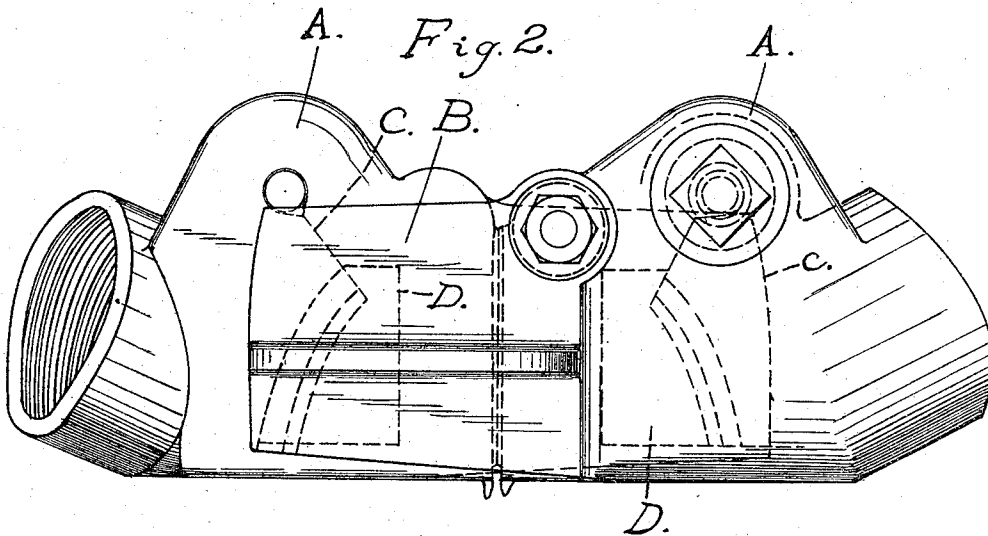
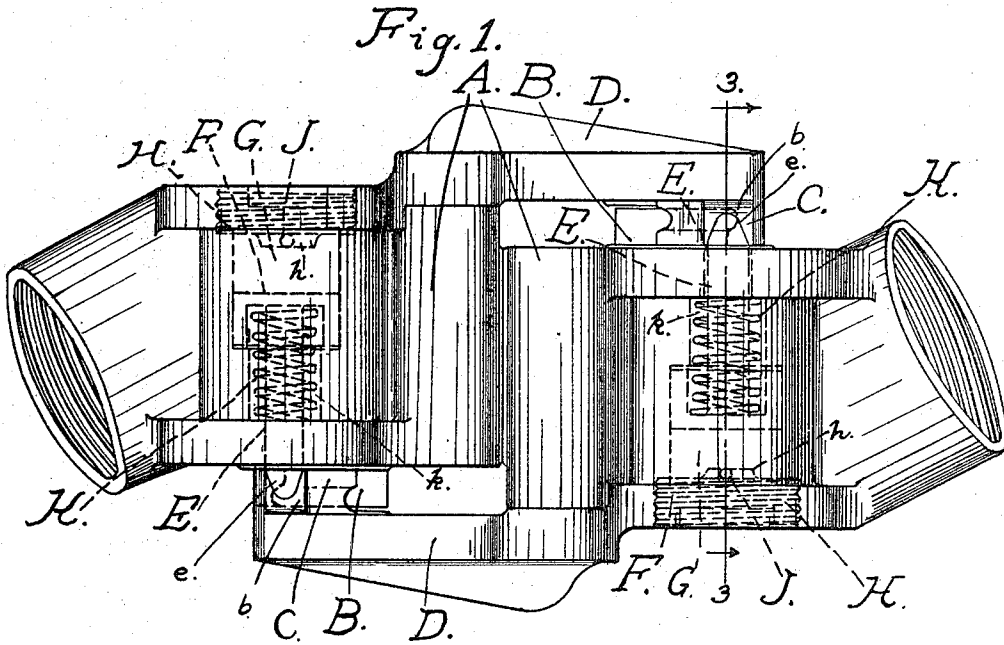


F. F. COGGIN & E. H. GOLD.
 LOCK FOR HOSE COUPLINGS,
 APPLICATION FILED MAY 15, 1914.

1,209,673.

Patented Dec. 26, 1916.
 2 SHEETS—SHEET 1.



