E. F. BERRY.

COUPLING.

APPLICATION FILED FEB. 2, 1917.

1,233,172. Patented July 10, 1917.

Fig. 1.

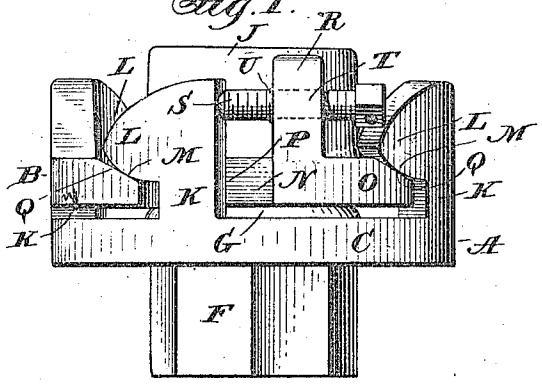


Fig. 2.

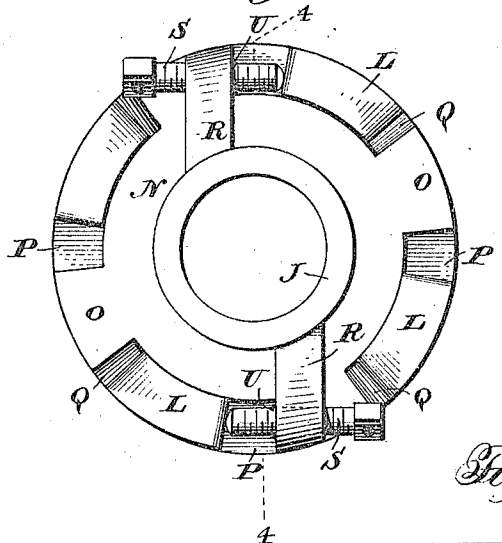


Fig. 3

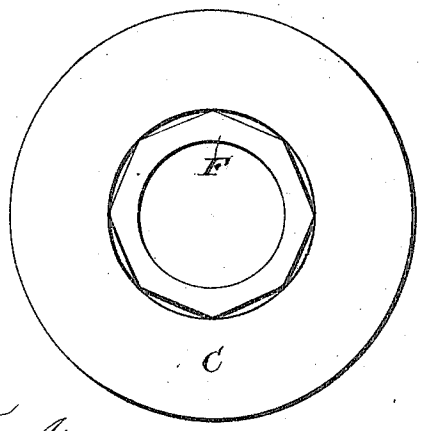
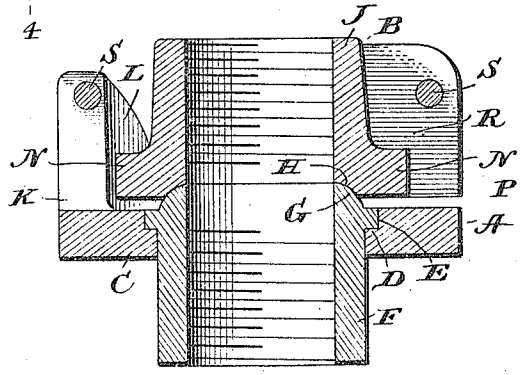


Fig. 4.



Witness

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By

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UNITED STATES PATENT OFFICE.

EDWARD F. BERRY, OF NEW ORLEANS, LOUISIANA.

COUPLING.

1,233,172. Specification of Letters Patent. Patented July 10, 1917.

Continuation in part of application Serial No. 123,938, filed October 5, 1916. This application filed February 2, 1917. Serial No. 146,253.

To all whom it may concern:

Be it known that I, EDWARD F. BERRY, citizen of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented certain new and useful Improvements in Couplings, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to improvements in couplings, and more particularly to that general type of coupling illustrated in my application for patent, filed Oct. 5, 1916, Serial No. 123938, of which latter application the present case is a continuation in so far as matter required to be divided out of said earlier application is here presented.

The object of the present invention is to simplify the construction of the coupling, while preserving adequate strength thereof, and incident to a material reduction of the metal required in its making correspondingly decreasing the cost of manufacture.

