

(No Model.)

J. S. BLACKBURN.
HOSE COUPLING.

No. 511,992.

Patented Jan. 2, 1894.

Fig. 1.

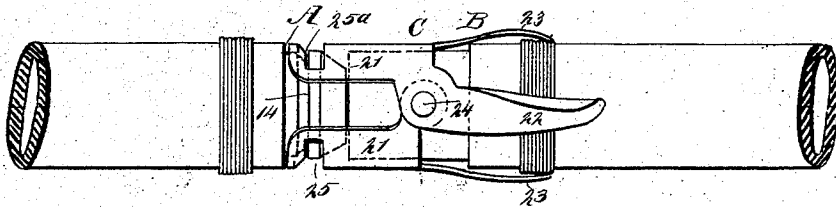


Fig. 2.

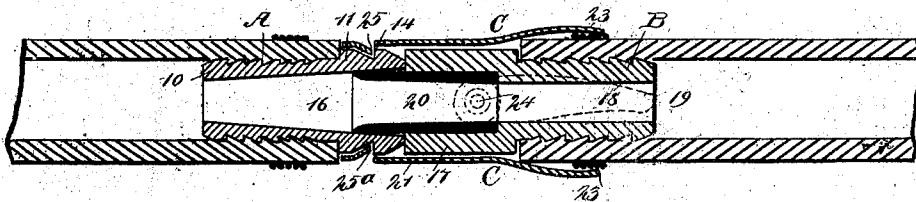


Fig. 3.

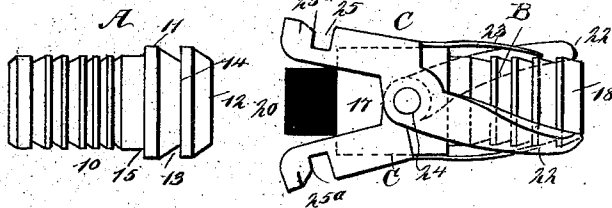
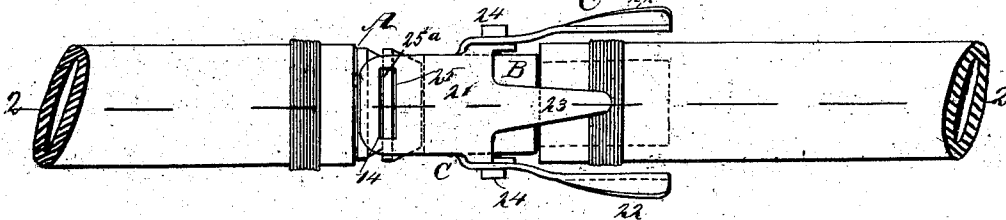


Fig. 4.



WITNESSES:

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JOSEPH S. BLACKBURN, OF SALEM, OHIO.

HOSE-COUPLING.

SPECIFICATION forming part of Letters Patent No. 511,992, dated January 2, 1894.

Application filed April 13, 1893. Serial No. 470,213. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH S. BLACKBURN, of Salem, in the county of Columbiana and State of Ohio, have invented a new and Improved Hose-Coupling, of which the following is a full, clear, and exact description.

My invention relates to a hose coupling, and it has for its object to provide such a coupling which will be exceedingly simple and durable, and economic in construction, the coupling being so made that when two sections of hose are brought together having the improved coupling applied, the said sections when forced to a contact will automatically couple one with the other.

Another feature of the invention consists in providing a means whereby there will be no possible leak at the junction of two sections of hose, and likewise to construct the coupling in such manner that an uncoupling of sections may be expeditiously and conveniently effected.

The invention consists in the novel construction and combination of these several parts, as will be hereinafter fully set forth and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of two sections of hose connected by the improved coupling. Fig. 2 is a longitudinal vertical section through two coupled sections of hose, the section being taken practically on the line 2—2 of Fig. 4. Fig. 3 is a side elevation of the parts of the coupling removed from the hose; and Fig. 4 is a plan view of two sections of hose connected by the coupling, the view being taken at right-angles to the view shown in Fig. 1.

The coupling is made in two sections designated respectively as A and B. Both of the sections are tubular, and the section A, comprises a shank 10, which is exteriorly roughened, or grooved in any suitable or approved manner in order that it may cling tightly to the hose into which it is introduced, and the said section further consists of a head 11, which head at its outer end is provided with a beveled surface 12, the bevel extending

from the exterior inwardly in direction of the bore or inner chamber of the section; and at a proper distance back of the beveled surface 12 of the head an annular channel 13, is made in said head, the front wall of which channel is straight while the rear wall is inclined or beveled from the outer surface of the head downward and forward in direction of the straight wall of the groove. Thus the peculiar formation of the annular groove or channel 13 provides a shoulder 14, which is the straight wall of the groove, and as the head is of greater diameter than the shank 10 of the section, a rear shoulder 15, is formed at the junction of the shank with the head. The bore or chamber 16 in the coupling is more or less conical in shape, the outer end of the bore being of greater diameter than the inner end, as is best shown in Fig. 2.