WITNESSES:
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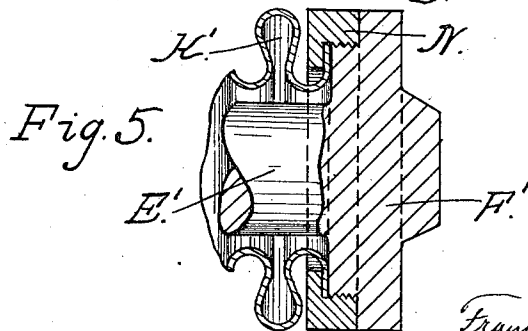
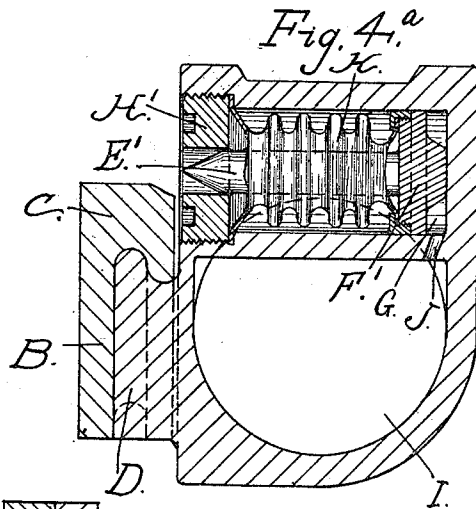
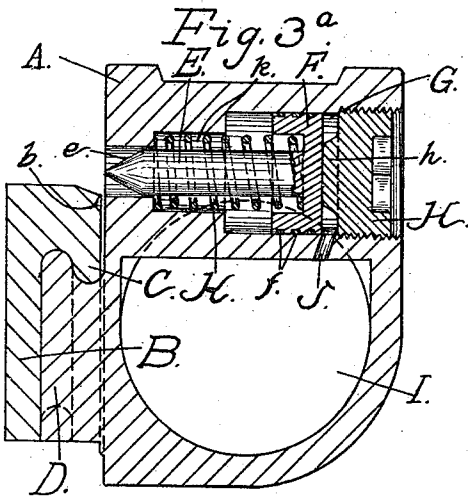
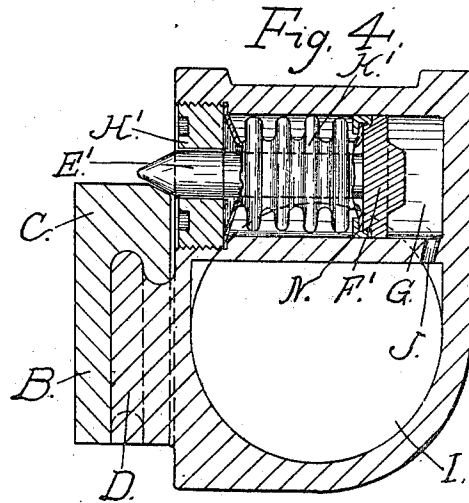
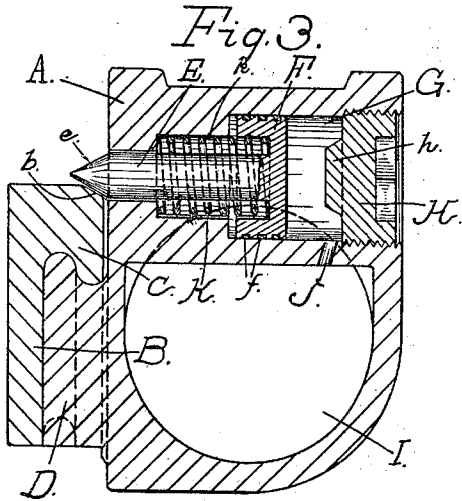
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2 SHEETS—SHEET 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

FRANK F. COGGIN, OF MATAWAN, NEW JERSEY, AND EGBERT H. GOLD, OF CHICAGO, ILLINOIS.

LOCK FOR HOSE-COUPPLINGS.

1,209,673.

Specification of Letters Patent.

Patented Dec. 26, 1916.

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To all whom it may concern:

Be it known that we, FRANK F. COGGIN and EGBERT H. GOLD, citizens of the United States, residing at Matawan, in the county of Monmouth and State of New Jersey, and Chicago, in the county of Cook and State of Illinois, respectively, have invented certain new and useful Improvements in Locks for Hose-Couplings, of which the following is a specification.

