(No Model.)

L. J. HOUZE.

HOSE COUPLER.

No. 543,871. Patented Aug. 6, 1895.

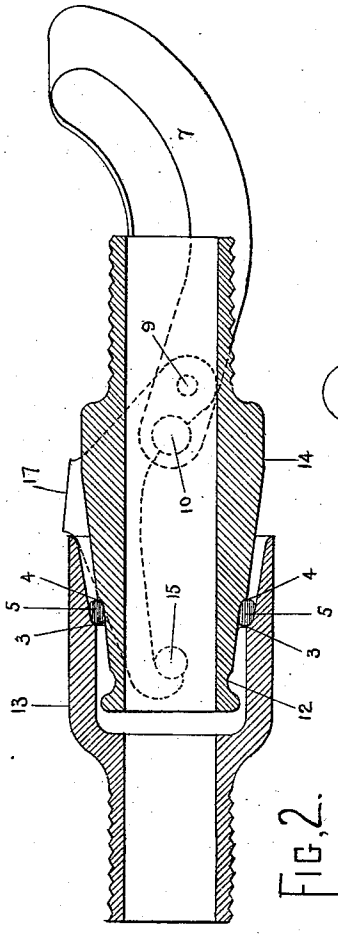

FIG. 2.

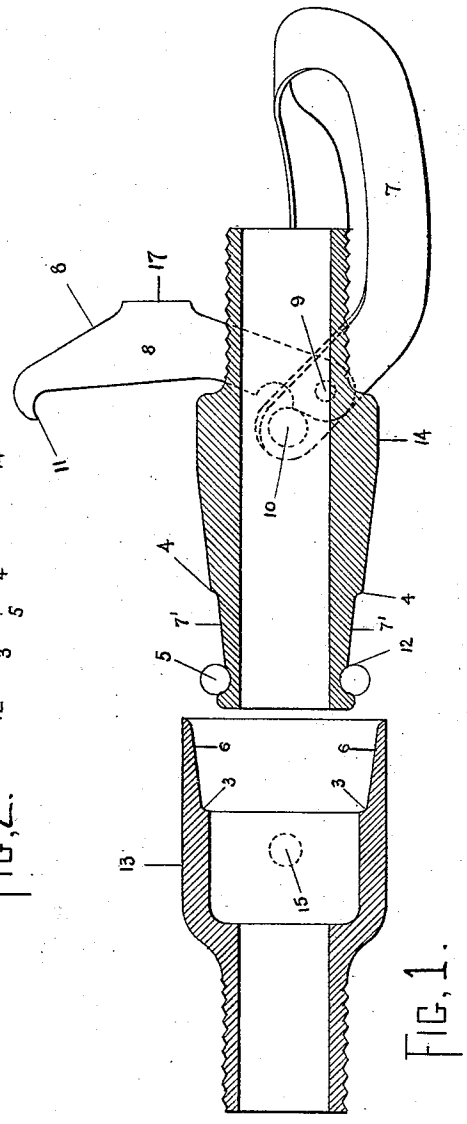

FIG. 1.

WITNESSES

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LEON J. HOUZE, OF HARTFORD CITY, INDIANA.

HOSE-COUPLER.

SPECIFICATION forming part of Letters Patent No. 543,871, dated August 6, 1895.

Application filed August 11, 1894. Serial No. 520,061. (No model.)

To all whom it may concern:

Be it known that I, LEON J. HOUZE, a citizen of the United States, residing at Hartford City, in the county of Blackford, in the State of Indiana, have invented certain new and useful Improvements in Hose-Couplers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in hose-couplers, and the object is to provide a more convenient and economical hose-coupler; and the invention consists in the construction and novel combination of parts hereinafter described, pointed out in the appended claims, and illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal section of the device with the two parts separated from each other, and Fig. 2 is a longitudinal section of the device with the two tube parts drawn together and interlocked.

Similar numerals of reference refer to similar parts throughout the several views.

The construction of my device, which includes the coupler and its interlocking parts, is as follows:

The two tube parts 13 and 14 of the coupler are constructed so that the one 14 enters the other 13. The entering part 14 has its outer walls or periphery inclined inwardly toward the end in conical form. On the end thereof, or near its end, I preferably provide a grooved recess 12 for the purpose of holding an elastic packing-ring 5 in place, so that it shall always be on the entering part 14 when not in use and in position to be operated. Farther up on this incline a suitable distance I prefer to widen out the entrance part, so as to form a shoulder 4. The receiving part 13 is constructed with its inner walls 6 flaring outwardly to its end, in conical form, to correspond to the conical form of the entering part 14. It is also preferably provided at some distance from its end with a shoulder 3. The purpose of the two shoulders 3 and 4 are to limit the entrance of the one tube part into the other, and it is preferred that the elastic packing 5 shall be held compressed between these two shoulders after having been rolled up and compressed between the conical forms of the two tube parts 13 and 14 by the motion imparted when the one part 13 moves into the other. This is readily seen from the construction. When so brought and held together, the coupling forms a tight joint. A tight joint may be formed, if the packing-ring is so adapted in size, solely by the compression of the packing-ring 5 between the two conical surfaces of the tube parts 13 and 14, without being compressed between the shoulders; but I prefer to make use of both the conical sides and the shoulders, as described, as the combination makes a more complete and perfect tight joint. It will be seen, also, from the forms of the tube parts that the end of the entering part 14 can be placed within the end of the receiving part 13 without paying much attention to exact fitness and the parts will regulate themselves to a fit as they are drawn together. The coupler is therefore much more convenient and can be more quickly adjusted than those where the operator is compelled to fit the two parts exactly to bring them together, as is required in couplers which are screwed together and couplers whose parts enter each other snugly. This facility of operation is due to the conical forms and construction described.

