

A. WORK.
Hose-Couplings.

No. 148,540.

Patented March 10, 1874.

Fig. 1.

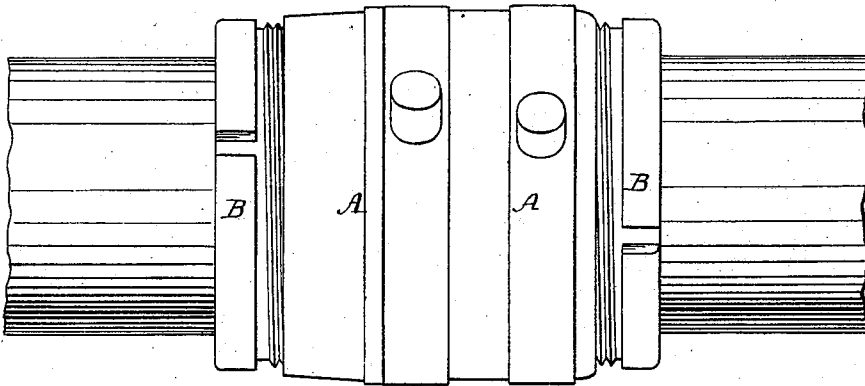


Fig. 2.

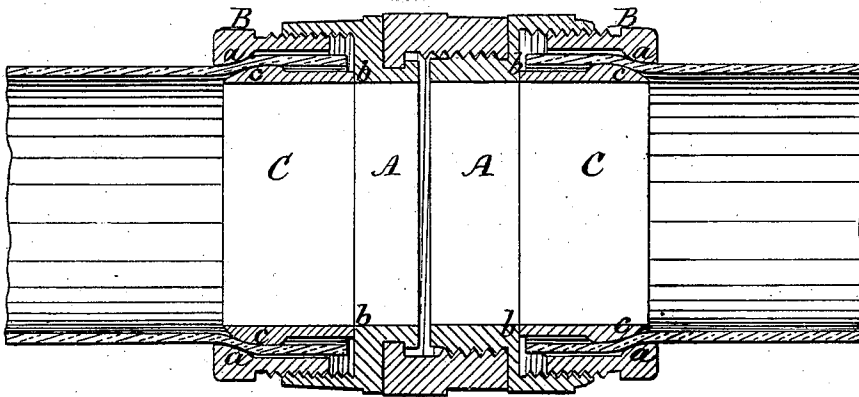
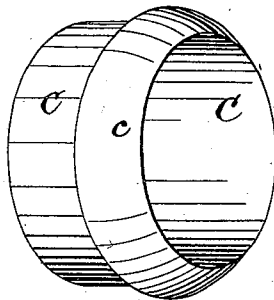


Fig. 3.



Witnesses
Philip H. Garner
A. B. Caldwell

Inventor
Alanson Work-
By Wm. B. Wood
Attorney

UNITED STATES PATENT OFFICE.

ALANSON WORK, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN HOSE-COUPPLINGS.

Specification forming part of Letters Patent No. **148,540**, dated March 10, 1874; application filed February 20, 1874.

To all whom it may concern:

Be it known that I, ALANSON WORK, of the city and county of Providence, in the State of Rhode Island, have invented certain new and useful Improvements in Hose-Couplings; and I do hereby declare that the following specification, taken in connection with the drawings furnished and forming a part thereof, is a clear and true description of my invention.

My invention consists in combining with a section of hose-coupling and a threaded sleeve, which is provided with an inward annular projection at its outer end, an independent interior clamping-ring of peculiar construction, so arranged, with relation to the coupling-section and the sleeve, that, when the latter is advanced with the hose toward the former, the rear end of the clamping-ring and an interior annular shoulder in the coupling-section will be in contact, thereby causing an annular portion of the hose to be clamped or compressed between the outer end of the clamping-ring and the inner surface of the interior annular projection on the sleeve.

Referring to the drawings, Figure 1 represents a set of my improved couplings. Fig. 2 represents the same in longitudinal section. Fig. 3 represents one of the independent interior clamping-rings detached from the couplings.

