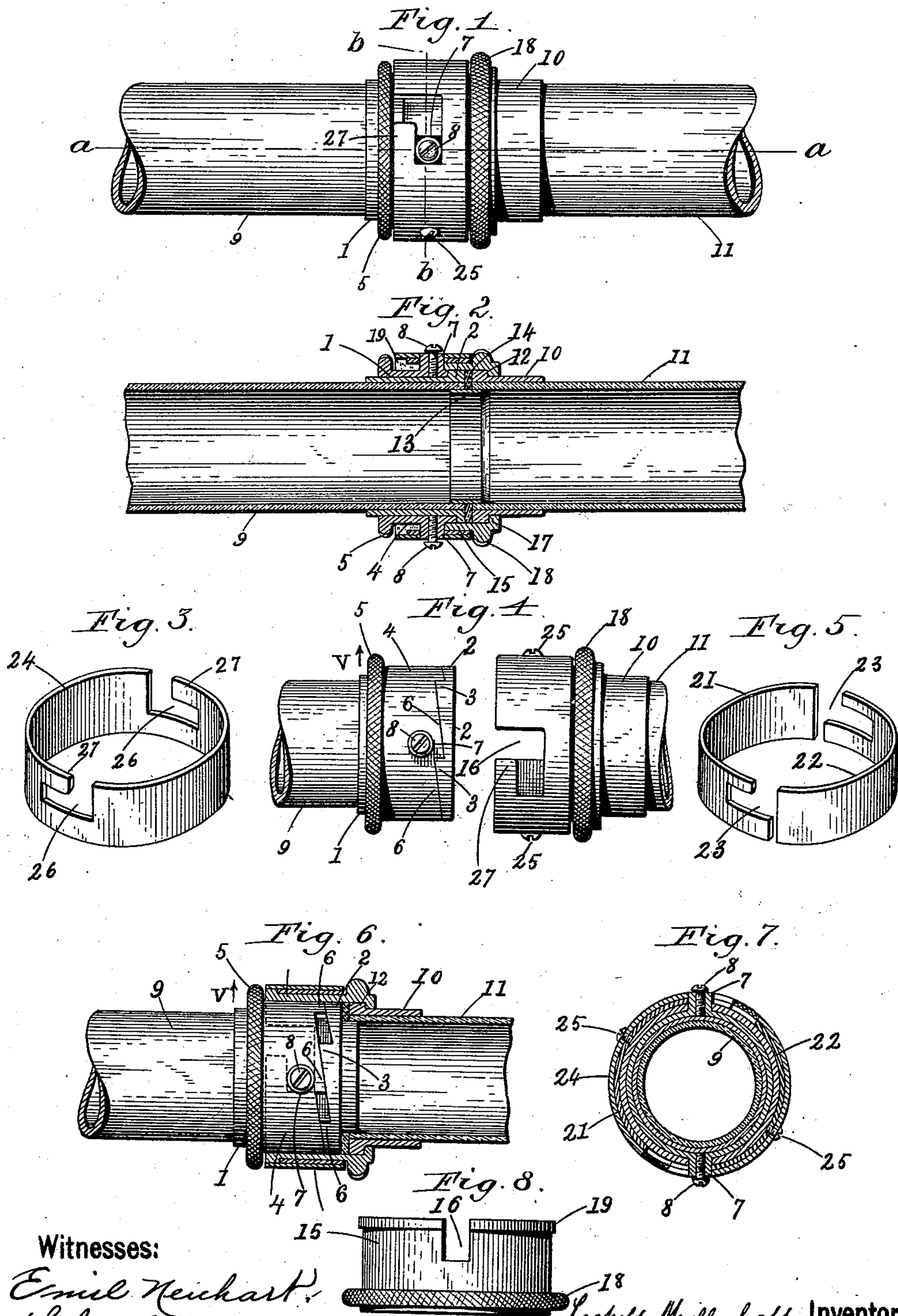


(No Model.)

L. MULLENHOFF.
PIPE COUPLING.

No. 551,733.

Patented Dec. 17, 1895.



Witnesses:
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UNITED STATES PATENT OFFICE.

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PIPE-COUPLING.

SPECIFICATION forming part of Letters Patent No. 551,733, dated December 17, 1895.

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To all whom it may concern:

Be it known that I, LEOPOLD MULLENHOFF, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Pipe-Couplings, of which the following is a specification.

My invention relates to an improved device for coupling metal pipe, more particularly lead or tin pipe, but it is well adapted for coupling pipe of any suitable material, all of which will be fully and clearly hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 represents a side elevation of the coupling and two pieces of metal pipe secured together. Fig. 2 represents a longitudinal section on or about line *a a*, Fig. 1. Fig. 3 is a detached perspective view of the bayonet-catch fastening-ring. Fig. 4 represents a side elevation of the two parts of the coupling and pipe separated. Fig. 5 is a detached perspective view of the inner separable fastening-ring. Fig. 6 is a longitudinal central section, cutting through one-half or part of the coupling only. Fig. 7 represents a transverse section through the coupling on or about line *b b*, Fig. 1. Fig. 8 represents a detached side elevation of the inner removable holding-ring upon which the bayonet-catch holding-ring is secured and turns.

