

W. F. BAUM.

COUPLING.

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953,506.

Patented Mar. 29, 1910.

Fig. 1.

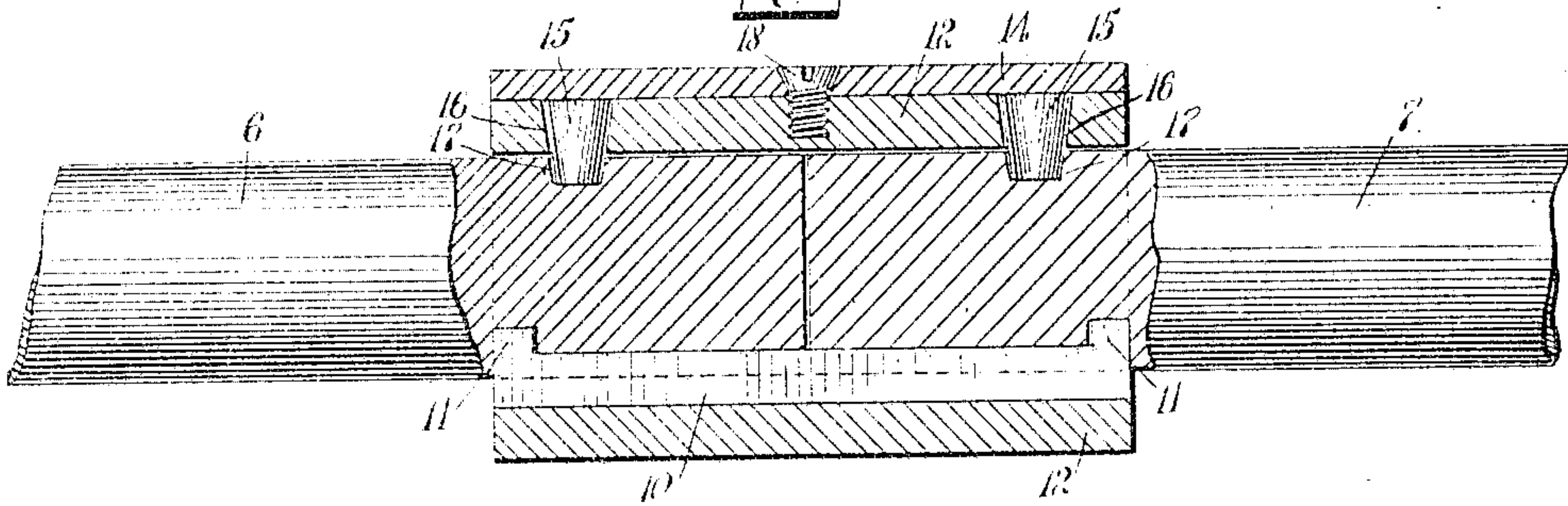


Fig. 2.

