

No. 701,019.

Patented May 27, 1902.

S. E. DIESCHER.
COUPLING FOR PIPES, &c.

(Application filed Oct. 21, 1901.)

(No Model.)

FIG. 1.

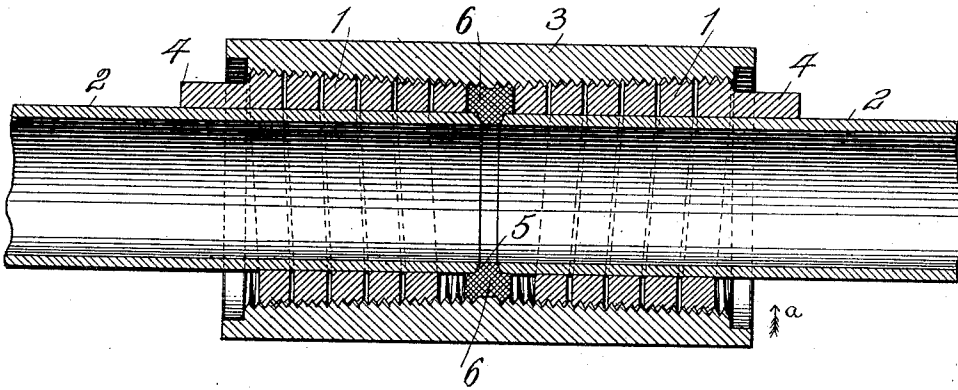


FIG. 2.

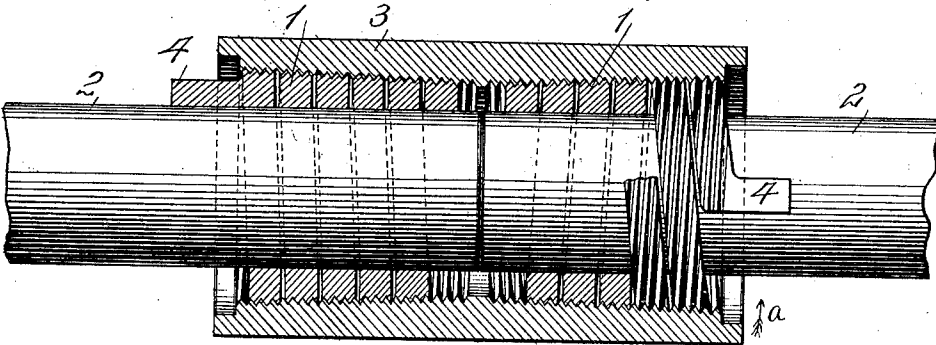
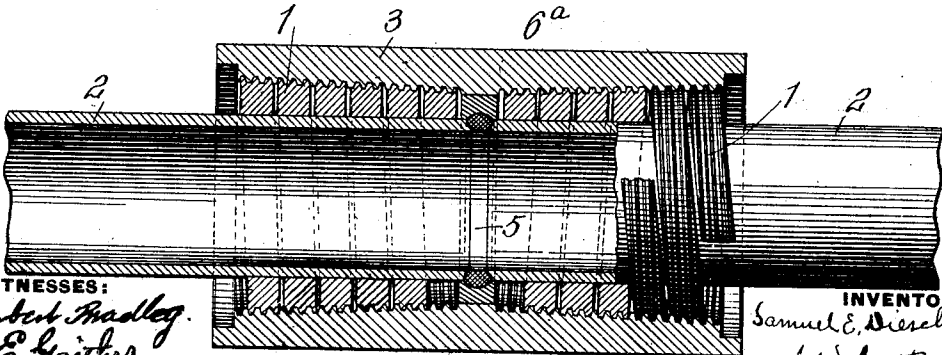


FIG. 3.



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UNITED STATES PATENT OFFICE.

SAMUEL E. DIESCHER, OF PITTSBURG, PENNSYLVANIA.

COUPLING FOR PIPES, &c.

SPECIFICATION forming part of Letters Patent No. 701,019, dated May 27, 1902.

Application filed October 21, 1901. Serial No. 79,407. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL E. DIESCHER, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Couplings for Pipes, &c., of which improvements the following is a specification.

The invention described herein relates to certain improvements in couplings of the class or type forming the subjects-matter of Letters Patent Nos. 631,956 and 631,957, dated August 29, 1899, and consisting, generally stated, in gripping-coils and an inclosing case or shell.

The present invention has for its object a construction especially adapted to connecting pipe-sections, although equally applicable for coupling shaft-sections.

The invention is hereinafter more fully described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a sectional view showing two pipe-sections connected by my improved coupling. Fig. 2 is a view, partly in section and partly in elevation, showing the coupling applied to shaft-sections; and Fig. 3 is a view similar to Fig. 1, illustrating a modification.