Our invention relates to the provision of a lock for hose couplings, particularly couplings for the steam train line of a railway train of the type comprising two coupler heads or mating elements having an interlocking engagement with each other which is brought about by a rocking movement of the heads with respect to each other and is maintained, or intended to be maintained, by the weight of the heads. The advantage of this type of coupling, known as the "Sewall" type, is that the coupler heads will automatically uncouple when the hose to which they are attached are pulled one away from the other so that if, in cutting out a car, the trainman forgets to disengage the elements of the coupling the hose are not ruptured as would be the case if the engagement between the coupler heads were positive. On the other hand, a coupling of this type has the disadvantage of uncoupling automatically, under certain conditions, at times when the engagement of the coupler heads is supposed to remain intact, for example, when the train rounds a sharp or reverse curve, putting the hose under some tension. To avoid such accidental uncoupling, which by opening up the train line wastes steam and cuts off the supply to the cars back of the break, it has been customary to provide couplers with locking devices of one sort or another. If the lock used in this connection is a positive lock it destroys the capacity of the coupling to uncouple automatically whenever it is in its operative locking position. If the lock be of the so-called "impositive" type consisting of a spring pressed element which resists without preventing the relative disengaging movement between the coupler heads, its operation is not always certain and reliable. A weakening or breaking of the spring, for example, will render the device inoperative.

The object of our invention is to provide an improved form of locking means for a

hose coupling which will become effective when the train line is under steam and at other times is ineffective. With a lock constructed and operating on this principle the coupling is locked against accidental uncoupling whenever the normal interlocking engagement between the coupler heads requires to be supplemented to prevent the opening up of the coupling. On the other hand, the supplemental locking means is ineffective under the conditions which prevail when it is desirable that the coupling should have the capacity to uncouple automatically.

While our invention is shown and will be described in connection with a steam hose coupling of a particular type, namely, of the "Sewall" or "gravity" type, it may be employed on other types of hose couplings used in steam train lines or analogous situations or in connection with the hose couplings used with the air brake systems.

The invention is illustrated in certain preferred embodiments in the accompanying drawings, wherein—

Figure 1 is a plan view of a coupling provided with supplemental lock constructed in accordance with our invention; Fig. 2, a side elevation of the coupling shown in Fig. 1; Fig. 3, a sectional view taken on line 3—3 of Fig. 1; Fig. 3^a is a figure corresponding to Fig. 3 but showing the parts of the lock in the positions which they assume when there is no pressure in the coupling; Fig. 4, a view, similar to Fig. 3, illustrating a modified form of lock; and Fig. 4^a is a view, corresponding to Fig. 4, illustrating the position of the parts when not subjected to pressure; Fig. 5, a fragmentary sectional view, on an enlarged scale, showing the connection between the spring diaphragm and the piston in the modification illustrated in Fig. 4.

Like characters of reference designate like parts in the several figures of the drawings.

Referring first to Figs. 1, 2, 3 and 3^a, the coupling therein shown is a straight port gravity coupling of the "Sewall" type consisting of mating coupler heads A, each having an arm B formed with a locking lug C adapted to interlock with a lug D on the side of the other head. The lugs C and D constitute the normal or primary means for engaging and holding the coupler heads in closed relation with each other. The supplemental lock shown in these figures con-

sists of a bolt E secured to a piston F arranged in a cylindrical chamber G in the coupler head and provided preferably with packing rings *f*. The chamber is closed by a plug H and steam is admitted thereto from the steam port I of the coupler head through a port J. The plug H is preferably formed with a boss *h* so that the back stroke of the piston does not close port J. A spiral spring K is arranged in a recess *k* in the coupler head and bears against the piston F. The extremity of the bolt is preferably tapered so as to provide a wedge surface *e* which preferably bears upon an inclined surface *b* formed on the arm B. With the train pipe under steam the pressure in chamber G forces the piston F outwardly so as to bring the extremity of bolt E into engagement with the arm B, the wedging action between surfaces *e*, *b* insuring a close fit between the bolt E and the arm. When steam is cut off from the train line the spring K retracts the bolt. If spring K be not employed or if it should become weakened with use or broken, the bolt will be forced back by an uncoupling movement of the coupler heads due to the wedging or cam relation between the surfaces *b*, *e*.

