

No. 621,764.

Patented Mar. 21, 1899.

R. S. BROWN.
TRAIN PIPE HOSE COUPLING.

(Application filed Dec. 15, 1898.)

(No Model.)

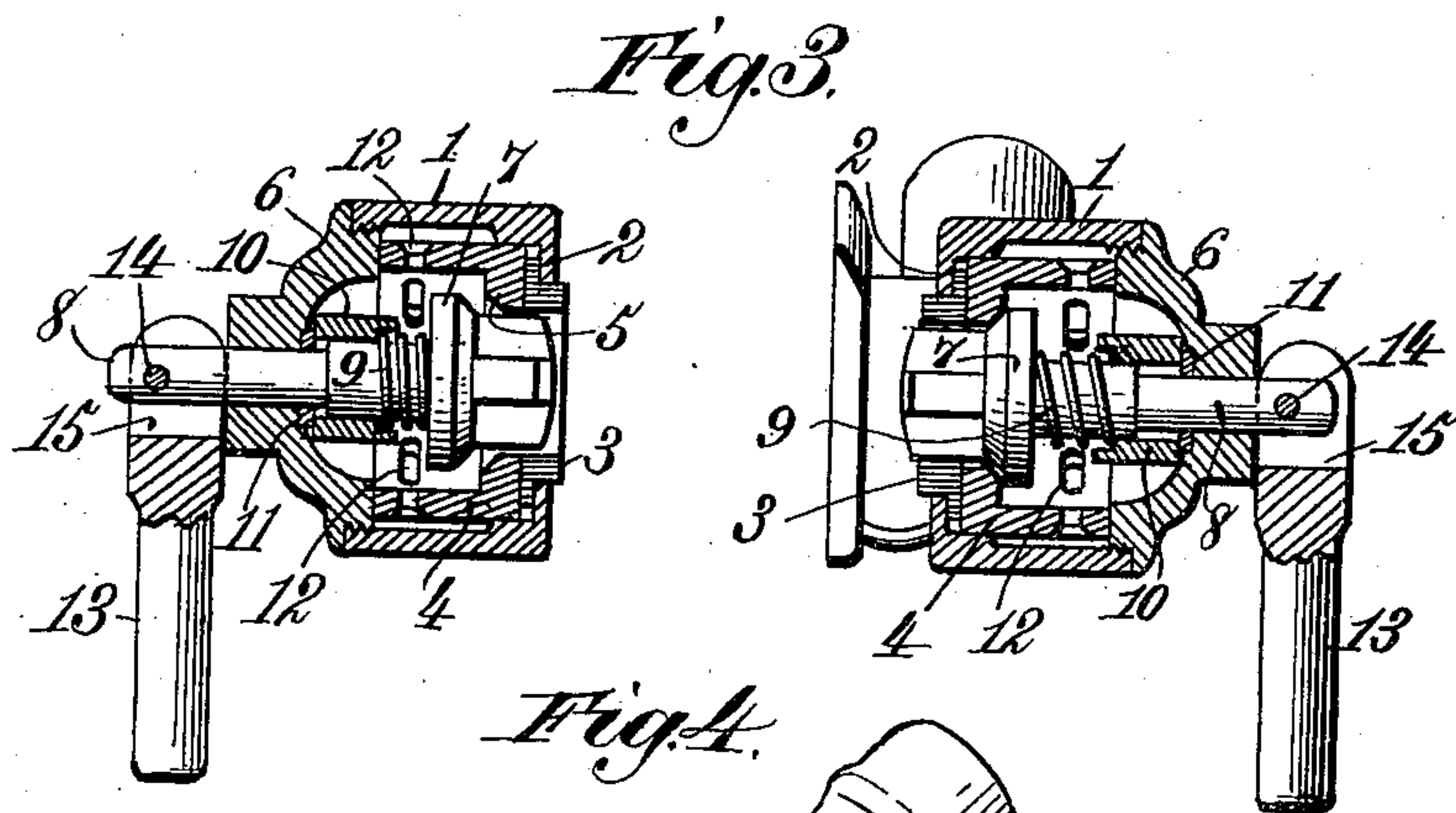