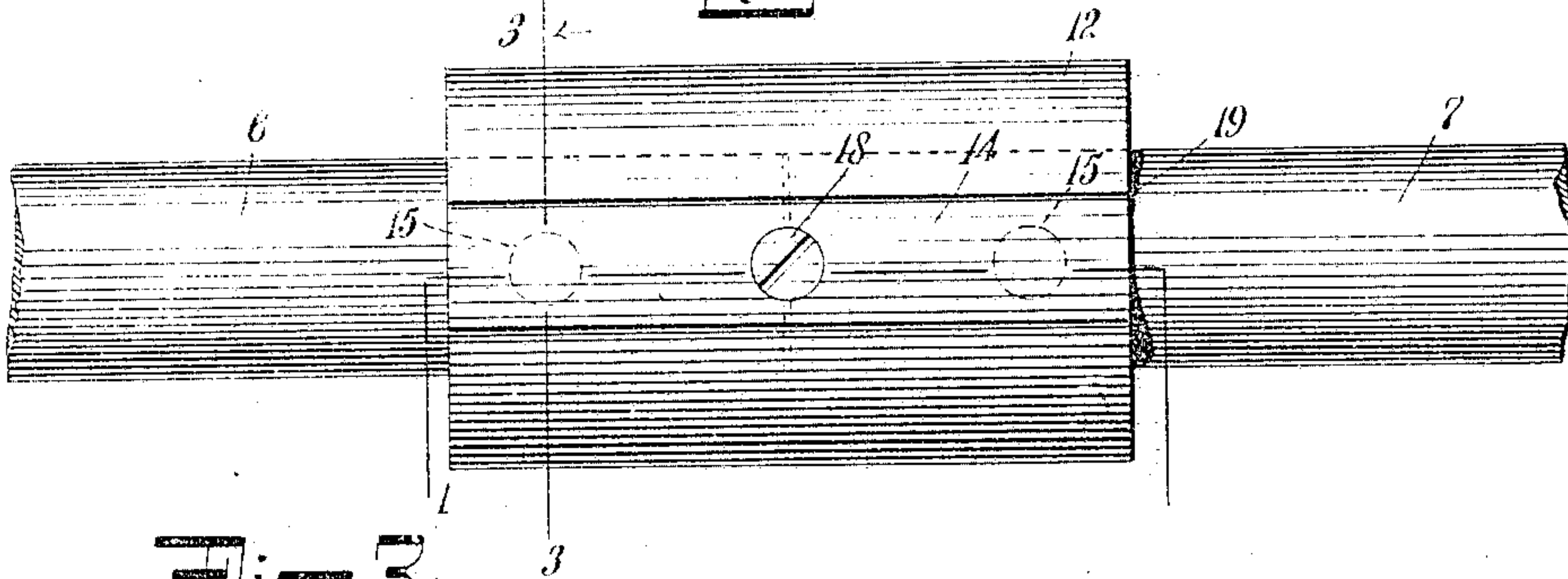


Fig. 3.

