R. W. BROWER.

LOCK FOR AIR HOSE COUPLINGS.

APPLICATION FILED FEB. 18, 1919.

1,354,643. Patented Oct. 5, 1920.

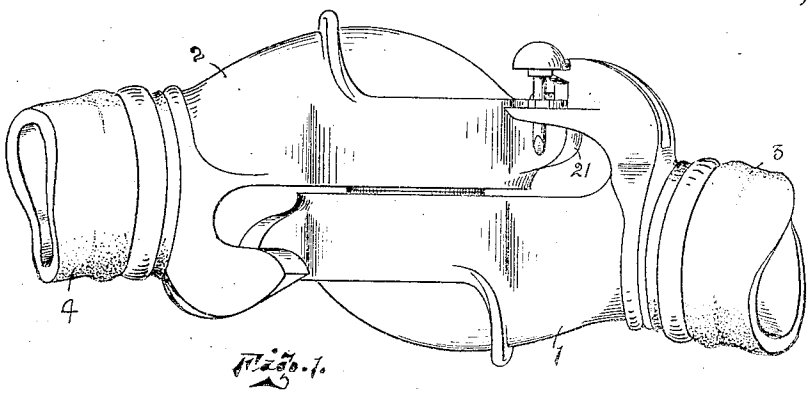


Fig. 1.



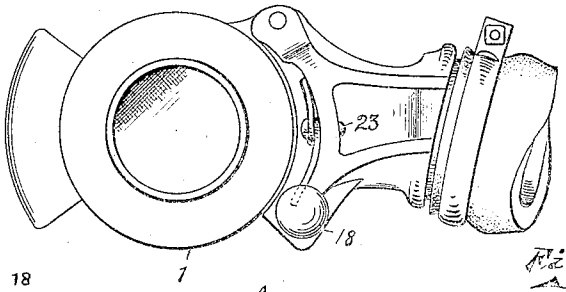
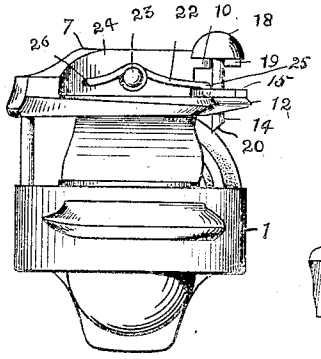


Fig. 2.



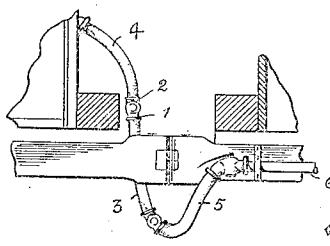


Fig. 5.

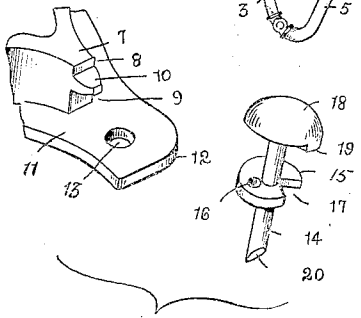


Fig. 3.

Fig. 4.

INVENTOR

BY Richard W. Brower.

Geo. Stevens.

ATTORNEY.

UNITED STATES PATENT OFFICE.

RICHARD W. BROWER, OF PROCTOR, MINNESOTA.

LOCK FOR AIR-HOSE COUPLINGS.

1,354,643. Specification of Letters Patent. Patented Oct. 5, 1920.

Application filed February 18, 1919. Serial No. 277,810.

To all whom it may concern:

Be it known that I, RICHARD W. BROWER, a citizen of the United States, residing at Proctor, in the county of St. Louis and State of Minnesota, have invented certain new and useful Improvements in Locks for Air-Hose Couplings, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to air couplings for railroad cars and has special reference to locking means for an auxiliary section of air hose when circumstances necessitate the use of same.

The principal object of the invention is to produce a simple and inexpensive lock for such couplings.

Other objects and advantages of the peculiar construction will appear in the further description of the invention.

Referring to the accompanying drawings forming part of this application and in which like reference characters indicate like parts:

Figure 1 is a side elevation of a complete air hose coupling, showing my improved locking means applied thereto,

Fig. 2 is a plan view of half of the coupling carrying the locking means,

Fig. 3 is an end elevation of Fig. 2,

Fig. 4 is an enlarged perspective view of the locking bolt and its mount, and

Fig. 5 is a side elevation of a fragmental portion of two draw bars coupled, showing the relative position of the auxiliary section of hose as employed and in which the present invention becomes an essential part.

The use of an auxiliary section of air hose, as here disclosed, is comparatively rare in railroad practice. However, it is well known that in some cases, as, for example, on iron ore cars used in the mining districts of northern Minnesota, the air hose couplings are installed above the draw bars of the cars, instead of at one side thereof, as is common in most all other forms of railroad cars. This being the case, when one of these cars is operated in connection with a car having the common installation of hose coupling, it becomes necessary to install an auxiliary section of air hose in order to make proper connection therebetween.

