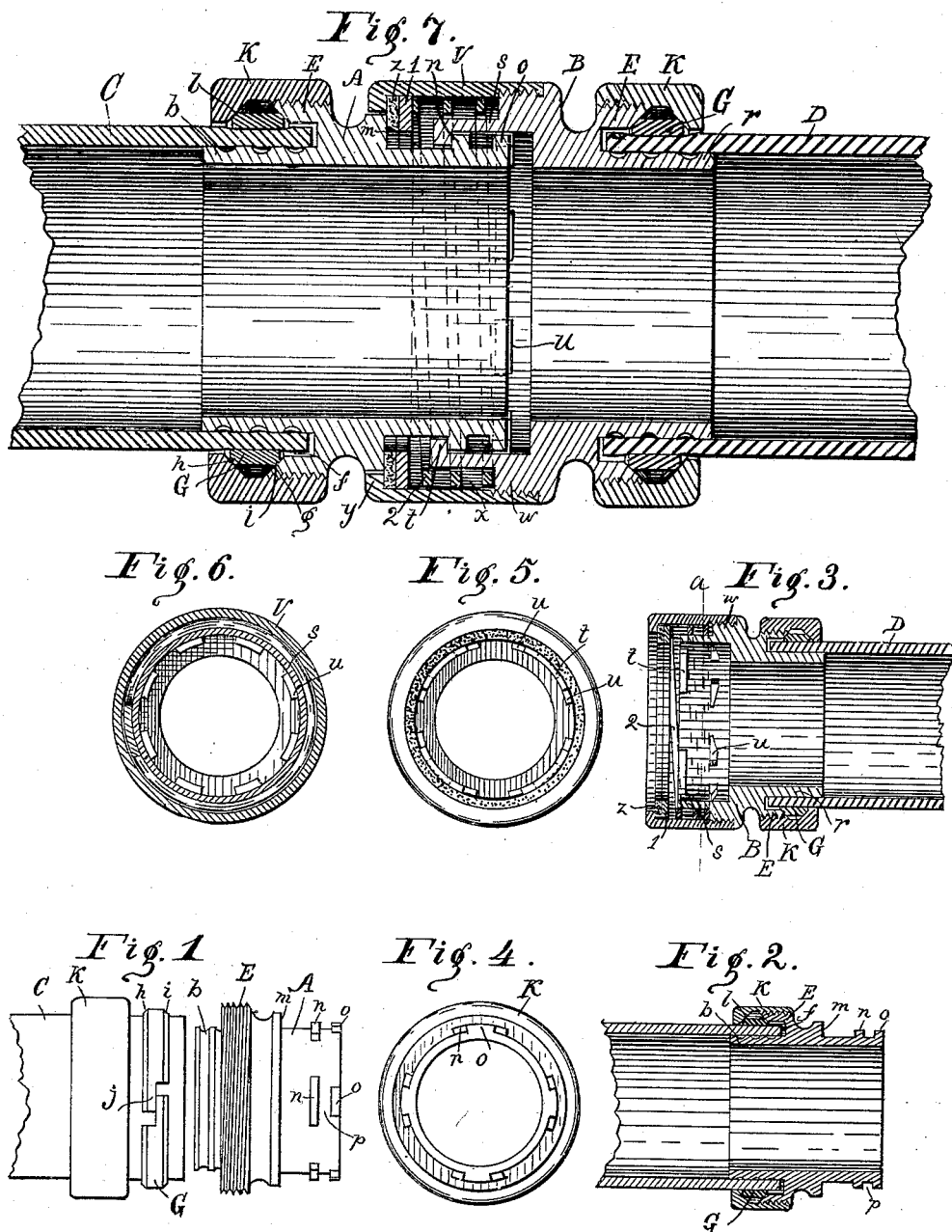


• (No Model.)

L. J. RICE.
HOSE COUPLING.

No. 418,225.

Patented Dec. 31, 1889.



Witnesses
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UNITED STATES PATENT OFFICE.

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HOSE-COUPLING.

SPECIFICATION forming part of Letters Patent No. 418,225, dated December 31, 1889.

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To all whom it may concern:

Be it known that I, LEWIS J. RICE, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Improvement in Hose-Couplings, of which the following is a specification.

My invention relates to an improvement in hose-couplings.

The object of my improvement is to provide means for quickly securing the two coupling-sections together and for packing the joint between them, all as hereinafter fully described.

The accompanying drawings illustrate my invention.

Figure 1 represents a side elevation of the male portion of the coupling and its hose-section disconnected. Fig. 2 represents a central longitudinal section of the same after the hose has been connected to the coupling. Fig. 3 represents a central longitudinal section of the female portion of the coupling having its hose connected thereto. Fig. 4 represents an end elevation of the male portion of the coupling. Fig. 5 represents an end elevation of the female portion of the coupling. Fig. 6 represents a transverse section of the female portion of the coupling at *a*, Fig. 3. Fig. 7 represents a central longitudinal section of the entire coupling.

A is the male portion of the coupling, and B is the female portion.

C and D are the two sections of hose to be coupled. Coupling A is of suitable size at one end *b* to fit the interior of the hose C.