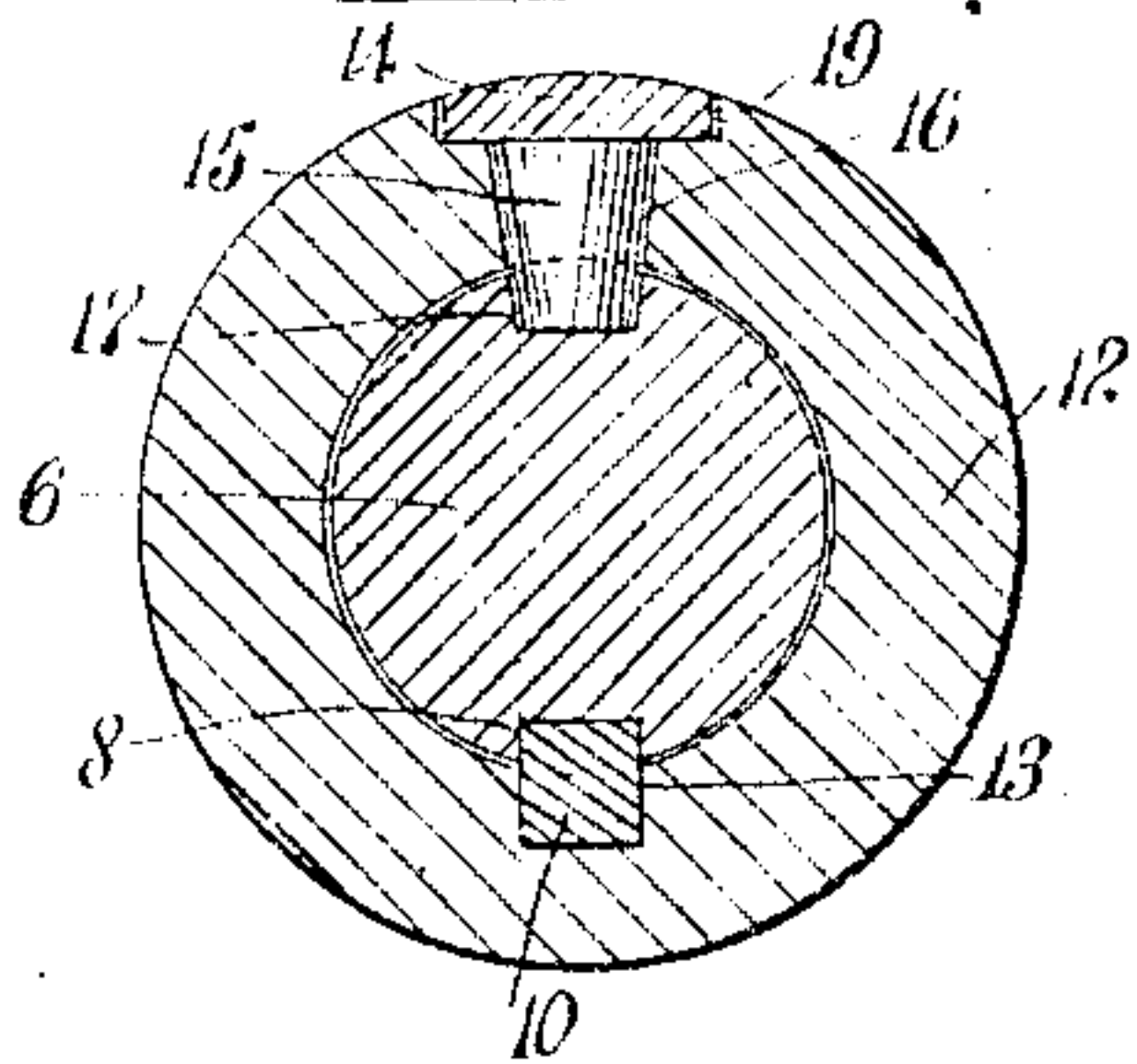


Fig. 4.

