

No. 807,417.

PATENTED DEC. 12, 1905.

S. S. CASKEY.
COUPLING.

APPLICATION FILED MAY 26, 1903

Fig. 1.

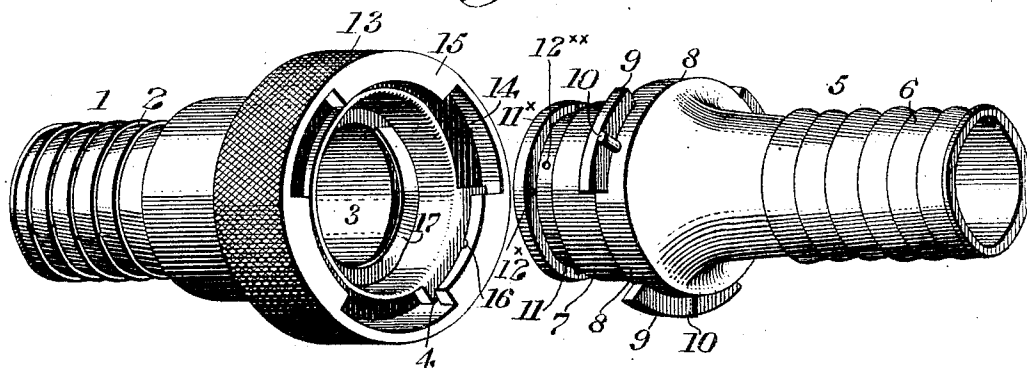


Fig. 2.

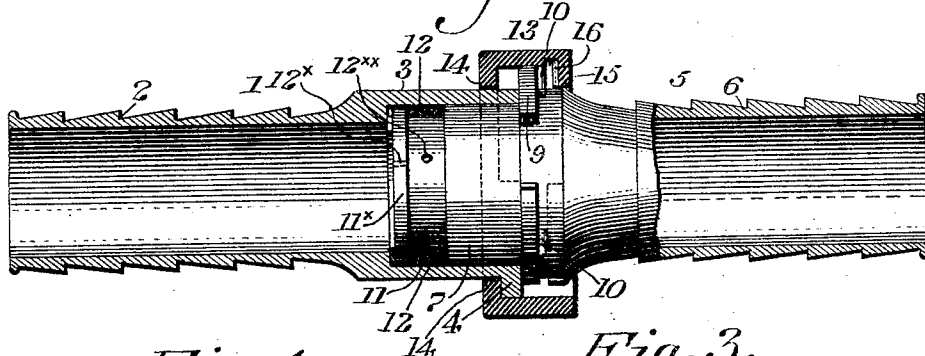


Fig. 3.

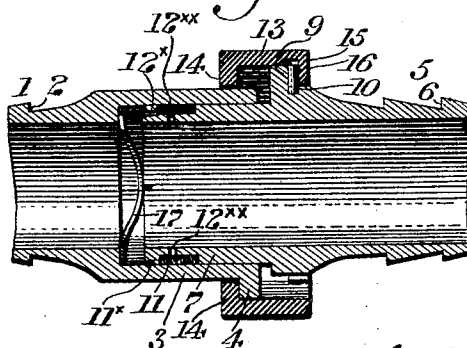
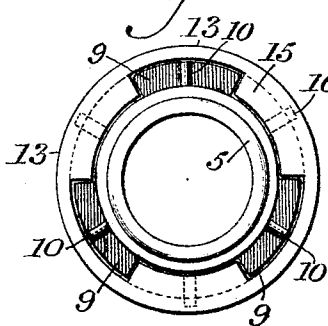


Fig. 4.



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COUPLING.

No. 807,417.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, SAMUEL S. CASKEY, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Couplings, of which the following is a specification.

My invention relates to a novel coupling adapted to join lengths of hose or the like.

It consists of means for facilitating coupling and uncoupling, while preventing accidental uncoupling.

It further consists of novel features of construction, all as will be hereinafter set forth.

Figure 1 represents a perspective view of the members of my coupling detached from each other. Fig. 2 represents, in partial section and partial elevation, the members in the act of being disconnected. Fig. 3 represents a longitudinal section of the members connected. Fig. 4 represents a transverse elevation of the device as shown in Fig. 2 looking toward the left.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings, 1 designates the female member of the coupling having annular hose-attaching grooves 2, an enlarged head 3, and lugs 4.

5 designates a second or male member of the coupling also having hose-attaching grooves 6, a head portion 7, adapted to enter the head 3, and a flange 8, from which projects lugs 9. At the rear of one or more of the lugs 9 is a radial or other projection 10, preferably formed, as shown, by drilling radially into the flange 8, adjacent the lug 9, and driving in a pin. A groove 11 in the head 7 is adapted to receive a packing-ring 12. Through the wall 11^x at the end of the groove 11 or through the wall of the groove itself are drilled small holes 12^x or 12^{xx}, as shown in Figs. 1 and 3. It will be apparent that both sets of holes may be employed or only one, as may be desired. A coupling-ring 13 has at one end an inwardly-extending annular flange 14 and at the other end a plurality of inwardly-projecting lugs 15, the spaces between which correspond to the lugs 4 and 9. At the inner side of one or more of said lugs 15 is formed a recess 16, adapted to receive the projection 10 when the lugs 9 bear against the lugs 15, thereby forming a practical and efficient lock for the coupling members. This recess 16 may be conveniently made by drilling through the wall of

the ring 13, as shown, or by coring, as is evident.

