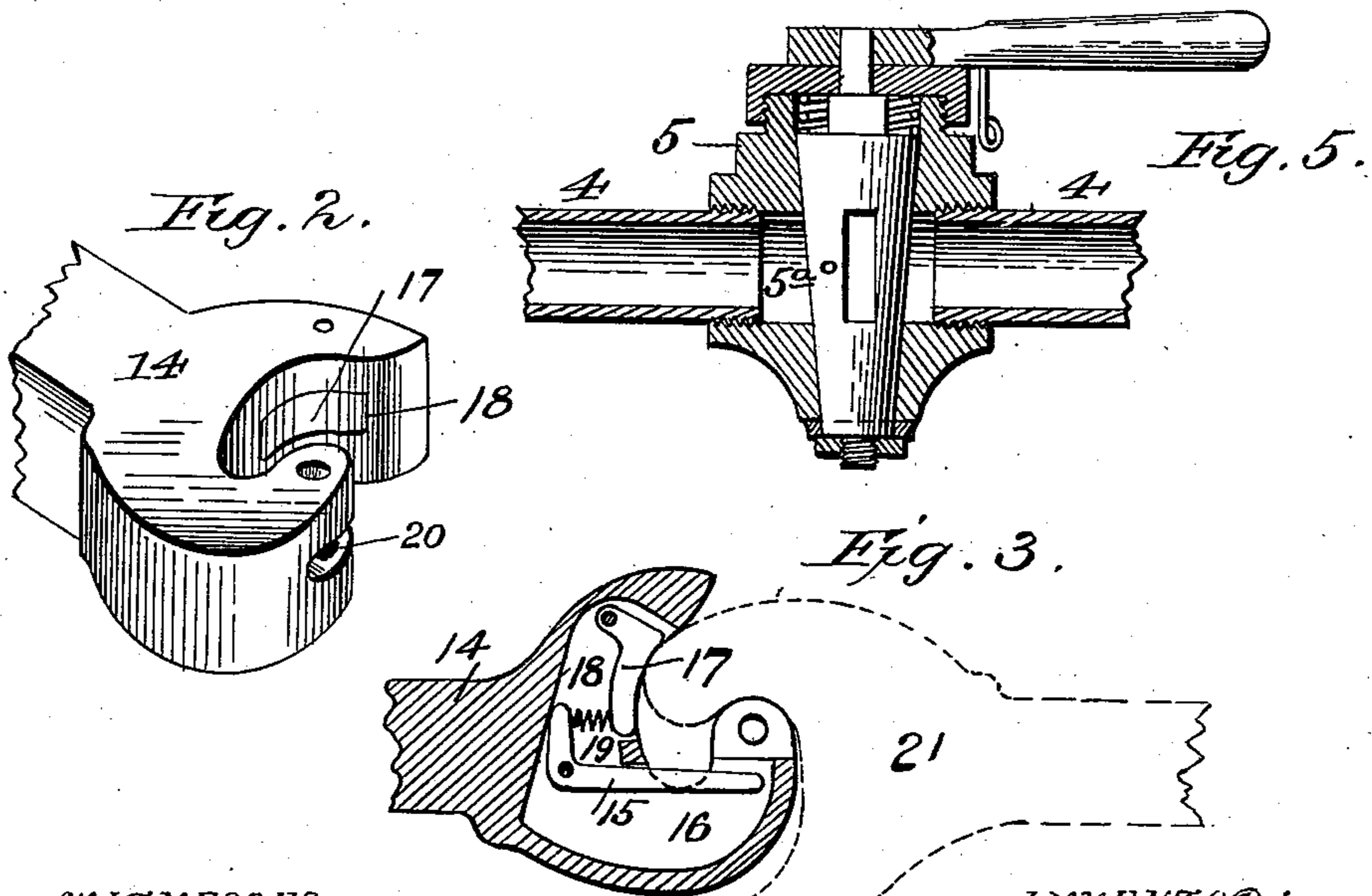
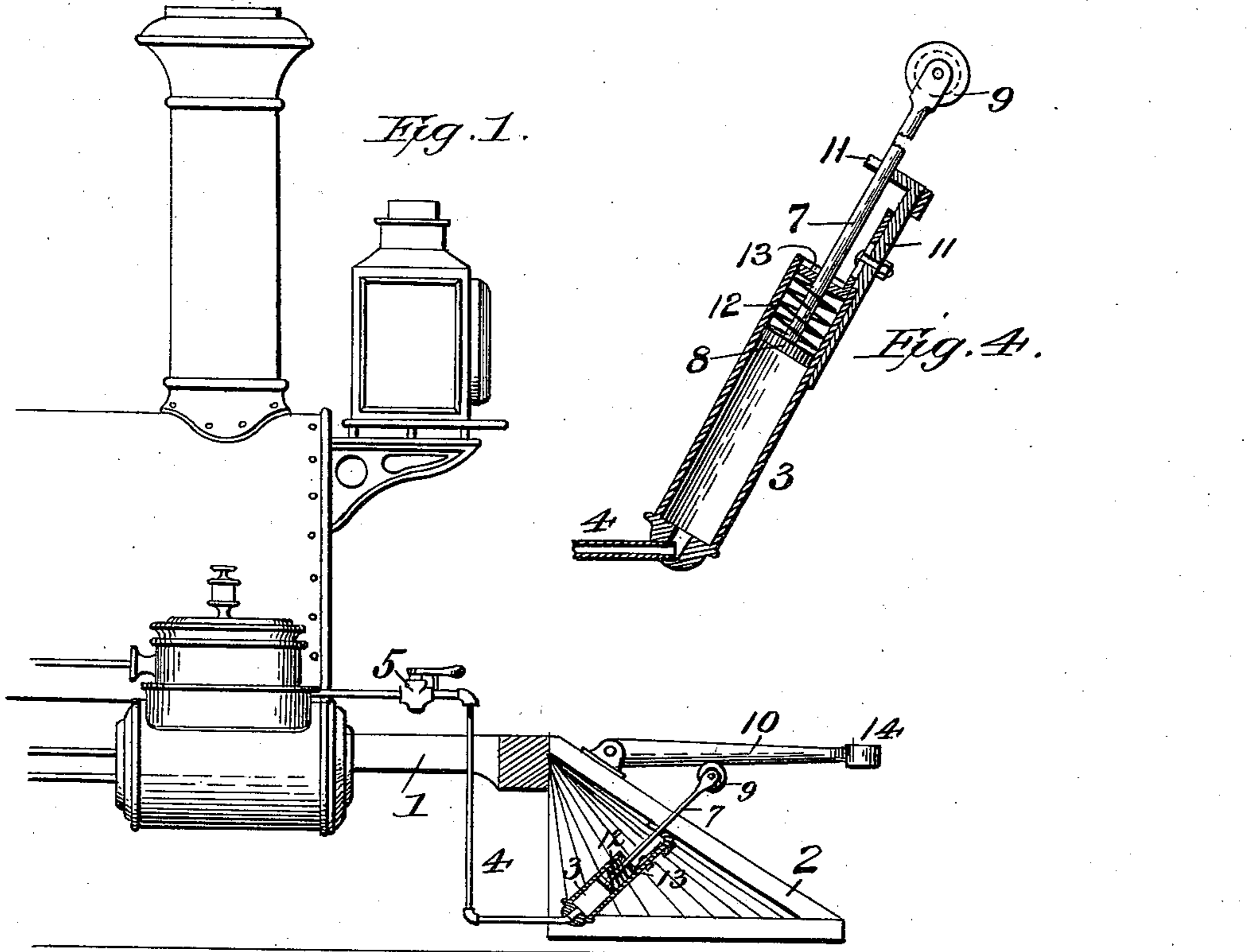


