

M. C. RYAN.
Pipe-Couplings.

No. 149,070.

Patented March 31, 1874.

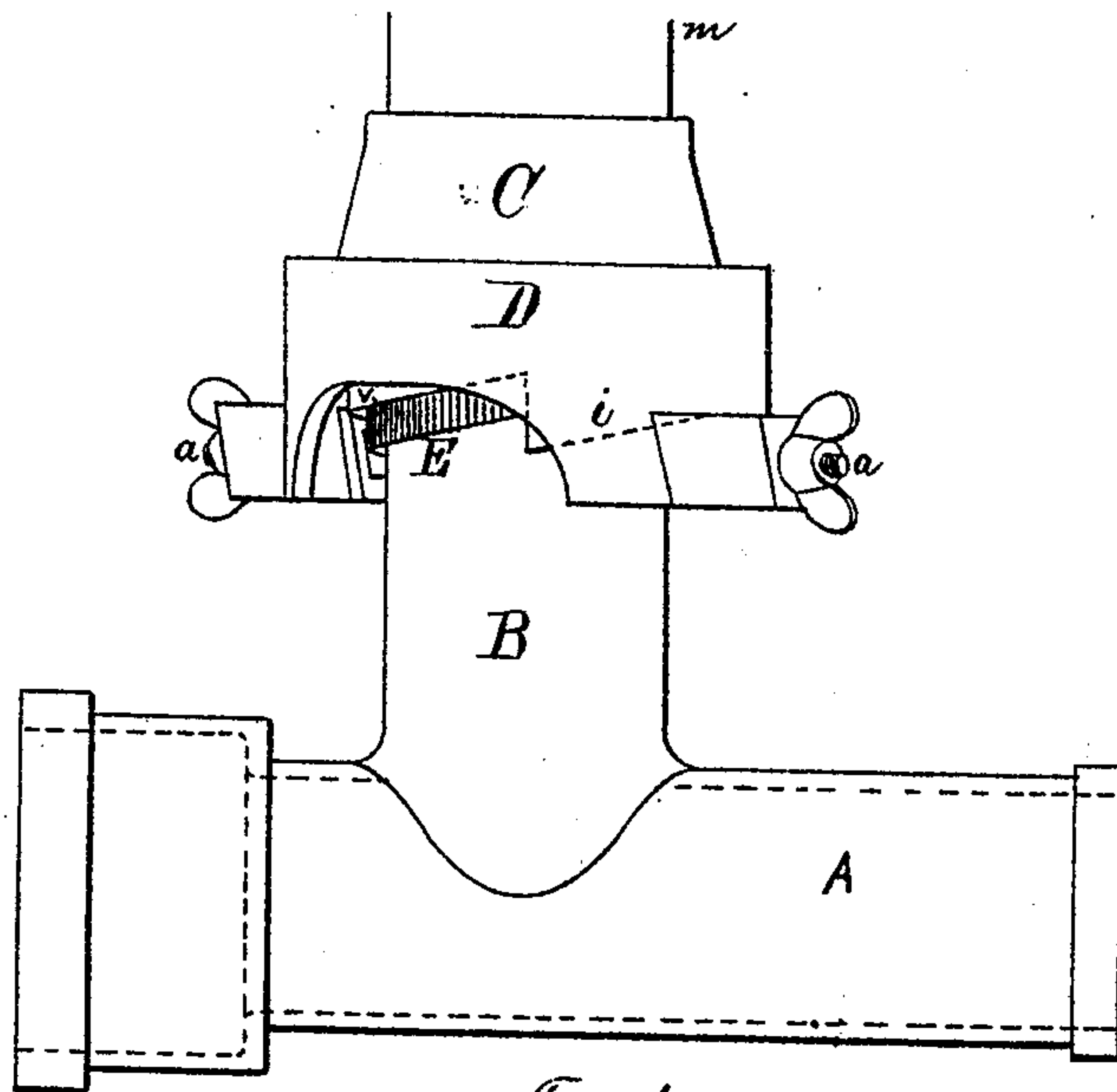


Fig. 1.

