No. 759,270. PATENTED MAY 10, 1904.

T. J. GRIER.

COUPLING.

APPLICATION FILED AUG. 4, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

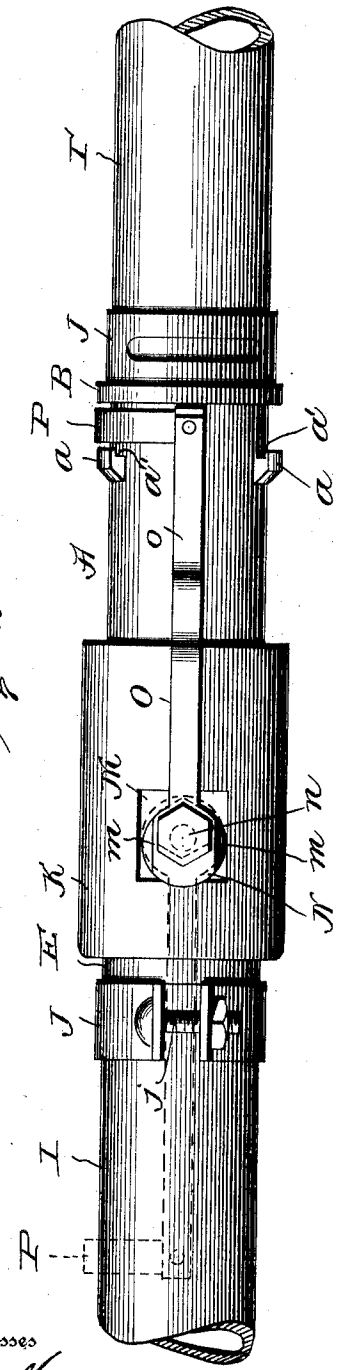
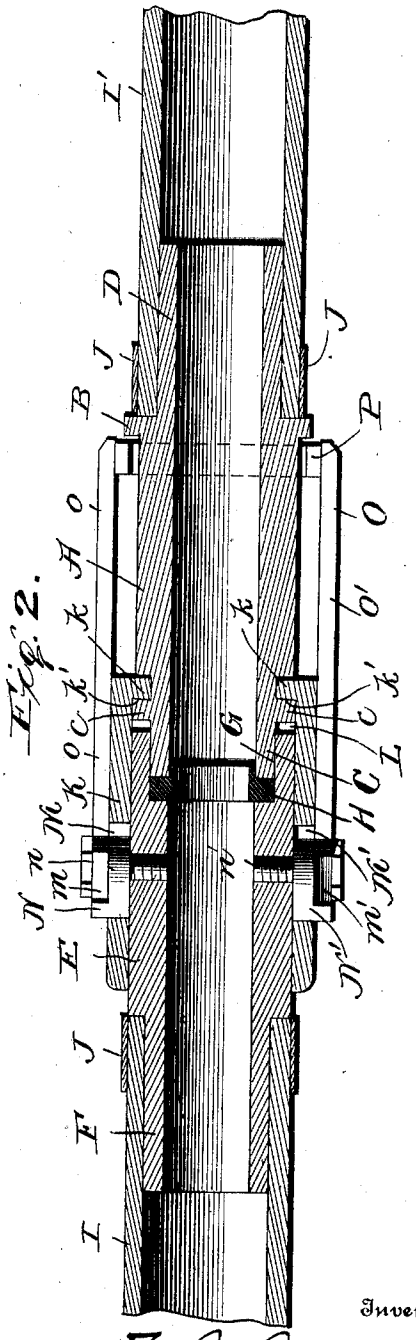


Fig. 2.