Now the common air hose coupling, as is well known, is so constructed that when the two coöperative halves of the coupling are united, they must be turned upwardly toward each other to accomplish the desired union and when this is done, they retain such union by the natural falling of the hose to a downwardly arcuate position, where they remain without any necessity whatever of a locking device, but where one section of the hose is considerably above the other, as in the abnormal condition above referred to, and it becomes essential to establish an intermediate section of hose, this downwardly curved position of the uppermost connection, between the intermediate and uppermost sections, becomes impossible. Therefore, the necessity of some form of locking means.

In train service, where these conditions arise, it is common practice to equip such auxiliary hose sections, which are provided for this emergency, with short pieces of wire for holding the insecure connection. The unreliability and danger of this practice are obvious.

I will now proceed to describe one practical embodiment of my invention, though it is evident that various modifications may be resorted to without departing from the spirit thereof.

1 and 2 represent the interlocking halves of the ordinary hose coupling, which are of identical form, well known to those versed in the art. The half indicated by the numeral 1 is upon that which will be termed the upper end of the intermediate or auxiliary section of hose 3, which, at all times, in making such connection, is united with the half 2 of the hose section 4 on the car having the hose above the draw bar and which may be referred to as the abnormal condition of hose mounting.

The opposite end of the intermediate section of hose 3 is connected with the section 5, which is mounted upon the ordinary car in the usual way, the train pipe 6 being at one side of the draw bar of the car. This lowermost connection of couplings hangs in the usual manner and requires no locking means whatever, while the upper connection, made by the union of the halves 1 and 2, hangs substantially vertically and, consequently, does not remain at all times connected and requires some form of locking means. In providing the locking means here shown, the extreme end of the reinforcing web 7, found upon the half 1 is cut away angularly, as at 8 and 9, forming

the projecting lug 10, there being sufficient of the web removed to form the flat surface 11. In this flat surface, through the projecting member 12, and spaced a short distance from the end of the lug 10, is formed the round hole 13.

A pin 14 is provided for operation in the hole 13 and said pin has formed integral therewith, intermediate of its two extreme ends, the disk-like member 15, having a hole 16 formed therein and an open segmental portion or notch 17 upon one side thereof, said notch being of a size to permit of the lug 10 passing therethrough when properly alined therewith.

A head 18 is formed upon the upper end of the pin for convenient manipulation by hand and has a depending segmental-shaped projection 19 upon the under side thereof and which projection is directly above the notch 17 for the purpose hereinafter described. The lower end of the pin 14 is formed at an angle inclining upwardly toward and in line with the notch 17, as at 20, to provide for the uninterrupted entrance of the locking ear 21 upon the opposite half 2 and whereby the pin is raised when the ear enters its engaging position.

To insure the return of said pin to its locking position behind the ear after the latter is fully entered, a spring wire 22 is provided and is mounted spirally upon the pin 23 fixed within the wall 24 of the reinforcing web 7. The pin-engaging end 25 of the wire 22 is bent at right angles and enters the hole 16 in the disk 15 on the pin and the opposite end 26 of the wire 22 is made secure within a suitable hole in the wall 24, thus imparting at all times a downward yielding pressure upon the pin 14.

When the pin is thus positioned in its place upon the coupling, it will be observed that the notch 17 extends radially in a position non-registering with the lug 10, and is thus normally held in one direction by the wire 22, engaging the disk 15, and in the other direction, by the projection 19 on the under side of the head 18, engaging the side of the lug 10. It is apparent that if the wire connection with the disk 15 were at all times perfect, there would be no necessity of the lug 19, but the facts are that to avoid the possible rotating of the pin away from said wire, it is advisable to provide such lug to insure the pin against rotating and holding the angle 20 in its proper receptive position, the notch 17 being away from any possible registering with the lug 10, whereby it might become dislodged and inoperative.

When it becomes desirable to remove the pin 14 for any purpose whatever, all that is necessary is to raise the wire 22 from engagement with the disk 15 and turn and raise the pin until the notch 17 registers with the lug 10, when the same may be wholly withdrawn.

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

1. The combination with an interlocking hose coupling of the character described including a reciprocable spring controlled pin mounted in one-half of the coupling and adapted to lockingly engage the other half, of means formed integral with the half of the coupling carrying the pin and adjacent the latter for normally retaining the pin in position and means carried by the pin whereby it may be manually adjusted or removed from the coupling.

2. The combination with an interlocking hose coupling of the character described having a reciprocable spring controlled pin mounted in one-half of the coupling and adapted to lockingly engage the other half, of a disk carried by the pin intermediate of the ends thereof, a notch in one side of the disk, a fixed lug on the coupling projecting adjacent the pin and above the disk, and means whereby the disk is held normally with the notch therein non-registering with the lug substantially as described.

3. A locking device for air hose couplings comprising a reciprocable pin having a protruding head for direct manual control, a disk fixed to the pin intermediate of its ends, a spring fixed to the coupling and impinging the disk for holding the pin in its locked position, a notch in the disk, a fixed protruding lug adjacent the pin and normally engageable with the disk to prevent the pin being dislodged, and a depending projection from the under side of the head of the pin for normally preventing the registration of the lug and notch but permitting ready removal of the pin by direct manual manipulation.

In testimony whereof I have hereunto affixed my signature in the presence of two witnesses.

RICHARD W. BROWER.

Witnesses:
G. M. OUELLETTE,
S. GEO. STEVENS.