A spring 17 may be interposed between a shoulder at the inner end of the head 3 and the end of the head 7. As shown, the spring is of segmental form; but it is evident that any form of thrust-spring, as a helix, will equally perform the required function, and this spring may be omitted in practice.

The operation is as follows: The head 3 is slipped over the male member 7, the lugs 4 bearing against the flange 14 of the ring, the spring 17, if used, appearing substantially in the position shown in Fig. 3. The head 7 of the member 5 being then passed through the ring 13 and into the head 3 of the member 1 compresses said spring. A partial rotation of the member 5 brings the lugs 9 and the projections 10 opposite the recesses 16 in the lugs 15, whereupon the spring 17, if used, acts to seat these projections 10 in the recesses 16, and thus to prevent the disengagement of the coupling members except when purposely forced toward each other.

I desire it understood that in practice in many instances the spring 17 may be dispensed with, in which case, assuming that the parts are assembled as seen in Fig. 3, it will be apparent that the pressure of the compressed fluid within the coupling-section will tend to force the sections apart, or, in other words, to tightly seat the projections 10 against the contiguous recesses 16 in the lugs 15, the above-described operation being automatic. So long as fluid-pressure is exerted upon the interior of the coupling-sections it will be apparent that the latter cannot be disconnected without the application of considerable compression of the coupling members.

It will be noted that any fluid-pressure in the coupling will be admitted behind or underneath the packing-ring 12 by means of the small holes 12^x or 12^{xx}, thereby forming a tight joint.

I am aware that it has heretofore been proposed to unite coupling-sections by means of bayonet-joints and cam-surfaces and separable threaded rings; but I desire to call attention to the fact that in my invention I am enabled to dispense with certain of these objectionable features, and thereby reduce the expense of manufacture, since no machine-work is required in making ground joints or metallic sealing-surfaces.

I desire also to call especial attention to the

fact that no wrenches are necessary to unite the coupling-sections and that the sections of hose coupled together are permitted to turn freely under pressure without any tendency to uncouple or to impair the requisite tight joint.

Attention is also directed to the fact that in my device there are no projecting lugs exterior to the coupling-sections which are liable to be accidentally hit or turned during the manipulation of the hose or if the same is dragged along the ground.

It will be evident that various changes may be made by those skilled in the art which will come within the scope of my invention, and I do not, therefore, desire to be limited in every instance to the exact construction herein shown and described.

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

1. A coupling comprising male and female members, a detachable ring adapted to inclose said members, means for the admission of a fluid-pressure in a direction to force said members asunder, interlocking devices common to said ring and one of said members, fastening devices common to said ring and the other member, said ring being interlocked with one of said members, said members being compressible in a direction opposite to the admission of the fluid-pressure, to uncouple, packing interposed between the male and female members, and means for admitting fluid-pressure from within the coupling radially and longitudinally against said packing, said ring and its interlocked member being freely rotatable with respect to the other member when under pressure.

2. A coupling comprising a male and a female member, a detachable ring adapted to embrace said members, means for the admission of a fluid-pressure in a direction to force said members asunder, interlocking devices common to said ring and one of said members, fastening devices common to said ring and the other member, said ring being interlocked with one of said members, said mem-

bers being compressible in a direction opposite to the admission of the fluid-pressure, to uncouple, packing seated in an annular recess in the male member intermediate the said members, and means for admitting fluid-pressure from within the coupling into said groove both radially and longitudinally against said packing, said ring and its interlocked member being freely rotatable with respect to the other member when under pressure.

3. A coupling comprising male and female members connected to turn freely under pressure and adapted for engagement by means of their relative rotation, and compressible in a direction opposite to the admission of the fluid-pressure, to uncouple, projections on one of said members adapted to engage with recesses in the other member, a packing around the male member, passages in said male member both radially and longitudinally thereof for admitting fluid-pressure against said packing in directions at right angles to each other, a detachable ring adapted to interlock with one of said members and means for forcing said projections into said engaging recesses.

4. A coupling comprising male and female members connected to turn freely under pressure and adapted for engagement by means of their relative rotation, and compressible in a direction opposite to the admission of fluid-pressure, to uncouple, projections on one of said members adapted to engage with recesses in the other member, a packing around the male member, passages in said male member both radially and longitudinally thereof for admitting fluid-pressure from within the coupling against said packing in directions at right angles to each other, a detachable ring adapted to interlock with one of said members, and a spring bearing against the inner end of the male member and against a bearing within the female member and tending to force said members apart and in the direction of the admission of the fluid-pressure.

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