The opposing section B of the coupler comprises a head or body section 17, which is of cylindrical shape, and is preferably quite smooth, and a shank 18, ordinarily made integral with the head or body section, the said shank being roughened or grooved in similar manner to the shank of the section A. The shank and body or head of the section B, are provided with a bore or interior chamber 19, extending through from end to end. This chamber is preferably made in two diameters, its greatest diameter being at the outer end of the section; and within the larger portion of the bore or chamber a tube 20, is inserted, the said tube being made preferably of rubber, although it may be made of any equivalent water or steam-proof material. The flexible tube 20, is fitted so tightly in the section B that it will not slip out therefrom, but it may be drawn out when it is necessary to insert another tube.

The tube 20, projects some distance beyond the outer face of the section B, as shown in Fig. 2, and at its outer end the inner surface of the tube is made more or less bell-shaped or flaring.

The section B is further provided with two clamping jaws, designated as C. Each jaw consists of a semi-circular body 21, and the said body is provided at one of its ends with a lever arm 22, extending at a right angle from it, and at its center each body is provided with a spring tongue 23, or other form

of spring, extending in the same direction as the arm. The jaws are placed oppositely upon the head or body portion of the section B, and are pivoted thereto by means of pins 24, ordinarily two in number and oppositely disposed, the two pins being utilized to pivotally connect both jaws with the body of the section; and in placing the jaws together, the lever of one jaw is diametrically opposite the lever of the opposing jaw, and the bearing surfaces of the levers, or those surfaces to be engaged by the fingers to operate the jaws, are at opposite sides of the levers, but said surfaces may be on the same side of the hose, and such location is preferred. The jaws extend some distance beyond the outer face of the body of the section, and preferably slightly beyond the outer end of the flexible tube 20, and each jaw is provided with a diametrically transverse opening 25 in its body portion, and the outer wall of the opening is carried inward at an angle a sufficient distance to place the said wall out of alignment with the rear wall of the slot, the inwardly-extending wall being designated in the drawings as 25^a. The shanks of the two sections are introduced into the ends of different sections of hose to be united, and are held within the hose in any suitable or approved manner, and when the shanks are properly placed in the hose sections, the inner shoulders or faces of the heads of the coupling sections are engaged with the outer ends of the hose sections, as shown in Fig. 2.

35 In order to effect a coupling, the sections A and B of the hose sections are brought together and the head of the section A will, when engaging with the jaws of the section B, force the said jaws outward in opposite directions against the tension of the spring fingers 23 of the jaws, as shown in Fig. 3, and the moment that the grooved portion 13 of the section A is opposite the inwardly struck edge of the slots in the jaws of the section B, the jaws will close around the head of the section A, and the inwardly struck portions of the jaws will engage with the shoulder 14 of the section A, and the two sections of the hose will be tightly coupled, and cannot be drawn apart by simply exerting tension in opposite directions upon the sections of the hose, or by manipulating the hose in any way; and when the two sections of the coupling are brought together, the inner flexible tube 20, will have entered the bore in the coupling section A, and thereby the joints between the two sections will be perfectly covered, and when water or steam passes from one section to the other, the elastic or flexible tube 20, will be expanded to such an extent that it will hug closely to the inner face of the said coupling section A.

-In order to effect an uncoupling, the lever of either jaw is pressed in a manner to force the jaw with which it is connected outward, and at that time the section A, may be readily withdrawn. By carrying inward one wall of the slot 25 in each jaw an interior rib is formed, but I desire it to be understood that this rib may be produced in any other approved manner.

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

1. In a hose coupling, the combination, with a section having a shoulder, of a second section adapted to abut against the first named section, spring-controlled jaws pivoted upon the second section and extending longitudinally thereof, the ends of the said jaws protruding in front of the section and being adapted for engagement with the shoulder of the first section, and levers located exteriorly of the sections and connected with the jaws for raising the same out of contact with the said shoulder, as and for the purpose set forth.

2. In a hose coupling, the combination, with a section consisting of a shank and a head, the head having a groove formed therein, one wall of which is straight, forming a shoulder, of a second section, comprising a head and shank, spring-controlled and oppositely located jaws pivoted upon the head thereof, levers connected with the jaws, and ribs formed upon the inner faces of the jaws, adapted for engagement with the shoulder of the first named section when the two sections are brought in contact, as and for the purpose set forth.

3. In a hose coupling, the combination, with a receiving section consisting of a shank and a head, the head having an annular groove produced exteriorly therein, one wall of which is straight, forming a shoulder, the said section being likewise provided with a tapering inner bore widest at the head, of a locking section comprising a head and shank, an elastic tube fitted in the head and adapted to enter the bore of the opposing section at the head portion thereof, oppositely disposed jaws pivoted upon the head of the locking section, which jaws are provided with transverse openings, the outer walls of said openings being beveled rearward and inward, whereby the outer walls of the openings extend inward beyond the plane of the inner rear faces of the jaws, levers connected with the jaws at opposite ends, and spring fingers projected from the jaws over the shank, as and for the purpose set forth.

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Witnesses:

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