No. 646,590. Patented Apr. 3, 1900.

W. D. WILLIAMS.

HOSE OR PIPE COUPLING.

(Application filed Mar. 30, 1899.)

(No Model.)

Fig. 1.

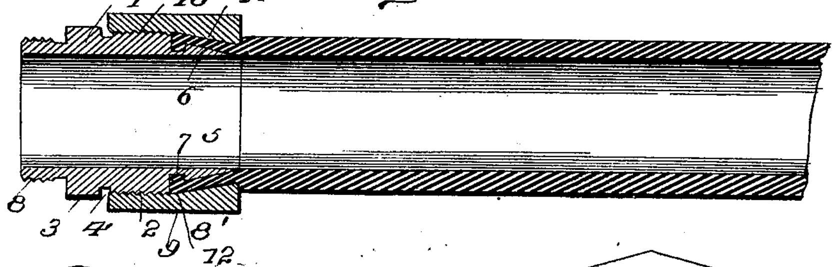


Fig. 2.

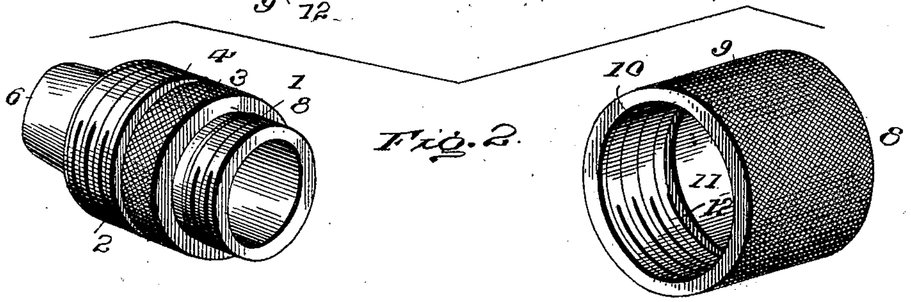


Fig. 3.

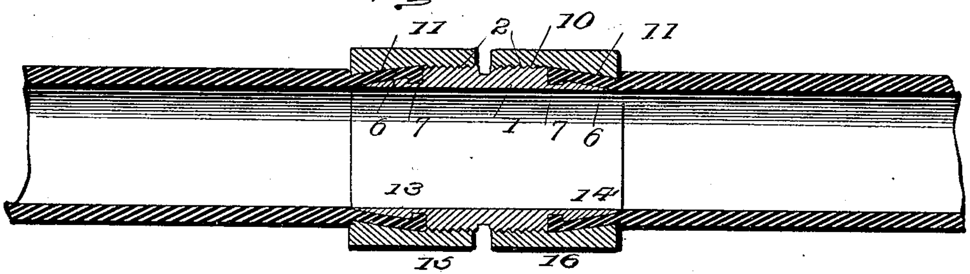
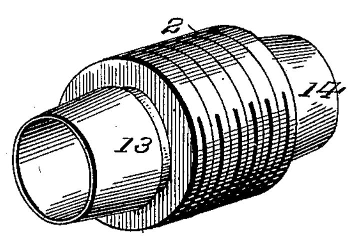


Fig. 4.



Inventor

Witnesses

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UNITED STATES PATENT OFFICE.

WIN D. WILLIAMS, OF ST. LOUIS, MISSOURI.

HOSE OR PIPE COUPLING.

SPECIFICATION forming part of Letters Patent No. 646,590, dated April 3, 1900.

Application filed March 30, 1899. Serial No. 711,173. (No model.)

To all whom it may concern:

Be it known that I, WIN D. WILLIAMS, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Hose or Pipe Couplings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to that class of hose-pipe couplings embodying in their construction a tubular coupling-section having one end tapering and the opposite end threaded and a clamp-sleeve having an end portion threaded to screw upon the threaded end of the coupling-section and having its opposite end tapering and adapted to clamp the hose-pipe between it and the tapering end of said coupling-section.

In couplings of the character specified the clamp-sleeve has a jog or offset intermediate of the threaded and clamp portions, and the external surface is not of uniform diametrical extent. The external offset provides a projection which is liable to injure the hand when grasping the sleeve to rotate it to either clamp or release the hose-pipe, and the inner jog oftentimes limits the longitudinal movement of the clamp-sleeve by the shoulder formed thereby coming in contact with a like shoulder of the coupling-section before the hose-pipe is firmly grasped between the tapering clamp-faces of the coupling members.

It is the purpose of this invention to obviate the foregoing features and to provide a coupling of the variety set forth which will be lasting, easily operable, effective, light, and possessed of maximum strength.