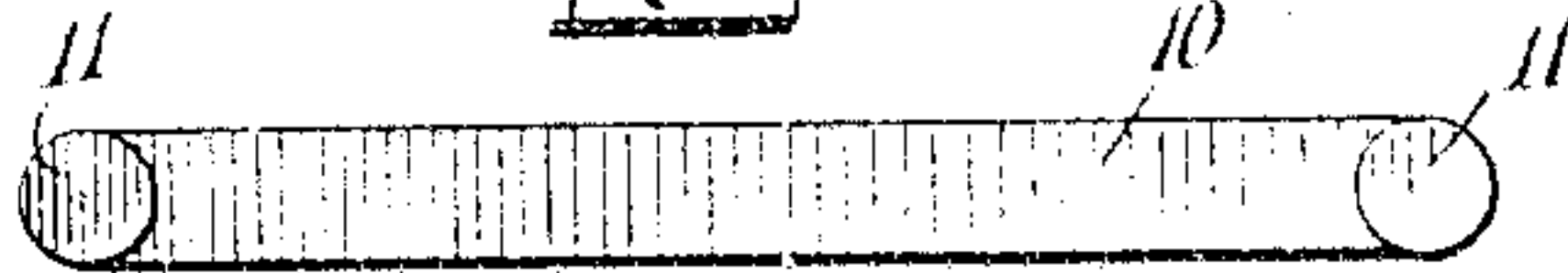
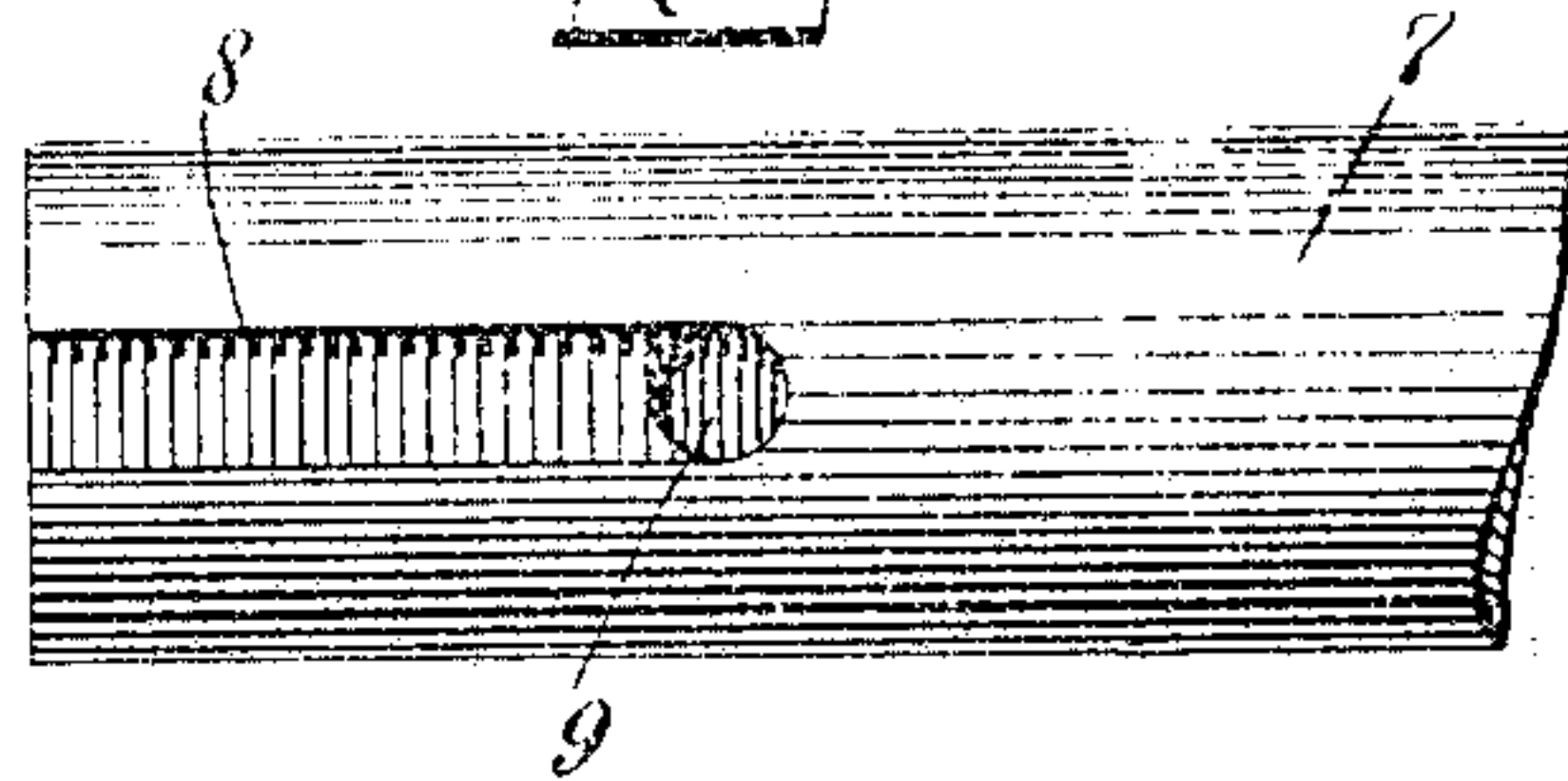


Fig. 5.



WITNESSES

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# UNITED STATES PATENT OFFICE.

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## COUPLING.

953,506.

Specification of Letters Patent.

Patented Mar. 29, 1910.

Application filed December 21, 1909. Serial No. 534,306.

*To all whom it may concern:*

Be it known that I, WILLIAM FREDERICK BAUM, a citizen of the United States, and a resident of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and Improved Coupling, of which the following is a full, clear, and exact description.

My invention relates to couplings, my more particular purpose being to provide a type of coupling especially adapted for connecting together the abutting ends of two revoluble shafts or analogous members.

More particularly stated, my invention comprises, among other things, a key to be sunken partially into the two adjacent ends of the shafts to be coupled, and a sleeve for holding this key in position, the sleeve being movable longitudinally in the general direction of its own axis, which coincides with the general axial line of the shafts; also another key for locking the sleeve securely to both shafts and means for holding this last-mentioned key in position.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a section on the line 1—1 of Fig. 2, looking in the direction of the arrow, and showing my improved coupling as applied to two shafts and locking the same together; Fig. 2 is a plan view of the mechanism shown in Fig. 1 and shows particularly the key for holding the sleeve in position; Fig. 3 is a cross section on the line 3—3 of Fig. 1, looking in the direction of the arrow; Fig. 4 is a detail showing in plan the inner key—that is, the one to be partially sunken, throughout its entire length, into the two shafts; and Fig. 5 is a fragmentary plan view of one of the shafts, showing the groove for holding the key just mentioned.

