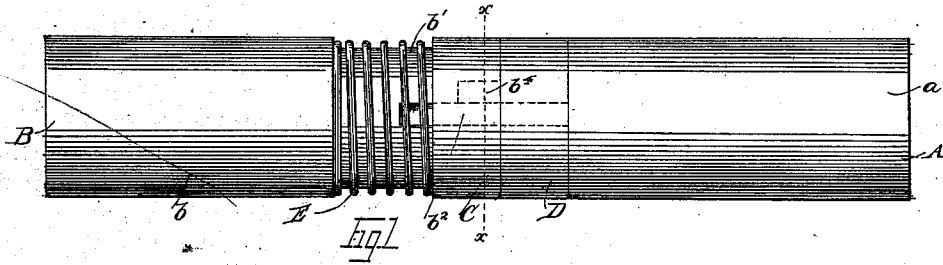
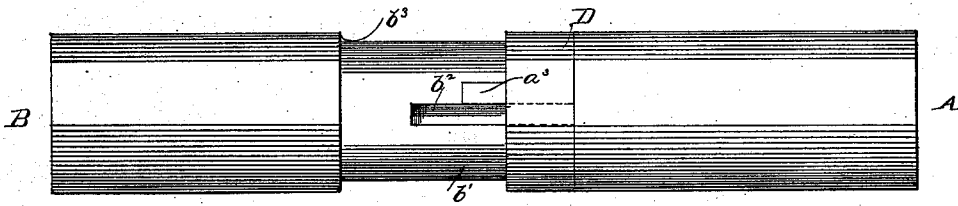
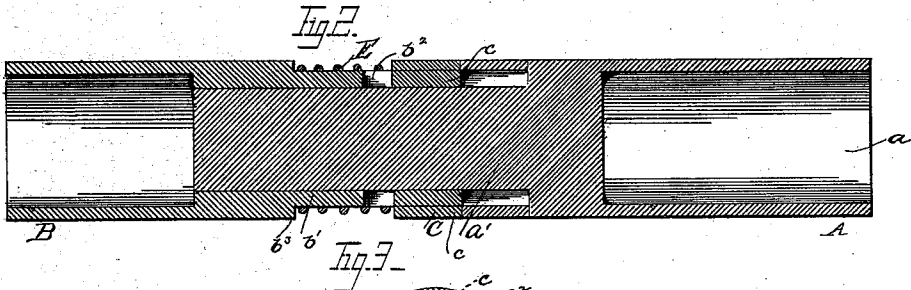
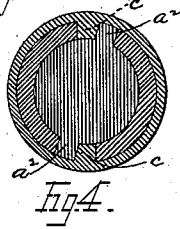
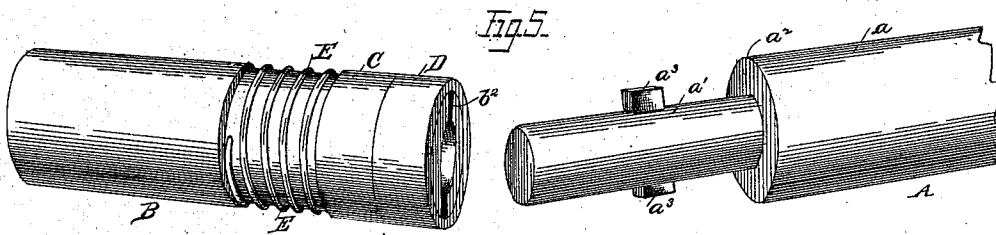


(Model.)

A. G. BERRY.
ROD COUPLER.

No. 402,132.

Patented Apr. 30, 1889.



Witnesses

A. G. Berry

Frank L. Dyer

Inventor,
Albert G. Berry
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his Attorney.

UNITED STATES PATENT OFFICE.

ALBERT G. BERRY, OF WASHINGTON, DISTRICT OF COLUMBIA.

ROD-COUPLER.

SPECIFICATION forming part of Letters Patent No. 402,132, dated April 30, 1889.

Application filed May 5, 1888. Serial No. 272,936. (Model.)

To all whom it may concern:

Be it known that I, ALBERT G. BERRY, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Couplers; and I do hereby declare the following to be a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

The purpose I have in view is the production of a simple, cheap, and effective coupler for coupling two articles quickly and firmly.

The principal object of my invention is to couple together the various sections of the modern gun-swabbing rods; but my invention is applicable to other uses; and my invention therein consists in a self-locking joint of peculiar construction, as will be hereinafter explained and claimed.

To understand the following description, attention should be given to the drawings connected therewith, in which—

Figure 1 is an elevation of the complete coupler; Fig. 2, a similar elevation with the locking-ring and spring removed; Fig. 3, a central longitudinal section; Fig. 4, a vertical cross-section at $x x$, Fig. 1; and Fig. 5, views of the two parts of the coupler separated.

