

No. 625,948.

Patented May 30, 1899.

F. L. BICKEL.
COMPRESSION COUPLING.

(Application filed Oct. 12, 1898.)

(No Model.)

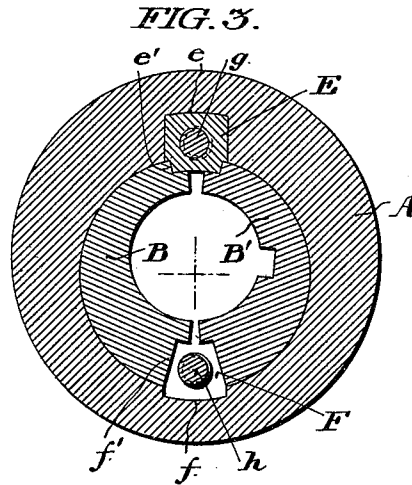
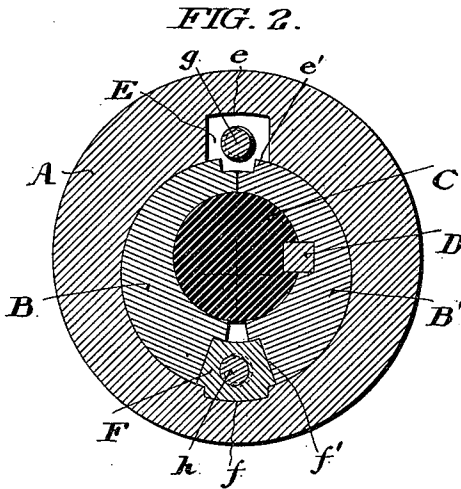
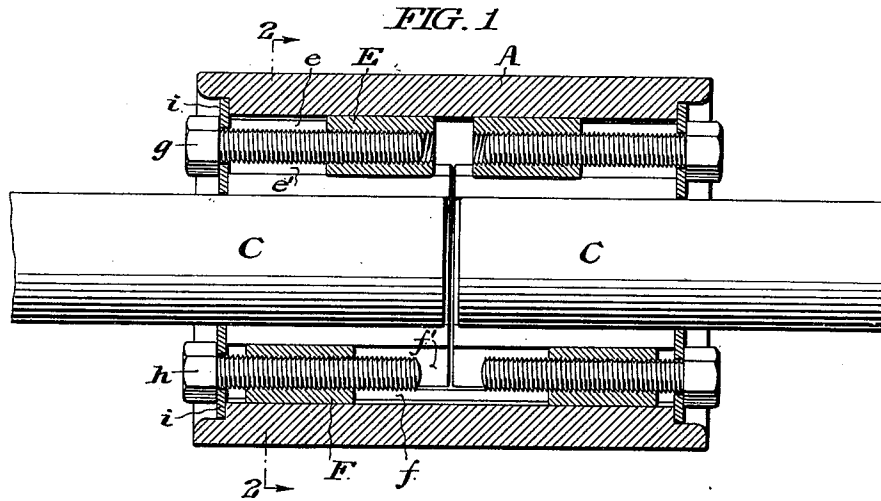


FIG. 5.

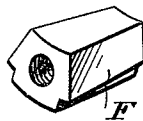
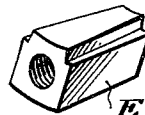


FIG. 4.



WITNESSES:

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FREDERICK L. BICKEL, OF PHILADELPHIA, PENNSYLVANIA.

COMPRESSION-COUPLING.

SPECIFICATION forming part of Letters Patent No. 625,948, dated May 30, 1899.

Application filed October 12, 1898. Serial No. 693,275. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK L. BICKEL, a citizen of the United States, residing in the city of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Compression-Couplings, whereof the following is a specification, reference being had to the accompanying drawings.

My invention relates to a compression-coupling device primarily adapted to couple separate lengths of shafting. It is simple in construction. It does not involve any conical turning. It affords a very gradual and therefore a very strong compression. Each half of the coupling may be clamped to a shaft irrespective of the operation of the other half. No separate piece is needed to perform the operation of uncoupling.