Witnesses

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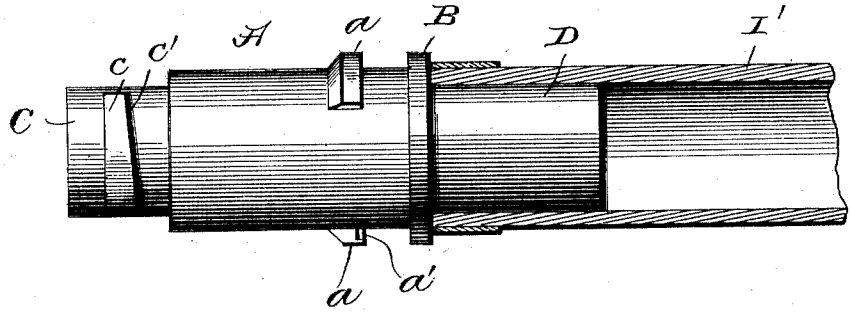
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COUPLING.

APPLICATION FILED AUG. 4, 1903.

NO MODEL. 2 SHEETS—SHEET 2.

Fig. 3.



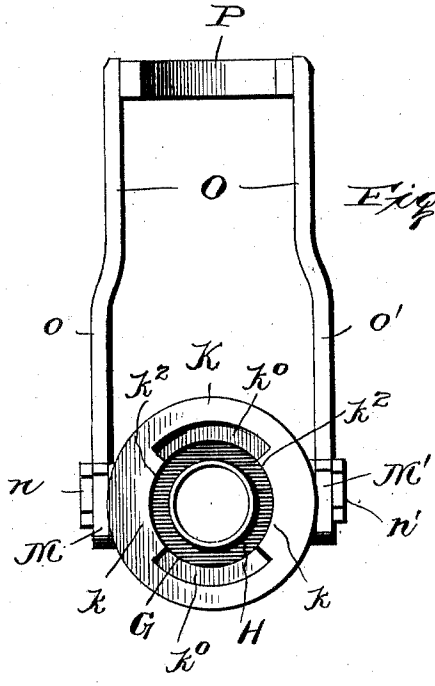
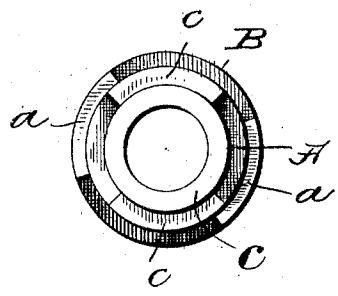


Fig. 4.

Fig. 5.



Witnesses

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No. 759,270. Patented May 10, 1904.

UNITED STATES PATENT OFFICE.

THOMAS J. GRIER, OF WEST PALMBEACH, FLORIDA.

COUPLING.

SPECIFICATION forming part of Letters Patent No. 759,270, dated May 10, 1904.

Application filed August 4, 1903. Serial No. 168,219. (No model.)

To all whom it may concern:

Be it known that I, THOMAS J. GRIER, a citizen of the United States, residing at West Palmbeach, in the county of Dade and State of Florida, have invented certain new and useful Improvements in Couplings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in couplings; and it consists of certain features of novelty hereinafter described and claimed.

The main object of my invention is to prolong the life and usefulness of the coupling by providing a simple but durable and effective means of taking up the wear caused by frequent coupling and uncoupling, thereby insuring a more perfect union, and consequently a tighter joinder, of the male and female members.

Although I have shown my invention as applied to a hose-pipe, it will be understood that I do not limit its application to such use, as it will be readily apparent that it might be used in many other connections.

To more fully describe the invention, reference is had to the accompanying drawings, in which like letters designate the same parts in the several views, and in which—

Figure 1 represents a side elevation of my device coupling two sections of a hose or train pipe; Fig. 2, a central longitudinal section looking from the bottom of Fig. 1, but showing the cam connections and operating-lever in elevation; Fig. 3, a side elevation of the male member, partly in section, to show connection with hose-pipe; Fig. 4, an end view of the female member, showing the operating lever raised at right angles thereto, in bottom plan; and Fig. 5 is an end view of the male member.

A designates the male member of the coupling provided with the exterior annular rib B and the annular cut-away ends C and D. A short distance from the rib B are located a plurality of annularly-disposed lugs *a*, preferably cut away, as at *a'*, on their face nearest the rib B. These lugs *a* form, with the rib B, a substantially annular recess to receive the pivoted end of the operating or locking lever, hereinafter described. The cut-away portion of the end C is also provided with a plurality of circumferentially-extending wedge-shaped lugs *c*, beveled longitudinally on their inner faces, as at *c'*.

