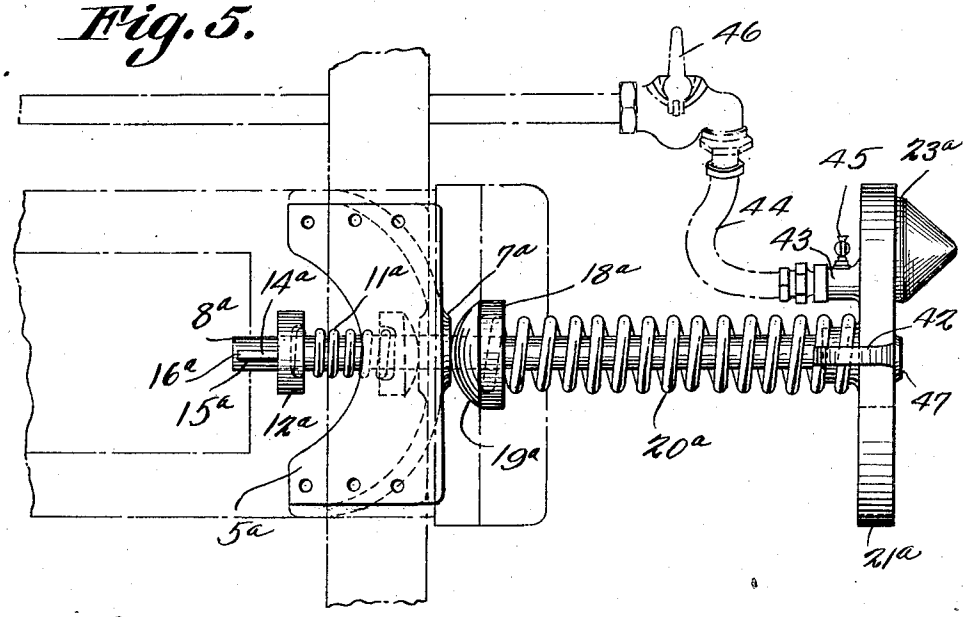
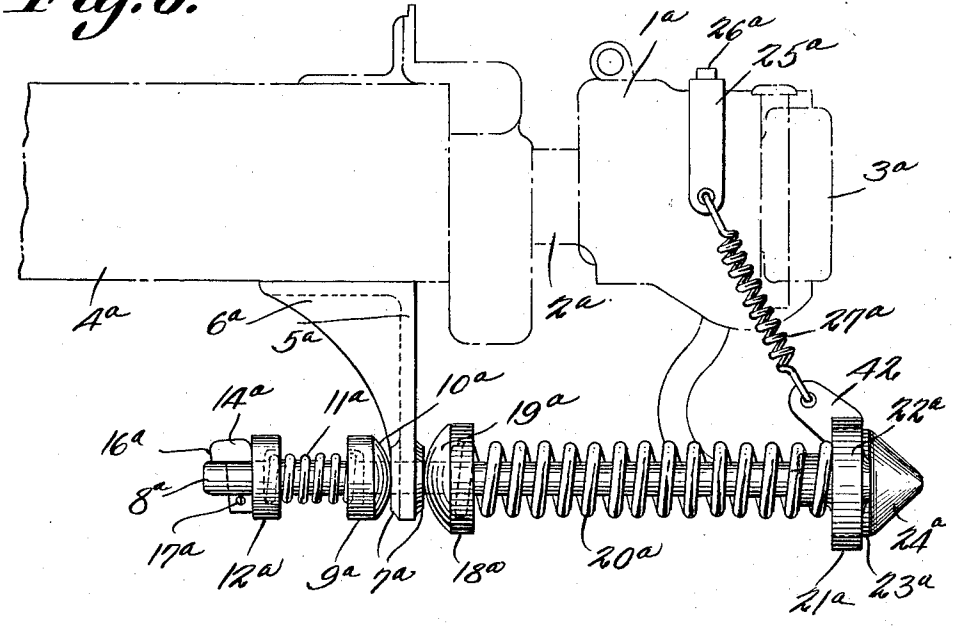


Fig. 6.



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Patented May 17, 1932 1,858,646

UNITED STATES PATENT OFFICE

JOSIAH SULLIVAN, OF DALLAS, TEXAS

HOSE COUPLER

Application filed November 7, 1930. Serial No. 494,118.

This invention aims to provide a novel means for coupling, automatically, and when cars are brought together, the various fluid-pressure lines employed for the brake mechanism, for heating, for signal purposes and the like.

This invention aims to provide novel means for yieldably supporting the instrumentality whereby the coupling of the fluid-pressure lines is brought about.

A further object of the invention is to provide novel means whereby water may be drained out of the fluid-pressure lines adjacent to the head which effects the coupling of the fluid-pressure lines.

It is within the province of the disclosure to improve generally and to enhance the utility of devices of that type to which the invention appertains.

With the above 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, may be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings:

Figure 1 shows in side elevation, a device constructed in accordance with the invention, parts being in section;

Figure 2 is a top plan;

Figure 3 is a transverse section;

Figure 4 is a transverse section showing a modification;

Figure 5 is a top plan of the modification;

Figure 6 is an elevation of the modification.

Referring to Figures 1, 2 and 3, there is shown the coupler head 1 of a passenger car, the draw bar appearing at 2, and the coupler at 3.

Carried by any accessible part of the car, designated by the numeral 4, is a support 5, in the form of an angle bracket, reenforced by one or more flanges 6. The vertical portion of the bracket 5 carries a projecting boss 7 which extends both forwardly and rearwardly.

