

W. A. CASWELL.
HOSE-COUPLING.

No. 170,155.

Patented Nov. 23, 1875.

Fig. 1.

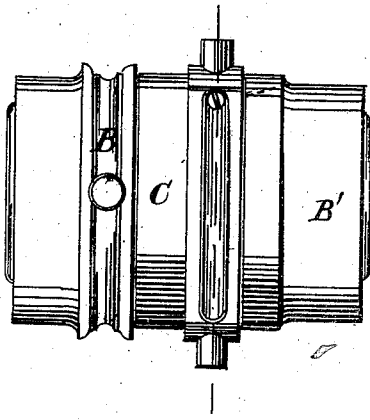


Fig. 2.

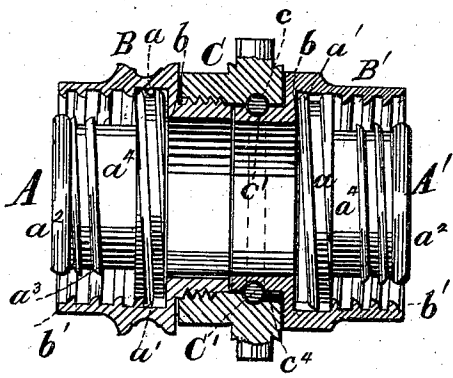
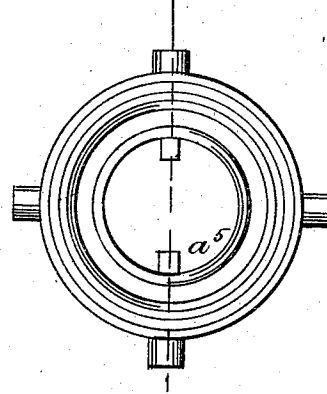


Fig. 3.

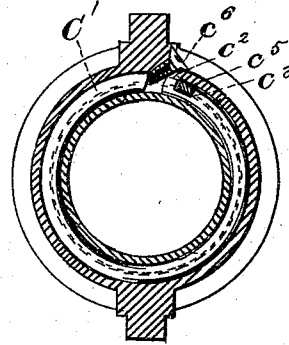
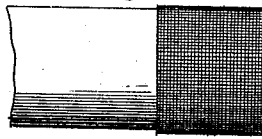


Fig. 4.

Fig. 5.



Witnesses:
A. Rupert.
A. Edw. Eils

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Inventor:
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UNITED STATES PATENT OFFICE.

WILLIAM A. CASWELL, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF
HIS RIGHT TO E. B. PRESTON, OF SAME PLACE.

IMPROVEMENT IN HOSE-COUPINGS.

Specification forming part of Letters Patent No. **170,155**, dated November 23, 1875; application filed
July 26, 1875.

To all whom it may concern:

Be it known that I, WILLIAM A. CASWELL, of Chicago, in the county of Cook and State of Illinois, have invented a certain Improvement in Hose-Couplings, of which the following is a specification:

The nature of my invention consists, mainly, in improving the manner of confining the end of the hose between the tail-piece of the coupling and an encircling sleeve, of connecting the tail-piece and the encircling sleeve, and of securing the swivel, all the details of which will be fully explained in the ensuing description, and specifically pointed out in the claims.

In the annexed drawings, Figure 1 is a side elevation of my improved hose-coupling. Fig. 2 is an end view of the same. Fig. 3 is an axial section. Fig. 4 is a transverse section.

The same letters of reference are used in all the figures in the designation of identical parts.

The respective tail-pieces A and A' are connected, in manner hereinafter stated, to the sleeves B and B', to the latter one of which the swivel C is permanently attached. The respective tail-pieces are constructed exactly alike, so that a description of one will answer for both. Each has an encircling flange, *a*, at the inner end, designed to confine a washer between it and the shoulder *b*, formed on the interior of the encircling sleeve, so as to form a water-tight joint at this point. A screw-thread, *a*¹, is cut upon the surface of the flange *a*, which has a width of half an inch, more or less, to engage a corresponding female thread, *b*¹, upon the interior surface of the encircling sleeve. The exterior end of the tail-piece terminates in a circular bead, *a*², and from that starts a screw-thread, *a*³, which makes three or four turns around the tail-piece, terminating some distance from the flange *a*, leaving a smooth surface, *a*⁴, between the flange and the thread *a*³. The beaded and threaded end of the tail-piece is made slightly tapering, increasing in size toward the outer end. The screw-threads *a*¹, *b*¹, and *a*³ are of quadrantal form in cross-section, as clearly shown in Fig. 3, the vertical side of the threads *a*³ and *b*¹ facing the shoulder *b*, while the vertical side

of the thread *a* faces the other way, so as to interlock securely with the corresponding side of the thread *b*¹. This form of thread has been adopted with a special view of avoiding injury to the hose on applying the tail-piece and encircling sleeve.

