

H. K. FLAGLER & C. F. BROWN.

THE ART OF COUPLING SECTIONS OF PIPES OR TUBING.

No. 170,473.

Patented Nov. 30, 1875.

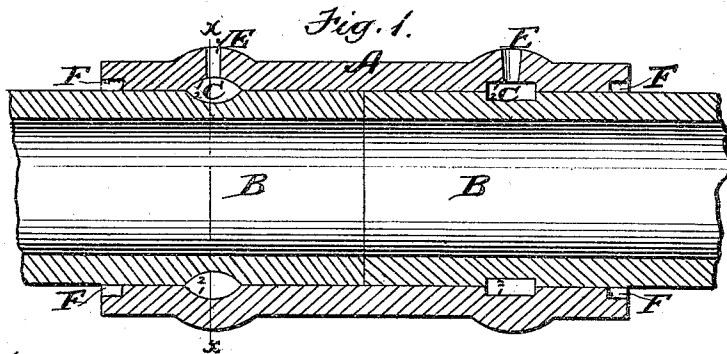


Fig. 2.

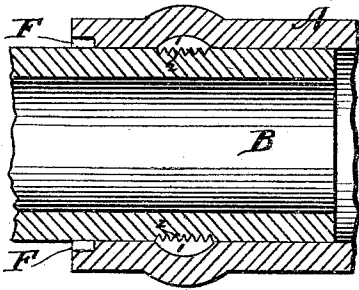


Fig. 4.

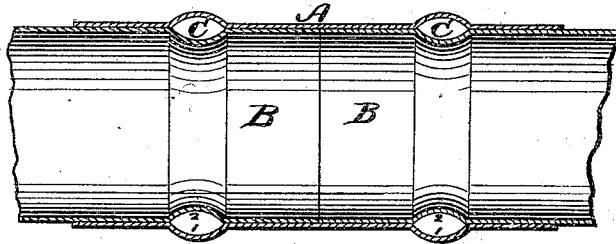


Fig. 5.

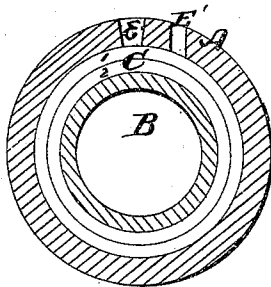
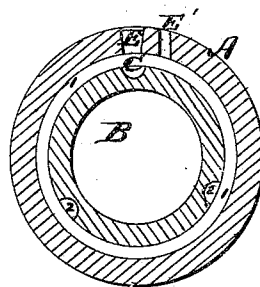


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

HARVEY K. FLAGLER, OF BOSTON, AND CHARLES F. BROWN, OF READING,
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IMPROVEMENT IN THE ART OF COUPLING SECTIONS OF PIPE OR TUBING.

Specification forming part of Letters Patent No. **170,473**, dated November 30, 1875; application filed
August 25, 1875.

To all whom it may concern:

Be it known that we, HARVEY K. FLAGLER, of Boston, in the county of Suffolk, and CHARLES F. BROWN, of Reading, in the county of Middlesex, and State of Massachusetts, have invented certain Improvements in the Art of Securing Lengths of Pipe to their Coupling-Sockets, of which the following is a specification:

In the accompanying drawing, forming a part of this specification, Figure 1 represents a longitudinal section of a pipe-coupling embodying our invention. Figs. 2, 3, and 4 represent sectional views of modifications of the same; and Fig. 5, a section on the plane of line *x x*, Fig. 1.

Our invention relates to the coupling of lengths of pipe or tubing by means of a coupling-socket, into which the ends of two lengths of pipe are inserted; and it has for its object to provide improved means for securing the ends of the lengths to their coupling-socket, and, at the same time, preventing leakage at the joints of the lengths, and also to enable the ends of the lengths to abut against each other within the coupling.

Our invention consists in the peculiar formation of the coupling-socket and the ends of the lengths connected thereby, said formation being such as to create tight annular molds between the interior of the coupling-socket and the inclosed periphery of the lengths—one or more on each side of the point of junction of the lengths—which molds are provided with sprues, and are adapted to receive and retain melted sulphur or other suitable material when the pipe is laid horizontally, the melted material, when hardened, forming annular keys, which secure the lengths to the socket, and prevent leakage from the joint, all of which we will now proceed to describe.

In carrying out our invention we employ a tubular socket, A, of sufficient diameter internally to receive the ends of the pipe or tube lengths B B, the latter abutting against each other at the center of the socket, and fitting snugly therein, as shown in Fig. 1. C C represent annular spaces or molds, surrounding the sections or lengths B B within the socket A, on each side of the point of junction of the

lengths. These spaces or molds are formed by making coincident recesses or half-molds 1 2 in the bore of the socket and the periphery of the lengths, as shown in Fig. 1. The molds are rendered comparatively proof against the escape of liquids placed in them by the closeness with which the ends of the lengths fit into the sockets; consequently, said molds are adapted to receive and retain any suitable melted material which, when hardened, will lock the lengths B to the socket A. This material is introduced into the molds through sprues E, a sprue being provided for each of the annular molds, through which the melted material is poured until said molds are filled. Suitable vent-holes E' should be made near the sprues. When the material thus introduced is cooled and hardened, it forms annular keys between the bore of the socket and the periphery of the lengths B—one on each side of the point of junction of the latter; and these keys perform the twofold office of locking the socket and lengths securely together, and preventing leakage from the joint of the lengths. In case the coupling-socket is rigidly attached to the end of one of the lengths to be coupled, one annular mold will be sufficient, the same being located between the joint of the lengths and the projecting end of the socket.

The spaces or molds C may be made in various forms; for instance, the half-molds 1 2 may be made alike in cross-section, as shown in Fig. 1, or those on the lengths B may be made up of a number of circumferential corrugations, as shown in Fig. 2, or separate indentations, as shown in Fig. 3. In fact, any arrangement of coincident half-molds or recesses adapted, first, to form tight isolated annular molds between a tubular socket and the lengths of pipe or tubing inclosed therein for the reception and retention of melted material, and, secondly, to constitute key-seats or lateral bearing-surfaces for the annular keys thus formed, partakes of the nature of our invention.

In applying our invention to pipe or tubing made of thin material the half-molds on the lengths should be formed by indenting the same as shown in Fig. 4, while in thick and heavy pipe the half-molds may be formed by

removing or compressing a portion of the metal during the manufacture of the pipe, or by subsequent operations.

We prefer sulphur as a material for the annular keys, as it is fusible, cools readily, and does not contract in cooling. It is also light and cheap, and possesses sufficient hardness to adapt it to the purpose desired.

By our improvement we dispense with screw-threads, and cause the ends of the pipe-lengths to abut against each other at the center of the socket. Hence, we are enabled to avoid the enlargement caused by the space between the adjacent ends within the socket, which is common in pipes which are screwed into their couplings.

We claim—

In a pipe-coupling, the annular molds C C, located between the socket A and the inclosed peripheries of the lengths B B on each side of

the joint of the lengths, each mold being composed of an annular recess or half-mold, 1, made in the interior of the socket, and a coincident annular recess or half-mold, 2, made in the inclosed periphery of one of the lengths, the molds being provided with sprues E, and rendered tight by the contact of the socket with the peripheries of the lengths on each side of the molds, and thus adapted to receive and retain a fused substance when the pipe is laid horizontally.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

HARVEY K. FLAGLER.
CHARLES F. BROWN.

Witnesses:

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