With these objects in view the tubular coupling-section has an outer annular groove intermediate of the tapering end and the threaded portion to receive the deflected terminal portion of the hose-pipe, and the clamp-sleeve is of uniform external diameter and has an end portion internally threaded to make screw-thread connection with the threaded part of the tubular section, the opposite end portion of said sleeve being thickened and inwardly flaring to and vanishing into the inner threaded part, whereby the end portion of the hose-pipe is clamped between the tapering portions of the coupling members and its terminal is crowded into and confined in the annular groove or seat of the said tubular coupling-section, all as fully set forth hereinafter, claimed, and illustrated in the drawings, in which—

Figure 1 is a longitudinal section of a piece of hose-pipe, showing the improved coupling applied thereto. Fig. 2 is a detail perspective view of the parts of the coupling shown separated. Fig. 3 is a view similar to Fig. 1, showing a modification in the construction. Fig. 4 is a detail perspective view of part of the coupling as shown by Fig. 3.

Referring to the drawings, wherein similar numerals of reference are employed to indicate corresponding parts in the several views, the numeral 1 designates a coupling-section, which, as shown in Figs. 1 and 2, has a central circumferential enlargement, with screw-threads 2 adjacent one end thereof and a milled surface 3 at the opposite end, the said screw-threads and milled surface being separated by an intermediate limit-groove 4. The coupling-section 1 is formed with a central bore, and projecting from one end thereof is a tubular extension 5, in line with the said bore and having an exterior tapered surface 6, terminating adjacent to the said section in a circumferential groove 7, said groove having straight or square concentric walls constituting shoulders, one of which is formed by the adjacent end of the said threaded enlargement. From the opposite end of the said section a screw tap or collar 8 projects for securement to various mechanisms or devices, and in making different forms of connections the screw-threads may be exteriorly located, as shown, or formed on the interior of the tap or collar, as may be desired.

A clamping-sleeve 8' is used in connection with the improved coupling and is formed with an exterior milled or roughened surface 9, and one end of the interior thereof has screw-threads 10 and the opposite end is enlarged and tapered, as at 11, the inner termination or base portion of the enlarged or tapered portion being separated from the screw-threads 10 by the portion 12, which constitutes a contact face or shoulder.

In applying the device as thus far disclosed the tapered extension on one end of the section is inserted in the end of a piece of hose or pipe, and as the latter is forced to receive the said extension it is expanded gradually until the end thereof abuts against the adjacent portion of the said section. The end of the hose or pipe being of a pliable or yielding nature will be caught by the groove 7, and after the parts are in this position the sleeve 8′, which has been previously placed on the piece of hose or pipe to which the coupling is applied, is moved forward, so that the interior screw-threaded portion thereof will engage the screw-threaded end 2 of the said section 1. The said sleeve is then gradually drawn on the screw-threaded end of the section 1 and the part of the hose or pipe in which the tapered extension has been fitted will be firmly clamped down on the latter by a gradual compression as the said sleeve is run onto the said section. The inner tapered portion of the said sleeve is of the same degree of slant as the exterior surface of the said extension, and after the said sleeve is fully applied the end of the hose or pipe will also be held positively seated in a crimped and expanded condition in the groove 7 by the contacting face or shoulder 12 of said sleeve, which lies directly over the said groove 7 when the said sleeve is fully screwed home, and thus obviate any tendency of a longitudinal displacement or loosening of the hose or pipe from the coupling and at the same time institute an exceptionally-firm water, steam, or air tight joint. The milled surfaces on the several parts, it will be understood, are for assisting in connecting up or separating the several parts, and in very large structures it might be found necessary to supply the sleeve with diametrically-opposed apertures or depressions or analogous devices for engagement with a spanner.

In Fig. 3 a modification of the construction is shown, and in this instance a tubular extension, with an outer tapered surface, is applied to both ends of the coupling-section, as at 13 and 14, and two sleeves 15 and 16 are used. This form of the device is intended for use in making intermediate connections or in quickly cutting out a portion of a hose that may be burst and fitting the coupling thereto without destroying the efficiency of the whole length of said hose. In the case of an accident of this character also it will be understood that the hose can again be quickly put in condition for service without requiring the use of any mechanism, and this form is especially efficient in lawn or fire hose, and a number of the couplings could be conveniently carried or stored to meet an emergency of this character.

The coupling in its different forms as heretofore disclosed is adaptable to many uses and is of a very simple and inexpensive nature, and though the device has been referred to as being capable of operation by a spanner the parts move with such ease that it is not actually necessary to employ other than the ordinary manual power in making a connection.

Having thus described the invention, what is claimed as new is—

A coupling for hose-pipes constructed substantially as set forth and consisting of a tubular coupling-section having a tapering end and a threaded portion separated by an outer annular groove, and a clamp-sleeve of uniform external diameter and having an end portion internally threaded to make screw-thread connection with the threaded part of the tubular coupling-section, and having the opposite end portion thickened and its inner walls inwardly divergent and merging into the threaded surface and adapted to clamp the hose-pipe and crowd and hold its terminal portion within the annular seat of the tubular coupling-section, substantially as set forth.

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

WIN D. WILLIAMS.

Witnesses:
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