In each of the figures the same or corresponding parts are designated by similar letters.

My coupler is composed of two principal parts, A and B, the first being the male portion and the latter the female. The part A has a body, a , usually cylindrical, screw-threaded on the inside when hollow, on the outside when solid, for attachment to one of the articles to be coupled to another. The part A has also a neck or projection, a' , of less size than the body a , usually cylindrical, hollow when adapted to be connected with pipes or other hollow articles and usually solid when designed for rods, shafts, or other solid articles. This neck or projection a' may be made integral with the body a , or secured to it in any usual way, leaving a shoulder, a^2 , which is preferably at right angles with the neck a' . Pins or keys a^3 project from one or more sides of the neck a' at a little distance from the shoulder a^2 .

The female part B of the coupler has a

part, b , usually cylindrical like the part A, a neck or projection, b' , usually only a trifle smaller than the body, one or more slots, b^2 , extending from the outer end of the neck to a point near the shoulder b^3 , but distant from it the same distance as the shoulder a^2 is distant from the nearest portion of the pins or keys a^3 , and this slot or slots b^2 are of a width to permit the passage back and forth of the pins or keys a^3 . On one side of this slot b^2 is a recess, b^4 , of a size to contain one of the keys or pins a^3 , and if there are two or more of such slots the recesses will be similarly arranged in each, and commonly in the vicinity of the longitudinal centers of such slot or slots. A ring, C, embraces the neck b , is as broad as the recess hereinafter named, and has longitudinal movement upon it. This ring has upon its inner surface a lug or lugs, c , which have movement longitudinally in the slots b^2 , but have a normal position in said slot opposite to the recess b^4 . A stop-ring, D, is secured upon or made a part of the neck b' , covering that portion of the same embraced between its outer end and the outer end of the recess b^4 . A spring, E, (shown as an ordinary spiral,) occupies the space between the shoulder b^3 and the nearest edge of the ring C and constantly presses the ring C against the ring D. This spring may be covered or protected in any usual and convenient way, and suitable packing of well-known kinds may be employed when the coupler is used for water, air, or steam pipes.

In the operation of my device, the parts A and B being separated in the part B, the ring C will normally be in position as pressed against the ring D by the action of the spring E, and the lug c will be in the slot b^2 opposite the recess b^4 . The neck a' of the part A, being inserted into the neck b' of the part B, with the pins or keys a^3 entering the slot or slots b^2 until such pins or keys strike against the end of the lug c , will, when pressed, force said lug and the ring C back against the pressure of the spring E until the pins or keys are opposite to the recess b^4 , when a slight revolution of one or both of the parts A B will bring the pins or keys into such recess. By this action, the contact of the pins or keys against the lug c being removed and the keys or pins being taken out of the slot b^2 , the ac-

tion of the spring E forces the ring C back against the ring D, and the lug c is carried back to position opposite the recess b¹ and by the side of the key, serving to effectually prevent the removal of the key from the recess, and also effectually locking the joint of the coupler. To unlock the joint, the ring C is pressed up against the resistance of the spring E until the lug c is removed from its position by the side of the key and opposite the recess, and then by a slight revolution of one or both of the parts A B the lug is removed from the recess and the parts A B are readily separated.

It is evident that the locking parts may be reversed, so that what is described as connected with the male part may be put upon the female part, and what is described as connected with the female part may be put upon the male part; but I do not regard this arrangement so desirable as the one I have described as preferred by me. It is evident also that instead of a separate coupler the male and female parts may be made directly upon the ends of shafts, rods, &c. It is evident also that the locking-ring may be dispensed with if any equivalent means is adopted to carry a keeper in the slot and receive pressure from a spring. It is evident also that the spring may be dispensed with and the locking device moved back and forth by hand; but it is obvious that such an arrangement would be less convenient than the one I have before described.

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

1. A coupler having a joint composed of a key upon the male portion, a slot in the female portion for the reception of the key, a recess connected with said slot, and a keeper carried by and adjustable on the female portion to position alongside the recess and within said slot for locking the key within said recess, substantially as and for the purposes set forth.

2. A coupler having a joint composed of a key upon the male portion, a slot in the female portion, a recess in the side of said slot, a removable ring carrying a lug within the slot, a spring to actuate said ring, and a fixed ring to limit the movement of the movable ring, substantially as set forth.

3. A coupler having a joint composed of a key upon the male portion, a slot in the female portion, a recess connected with the slot, and a keeper actuated by a spring to lock the key within said recess, substantially as set forth.

4. A coupler having a joint composed of a key upon the male portion, a slot in the female portion, a recess connected with the slot, a lug within the slot for locking the key within the recess, and a movable ring to which the lug is secured for controlling said lug, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ALBERT G. BERRY.

Witnesses:

G. W. BALLOCH,
FRANK L. DYER.