(No Model.)

S. R. HEIDELBERG.
PILOT COUPLING.

No. 540,591.

Patented June 4, 1895.



WITNESSES
F. L. Ouraud.
Jos. Gregory

INVENTOR:
Samuel R. Heidelberg.
By J. Fred. Reily,
his Attorney

UNITED STATES PATENT OFFICE.

SAMUEL R. HEIDELBERG, OF PALESTINE, TEXAS.

PILOT-COUPLING.

SPECIFICATION forming part of Letters Patent No. 540,591, dated June 4, 1895.

Application filed April 5, 1894. Serial No. 506,459. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL R. HEIDELBERG, a citizen of the United States, residing at Palestine, in the county of Anderson and State of Texas, have invented certain new and useful Improvements in Automatic Pilot-Couplings; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention consists in an automatic pilot coupling, which will enable the pilot bar of a locomotive to be coupled with a car by a brakeman while standing to the side of the locomotive out of the way of all danger, from which position he can accurately operate the device, thus doing away with all necessity for going between the moving engine and the car to which it is to be coupled; and my invention will be hereinafter fully described and claimed.

Referring to the accompanying drawings, in which the same numerals of reference indicate corresponding parts in the several figures, Figure 1 is a side elevation, partly in section, illustrating my invention and showing the pilot-bar raised. Fig. 2 illustrates in detail, on an enlarged scale, the coupling-head of the pilot-bar. Fig. 3 is a top plan view showing said coupling-head coupled with the draw-head of a car. Figs. 4 and 5 are detail views.

In the drawings, 1 indicates the front part of the frame of a locomotive, and 2 the pilot. Within the pilot-frame is mounted the inclined cylinder 3, which is open at its upper end and closed at its lower end except where the air-pipe, 4, communicates with it. This air pipe runs along the side of the locomotive to the reservoir of the locomotive, and is provided with a cock or valve, 5, at a point where it can be conveniently reached by the brakeman standing at the side of the engine. Any suitable form of valve, 5, for turning the air into the air cylinder 3 may be employed; and I have shown in the drawings a stop-cock having a small escape-opening 5^a arranged so that when the operator is turning on the air if the

pilot bar is raised too high he can turn the cock enough to bring this escape opening to register with an escape opening 6 in the side of the chamber of the valve, thus allowing a part of the air in the air-cylinder 3 to escape; and when the pilot bar is thus allowed to drop to the proper level he can shut off the valve entirely by turning it farther around to close the air-pipe 4.