In the boss 7, a slide 8, in the form of a rod, is mounted for reciprocation. A rear abutment 9 is slidably mounted on the rod 8 and has a forward rounded surface 10 which bears against the rear portion of the boss 7 on the support 5. A compression spring 11 is disposed around the rear portion of the slide rod 8 and is engaged at its forward end with the rear abutment 9. The rear end of the compression spring 11 engages a stop collar 12 on the slide rod 8. The stop collar 12 is held against backward movement by a key 14 inserted in a longitudinal slot 15 in the slide rod 8. Downward movement of the key 14 is prevented, because it has a rearwardly extended shoulder 16 that engages the slide rod 8. A securing element 17 is mounted in the lower portion of the key 14 and limits upward movement of the key.

A forward abutment 18 is slidably mounted on the rod 8. The forward abutment has a rounded surface 19 which bears against the forward portion of the boss 7 on the support 5. A compression spring 20 surrounds the slide rod 8. The rear end of the compression spring 20 bears against the forward abutment 18. The forward end of the compression spring 20 bears against transverse head 21 on the forward end of the slide rod 8.

At one side, the head 21 is equipped with a socket 22. At its opposite side, the head 22 is supplied with a forwardly projecting pin 23, shaped to be received in the socket 22 of the coupler on another, similarly equipped car. The pin 23 is tapered, as shown at 24 to ease it into the socket 22.

An inverted U-shaped anchor 25 is attached by securing elements 26 to the coupler head 1. Downwardly extended, converging pull springs 27 are connected at their upper ends to the depending arms of the U-shaped anchor 25. At their lower ends, the pull springs 27 are connected to an upstanding ear 28 formed on a rearwardly prolonged tubular extension 29 carried by the head 21. The extension 29 carries a water drain, preferably a pet cock 30, located close to the head 21.

Whenever, hereinafter, pet cocks are mentioned, it will be understood that any suitable kind of a water drain may be provided. A hose 31 is connected to the tubular extension 29. The tubular extension 29 opens through the forward surface of the head 21 and, at the forward surface of the head 21 there is a gasket 32 which makes a tight joint for the fluid that passes through the extension 29 and the hose 31, when two similarly equipped cars are brought together.

The head 21 has a laterally inclined tubular extension 34 carrying a pet cock 35, a hose 36 being connected to the extension 34. The extension 34 opens through the forward surface of the head 21, and at the mouth of the passage through the extension 35 there is a gasket 37.

The head 21 has a laterally inclined extension 38 carrying a pet cock 39, the extension 38 being connected to a hose 40. The gasket for the tubular extension 38 is marked by the numeral 41. Referring to the gaskets as indicative of the various fluid-pressure passages, it will be noted from Figure 3 that the gasket 41 is lower-most, the gasket 32 being uppermost and the gasket 37 being located between the gaskets 32 and 41. The device, obviously, provides in the form under discussion, for three fluid-pressure lines which may be connected hermetically, when two cars are brought together.

The gaskets shown at 37 and 32 are gaskets for air passages, and the gasket shown at 41 is the gasket of the steam passage. In order to prevent heating, and consequent deterioration, of the gasket 37 from the steam line, there is an air space in the head 21 between the gaskets 41 and 37, and this air space is in the form of a hole 100, extended entirely through the head 21.

In Figures 4, 5, and 6, a modified form of the invention has been shown. In the said figures, parts hereinbefore described, have been designated by numerals previously used, with the suffix "a".

The ear 42, corresponding to the ear 28, is located on the head 21*a* at a point approximately midway between the ends of the head. In this form of the invention, a single tubular extension 43 is provided, the same being connected to a hose 44. The extension 43 carries a pet cock 45, and the gasket is shown at 47. The form under consideration is adapted to be used on freight cars, or elsewhere, where it is desired to couple but a single fluid-pressure line from car to car.

All of the various hose members are controlled by the usual hand valves 46, and it is to be understood that the pet cocks or water drains, such as the parts 30, 35, 39 and 45 are not the same thing as the hand valves 46 but are an independent draining means, adapted to carry off water which may collect in the various hose members, adjacent to the head 21, or adjacent to the head 21*a*. Owing to the provision of the aforesaid pet cocks or water drains, it is possible to draw off the water that may accumulate in the hose members, without uncoupling the cars, and without going between the cars to any undesirable extent.

The springs 27 or 27*a* serve to support the head 21 and keep it in centered position, for cooperation with another head. The spring 11 limits the forward movement or rebound of the head 21 and the rearward movement of the head, of course, is cushioned by the compression spring 20.

The device is simple in construction, but it will be found thoroughly effective to bring about a coupling of fluid-pressure lines on two cars, novel means being provided for sustaining the head and holding it centered, and novel means being provided for drawing off accumulated water, upon occasion, without uncoupling the cars, and without assuming a dangerous position between the cars.

Having thus described the invention, what is claimed is:

In a hose coupling for cars, a slide including a head having a fluid conduit, means carried by the head for aligning two like heads to effect a coupling of the conduits of the heads, means for mounting the slide for reciprocation, a draw bar located above the slide, a car-coupling head carried by the draw bar, a U-shaped anchor inverted over the car-coupling head and supported thereby, portions of the sides of the anchor embracing the car-coupling head closely, the lower ends of the sides of the anchor being spaced from the car-coupling head, downwardly converging springs having their upper ends connected to the lower parts of the sides of the anchor, the lower ends of the springs being connected to the slide, adjacent to the head of the slide, and securing means uniting the anchor detachably with the car-coupling head.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

JOSIAH SULLIVAN.