No. 735,401. PATENTED AUG. 4, 1903.

J. R. McFALL.

HOSE COUPLING.

APPLICATION FILED MAR. 16, 1903.

NO MODEL.

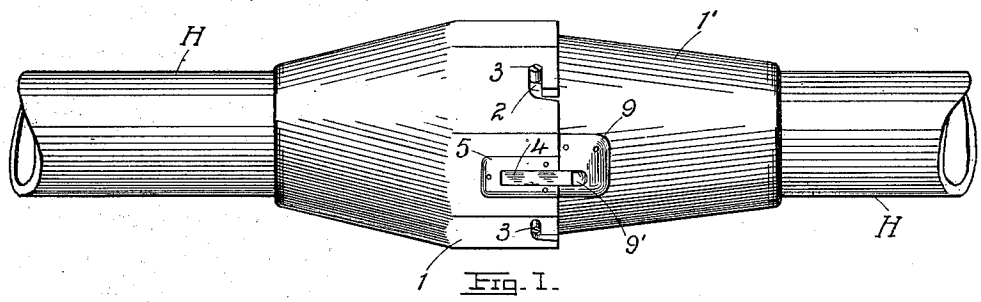


Fig. 1.

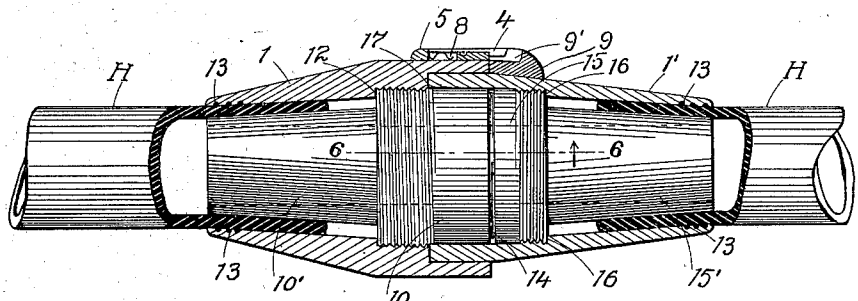


Fig. 2.

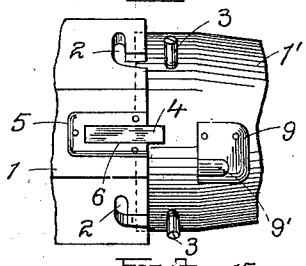


Fig. 3.

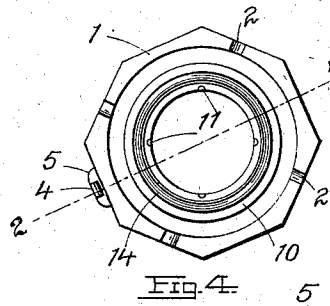


Fig. 4.

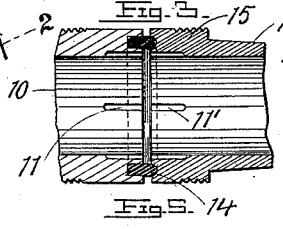


Fig. 5.

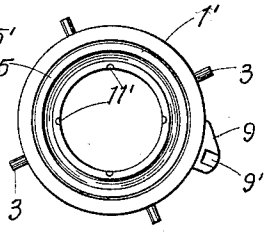


Fig. 6.

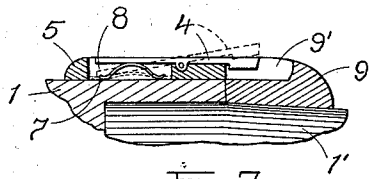


Fig. 7.

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No. 735,401. Patented August 4, 1903.

UNITED STATES PATENT OFFICE.

JAMES R. McFALL, OF ST. LOUIS, MISSOURI.

HOSE-COUPLING.

SPECIFICATION forming part of Letters Patent No. 735,401, dated August 4, 1903.

Application filed March 16, 1903. Serial No. 148,033. (No model.)

To all whom it may concern:

Be it known that I, JAMES R. McFALL, a citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Hose-Couplings, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to improvements in hose-couplings; and it consists in the novel construction of coupling more fully set forth in the specification and pointed out in the claims.

In the drawings, Figure 1 is an elevation of the coupling with the two sections thereof assembled and locked. Fig. 2 is a horizontal section on line 2 2 of Fig. 4. Fig. 3 is an elevation showing the two sections in position for being coupled. Fig. 4 is an inner end view of the female section. Fig. 5 is an inner end view of male section. Fig. 6 is a sectional detail of the plugs on line 6 6 of Fig. 2, and Fig. 7 is a sectional detail showing the locking-latch of the coupling.

The object of my invention is to construct a coupling by means of which two sections of hose or pipe can be instantly coupled or uncoupled, entailing the loss of a minimum amount of time in the operation.

A further object is to construct a coupler which will be simple, cheap, and durable, one in which a section thereof may be directly attached to a fire-plug, and one possessing further and other advantages better apparent from a detailed description of the invention, which is as follows:

Referring to the drawings, 1 represents the female section of the coupler, and 1′ the male section, which the same is adapted to receive. Disposed along the edge of the end of the female section which receives the male are a series of angular recesses 2, the outer end of each recess being substantially parallel to the axis of the coupling and the inner end being disposed peripherally in a plane at right angles to the axis. Disposed radially along the periphery of the adjacent end of the male section are a series of pegs or pins 3, which in the assembling of the sections are brought axially into alinement with the outer portions of the recesses 2, Fig. 3, into which they are inserted, when the male section is given a slight turn until the pins engage the bases of the inner portions of said recesses, Fig. 1, when the two sections are fully engaged. The outer wall of the female section is provided with a latch 4, pivoted to a plate 5, secured to the wall of the female section, the latch being confined in a groove 6 in said plate to be fully protected. The spring 7, by which the latch is actuated, is preferably in the form of a bow and rests within a chamber 8, formed in the plate, the normal tendency of the spring being to force the opposite end of the latch toward the axis of the coupling. The male section has formed thereon a peripheral enlargement or ridge 9, having an elongated groove or socket 9′, into which the latch is forced when the socket comes opposite the latch.