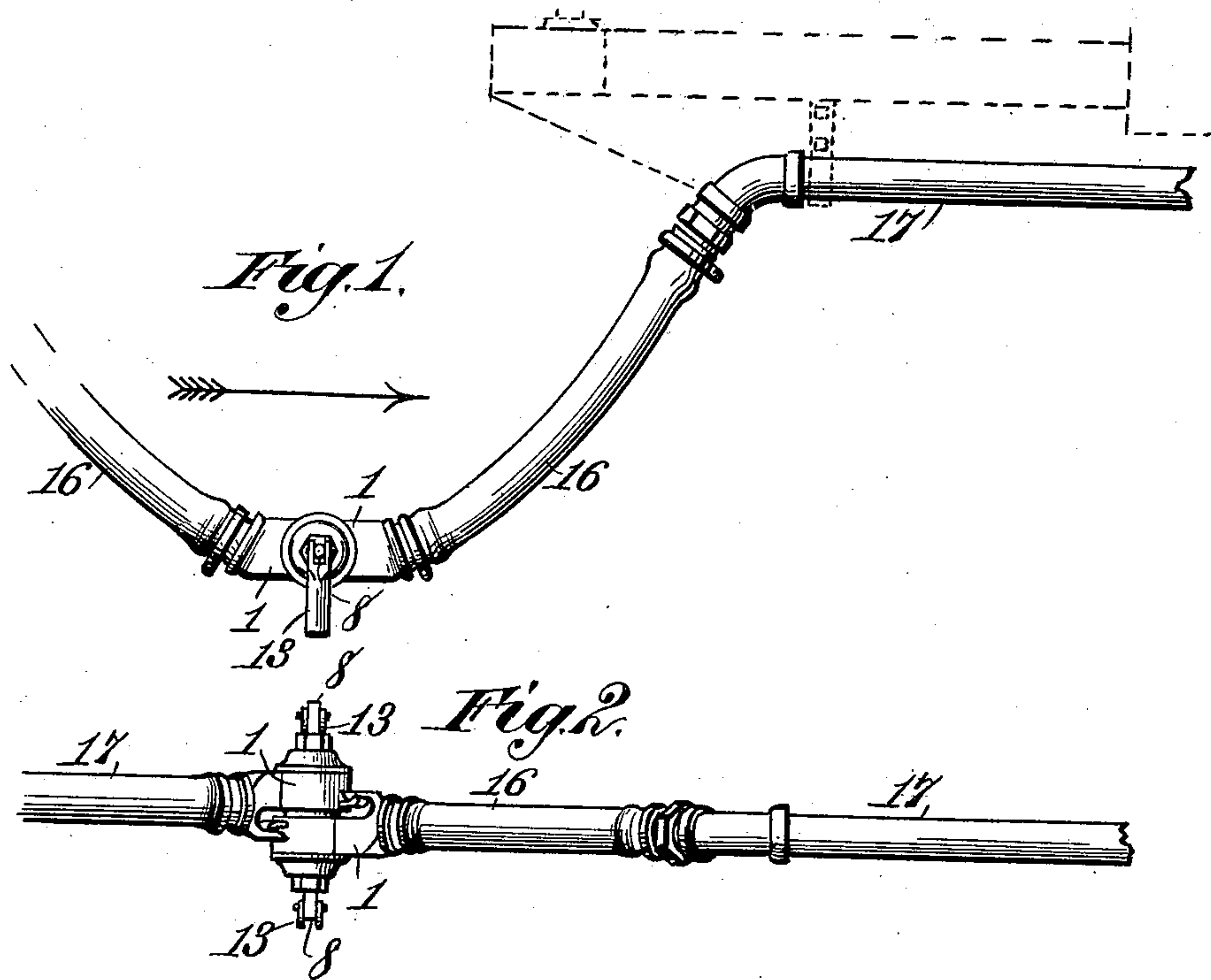
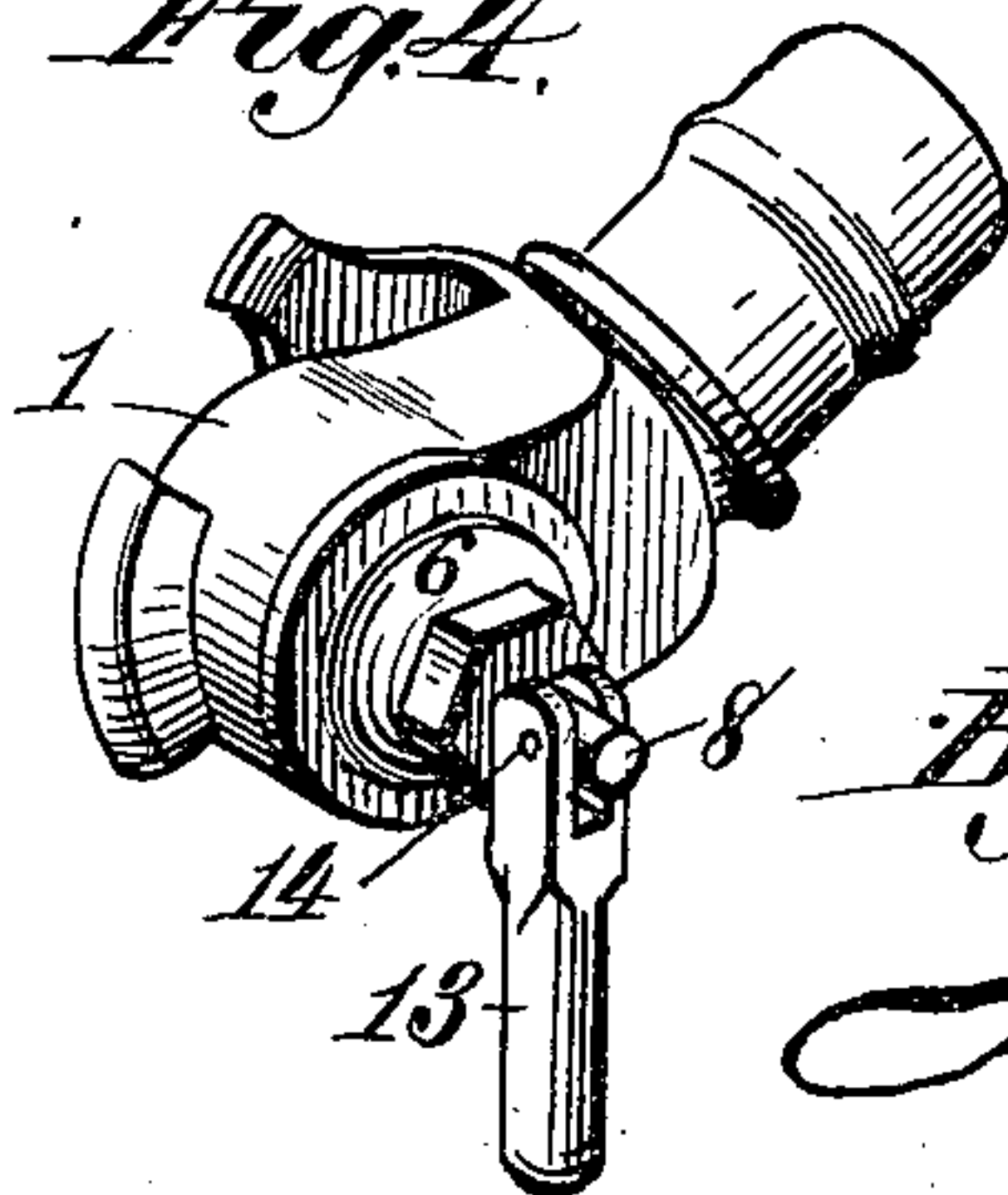