In the practice of my invention I employ two coils 1, having opposite pitches and having an internal diameter approximately equal to the external diameter of the pipe-sections 2 to be connected. The coils have their outer surfaces tapering from the outer to their inner ends, corresponding to the internal taper of the inclosing case or shell 3. The coils are externally threaded, the threads on each coil having a pitch opposite the pitch of the coils themselves, and the case or shell is internally threaded, the pitch of the threads at one end right-handed and at the opposite end left-handed.

In making a connection between pipe-sections the coils are slipped onto the ends of the pipe-sections, which they should fit snugly by preference. The ends of the coils and pipes are then inserted into the ends of the case or shell and the latter rotated, so as to draw the coils and pipe ends into the case or shell. While the case or shell is rotated on the coils the latter and the pipe-sections are

held stationary. This can be conveniently effected by forming lugs 4 on the outer or larger ends of the coils, said lugs being adapted to engage the pipe-tongs or other tool employed for holding the pipe-sections. As the threads on the coils have a pitch opposite that of the pitch of the coils, it is obvious that in turning the case or shell in the direction of the arrow *a* to screw it onto the coils the case or shell will have a tendency to pull with it the front or inner ends of the coils as soon as it is in frictional engagement with such ends, and thereby tighten the coils onto the pipe-sections. The tightening of the coils is also effected by the circumferential pressure applied to the coils as they pass into the case or shell. As the coils are made to fit the pipe snugly, only a partial turn of the case or shell will be needed to cause the coils to take a firm grip on the pipe-section, so that by the continued rotation of the case or shell the ends of the pipe-sections will be drawn toward each other and against a suitable packing-ring 5, interposed between the adjacent ends of the pipe-sections. In order to prevent the packing from being squeezed out into the space between the case or shell and the pipe-sections, a backing or reinforcement 6 for the packing-ring is provided. As shown in Fig. 1, the backing or reinforcement may be formed integral with the packing-ring or may be formed in or secured to the case or shell, as shown at 6^a in Fig. 3. In the latter case the backing or reinforcement is provided with a groove to hold the packing in position.

As shown in Fig. 2, my improved coupling can be employed for connecting the adjacent ends of shafts 7. The construction and manner of applying the coupling to shafts is similar to that described except that no packing is employed.

While the construction shown in Figs. 1 and 2 is efficient as regards its coupling or connecting function, difficulty is experienced in uncoupling, especially when the parts have been brought together tightly, for the reason that in turning the case or shell back there will be a tendency on the part of the case or shell to push back the inner ends of the coils and to cause an expansion thereof against the case or shell and to prevent the latter turning back on the coils. This objection-

able feature can, however, be obviated by making the threads on the coils with a pitch in the same direction as that of the coils themselves, as shown in Fig. 3. When the case or shell is screwed onto the coils, there will be a tendency to push the front or inner ends of the coils back or in a direction to enlarge the coils. In order to prevent any such back or enlarging movement of the inner ends of the coils, they are made of such internal diameter that the inner coils will grip the inner ends of the pipe-sections firmly when pushed into the coils. This frictional grip will be sufficient ordinarily to hold the coils on the pipes, but may be rendered more certain by roughening the internal surfaces of the inner ends of the coils. When the inner ends of the coils are thus held, the coils will be caused to grip the pipe-sections by the circumferential pressure of the case or shell, the outer ends of the coils being forward. This forward movement of the coils around will be assisted by the friction between the coils and the case or shell. It is found in practice that in this construction the grip on the pipes is as effectual as in the construction shown in Figs. 1 and 2 and that the joint thus formed can be loosened by turning the case or shell back, there being no gripping of the coils against the case or shell during such back movement.

I claim herein as my invention—

1. A coupling for pipes, &c., having in combination two coils externally tapered and

threaded and a case or shell internally tapered in opposite directions and threaded to correspond to the threads on the coils, substantially as set forth.

2. A coupling for pipes, &c., having in combination two coils of opposite pitch externally tapered and having external right and left threads and a case or shell internally tapering in opposite directions and internally threaded to correspond with the threads on the coils, substantially as set forth.

3. A coupling for pipes, &c., having in combination two coils of opposite pitch externally tapered, and having external right and left threads, means for locking one end of each coil to the pipe, &c., and a case or shell internally tapering in opposite directions and internally threaded to correspond to the threads on the coils, substantially as set forth.

4. A coupling for pipes, &c., having in combination two coils of opposite pitch externally tapered and having external threads pitched in the same direction as the coils and a case or shell internally tapering in opposite directions and threaded to correspond with the threads on the coils, substantially as set forth.

In testimony whereof I have hereunto set my hand.

SAMUEL E. DIESCHER.

Witnesses:

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