Referring to the drawings in detail, 1 represents the inner tubular portion of that part or half of the coupling carrying the tightening device. It is a plain tubular portion having at one end an enlargement 2, provided on its inner side with a series of inclined or long ratchet-shaped teeth 3. Either two or more of such inclined teeth can be employed. I have shown four as a suitable number; but more or less may be used. This enlargement 2 may be integral with the tubular portion 1, or rigidly secured to it by solder or other well-known means. Over the tubular portion 1 is passed a collar 4, having on one end an enlarged portion provided with a milled periphery 5, so that it can be turned easily on the tube 1 by the fingers.

At the opposite end of the collar 4 is a series of inclined or ratchet-shaped teeth 6, cor-

responding in shape, size and number with the inclined teeth 3, so that they can fit close in together, as shown in Fig. 4, or by turning it in the direction of the arrow *v*, Fig. 4, the collar 4 will move longitudinally on the tubular portion 1, or away from the enlarged portion 2, substantially as shown in Fig. 6. On each side of the collar 4, directly opposite each other, is an outwardly-extending lug or trunnion 7, into each of which is fitted a tightening-screw 8, for tightening the collar on the tubular portion 1, so that it cannot be turned or moved, the object of which will appear farther on.

Within the tubular portion 1 is rigidly secured by solder or any well-known means, so as to be gas or water tight, a piece of lead or other pipe 9.

10 represents the inner tubular portion of the opposite part of the coupling. It is provided with an outward surrounding flange 12 at its coupling end.

Within the portion 10 is secured gas or water tight, by solder or other well-known means, a piece of lead pipe 11 or other pipe to be coupled with the pipe 9.

At the coupling end of the inner tubular portion 10 and pipe 11 is a reduced portion 13, either formed integral with the pipe and tubular portion or secured thereon by solder. Over the reduced portion is fitted a gasket 14 of rubber or other suitable yielding material.

A loose collar 15, having two openings 16 at directly opposite sides, is adapted to pass over the tubular portion 10 until stopped by the flange 12 thereon coming in contact with the flange 17 on the inner side of the coupling end of the collar 15. On the outside of the same end of the collar 15 is an enlarged surrounding portion or bead 18 having a milled or roughened surface by which the collar may be turned back and forth by the fingers. (See Figs. 2 and 6, where this collar is shown in section.)

At the opposite end of the collar 15 is an outward surrounding flange 19, thereby leaving a reduced body portion between the flange 19 and the milled bead 18, over which is fitted a flat ring composed of two parts 21 and 22, each part having side openings 23, which, when

the two parts 21 and 22 are put together, form what may be termed "bayonet-catch" openings.

When the two parts 21 and 22 are in place on the collar 15 an outside flat ring 24 is slipped over them and then rigidly secured to the ring portions 21 and 22 by two small screws 25 which screw into the parts 21 and 22, thereby fastening them securely to the ring 24.

From the above construction it will be seen that the outside ring 24 can be turned easily on the collar 15, but the portions 21 and 22 prevent it from being moved longitudinally thereon.

In each opposite side of the ring 24 is a bayonet-catch opening 26, which corresponds exactly with the openings 23 in the ring parts 21 and 22, which openings 26 register exactly with the openings 23, so they form substantially a single operating bayonet-catch opening in opposite sides of the compound ring 21 and 22 and 24, which is movable only in either direction around the collar 15.

The operation of this coupling is as follows:

That portion of the coupling having the collar 15 (see Fig. 4) is slipped over the parts 2 and 4 on the opposite coupling part until the lugs or trunnions 7 pass to the bottom of the openings 16 of the collar 15. By now taking hold of the flat ring 24 (placing the fingers against the heads of the screws 25) and turning it on the collar 15 until the portions 27, forming the holding part of the bayonet catch, pass over the lugs or trunnions 7 the two coupling portions are secured together substantially as shown in Fig. 1. To tighten the two parts of the pipe rigidly against the elastic gasket 14, and thereby secure a water-tight or air-tight joint, all that is necessary to do is to take hold of the milled roughened portion 18 in one hand and the pipe 9 in the other hand and turn said milled portion in the direction of the arrow *v*, which operation causes the collar 4 to turn in the same direction, thereby sliding the inclined portions of the teeth 6 over the teeth 3 and forcing the collar 2 rigidly against the gasket 14, and

then tightening the collar 4 by tightening the set-screws 8 in the ordinary way, and thereby securing a tight joint.

I claim as my invention—

1. In a pipe coupling, the combination with one member of the coupling of a collar having an opening in each side and adapted to turn on the coupling portion, means for preventing it from being drawn therefrom, a flat bayonet catch ring mounted on said collar, means for preventing it from moving longitudinally while free to turn thereon, and a tubular portion on the other member of the coupling having at its coupling end an outside flange provided with a series of teeth on its inner side, a loose collar mounted on said tubular portion having a series of corresponding teeth adapted to engage with the teeth on the tubular portion, and two holding trunnions rigidly secured to said collar, for the purposes described.

2. In a pipe coupling, the combination with one member of the coupling, of a collar having an opening extending inward in each side and adapted to turn on the coupling portion, means for preventing it from drawing off from the coupling portion, a flat bayonet catch ring mounted on said collar, means for preventing it from moving longitudinally while free to turn thereon, a tubular portion on the other member of the coupling having at its coupling end an outside flange provided with a series of teeth on its inner side, a loose collar mounted on said tubular portion having a series of corresponding teeth adapted to engage with the teeth on the tubular portion, two holding trunnions rigidly secured to said collar for engaging with the bayonet catch openings, and set screws passing through said trunnions for securing the two parts of the coupling when in engagement, substantially as described.

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Witnesses:

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