E designates the stationary portion of the female member provided with the cut-away end F and interior annular recess G, which latter is adapted to receive a suitable packing-gasket H, against which is forced the end of the cut-away portion C of the male member when forced home.

The hose-sections I I' are held in position over the cut-away portions F D by suitable bands J and clamping means *j*.

K is a sleeve loosely surrounding the stationary part E and forms a movable part of the female member. This movable sleeve K projects at one end beyond the stationary member E and forms therewith a second interior recess L at the coupling end of the female member.

Formed integrally with the sleeve K are the inwardly-projecting wedge-shaped lugs *k*, inclined on their rear faces *k'* and curved on their inner faces k^2 to receive the reduced end C of the male member. These lugs, like the lugs *c*, are annularly disposed relatively to their supporting members and are oppositely disposed relatively to each other, alternating with the recesses k^0, which latter receive the lugs *c* as the male member is inserted in the female member. The rear faces *c' k'* of the lugs *c* and *k* in addition to being inclined longitudinally may also be slightly beveled transversely, if desired, as shown in Fig. 2, which would insure a more perfect union of these parts.

The movable sleeve K is slotted on each side, as at M M', to receive the eccentric cams N N'. These eccentric cams N N' are pivotally supported on the pivot-bolts *n n'*, securely screwed into the stationary member E. The pivot-bolts *n n'* are disposed diametrically opposite each other, which allows the yoke to be operated from either side.

O is a yoke-lever the arms of which, *o o'*,

are suitably bent or shaped to conform with the contour of the coupling members and which are secured at their free ends to the eccentric cams in any suitable way. The cams and yoke-lever, however, are preferably formed integral, as illustrated, the point of joinder of the arms and the cams being preferably cut away, as at *m m'*, for lightness and neatness.

P is a semicylindrical band pivotally supported by the opposite ends of the arms of the yoke-lever and is adapted to rest in the recess behind the lugs *a* when the coupling is locked and which may be turned on its pivots to assume the position shown in dotted lines in Fig. 1 when the coupling is unlocked. To further lock the yoke-lever, this band P may, if desired, be pressed beneath the projecting ledge or recess *a'* of the lugs *a*.

It might be stated here that the lugs *a* are preferably alternately disposed relatively to the lugs *c*, so that when the male member is given a half-turn in the female member to initially lock the coupling one of the lugs *a* will be in the proper position relatively to the band P.

The operation of the device is as follows: In order to couple the members, the yoke-lever should be swung back to the position shown in dotted lines in Fig. 1, when the cam-face of the cams N N' will have engaged the front wall of the slot M and shoved the sleeve K forward. In this position the reduced end C of the male member is inserted within the recess G of the female member, the wedge-shaped lugs *c* fitting within the recess k^0 and the inner curved face of the lugs *k* embracing the cylindrical surface of the reduced end C. When thus inserted and the coupling is still in the unlocked position, the male member is given a half-turn to the right or the female member a half-turn to the left, when the inclined faces *c'* of the lug *c* will engage the similarly-inclined faces *k'* of the lugs *k*, thus initially locking the two members together. This half-turn of the two members relatively to each other will bring the lug *a* in proper position for the reception of the band P of the yoke-handle, and when locking the parts more firmly together this yoke-handle is now swung around on its pivots *n n'*, when the cam-surface of the eccentrics N N' will engage the rear walls of the slots M M' and force the sleeve K outwardly on the stationary member E, thus drawing the male member inwardly in closer contact with the female member, thus the end of the reduced portion C being forced tightly against the packing-gasket H.

It will be understood that I do not wish to limit myself to the exact details illustrated, as it is obvious that many modifications might be made without departing from the spirit of the invention, and I wish it distinctly understood that I do not limit the application of my improved coupling to a hose or train pipe.

