H. HANDOLL.

HOSE COUPLING.

APPLICATION FILED NOV. 20, 1915.

1,196,680. Patented Aug. 29, 1916.

Fig. 1.

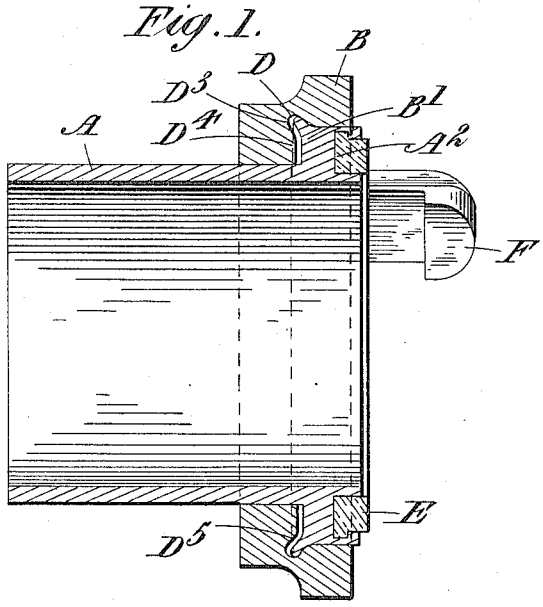
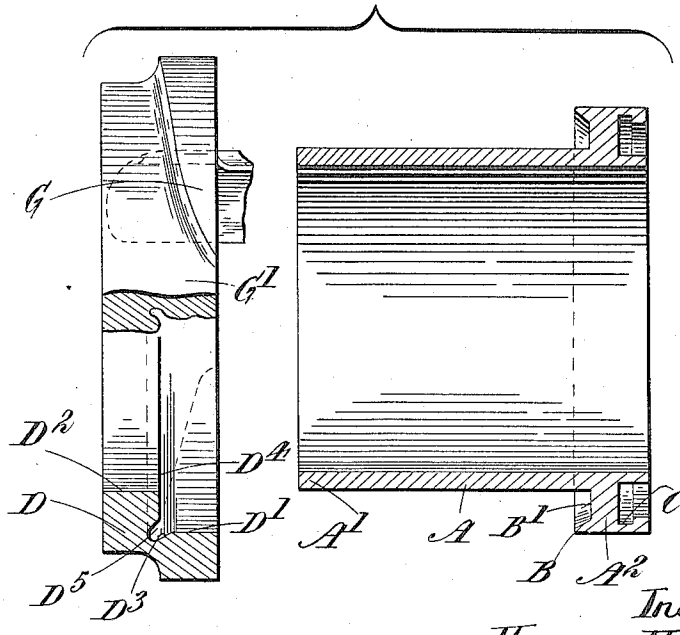


Fig. 2.



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UNITED STATES PATENT OFFICE.

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HOSE-COUPLING.

1,196,680. Specification of Letters Patent. Patented Aug. 29, 1916.

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To all whom it may concern:

Be it known that I, HENRY HANDOLL, a subject of the King of England, residing in London, England, have invented certain new and useful Improvements in Hose-Couplings, of which the following is a specification.

This invention is for improvements in or relating to a hose-union and to a method of constructing it. As each half-coupling of a hose-union is identical a description of one of them will suffice for both.

According to the present invention a method of constructing a half-coupling for a hose-union in which two metal members are to be engaged with freedom for relative rotation is characterized by the deformation of a flange or projection on one of them into a pocket in the other by a face constituted by one wall of the pocket or by a surface provided for the purpose and adjacent to that pocket. More particularly in forming such a half-coupling the two metal members are provided with bearing-surfaces which abut at the finish of the operation of deforming the flange or projection so that the bearing-surfaces constitute a stop limiting the degree of relative movement which can be imparted to the members during the operation of the deformation of the flange.

The invention also includes a half-coupling constructed by the methods above referred to.