Fig. 4.



Witnesses.
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UNITED STATES PATENT OFFICE.

ROBERT S. BROWN, OF BLUEFIELD, WEST VIRGINIA, ASSIGNOR OF ONE-HALF
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TRAIN-PIPE HOSE-COUPLING.

SPECIFICATION forming part of Letters Patent No. 621,764, dated March 21, 1899.

Application filed December 15, 1898. Serial No. 699,350. (No model.)

To all whom it may concern:

Be it known that I, ROBERT S. BROWN, a citizen of the United States, residing at Bluefield, in the county of Mercer and State of West Virginia, have invented new and useful Improvements in Train-Pipe Hose-Couplings, of which the following is a specification.

This invention relates to train-pipe hose-couplings for automatic air-brake systems, and has for its object to provide a simple and improved means for so adjusting or setting the valves of the coupling-heads that should one portion of the railway-train become detached from the other, with consequent uncoupling of the air-pipes, the valve in the coupling-head that connects with the front end of the rear detached portion of the train will remain open, being locked against a closing movement, while the valve in the coupling-head that connects with the rear end of the forward portion of the train will be free to close automatically. Thus by setting the valve at the front end of each car so it will remain open in event of separation of the train at any point the brakes will be set on the rear detached portion by the air exhausting to atmospheric pressure, while by setting the valve at the rear end of each car so it will be free to close and maintain a proper air-pressure in the train-line of the forward portion of the train the engineer will have full control of this portion of the train and be enabled to keep out of the way of the detached rear portion until the brakes become automatically set on the latter, thus preventing a rear-end collision.

My invention consists in the combination, with an air-brake coupling-valve having its stem extended beyond the coupling-head, of a valve-setting lever having an eccentrically-arranged fulcrum through which it is directly connected with the projecting portion of the valve-stem to operate in bearing contact with an outer portion of the coupling-head, so that in one position of said lever the valve will be unseated and locked against a closing or seating movement and in the other position of the lever the valve will be free to seat automatically when the two coupling-heads are separated.

In the annexed drawings, illustrating the

invention, Figure 1 is a side elevation showing the hose-coupling and a portion of a train-pipe to which the hose is directly connected without the interposition of the usual angle-cock. Fig. 2 is a plan of the same. Fig. 3 is a vertical transverse section through the valved portions of two disconnected coupling-heads, showing the lever of one coupling-valve as set to prevent the valve from seating and the lever of the valve in the other head as set to permit automatic seating and unseating of that valve. Fig. 4 is a perspective of a hose coupling-head detached from its fellow.

The coupling-heads are designated by the reference-numeral 1, and may be constructed to engage and interlock with each other in the usual manner, as shown. Each coupling-head is provided with the usual flange 2 for supporting a gasket 3, that is held in place by a valve-seat ring 4, having a bevel valve-seat 5 therein. A cap 6 is screwed into the outer face of the coupling-head and bears against the valve-seat ring 4, as shown, thereby holding it against the gasket.

The valve 7 is of the usual form, but has its stem 8 extended through the cap 6 beyond the outer face of the coupling-head. A spiral spring 9 surrounds the valve-stem and bears at one end against the valve 7 and at the other end against a bushing 10, between which and the cap 6 there is a packing-ring 11, closely surrounding the valve-stem.

It will be seen by reference to Fig. 3 that the valve-seat ring 4 is fitted within a shouldered portion of the coupling-head and is provided with a series of openings 12 to permit the passage of air from one coupling-head to the next or to the atmosphere when the valves are open. Also through these openings 12 there is access of air to the rear of the valve to assist in seating it.