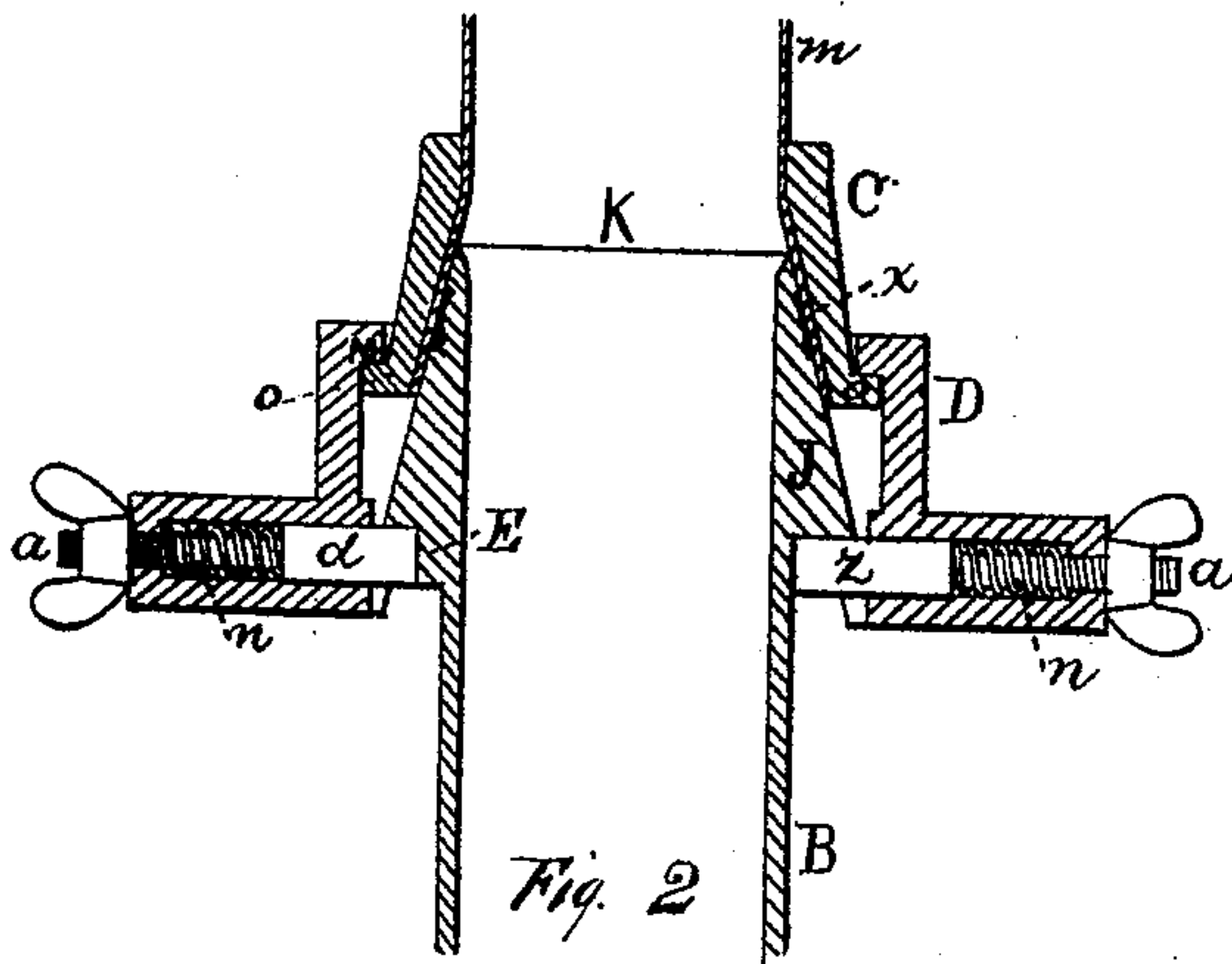


Fig. 2

WITNESSES.

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MICHAEL C. RYAN, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF ONE-HALF HIS RIGHT TO JOSEPH G. RUSSELL, OF SAME PLACE.

IMPROVEMENT IN PIPE-COUPPLINGS.

Specification forming part of Letters Patent No. 149,070, dated March 31, 1874; application filed February 10, 1874.

