S. LIGHTBURNE, Jr.

PIPE-COUPLING.

No. 189,477. Patented April 10, 1877.

Fig. 1

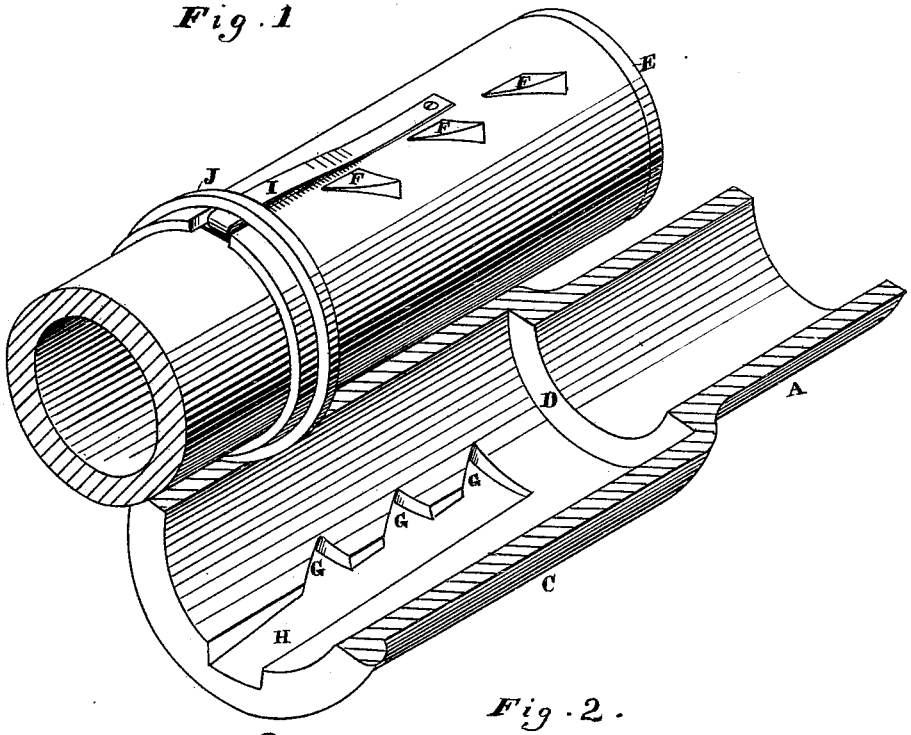
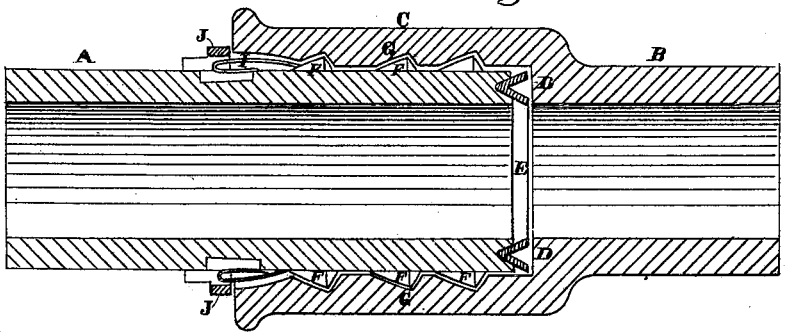


Fig. 2.



Witnesses

Geo. H. Strong.

Odwyn T. Stacey

Inventor.

Stafford Lightburne Jr.

By Dewey & Co.

Atty's.

UNITED STATES PATENT OFFICE.

STAFFORD LIGHTBURNE, JR., OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN PIPE-COUPLINGS.

Specification forming part of Letters Patent No. **189,477**, dated April 10, 1877; application filed December 2, 1876.

To all whom it may concern:

Be it known that I, STAFFORD LIGHTBURNE, Jr., of the city and county of San Francisco, and State of California, have invented an Improved Pipe-Coupling; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings.