A denotes, in each instance, one of the two sections of a hose-coupling. These sections differ from each other only so far as is necessary to enable them to match and couple in a manner well known. B denotes a threaded sleeve, which may be provided either with an exterior or interior screw at its inner end for engaging with the corresponding screw-threads on one of the sections of the coupling. This threaded sleeve is essentially provided with an interior annular projection, *a*, at its outer end, so as to present at that point an interior diameter a little less than the exterior diameter of the hose with which it is to be used. For convenience it should be provided with projections or recesses with which a vise or hose-coupling wrench may firmly engage when hose and couplings are to be united. The interior of the coupling-section is also essentially provided with an annular bearing-shoulder, *b*. C denotes the independent interior

clamping-ring. It is preferably to be composed of non-corrosive metal, and of such character and thickness at its front end as will permit it to change from a circular to an oval form, should the particular character of the hose require it. Its length should be somewhat greater than that of the sleeve, and its interior diameter equal to that of the main section. Its rear end should be squared off, so as to present a good bearing-surface against the bearing-shoulder *b* of the main coupling-section A. Its front end is essentially provided with an inclined or rounded edge, as at *c*. An exterior annular projection may also be provided adjacent to the inclined or rounded surface; or the ring may be of uniform thickness; but, in either case, there should be between the exterior of the ring and the interior of the threaded sleeve, between the projection *a* and its inner end, an annular space or recess, somewhat deeper than the thickness of the hose with which it is to be used, it being desirable that the hose be principally compressed or clamped between the inclined surface of the ring C and the coincident surface of the projection *a* of the sleeve B.

When applied to hose, the sleeve is put thereon with its inner end flush with the end of the hose. The inclined end of the clamping-ring C is then inserted and driven home with a mallet. When so adjusted, its rear end should project considerably beyond the sleeve, so that when the sleeve is turned into or upon the main section of the coupling, the rear end of the ring and the shoulder *b* will be in bearing contact.

It will be seen when the parts are so adjusted, the threaded sleeve held stationary, and the main section A rotated, that no movement whatever will be imparted to the clamping-ring C, but as the sleeve and section approach each other, the coincident clamping-surfaces of the ring and sleeve are brought nearer to each other, and engage with the hose only at that point, and therefore if the hose be thicker on one side than on the other, the front end of the ring will be forced to assume an oval form, or adapt itself to the varied thickness, and yet clamp at all points with uniformity. It will be seen too that my improved coupling can be adapted without material

change for use with thick or thin hose, as the variations therein can only cause the clamping-ring to project a greater or lesser distance beyond the sleeve, and that in all cases the coincident clamping-surfaces will be brought into such relations with each other as to engage properly with the hose.

It is well known that rubber hose after continued use becomes so firmly united with the brass of a coupling with which it is in close contact under pressure, that great difficulty is experienced in detaching old and worthless hose therefrom, and also that emergencies frequently arise in which it is important that bursted hose (which generally bursts at the coupling) should be recut and promptly re-attached to the same couplings. With my improvements this is readily effected, as on withdrawing the sleeve the projecting clamping-ring can readily be started out, and properly replaced without difficulty.

In applying my couplings no possibility exists of abrading or cutting the exterior or interior surfaces of the hose, as both clamping-

surfaces either remain stationary or move together during the rotation of the main section or the sleeve, and that the only movement possible to the sleeve or the ring independently of the other is a longitudinal movement, by which the clamping-surfaces are brought together or separated.

I am aware that interior rings have heretofore been employed with exterior sleeves and the necks of couplings.

I claim herein as new, to be secured by Letters Patent—

A matched section of hose-coupling having an interior bearing-shoulder and a threaded connection at its neck, and a threaded sleeve fitted thereto, provided at its outer end with an interior annular projection, in combination with a clamping-ring having a bearing-surface at its rear end, and an inclined clamping-surface at its outer end, substantially as described.

ALANSON WORK.

Witnesses:

JOHN C. PURKIS,
CHARLES SELDEN.