Other features of the invention will be more clearly understood by reference to the following description taken in connection with the accompanying drawings which illustrate one preferred embodiment of the invention and in which—

Figure 1 is a central section of the two members of the device when they are assembled and interengaged, and Fig. 2 is mainly a central section of the two members separated from one another before being assembled and interengaged.

The drawings illustrate, in detail, a half-coupling of a hose-union of which, as will be seen in Fig. 2, the inner member A constitutes, at the end A^1, a sleeve to which the hose may be attached in any desired manner while at the other end it is provided with an enlargement, designated as a whole by the reference character A^2.

The part A^2 is formed with a projecting annular flange B which extends mainly in an axial direction and which may be conveniently formed by removing or cutting away the material at the region of the face B^1. The enlargement A^2 is also provided with an undercut portion, as at C, to receive the flange of a packing ring as will be hereinafter described.

The outer member D of the coupling is formed so that its internal diameter, at the surface D^1, is sufficiently large to enable it to pass over the projection B while at the surface D^2 the diameter is sufficient to allow the member to slide over the end A^1 of the member A. An annular slot or pocket is formed at D^3 and the mouth of the pocket is so disposed that as the outer member is caused to slide along over the inner member the projection B will pass into the pocket.

In assembling the two parts after the flange B has passed into the pocket D^3 it will be engaged by one wall, such as D^5, of the pocket and will be deformed until it assumes the position and formation illustrated in Fig. 1 and the limit of its deformation is determined by the bearing-surface D^4 abutting against the surface B^1.

It will be seen from consideration of Fig. 1 that after the flange B has been deformed in the manner described, it becomes locked within the pocket to prevent the withdrawal of the two parts from one another although the dimensions of the pocket and the flange may be such as to allow a certain limited play between the two parts. The construction is such, however, that the members A and B may rotate independently of one another.

The recess C in the enlargement A^2 receives the flange of a compressible ring, for example a rubber ring, E, which may be easily deformed and sprung into place as will be readily understood.

The outer member is provided with the usual hooked extensions as at F at opposite ends of a diameter, also with cam or wedge surfaces G and gaps G^1 between the commencement of the wedge surface and the hook so that a similar coöperating half-coupling may be engaged with it in the customary manner. Such an engagement will cause a compression between the packing ring E and a similar packing ring on the coöperating half-coupling to bring about the required fluid-tightness of the joint.

It will be at once seen that the advantages of the present invention are that the customary locking and packing rings used

in connection with the outer member to hold it in position on the inner member are done away with, while the efficiency of the coupling and the ease with which it may be manipulated are in no way impaired.

Although one particular construction of hose-coupler according to this invention has been described in detail with the aid of the accompanying drawings, it is obvious that modifications may be made in the details as may be found convenient provided always that the spirit of the invention, as defined by the claims, is not departed from.

What I claim as my invention and desire to secure by Letters Patent is:—

1. A hose coupling member comprisng an inner tube provided with a cylindrical boss, said boss provided at its rear end with a rearwardly projecting annular rib, and an outer ring revolubly mounted on said inner tube, and having a cylindrical chamber adapted to receive said cylindrical boss, and an annular groove projecting at an angle rearwardly and outwardly, said annular rib engaging and being distorted by said annular groove, thus locking said tube and said ring in engagement, said ring being provided with a hook and a cam surface adapted to engage a corresponding cam surface and hook on the opposite member, substantially as described.

2. A hose coupling member comprising an inner tube provided with a cylindrical boss, said boss being provided at its front end with an annular chamber having an over-hanging lip at its orifice and at its rear end with a rearwardly projecting annular rib, an outer ring revolubly mounted on said inner tube, and having a cylindrical chamber adapted to receive said cylindrical boss, and an annular groove projecting at an angle rearwardly and outwardly said annular rib engaging and being distorted by said annular groove, thus locking said tube and said ring in engagement, said ring being provided with a hook and cam surface adapted to engage a corresponding cam surface and hook on the opposite member, and a packing ring sprung into said annular chamber and locked in place by said over-hanging lip, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY HANDOLL.

Witnesses:

HARRY S. DODGE,

GEORGE WESTON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."