7 indicates the piston-rod, having a piston-head 8 at its lower end which fits and travels in the air cylinder, while the upper end of the piston-rod has a jaw in which is pivoted a grooved roller, 9, that presses against the under side of the pilot-bar, 10, as shown. The upper end of the air cylinder is held in position by a support or guide-plate, 11, the lower end of which is secured to the upper end of the cylinder while its upper end is bolted to a cross-piece on the two front slats of the pilot. I do not of course limit myself to this precise means of attachment of the air cylinder to the pilot frame, as it can be arranged and connected in any suitable manner.

The plate 10 is in the form of an L, its upper end extending at right angles, and having a central opening through which the piston-rod works, thus forming a guide for the rod. A spiral spring, 12, encircles the piston rod between its head and a shouldered stop-plate, 13, resting on the piston-head and being free to travel up and down with it. The body of the stop-plate 13 is formed with a longitudinal slot, a set-screw passing through said slot into the plate 11, so that the stop-plate can be adjusted up or down to adjust the distance which the spring and piston-head will travel; thus regulating the height to which the pilot-bar will be raised.

To the outer end of the iron pilot bar is welded the cast steel coupling-head 14, which is a coupler of the Janney type, but without any knuckle, being cast in one piece. An L-shaped lever-bar 15, is pivoted at its angle in the rear part of the coupling-head, playing in a lateral space, 16, formed in the head. 17 indicates a friction clutch or plate which is pivoted near its outer end in an opening or slot 18 in the head 14, at the point shown, a coiled spring 19 being arranged between the inner part of this friction plate and the end of the shorter arm of the lever-bar 15. The usual

horizontal slot, 20, is formed in the outer end of the coupling-head to allow it to couple with a car having the ordinary link-and-pin coupling, when necessary. When the coupling-head, 21, of a car engages on an exact level with the coupling-head of the pilot-bar, it will press against the pivoted friction plate 17 and, through spring 19, hold the outer end of L-shaped lever 15 in the end-slot 20 at its end, thus preventing the two coupling-heads from becoming uncoupled by slipping up or down; as the pilot-bar being supported only by the air pressure in cylinder 3 would otherwise be likely to become detached from the car-coupling while shifting cars. When the coupling is not made on exactly the same plane, so that the outer end of lever 15 does not enter the central slot 20 in the end of the car draw-head, the point of the car coupling-head will then press back the long arm of lever 15 into recess 16, thus through spring 19 forcing out the friction-plate 17 tightly against the car coupling-head, and thus automatically holding the end of the pilot-bar from dropping or becoming detached.

The pilot-bar normally lies down along the inclined front of the pilot, with the piston-head at the lower end of the air-cylinder. As the locomotive approaches the car to which it is desired to couple, the brakeman walking at the side of the engine turns the valve 5, admitting the air into the lower end of the cylinder, which slides up the piston-head, and the piston-rod thus raises the pilot-bar into a horizontal position, as shown in Fig. 1. It will be seen that by turning the valve as before described, that the pilot-bar can be adjusted or raised to the exact level desired, thus enabling the brakeman to accurately couple the pilot-bar with cars the draw-heads of which stand at different heights; while my coupling-head will securely hold the outer end of the pilot-bar in engagement with the draw-head with which it had once coupled as above described.

This invention can be operated either by compressed air, steam, or water, from the boiler tank or reservoir.

While I have thus far illustrated and described the preferred construction in the embodiment of my invention, it will be understood that I do not limit myself to the precise details of construction and arrangement set forth, as it is evident that these can be varied from and substantially the same results accomplished without departing from the spirit of my invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination with the frame of a locomotive, of the pilot bar mounted thereon and having at its outer end the coupling head 14, formed with the recess 16 and opening 18, the pivoted L-shaped lever 15, the pivoted friction-plate 17, and the coiled spring 19 arranged as specified, the piston rod bearing against the under side of the pilot bar, and means for actuating it from the locomotive; substantially as set forth.
2. The combination with the frame of a locomotive and pilot, of the draw bar mounted on the frame above the pilot and having a coupling head at its outer end, the cylinder arranged within the pilot, a pipe leading from the locomotive to the lower end of said cylinder and having a controlling valve, the piston rod contacting at its upper end with the draw-bar, passing through a guide, and having the piston-head at its lower end, the adjustable stop-plate, and the coiled spring encircling the piston-rod between its head and said adjustable plate; substantially as set forth.

3. The coupling head cast in a single piece and formed with the recess 16 and opening 18, the pivoted-L-shaped lever 15, the pivoted friction-plate 17, and the coiled spring arranged as specified; substantially as set forth.

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

SAMUEL R. HEIDELBERG.

Witnesses:

B. H. GARDNER,
A. W. GREGG.