What I claim is—

1. In a coupling, the combination with the female member comprising a stationary portion and a projecting sleeve movable longitudinally thereon, of a male member adapted to be inserted in the projecting end of said sleeve and initially locked thereon, and means for operating said sleeve rearwardly to draw the ends of the male member and the stationary portion of the female member together and forwardly to push them apart, comprising a lever pivoted to said stationary portion provided with means thereon adapted to engage and slide said sleeve when operated.

2. In a coupling, the combination with the female member comprising a stationary portion and a projecting sleeve movable longitudinally thereon, of a male member adapted to be inserted in the projecting end of said sleeve and initially locked thereon, and means for operating said sleeve rearwardly to draw the ends of the male member and the stationary portion of the female member together and forwardly to push them apart, comprising a lever pivoted to said stationary portion provided with cam mechanism thereon adapted to engage and slide said sleeve when operated.

3. In a coupling, the combination with the female member comprising a stationary portion and a projecting sleeve movable longitudinally thereon, of a male member adapted to be inserted in the projecting end of said sleeve and initially locked thereon, and means for operating said sleeve rearwardly to draw the ends of the male member and the stationary portion of the female member together and forwardly to push them apart, comprising a yoke-lever pivoted to said stationary portion, and carrying cams in operative engagement with said movable sleeve.

4. In a coupling, the combination with the female member, comprising a stationary portion and a projecting sleeve, provided with slots in the side walls, movable longitudinally thereon, of a male member adapted to be inserted in the projecting end of said sleeve and initially locked therein, and means for operating said sleeve rearwardly to draw the end of the male member in close contact with the end of the stationary portion of the female member and forwardly to disengage said ends, comprising a yoke-lever pivoted to said stationary portion, and carrying cams engaging the rear and front walls of the slots of said sleeve when operated.

5. In a coupling, the combination with the female member comprising a stationary portion and a projecting sleeve, provided with slots in its side walls, movable longitudinally thereon, of a male member adapted to be inserted in the projecting end of said sleeve and initially locked therein, and means for operating

said sleeve rearwardly to draw the ends of the male member and the stationary portion of the female member together and forwardly to push them apart, comprising a yoke-lever having enlarged cam portions pivoted eccentrically on the stationary portion and adapted to engage the rear and front walls of the slots of said sleeve when operated.

6. In a coupling, the combination with the female member, comprising a stationary portion and a projecting sleeve movable longitudinally thereon, of a male member adapted to be inserted in the projecting end of said sleeve and initially locked therein, lugs on said male member, means for operating said sleeve rearwardly to draw the ends of the male member and the stationary portion of the female member together and forwardly to push them apart, comprising a pair of levers pivoted to said stationary portion at each side thereof and provided with means thereon adapted to engage and slide said sleeve when operated, and a semicylindrical band pivotally supported on the ends of said levers, adapted to snugly fit said male member behind said lugs when the coupling is locked.

7. In a coupling, the combination with the female member, comprising a stationary portion and a projecting sleeve movable longitudinally thereon, of a male member adapted to be inserted in the projecting end of said sleeve and initially locked therein, means for operating said sleeve rearwardly to draw the ends of the male member and the stationary portion of the female member together and forwardly to push them apart, comprising a lever pivoted to said stationary portion and provided with means thereon adapted to engage and slide said sleeve when operated, and a packing-gasket interposed between the male member and the stationary portion of the female member.

8. In a coupling, the combination with the female member comprising a stationary portion and a projecting sleeve, provided with slots, movable longitudinally thereon, of a male member adapted to be inserted in the projecting end of said sleeve, means for initially locking said members comprising a plurality of lugs carried by said members and having inclined rear faces adapted to become engaged when the male member is inserted and rotated within the female member, and means for operating said sleeve rearwardly to draw the ends of the male and the stationary portion of the female member together and forwardly to push them apart, comprising a yoke-lever having enlarged cam portions pivoted eccentrically on the stationary portion and adapted to engage the rear and front walls of the slots of said sleeve when operated.

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

THOMAS J. GRIER.

Witnesses:
C. C. CHILLINGWORTH,
GEO. G. CURRIE.