In the form of the invention in Figs. 4, 4^a and 5 the pressure chamber G' has its open end toward the arm of the coupler head, the opening being closed by a plug H' through which the locking bolt E' extends. An expansible diaphragm K' is interposed between the piston F' and the plug H'. One edge of the diaphragm is clamped between the plug H' and the body of the coupler head. The other edge is secured by nut N to the plunger F'. No packing rings are required in this form.

While we have described our invention in certain preferred embodiments, further modifications might be made without departure from the principle of the invention. Therefore we do not wish to be understood as limiting the invention to the precise constructions, arrangements and devices shown and described except so far as certain of the claims are limited thereto by their express language.

We claim:

1. The combination with a hose coupling comprising mating elements provided with fixed interlocking lugs, of a locking member in each element for preventing the accidental disengagement of said elements which is made effective by direct contact with the fluid passing through said coupling, said locking members being adapted to permit automatic disengagement of said mating elements when the fluid pressure in said coupling is reduced.

2. The combination with a hose coupling comprising mating elements provided with

fixed interlocking lugs, of a locking member in each element for preventing the accidental disengagement of said elements which is made effective by the pressure of and direct contact with the fluid passing through said coupling, said locking members being adapted to permit automatic disengagement of said mating elements when the fluid pressure in said coupling is reduced.

3. The combination with a hose coupling comprising mating elements provided with fixed interlocking lugs, of a locking member arranged in each of said elements which is actuated to operatively engage the other element by the presence of and direct contact with the fluid which said coupling is designed to pass, said locking member being adapted to permit automatic disengagement of said mating elements when the fluid pressure in said coupling is reduced.

4. The combination with a hose coupling comprising mating elements provided with fixed interlocking lugs, of a locking member arranged in each of said elements in position to engage the other of said elements, contact with the fluid in the coupling, and so as to be made operative by fluid pressure in said coupling, said locking members being adapted to permit automatic disengagement of said mating elements when the fluid pressure in said coupling is reduced.

5. The combination with a hose coupling comprising mating elements adapted to be rocked into and out of engagement, of locking means in each element for preventing the accidental rocking open or disengagement of said elements which is made effective by the pressure of the fluid passing through said coupling, and a spring in each element against the force of which said pressure operates to effect the locking operation of said locking means.

6. The combination with a hose coupling comprising mating elements adapted to be rocked into and out of operative engagement, of a locking member arranged in each of said elements in position to engage the other of said elements and so as to be made operative by fluid pressure in said coupling, and a spring in each element in opposition to which said fluid pressure operates.

7. The combination with a hose coupling comprising mating elements formed with fixed interlocking lugs, of a pressure actuated member in each element exposed to the pressure of the fluid passing through said coupling, and a locking member in each element connected with said pressure actuated member adapted to engage with one of said interlocking lugs on the other coupling element.

8. The combination with a hose coupling comprising mating coupler heads each having a fixed arm interlocking with the side

of the other head, and a lock arranged in each of said heads and adapted to engage the arm of the other head, the engagement of which is made effective by the presence of fluid in said coupling.

9. The combination with a hose coupling comprising mating coupler heads each having an arm engaging the side of the other head, and a lock arranged in each of said heads and adapted to engage the arm of the other, the engagement of which is made effective by the presence of fluid in said coupling, said locks and arms being formed with co-engaging wedge surfaces.

10. The combination with a hose coupling comprising mating coupler heads each having a fixed arm interlocking with the side of the other head, and a fluid pressure operative lock arranged in each of said heads and adapted to engage the arm of the other head.

11. The combination with a hose coupling

comprising mating coupler heads each having an arm engaging the side of the other head, a fluid pressure operative lock arranged in each of said heads and adapted to engage the arm of the other, and a spring in each head in opposition to which the fluid pressure operates to make said lock effective.

12. In a hose coupling, the combination of a pair of mating elements each comprising a coupler head formed with a steam port and with a pressure chamber communicating with said steam port, a piston in said chamber, a locking bolt carried by said piston adapted to engage the other element of the coupling, and a spring arranged to retract said piston when not under pressure.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."