In coupling the parts in the manner previously indicated the ridge 9 occupies a position to one side of the latch, Fig. 3; but when the final turn is imparted to the male section to bring the pegs 3 into the bottoms of the inner portions of the angular recesses the locking end of the latch rides up the inclined walls of the ridge and at the proper moment drops into the groove 9′ under the action of the spring 7 and the parts are locked, Fig. 1. It will be observed that the groove 9′ is elongated beyond the dimensions which would be sufficient to receive the locking end of the latch, the object of such elongation being to afford sufficient room for the insertion of the finger when it is desired to disengage the latch to permit the uncoupling of the sections, Fig. 7.

Mounted within the female section is a hollow plug having an inner exteriorly-screw-threaded head 10 and an outer tapering smooth stem 10′, the taper on the stem 10′ corresponding to the taper of the inner peripheral surface of the section carrying the same. The inner wall of the head 10 is provided with longitudinal depressions or sockets 11 for the reception of the teeth of a suitable wrench, (not shown,) by means of which the plug may be screwed or unscrewed. When driven fully home, the head is limited by a shoulder 12, formed on the section 1. The inner wall of the tapering end of the section 1 is provided with a series of corruga-

tions or ridges 13 to afford a better frictional hold for the hose H when the end of the same is inserted into the conical space formed between the stem 10′ and the said section. As the plug is driven home the conical surfaces between which the hose is inserted grip the hose and hold it firmly to this section of the coupling. The outer end of the head 10 is provided with a terminal groove for the reception of one end of a rubber gasket 14, the projecting end of the latter being received by a corresponding annular groove of the adjacent end of a similar plug 15, carried by the male section. The plug 15 is composed likewise of a head 15 and a conical or tapering stem 15′ and in a similar manner serves to grip the end of the adjacent hose-section H, being provided with similar sockets 11′ for engagement with a driving-tool. The shoulder 16 limits the plug 15 when fully driven home. The diameters of the heads 10 15 of the respective plugs are substantially the same, so as to form a practically continuous surface when the parts are assembled, the section 1′ snugly fitting within the section 1 and the head 10 snugly fitting the section 1′, and when the parts are fully assembled the inner end of the male section 1′ is limited by the annular shoulder 17, formed in the female. In order that a quick coupling of the two sections may be effected, it will be noticed that the outer end of the head 10 and the adjacent end of the section 1 are disposed in the same transverse plane, so that one part does not project beyond the other. In this way there is no obstruction in the way of a ready insertion of the male section into the annular space between the head 10 and inner wall of the section 1, and the coupling can be effected with a minimum loss of time.

It is of course to be understood that I need not limit myself to the precise details here shown, as these may in a measure be departed from without affecting the nature or spirit of my invention.

Having described my invention, what I claim is—

1. A hose-coupling comprising a male and female section, a hollow plug having a screw-threaded head and a tapering or conical stem mounted in each of the sections, the end of the head in the female being disposed in the same transverse plane with the adjacent end of the female section, a suitable annular space being formed for the reception of the adjacent end of the male section, terminal annular grooves in the adjacent ends of the heads, a gasket received by said grooves, the ends of the hose being received in the spaces between the tapering stems and the adjacent walls of the sections, and means for coupling the sections, substantially as set forth.

2. A hose-coupling comprising a male and female section, a series of angular recesses disposed at one end of the female section, a series of pins radially distributed at one end of the male section and adapted to engage said recesses, a peripheral enlargement or ridge having a socket, carried by the male section, a spring-actuated latch carried by the wall of the female section, said latch being adapted to engage the socket of said ridge when the pins aforesaid have fully entered the recesses, substantially as set forth.

3. A hose-coupling comprising a male and female section, a plug having a screw-threaded head and a smooth tapering stem mounted in each of the sections, sockets or depressions formed in the respective heads for turning the same by means of a tool, terminal annular grooves formed in the adjacent ends of the heads, a gasket received by said grooves, the ends of the hose being adapted to be gripped between the tapering stems of the plugs and the adjacent inner walls of the respective sections, and means for coupling and locking the sections, substantially as set forth.

4. A hose-coupling comprising a male and female section, a hollow plug having a screw-threaded head and a smooth tapering or conical stem mounted in each of the sections, the end of the head in the female being disposed in the same transverse plane with the adjacent end of the female section, a suitable annular space being formed for the reception of the adjacent end of the male section, depressions or sockets being formed in the respective heads for turning the same by means of a suitable tool, terminal annular grooves in the adjacent ends of the heads, a gasket received by said grooves, the ends of the hose being received in the space between the tapering stems and the adjacent walls of the sections, and means for coupling and locking the sections, substantially as set forth.

5. In a hose-coupling, a male and female section, angular recesses distributed along the edge of one end of the female section, radially-disposed pins on the wall of the male section for engaging said recesses, a plate carried by the female section, a latch pivoted within a depression of the plate, a chamber in the plate located opposite the inner end of the latch, a spring in said chamber for actuating the latch in one direction, a ridge having an elongated socket or groove carried by the male section, the walls of the ridge gradually leading to the groove, whereby upon rotation of the male section in the proper direction, the latch will automatically engage the groove, the parts operating substantially as, and for the purpose set forth.

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

JAMES R. McFALL.

Witnesses:
EMIL STAREK,
MARY D. WHITCOMB.