To the extended end of the valve-stem 8 there is pivoted a lever 13, that operates in bearing contact with the outer surface of the coupling-head cap 6 on an eccentrically-placed fulcrum-pin 14, so arranged with relation to the center of the lever end that in one position of said lever the valve 7 will be unseated, its spring 9 compressed, and the valve be locked against seating, while in the other po-

sition of said lever the valve will be free to seat automatically. The pivotal end of the lever 13 is formed with a bifurcation 15, through which the fulcrum-pin 14 is extended transversely, and also through the valve-stem 8 in a line to one side of the center of the lever end, and thus the end of said lever is made to act as a cam or eccentric against the adjacent outer portion of the coupling-head cap 6, so that in one position of the lever it will unseat the valve 7 and lock it against seating. In the other position of the lever 13 the valve 7 will seat or close automatically on separation of the coupling-heads. The lever 13 is to be swung outward and upward on its fulcrum 14, and in a vertical plane parallel with the valve-stem either to seat or unseat the valve, and then a semirotation is imparted to the connected lever and valve-stem to return the lever to a depending position, where it is held by gravity, the valve remaining either seated or unseated, according to the set given to the lever by its upward swing. The semirotation of the lever and valve-stem to return the lever to depending position does not affect the seated or unseated condition of the valve, but is merely to avoid leaving the lever in an upwardly-extended position, from which it might be thrown down by jarring.

In coupling the heads 1 together in the ordinary manner each valve will be pushed back or be unseated by pressure of the opposing valve, thus providing an open air-passage through the connected coupling-heads and train-line. The lever 13 on the coupling-head at the front end of each car will be set to lock the valve 7 in an open or unseated position, as shown at the left of Fig. 3, and thus if the train should break apart at any point the brakes will be automatically set on the rear detached portion of the train by exhaust of the air to atmospheric pressure; but the lever 13 on the coupling-head at the rear end of each car will be set for closing of the valve, as shown at the right of Fig. 3, so that the said valve will be free to close automatically on the instant that the coupling-heads separate, and consequently the air-pressure in the forward portion of the train will be maintained, the brakes in this portion of the train will remain off or released, and the engineer will still have full control of the air-brakes for the forward part of the train to enable him to avoid a rear-end collision from the rear detached cars. The required manipulation of the levers 13 can be readily and

quickly accomplished in the act of connecting the coupling-heads. If a break in the train occurs or the coupling-heads are disconnected at any part of the train while the valve-levers are properly set or adjusted, the setting of the air-brakes on the front portion will be prevented by the automatic closing of the valve in the coupling-head on the rear end of car or engine, as the case may be, while the locked-back valve in the coupling-head on the front end of a detached car will remain open, and thereby cause automatic setting of the brakes on that car and those at the rear.

When the coupling-heads are connected, the engineer is assured that he has a full flow of air through his train-line, as by pressing against each other the valves are held open. Each hose-pipe section 16 may be directly connected with a section of the train-pipe 17 without the interposition of the usual angle-cock, which is rendered unnecessary by the valved couplings, and it will be obvious that there can be no tampering with the valve-levers 13 to cut the air off from any car in the train or from the engine without the engineer knowing it, because it would stick the brakes on him and he could not move till he located the cause of the trouble by examining the setting of the coupling-valves.

This coupling allows air-inspectors to test hose for leaks when a car is cut out or detached from a train, and it also keeps dirt out of the triple valve and brake-cylinder.

What I claim as my invention is—

The combination with an air-brake coupling-valve having a stem extended beyond the outer face of the coupling-head, of a valve-setting lever having an eccentrically arranged fulcrum through which it is directly connected with the projecting portion of the valve-stem to operate in bearing contact with an outer portion of the coupling-head, whereby in one position of said lever the valve will be unseated and locked against a closing or seating movement and in another position of said lever the valve will be free to seat automatically on separation of the coupling-heads, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ROBERT S. BROWN.

Witnesses:

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J. M. BALDWIN.