The method of applying the hose is as follows: The tail-piece is placed on a socket-wrench, having a notch to engage the projection *a*² on the interior surface of the tail-piece. The wrench, with the tail-piece on it, is then clamped in a vise, and the rubber or other hose, after expanding it sufficiently to pass over bead *a*², is slipped onto the end of the tail-piece, and screwed home until it brings up against flange *a*. The rounded side of the screw-thread advancing into the hose will not injure it in any way.

The distance which the flange *a* projects from the surface of the tail-piece—its height, in other words—will be calculated so that the exterior surface of the hose, when applied to it, shall, where it abuts on the flange, be about flush with the summit of its thread *a*¹.

After the hose and tail-piece have been united in the manner stated the encircling sleeve is screwed onto the flange *a* of the tail-piece, and as it progresses upon the flange it will also screw upon the end of the hose, which is thus firmly confined and considerably compressed between the tail-piece and the encircling sleeve, the firm union of the parts being aided by the tapering form of the tail-piece. Of course, a tight connection is thus made; but this is not solely depended on for a tight joint between the hose and the encircling sleeve and flange *a*, for a gasket is also placed between flange *a* of the tail-piece and shoulder *b* of the encircling sleeve, as already stated. Beyond the shoulder *b* each sleeve is somewhat reduced, the sleeve B having an ordinary screw-thread cut upon this reduced end, to be engaged by a corresponding female thread in one end of swivel C. In the other end of swivel C, which is snugly fitted on the end of sleeve B', a groove, *c*, of semicircular form in cross-section, is turned, matching a similar groove, *c*¹, turned on the end of sleeve B'. The swivel C and sleeve B' are permanently connected, so that

the swivel may freely turn on the sleeve, by inserting a wire, C' , into the circular channel formed by the grooves c and c' .

The mode of applying this wire is as follows: A tangential aperture, c^2 , is bored through the boss surrounding one of the spanner-studs of the swivel, leading into the groove c . Through this hole the end of the wire, provided near its end with a transverse notch, c^3 , is inserted to enter the channel. A notch, c^4 , is also cut in the surface of the swivel, leading to the groove c' . Through this notch a key, c^5 , is driven, to engage the notched end of the wire. Then, by turning the sleeve in the swivel, the wire may be readily drawn into the channel. After the wire has been thus inserted the hole c^2 is closed by a plug, c^6 , preferably a screw, as shown. By removing the plug c^6 and turning the swivel back the wire may also be readily withdrawn, its tendency to straighten causing its free end to pass into the tangential hole c^2 .

The main advantage of the foregoing mode of uniting the swivel and the sleeve is, that if any injury is done to the swivel by hard usage it can be removed and repaired, or a new one substituted for it, without disturbing the connection of the sleeve, tail-piece, and hose.

It will be seen that the bead a^2 projects considerably beyond the threads a^3 . Thus, should the sleeve and tail-piece fail to clamp the hose sufficiently between their threads to secure a tight joint, the bead, pressing the hose forcibly into the extreme end of the sleeve, will infallibly secure this essential.

I prefer always to wrap the end of the hose

either with cloth-brass or ordinary cloth, preferably the latter, before applying the sleeve, both for the purpose of a packing which shall prevent the corrosion of the hose and of a protector against injury to the hose in the act of screwing the sleeve upon it. Fig. 5 shows a section of hose thus wrapped with cloth, which may be lubricated with soap or cement, to facilitate the application of the sleeve.

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

1. The tail-piece of a hose-coupling, having a screw-threaded flange at one end, a circular bead at the other, and a partly screw-threaded and partly smooth surface between them, substantially as and for the purpose specified.

2. The combination of the herein-described flanged tail-piece with an encircling sleeve, having a female screw-thread and an inwardly-projecting shoulder, substantially as and for the purpose specified.

3. The sleeve and swivel of a hose-coupling, connected together by a wire inserted in a circular channel formed in part in the swivel and in part in the sleeve, the wire being keyed fast at one end, substantially as and for the purpose specified.

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

WILLIAM A. CASWELL.

Witnesses:

B. T. C. PEASE,
GEO. D. PEASE.