To all whom it may concern :

Be it known that I, MICHAEL C. RYAN, of Boston, in the county of Suffolk, State of Massachusetts, have invented a certain new and useful Improvement in Pipe-Couplings, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which my invention appertains to make and use the same, reference being had to the accompanying drawing forming a part of this specification, in which—

Figure 1 is a side elevation of my improved coupling. Fig. 2 is a vertical section of the same.

Like letters refer to like parts in the different figures of the drawing.

My invention relates more especially to that class of couplings used in connecting the lead discharging-pipe of the traps of water-closets with the iron soil-pipe; and consists in making a cap to bear against the incline of the cast-metal pipe, and clamping the lead pipe between said cap and incline. The cap has an offset, on which bears the shoulder of a nut, which clamps under inclined lugs on the cast pipe, the nut turning independently of the cap, thereby avoiding forcing the cap around the lead pipe when it is being clamped by turning the nut, the object being to prevent reducing the capacity of the lead pipe and provide a joint or means for connecting it with the iron pipe, which can be readily uncoupled or detached, as occasion may require, without injuring or destroying the parts.

The extreme simplicity of my invention renders an elaborate description unnecessary.

In Fig. 1, A is the soil-pipe; B, the branch or T; C, the sliding cap; D, the locking-cap; E, the serrated boss; *a a*, the lug-screws, provided with thumb-nuts; and *m*, the lead pipe.

The usual method of securing the lead pipe in the cap is shown in Fig. 3, in which N is the cap, and L the pipe. In order to insert the end of the pipe in the cap, it is necessary to reduce it to such an extent as to form a throat at S, rendering it liable to choke or clog, and greatly decreasing its capacity. The pipe is also turned over the cap, at *l*, in such a manner

as to prevent it from being conveniently detached.

In my improved coupling, the pipe *m* is maintained full size, and is not permanently attached to the cap. The end of the pipe B has a shoulder, at J, Fig. 2, and is tapered from the shoulder to the point, forming a cone. The upper face of the shoulder, Fig. 1, is formed into segments of a double spiral, the spiral or screw threads V extending half around the pipe, and the spiral *i* beginning where V ends, (but on the same plane at which V begins,) completing the circle.

The sliding cap C is a hollow conical frustum, its interior corresponding with the exterior of the cone J, and is provided with an outwardly-projecting flange, *o*, at its largest end.

The locking or drawing cap D is provided with an inwardly-projecting flange, M, and has a central aperture formed. Its throat *k*, or point at which the iron pipe B ends, remains of full size.

The operation of forming the joint, or connecting the pipe *m* to the pipe B, is as follows: The cap C is slipped over the pipe *m*, and the locking-cap D passed over the cap C and pressed onto the cone J until the inner ends of the lugs *d z* slip over the shoulder or spirals *v i*. The cap D is then turned to the right, by which the lugs *d z* will be brought into contact with the spirally-inclined faces *v i*, and, as the cap is turned, draw the pipe *m* forcibly against the face of the cone J, wedging it securely between the cone and cap C, thus forming a tight and perfect joint.

It will be seen that the cap D and lugs *d z* form a nut, and the pipe B, with its spirals *v i*, a screw-bolt, which act together to draw the pipe *m* onto the cone J and form a connection, as shown. A serrated boss, E, is constructed on the pipe B, adjoining and just above the spiral *v*, and so inclined as to conform thereto. The end of the lug *d* is notched to correspond with the serrations in the boss, and arranged to intersect with it in such a manner as to secure the cap D in any desired position, the end of the lug being pressed against the boss by the spring *n*, forming a ratchet.

To uncouple the joint, all that is necessary is to turn in the nut on the screw of the lug *d*, thus withdrawing the lug and disengaging it from the boss E, and permitting the cap D to be turned back sufficiently to release the cap C. The face of the cone J is grooved and provided with a rubber packing-ring at *x*.

Having thus described my invention, what I claim is—

The pipe B, provided with the cone J, spirals

v i, and serrated boss E, in combination with the locking-cap D, provided with the lugs *d z* and sliding cap C, all constructed and operating substantially as and for the purpose set forth.

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Witnesses:

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