WILLIAM D. ALFORD.

Improvement in Pipe-Couplings.

No. 114,511. Patented May 9, 1871.

Fig. 1.

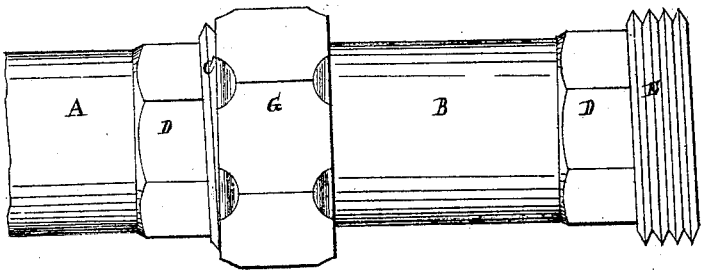


Fig. 2.

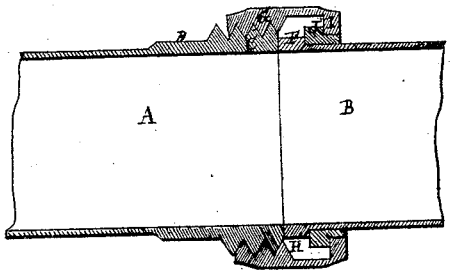


Fig. 3.

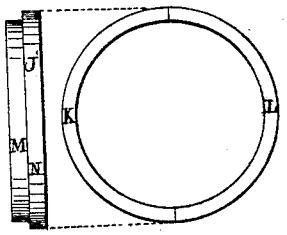


Fig. 4.

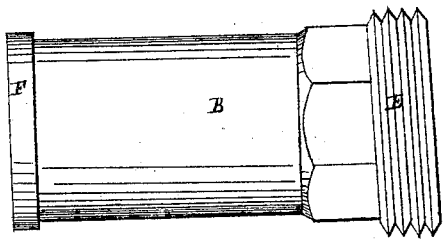
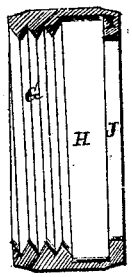


Fig. 5.



Inventor
Wm D Alford
per Burridge & Co
Attorneys

Witnesses.
D L Humphrey
Howard Ewing

Amted States Patent Office.

WILLIAM D. ALFORD, OF CUYAHOGA FALLS, OHIO.

Letters Patent No. 114,511, dated May 9, 1871.

IMPROVEMENT IN PIPE-COUPLINGS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, WILLIAM D. ALFORD, of Cuyahoga Falls, in the county of Summit and State of Ohio, have invented a new and improved Pipe-Coupling, of which the following is a description, reference being had to the accompanying drawing making part of this specification.

Figure 1 is a side view of the pipe-coupling.

Figure 2 is a transverse longitudinal section.

Figure 3 is a detached section.

Figure 4 is a detached section of pipe.

Figure 5 is a transverse section of a coupling-nut.

Like letters of reference refer to like parts in the different views.

The nature of this invention relates to a mode of coupling sections of pipe together by means of a chambered nut in which is fitted a collar, whereby the end of one section of pipe is held in the nut while the other is being screwed up for contact therewith.

A more full and complete description of the coupling is as follows:

In fig. 1 A B represent two sections of pipe, which may be of any desirable length and caliber.

On the end of section A is cast a screw, C, having, in connection therewith, a nut-like collar, D, whereby the screw is turned by a wrench.

A similar screw and collar, E, is cast on the end of the section of pipe B, whereas, on the opposite end is cast a plain ring or collar, F, fig. 4, the purpose of which will presently be shown.

G, fig. 1, is a nut having therein a thread of the proper size and pitch to fit the thread C on the end of the pipe A, as shown in fig. 2.

A detached transverse sectional view of said nut is shown in fig. 5, in which it will be seen that a section of the thread of said nut is cut out, forming, thereby, an annular recess or chamber, H, around the inside, close to and in continuity with the thread on the one side, and an internal shoulder, I, on the other, as shown in fig. 5.

The diameter of the opening J, surrounded by the shoulder I, merely exceeds the diameter of the end of the pipe B, including the collar F, to allow its admission into the chamber H, and into which it is inserted for the purpose of coupling the two sections of pipe together, as hereinafter described.

J', fig. 3, represents a ring. Said ring consists of two sections, K L, which, however, may be more in number if desired.

That part M of the ring is of a size to fit in the opening J of the nut, whereas the larger part N forms a collar, which, when the ring is in the nut, it projects beyond the opening and rests upon the shoulder I of the nut, as shown in the transverse section, fig. 2, in which J' is the ring shown detached in fig. 3, and of which N is the larger part or collar, resting upon the shoulder I of the nut, and M the smaller part, interposed between the pipe B and the edge of said shoulder I.

Having described the construction of the several parts of the coupling, the practical operation of the same is as follows:

The end of the pipe B having the collar F thereon is inserted in the opening J of the nut. In order to prevent it from being withdrawn therefrom the sections of the ring J' are placed in the chamber of the nut, so that they shall encompass the body of the pipe back of the collar F thereon. Now, as the body of the pipe is smaller than the opening J of the nut, the space between it and the shoulder I is filled by the smaller part M of the ring, thus, in effect, adding the thickness of the smaller part of the ring to the diameter of the pipe, making it equal in diameter to the extreme end inclusive of the collar F.

In this position of the ring it will be obvious that the pipe B cannot be withdrawn from the nut, as the collar N or the thickest part thereof projects over onto the shoulder I of the nut, as shown in fig. 2, and against which the shoulder of the collar F rests, which, in effect, is the same as though the collar F was made of the same diameter as the larger part of the ring, which, however, could not be, as in that case it could not be made to pass through the opening J of the nut.

The pipe B, ring, and nut, on being thus arranged, the nut G is then slipped back onto pipe B; the end of the pipe A is then placed against the end of pipe B. The nut is now moved forward and screwed onto the section of pipe A, thereby drawing it hard against the end of section B, and the collar forming a close, tight, abutting joint, as shown in fig. 2, thereby completing the connection of the two sections of pipe, as shown in fig. 1, and which is rendered all the more secure by the interposition of a gasket.

In this manner of coupling pipe it will be obvious that the labor of turning the pipe is avoided, the nut only being turned, allowing the sections of pipe to remain at rest during the act of making the connection.

By this mode of connection I am enabled to make an abutting joint, by the use of a single screw, which is simple in construction, easy to manipulate, tight, and durable. By the use of the supplementary ring or sections of ring, fig. 5, I am enabled to cast the ring F on the end of the pipe, thereby making a stronger and more durable joint than when the ring F is shrunk upon the end of the pipe in the ordinary way, which requires that the end of the pipe be first inserted in the nut, and the ring, which is of larger diameter than the bore of the nut, is shrunk thereon,

which is often very insecure, as the ring is quite liable to be pulled off, in consequence of the screwing up of the nut, which cannot happen when the collar is cast on, as in my coupling, which, though of less diameter than the bore of the nut, cannot pull out, in consequence of the resistance offered by the supplementary ring, fig. 5.

Claim.

What I claim as my improvement, and desire to secure by Letters Patent, is—

The chambered nut G, provided with the shoulder I, in combination with the sectional ring J and pipe-sections A B, constructed and arranged in relation to each other, as and for the purpose substantially set forth.

WILLIAM D. ALFORD.

Witnesses:
J. H. BURRIDGE,
D. L. HUMPHREY.