E is an annular flange projecting outwardly from A and screw-threaded on its outer edge. One face of flange E is recessed at *f* to receive the end of the hose C. The outer edge of recess *f* is tapered inward at *g* to receive the edge of a thin open ring G, which embraces the exterior of the hose and has oppositely-tapered edges *h* and *i*. Ring G is cut so that its ends overlap, as at *j*, and thus permit the expansion or contraction of the ring.

K is a short sleeve threaded interiorly and adapted to slip over ring G and screw onto flange E, and having an interior tapered surface *l*, adapted to receive the outer tapered edge of ring G.

The end *b* of the coupling projects into the hose, which is securely clamped to the coupling by screwing sleeve K onto flange E, and thus contracting ring G by bringing its edges against the inclined surfaces *g* and *l*. The other face of flange E forms a shoulder *m*, and that end of the coupling is provided at its outer end with two series of short radial projections *n* and *o*, arranged at regular intervals in two lines around the periphery of the coupling. Projections *o* are only about one-half the width of projections *n*, and arranged opposite the centers of *n* and at the extreme end of the coupling, there being a narrow space *p* between the two projections.

The female portion B of the coupling is provided at one end with a tubular portion *r*, adapted to fit the interior of hose D, which is secured thereto, by means of a ring G, sleeve K, and flange E, in exactly the same manner that hose C is secured to coupling A. The other end of coupling B consists of an enlarged tubular portion *s*, of sufficient internal diameter to receive the projections *n* and *o* of the coupling A, and an outer sleeve V, and it is provided with two series of inwardly-projecting annular ribs *t* and *u*, arranged in two lines around the interior of the coupling. The spaces between ribs *t* are sufficient to allow the free passage of the projections *n* of coupling A, and the spaces between ribs *u* are sufficient to allow the passage of the projections *o* of the same coupling, the arrangement being such that the spaces between ribs *u* are twice as many as those between ribs *t*, and are opposite ribs *t*, and also opposite the spaces between them. The longitudinal distance between ribs *t* and *u* is such that when the parts A and B are coupled together the inner sides of projections *n* are against the inner sides of ribs *t*, as in Fig. 7, and the projections *o* of coupling A will be in line with and between the ribs *u* of the coupling B.

The outside of portion *s* of coupling B is provided with an enlarged screw-threaded portion *w*, adapted to receive the interiorly-threaded shell V, there being an annular space *x* between the remaining portion of *s* and the interior of shell V. The outer end of shell V is provided with an inwardly-projecting flange *y*, which serves to retain an annular

packing-ring *z* and an annular washer 1, which are normally forced outward by a spiral spring 2, arranged in space *x*.

The operation of my device is as follows:

- 5 The couplings A and B having been secured to their respective hose-sections by means of rings G and sleeves K, as before described, coupling A, being turned so that its projections *n* and *o* are opposite the spaces between
- 10 the ribs *t* of coupling B, is easily inserted into B until shoulder *m* of coupling A rests against the outer face of packing-ring *z*. The couplings are then forced together longitudinally and at the same time turned in either direc-
- 15 tion, the projections *o* engaging the inner inclined surfaces of ribs *u*, thus compressing spring 2 until the projections *o* of coupling A pass inward beyond the ribs *u* of coupling B. When the projections *o* come opposite
- 20 the next spaces between the ribs *u*, then spring 2, pressing outward against washer 1, packing-ring *z*, and shoulder *m*, forces coupling A outward until its projections *o* are thus brought into the spaces between ribs *u*,
- 25 in line therewith, and opposite ribs *t*. The two couplings in this position are securely locked together and cannot be turned or separated until again forced together longitudinally.
- 30 When the hose is filled with water, the pressure of the water against washer 1 and packing-ring *z* operates to force the packing-ring against shoulder *m*, and thus seals the joint between the two coupling-sections, and also
- 35 prevents the longitudinal movement of one section upon the other, and consequent uncoupling.

I claim as my invention—

1. In a hose-coupling, the combination of

the male coupling having shoulder *m*, the female coupling adapted to interlock therewith and having shell V and flange *y*, and packing-ring *z*, inclosed in said shell and arranged to engage said flange *y* and shoulder *m*, whereby the two couplings, when locked together, are prevented by the water-pressure from unlocking and the joint between them is sealed, as set forth.

2. In a hose-coupling, the combination of the coupling A, adapted to be secured to a section of hose and having a tubular portion provided with two series of exterior radial projections *n* and *o*, arranged in pairs, the coupling B, adapted to be secured to a section of hose and having a tubular portion adapted to receive the tubular portion of coupling A, and provided with the two series of interior ribs *t* and *u*, arranged and adapted to interlock with the projections *n* and *o*, in the manner shown and described.

3. In a hose-coupling, the coupling A, adapted to be secured to a section of hose and having a shoulder *m*, and a tubular portion provided with two series of exterior radial projections *n* and *o*, arranged in pairs, the coupling B, adapted to be secured to a section of hose and having a tubular portion provided with the two series of interior ribs *t* and *u*, arranged and adapted to interlock with the projections *n* and *o* of coupling A, in the manner shown and described, the sleeve V, packing-ring *z*, washer 1, and spring 2, all combined and arranged to co-operate substantially as and for the purpose specified.

LEWIS J. RICE.

Witnesses:

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