The invention embraces in the characteristic features thereof an improved manner of forcing the coöperating wedge or clamping members together, so that increased strength is given said forcing means enabling the application of great power without danger of fracturing or impairing the mounting for the adjustable element of the forcing means; also the formation of the associated separable coupling members so that they together present a substantially continuous smooth periphery devoid of outstanding projections, while enabling one of said members to be recessed through and inwardly from its edge for the accommodation of wedging parts carried by the other member and having nosed portions projecting in the direction of clamping movement of the members, all to the end that the coöperating parts are positioned inwardly as near as possible to the axis of the coupling, thereby enabling the whole to be of a compact, stocky, and consequently strong nature.

The various details in construction and arrangement of parts will be better understood from the specific description hereinafter contained when read in connection with the accompanying drawings forming part hereof, and wherein the preferred embodiment of the present invention is illustrated for the purpose of imparting to workers in the art a clear understanding of the invention.

In the drawings—

Figure 1 is a side elevation of the coupling;

Figs. 2 and 3 are respectively opposite end views; and,

Fig. 4 is a longitudinal sectional view.

Referring more specifically to the drawings, wherein like reference letters refer to corresponding parts in the several views, A represents one of the coupling members, considered as an entirety, and B the other coupling member. The coupling member A comprises a flat ring C provided interiorly with a seat D for the reception of the flanged inner end portion E of an interiorly threaded nut F adapted to detachably engage a correspondingly threaded end of the pipe or equivalent member to be coupled (not necessary to be illustrated herein). G is the tapered inner end of the part F adapted to engage and have a machine and sealing fit with a complemental tapered seat H interiorly of the coupling member B and at the inner end of the similarly interiorly threaded body J thereof adapted in turn to be detachably secured to the other pipe terminal or member to be coupled (also not shown).

Flush with the periphery of the ring C the same is formed with integral shanks K formed with circumferentially disposed nosed portions L formed with wedging surfaces M on their bottoms and projecting in the direction of rotation or coupling movement of the coupling members A and B.

The coupling member B has an integral collar portion N constituting in part the body to which I have previously alluded, and this collar has an integral flanged portion O of approximately the size of the flat ring C and terminating flush with the periphery of the latter, as shown.

Cut or formed in the flange O at intervals, in keeping with the number of the nosed wedge members L are recesses P of a length to permit the wedge parts M with their shanks K to be inserted through the recesses and then have sufficient movement in a rotary direction to bring the nosed portions into impinging relation with the wedge surfaces Q on the flange O adjacent that end of the recessed portions facing the nosed portions M. This action will cause a

firm seating and sealing engagement of the interior interfitting tapered surfaces previously defined.

To reinforce the flanged portions O intermediate of the recesses P formed therein, I provide the integral walls or lugs R extending entirely across the face of the flange O and along the collar N to form a solid metal tie between the collar and the flange filling the angle thereof. The outer edge of the wall R is flush with the peripheral surfaces of the flange O and ring C, and, as previously observed, the shank and nosed portions K—L are also flush with these surfaces to the end that no matter what the adjustment of the parts, there is a substantially continuous smooth peripheral surface entirely around the coupling, save for the small openings in the recessed portions enabling the relative rotary movement. In other words, the formation is such that the device is entirely devoid of laterally projecting parts exposed to be struck by extraneous objects and broken or bent. By this arrangement also the parts may be formed in a very close relation to each other and as near as possible to the center or axis of the coupling, which characteristic lends to the employment of stocky, strong material because, as will be instantly appreciated, the farther removed the coöperating portions of the flanges are related to the axis of the coupling, the less strength they will have to resist the forces applied in the coupling operation.