The tube parts 13 and 14 thus constructed are drawn together to compress the packing-ring and make a tight joint, as described, by any suitable device therefor; but I prefer the interlocking mechanism shown in the drawings, which consists of a lever 7 provided with two arms 9, the ends of which are pivoted or fulcrumed at points 10 on diametrically-opposite sides of one of the tube parts 14. On the other tube part 13 a projection or projections 15 are placed on diametrically-opposite sides thereof. If only one projection is used, it is extended around the tube part, so as to furnish points of attachment at diametrically-opposite sides in any position of engagement. I provide two connecting-arms 8 and pivot their ends to the arms 9 at a short distance from the fulcrumed points 10, and I provide their other ends with means to engage the projection or projections 15 on the other tube part 13 of the coupler. As shown in the draw-

ings, such means preferably consist in projections 11, attached on one side of the connecting-arms 8, somewhat in the form of hooks. A cross-bar 17 connects the two arms 8 for the purpose of holding the engaging parts rigidly in place. The lever-arms 9 are bent to an obtuse angle from the point of connection with the connecting-arms 8, and are then brought together to form a handle 16 for the application of power to operate them. This is for the purpose of lowering the pivotal connection 18 of the arms below the center line of the coupler and permitting the handle 16 to lie on the coupler when in such position. This handle 16 is preferably integral, as shown in the drawings. The whole is so constructed that when the projections 11 of the connecting-arm 8 engage the projections 15 of the other part, and the lever handle 16 is then brought down upon the coupling with force, it thereby draws the tube parts together, compresses the packing-ring, and interlocks the parts. The interlocking is caused by such operation, because the pull on the tube parts is then on the connecting-arms 8, held on one part by the projections 15 and on the other part by their pivotal attachment to the arms 9, and held in such manner that the tendency of the pull is to draw the handle of the lever down on the coupler, which prevents further motion of the handle and its attachments, thereby firmly holding the parts in place.

The packing-ring 5 is a cylindrical ring of any suitable material. I prefer one of rubber, as I have found that material best adapted to the purpose, and its elasticity gives it a better hold upon its grooved seat 12 on the entrance part, so that it is not easily displaced when the tube parts are separated.

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

1. A hose coupler consisting of two metal tube parts one provided with a shoulder on the inside and its inner walls flaring outwardly from the shoulder, the other provided with a shoulder upon its outside periphery, and a portion beyond the shoulder chamfered inwardly, and also provided at the end of the chamfer with a circular groove adapted to hold an elastic packing ring in place so that it will not fall off; the two shoulders adapted, when brought together, to engage and hold firmly a packing ring between them: an elastic packing ring: and means to draw the two tube parts together to make a tight joint and interlock them together.

2. In a hose coupler, an entrance part or tube provided with a shoulder and chamfered inwardly from thence a short distance: a circular groove at the end of the chamfer adapted to hold a packing ring, in combination with a receiving part or tube having a flaring entrance and provided with a shoulder at the inner end of the flaring part and adapted to receive the entrance part of the tube, so that a packing ring may be compressed between the two shoulders to form a tight joint: a rubber packing ring: and an interlocking device consisting of the lever 7 attached pivotally to one of the two connecting parts: the arm 8 pivotally attached to the lever: and lugs 15 attached to the other connecting part, adapted to engage the ends 11 of said arms; the whole being adapted to interlock the two parts together and tightly compress the rubber packing ring when the lever is forced down upon the tube.

3. In a hose or pipe coupler consisting of two metal tube parts, which are adapted to be drawn together to form a tight joint with intervening packing: a lever provided with two arms, the ends of which are pivoted or fulcrumed on opposite sides of one of the tube parts: a projection or projections on the other tube part: arms provided at their ends with means to engage said projection or projections, and pivoted at their other ends to the said two arms of the lever, respectively, at a short distance above the fulcrumed points and also provided with a cross bar to hold the engaging parts in place; the whole adapted to draw the tube parts together and interlock them when the handle of the lever is forced down on the tube.

In testimony whereof I hereunto subscribe my name, in the presence of two witnesses, this 6th day of August, 1894.

LEON J. HOUZE.

Witnesses:
JOHN B. LASSUS,
H. C. HARTMAN.