My invention relates to a novel method of coupling together lengths of pipe, uniting parts of furniture, as bedsteads, attaching bottoms to lanterns, and making various joints where the use of my coupling will readily suggest itself.

It consists in forming one end of each section of the coupling with an enlarged opening sufficient in size to receive the end of the uniting-section. Longitudinal grooves are made in the interior of this enlarged chamber, and small triangular spaces are formed, opening out from one side of these grooves. The end of the inserted section is provided with peculiarly-shaped lugs, which slide in through the longitudinal channels until they are opposite the spaces, when the section is turned, and these lugs, by their form, will force the inner end of the section against the shoulder formed at the inner end of the enlargement. Longitudinal springs pass through a collar upon the inserted section, and, when it is turned sufficiently, the springs enter the longitudinal channel in the outer section, thus preventing the joint from becoming unlocked. The inner end of the inserted section is provided with a peculiar elastic packing, which is forced against the interior shoulder, and this makes a perfectly-tight joint, and prevents jar or loosening.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a perspective view, and Fig. 2 is a sectional view.

I have shown my coupling as employed upon two sections of pipe for the purposes of the present explanation, but its adaptability to other places is obvious.

A and B represent the meeting ends of two sections of pipe which are to be united. One of these ends, A, is of the size of the remainder of the pipe, while the other end has an enlargement, C, sufficient to allow the part A to slip into it, so as to abut against the shoulder D at its inner end, and this practically makes the pipes A and B continuous and of the same size, as the shoulder represents the ordinary diameter of the pipe.

The end of the pipe A is grooved or otherwise fitted to receive an elastic ring, E, which is preferably grooved or made double upon its outer face, as shown, so that it can be easily compressed against the shoulder D, and thus make a perfectly-tight joint. My device for uniting and locking the pipes consists of triangular inclined lugs F, which project from opposite sides of the part A, and are caused to enter similar depressions G upon the interior of the enlargement C.

In order to allow the lugs to pass into this enlargement until they arrive at a point opposite their corresponding slots or indentations, I make a longitudinal channel, H, in the sides of the part C, and through these grooves the lugs will pass.

The lugs F are made triangular in shape, and slope backward from the point which is the highest to their base or widest part, which is level with the surface of the pipe. The friction of the angular side of the lug against the corresponding side of the slot is thus reduced to a minimum. The channels H are made beveling, with their deepest part next to the slots, and this allows the lugs to pass into the channels without obstruction.

In order to retain the parts in place after they have been turned, I employ a spring or springs, I, which may be made in any suitable shape; but I have shown them as being secured at one end to the side of the pipe; thence they are carried forward beneath a guard-ring, J, and bent under and backward, so as to leave a bight outside, which can be pressed down to release the spring, when desired.

When the parts of the coupling are put together, the lugs F will slide into the channels H until they arrive opposite the slots or openings G. When the parts are turned, the pressure of the lugs against the sides of the slots will draw the parts together, and force the elastic packing into close contact with the shoulder. At the same time this turning of the parts allows the springs to fall into the

channels, where they serve to retain the sections together, and resist side pressure to unlock the coupling.

As many lugs, slots, and channels through which to pass the lugs may be used as may be thought best; but in the present case I have only shown two sets.

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

1. The coupling-section A, having the triangular inclined lugs F, as shown, in combination with the section B, having the enlargement C, said enlargement being provided with the depressions or slots G, to receive the lugs, and the beveled channels H, substantially as herein described.

2. The double-edged elastic ring E, secured to the end of the section A, and made compressible against the shoulder D by means of the lugs F and slots G, substantially as herein described.

3. The piece E, provided with ring J and spring I, in combination with piece C, provided with channels H, as and for the purpose set forth.

In testimony whereof I have hereunto set my hand and seal.

STAFFORD LIGHTBURNE, JR. [L. S.]

Witnesses:
O. T. STACY,
F. A. BROOKS.