At 6, 7 are shown the two shafts to be coupled. Each of them is provided with a groove 8 (see Fig. 5) terminating in a pit 9.

At 10 is a key which, because of its location, I designate as the inner key. This key is rectangular in cross section, as indicated in Fig. 3, and is provided at its ends with two upturned lugs 11 adapted to fit into the pits 9. The key as a whole is partially sunken into the grooves 8, the lugs 11 completely filling the pits 9.

At 12 is a sleeve made of tough metal and

having generally the proximate form of a cylinder. This sleeve is provided with a groove 13 extending throughout its entire length and parallel with its general longitudinal axis. This groove is of such a depth that when the key 10 is partially sunken into the grooves 8 and the sleeve slipped over the key 10, as indicated in Fig. 1, the key 10 extends to the bottom of the groove 13 as will be understood from Fig. 3.

At 14 is another key which, because of its location, I term the outer key. Its cross section is substantially segmental as indicated in Fig. 3, its outer surface corresponding in curvature to that of the outer surface of the sleeve 12. This outer key 14 is provided with lugs 15, each of substantially conical form and mounted directly upon it, being also preferably integral with it. The sleeve 12 is provided with holes 16 of substantially frusto-conical form and of such size that the lugs 15 fit neatly into them. The shafts 6, 7 are provided with holes 17 of proper conformity to receive the smaller ends of the lugs 15, as indicated in Fig. 1.

At 18 is a screw which extends through the outer key 14 and directly into a portion of the sleeve 12, this portion coinciding with the bottom of a groove 19 into which the outer key 14 is sunken.

The operation of my device is as follows: I will suppose that the operator wishes to connect together the two shafts 6, 7, and that these shafts are disposed in alinement so that their ends abut each other. The key 10 is first fit into the groove 8, the lugs 11 extending into the pits 9. This leaves the key 10, throughout its entire length, projecting a little from the outer surfaces of the shafts 6, 7. The sleeve 12, which first encircles one of the shafts 6, 7, is next slid in the general direction of its axis, so as to pass over the key 10, the sleeve being so guided that the groove 13 receives the protruding portion of the key in question. The outer key 14 is next placed in the groove 19, the lugs 15 extending through the holes 16 in the sleeve and entering the holes 17 in the two shafts. The screw 18 is now extended through the outer key 14 and into the adjacent portion of the sleeve 12 and turned until this sleeve is held firmly against the bottom of the groove 19. The two shafts are now connected rigidly together by a coupling which is exceedingly strong—so much so that the adjacent ends of the shaft cannot be turned



relatively to each other except by a force which is sufficient to mutilate them to a considerable extent.

Owing to the large diameter and massive construction of the sleeve 12 and to the manner in which the two keys are interlocked, this coupling, with the shafts in it, has a strength equal to that of any portion of either shaft. In order to disconnect the shafts the screw 18 is taken out, the key 14 removed, and the sleeve 12 slipped in either of the two general directions of its axial length. The two shafts can be quickly coupled or uncoupled and when coupled are in precise alinement with each other.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In a coupling, the combination of a pair of revoluble members to be connected together, a key connected with both of said members, a sleeve encircling the adjacent ends of said members, and also encircling said key, said sleeve being provided with a

groove, another key located within said groove and provided with portions engaging said revoluble members directly, and means for holding said last-mentioned key within said groove.

2. A coupling, comprising a pair of revoluble members, a key for connecting the same together, a sleeve encircling said revoluble members, and also encircling said key, said sleeve being provided with a groove and with holes, a key mounted within said groove and provided with lugs extending through said holes for the purpose of engaging said revoluble members, and a fastening member connected with said key and also connected with said sleeve for the purpose of holding said key within said groove.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM FREDERICK BAUM.

Witnesses:

WILLIAM M. BENWORT,  
WILLIAM WETTER.