In the accompanying drawings, Figure 1 represents a longitudinal central section of a coupling device embodying my invention, the two coupled shaft ends being shown *in situ*. Fig. 2 is a cross-section of the same along the line 2 2, Fig. 1. Fig. 3 is a similar section showing the coupling loosened and the shaft end removed. Figs. 4 and 5 are separate views of the tapered blocks E F, Fig. 1.

A is the external barrel of my coupling. Through it is cut a large cylindrical hole. Within this eccentric hole there fits at both ends an eccentric split annulus, the eccentricity of the annulus being equal to the eccentricity of the hole cut in the barrel, so that the central ring of the annulus is concentric with the barrel. Taking, for example, the left-hand end of Fig. 1 as seen in the section Fig. 2, the eccentric annulus is split into two equal segments B B', the split occurring along the axis of eccentricity. At the narrow ends of these segments there is little or none of the annulus removed at the point of splitting beyond that which necessarily results from cutting them apart. At the broad ends a sufficient amount of metal is removed from the opposing ends of the segments to allow for the requisite amount of rotation within the barrel to effect the loosening and fastening of the coupling. When the segments are so rotated that their narrow ends nearly touch, their interior surfaces form a practically perfect circle, broken only for a short distance between the broad ends of the segments and

clamping tightly upon the shaft C, which they are designed to fit. This is the position shown in Fig. 2. On the other hand, if the segments are rotated until their broad ends approach or touch each other the shaft is released. This is the position shown in Fig. 3.

D represents a key inserted between the shaft and one of the segments in a suitable keyway cut between them.

Along the inside of the barrel, opposite each of the splits between the segments, is cut a straight slideway *ef*. Similarly the ends of the segments at each split are partially cut away into tapered slideways *e' f'*. Within the double ways thus formed run the tapered blocks E F, the straight portions of which run in the straight slideways cut in the barrel, while their tapered portions correspond in taper to and run within the tapered slideways between the ends of the segments. The greater portion of the block E is straight and runs in the barrel. The greater portion of the block F is tapered and runs between the segments. Lengthwise through each of these blocks is cut a screw-thread, which receives a bolt *g h*. Between the heads of the bolts and the surface of the barrel and segments washers *i* are interposed.

The right-hand end of the coupling (seen in Fig. 1) is the exact counterpart of the left-hand end, which has been described.

The partial rotation of the segments, by which the fastening and loosening of the coupling are effected, is accomplished by the sliding of the blocks E F. In order to fasten the coupling, the block E, corresponding to the narrow ends of the segments, is sent to the bottom of its ways by rotating the screw *g*. The block F is then brought as far forward as possible by rotation of the screw *h*, its wedging action separating the broad ends of the segments and clamping the coupling strongly to the shaft. When this has been accomplished, the screw *g* is rotated sufficiently to draw the block E into firm engagement to prevent rattling, and the coupling is effected, the parts occupying the position shown in Fig. 2. To disengage the coupling, the screw *h* is rotated until the block F is sent to the lower end of its way, and then the screw *g* is rotated so as to draw the block E forward, which by its wedging

action divides the segments at their narrow ends, releasing the coupling.

It is evident that each half of my coupling is independent of the action of the other half, although in structure and operation they are the same.

Although I have described my device with reference to its adaptation to a double shaft-coupling, either half of such a coupling is operative by itself and may be used as a compression hub or clamp or as a friction-coupling.

Having thus described my invention, I claim—

1. A compression-coupling, consisting of an exterior barrel with a cylindrical hole; an eccentric annulus fitting within the same, divided along its axis of eccentricity into two annular segments, each segment being sufficiently cut away at its broad end to allow its partial rotation within the barrel; positive means whereby the narrow ends of the segments may be caused to approach each other

and clamp a shaft within them; and corresponding positive means whereby the broad ends may be caused to approach each other for the purpose of unclamping, substantially as described.

2. A compression-coupling, consisting of an exterior barrel with a cylindrical hole; an eccentric annulus fitting within the same, divided along its axis of eccentricity into two annular segments, each segment being sufficiently cut away at its broad end to allow its partial rotation within the barrel; a tapered way cut partially between each of the opposing ends of the segments; correspondingly-tapered blocks running in these ways; and means for positively controlling the position of these blocks within their ways, substantially as described.

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Witnesses:

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