To secure the firm clamping and sealing of the parts together, as well as to lock them in adjusted relation, I provide means adapted to exert pressure behind the nosed portions L to cause them to forcibly ride over the coöperating surfaces Q of the flange O. This means comprises a threaded bolt S (or several may be employed as illustrated), adapted at its end to bear against the back of the nosed part, and having a threaded bearing through the wall or lug R, as at T, the head of the bolt being squared and transversely apertured to enable the application of a wrench or tool in adjusting the bolt when forcing home the coöperating wedging surfaces M—Q, or in loosening the parts to enable uncoupling.

To prevent accidental unscrewing of the bolt S the same immediately back of the nosed part and adjoining the wall or lug R is upset or burred as at U to temporarily destroy the thread. When the parts are to be separated the application of the force in the unturning movement of the bolt will reshape the thread to permit its passage through its threaded bearing in the wall or lug R, as will be clear.

While I have herein disclosed one specific embodiment of the invention, it will be apparent to persons skilled in the art to which the invention relates that the same is capable of embodiment in still other forms and devices, as will be comprehended by the hereto appended claims.

Having thus described the invention, what I claim is:

1. The combination with coupling members, one having a collar carrying a recessed flanged portion having a wedging surface, and the other having a nosed lug having a wedging surface to engage the said first mentioned surface when passed through said recessed portion, an integral lateral part projecting out from said collar, and a bolt threaded through said part to exert pressure behind the nosed lug, substantially as described.

2. The combination with coupling members, one having a collar carrying a recessed flanged portion having a wedging surface, and the other having a nosed lug having a wedging surface to engage the said first mentioned surface when passed through said recessed portion, an integral lateral part projecting out from said collar, and means adapted to exert a force between said part and the nosed lug to effect a binding engagement of the wedging surfaces.

3. The combination with coupling members, one having a collar carrying a recessed flanged portion having a wedging surface, and the other having a nosed lug having a wedging surface to engage the said first mentioned surface when passed through said recessed portion, an integral lateral part projecting out from said collar, and means adapted to exert a force between said part and the nosed lug to effect a binding engagement of the wedging surfaces, said part being also formed integrally with the recessed flange, substantially as described.

4. The combination of opposed coupling members, one having a collar and a recessed flange opening peripherally thereof, and the other having a nosed lug having a wedging surface adapted to engage an adjacent surface at the end of the recessed portion, the nosed lug projecting in the direction of the coupling movement, a lug formed integrally with the collar and flange of said first mentioned coupling member and filling the angle thereof, and an adjustable clamping bolt passing through said lug and bearing behind the nosed lug, substantially as described.

5. The combination of opposed coupling members, one having a collar and a recessed flange opening peripherally thereof, and the other having a nosed lug having a wedging surface adapted to engage an adjacent surface at the end of the recessed portion, the nosed lug projecting in the direction of the coupling movement, a lug formed integrally with the collar and flange of said first mentioned coupling member and filling the an-

gle thereof, and an adjustable clamping bolt passing through said lug and bearing behind the nosed lug, the surfaces of the nosed lug and the coupling member carrying the same, as well as the surface of the flange, being coincident to present a continuous peripheral formation devoid of lateral projections.

6. The combination with coupling members, one carrying a recessed flanged portion having a wedging surface, and the other having a nosed lug having a wedging surface to engage the said first mentioned surface when passed through said recessed portion, an integral lug on said recessed flanged portion, and a bolt having a threaded bearing in said lug adapted to engage behind the nosed lug to force the wedging surfaces together, said bolt being provided with means intermediate of said integral lug and the nosed lug to prevent accidental loosening of the bolt, substantially as described.

7. The combination with coupling members, one carrying a recessed flanged portion having a wedging surface, and the other having a nosed lug having a wedging surface to engage the said first mentioned surface when passed through said recessed portion, an integral lug on said recessed flanged portion, and a bolt having a threaded bearing in said lug adapted to engage behind the nosed lug to force the wedging surfaces together, said bolt being provided with means intermediate of said integral lug and the nosed lug to prevent accidental loosening of the bolt, said last mentioned means comprising a part of the bolt having its thread upset immediately adjacent to the integral lug.

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

EDWARD F. BERRY.

Witnesses:
EDMUND WEGENER,
M. VON BEHREN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."