

No. 849,860.

PATENTED APR. 9, 1907.

G. S. SEARLE.  
SHAFT COUPLING.

APPLICATION FILED MAY 28, 1903.

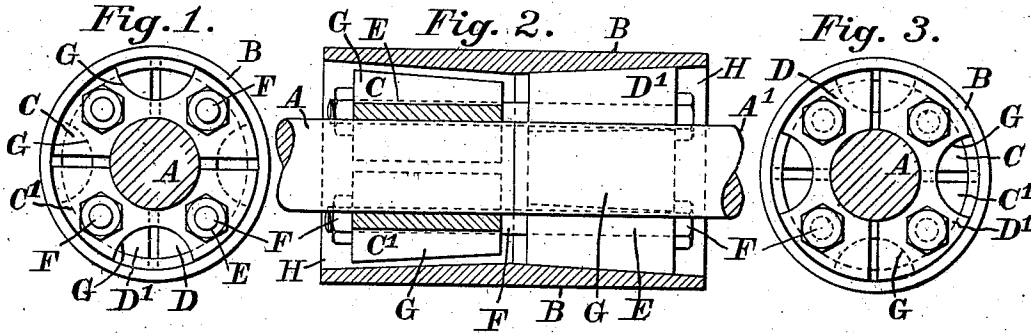
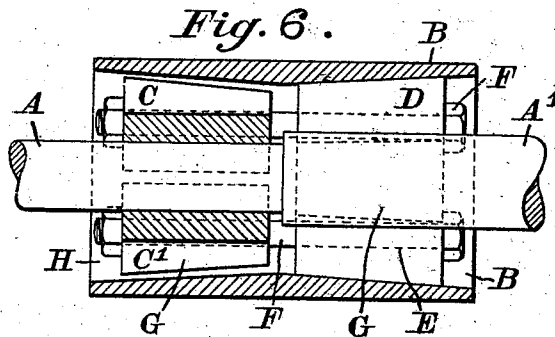
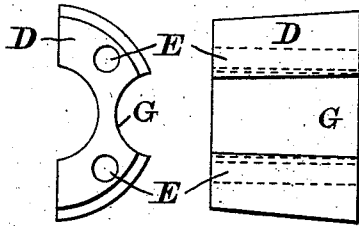


Fig. 4. Fig. 5.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

GEORGE SAMUEL SEARLE, OF ROCHESTER, NEW YORK.

## SHAFT-COUPLING.

No. 849,860.

Specification of Letters Patent.

Patented April 9, 1907.

Application filed May 28, 1903. Serial No. 159,162.

*To all whom it may concern:*

Be it known that I, GEORGE SAMUEL SEARLE, residing at Rochester, in the county of Monroe and State of New York, have invented a new and useful Shaft-Coupling, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to the general class of what are known as "compression" shaft-couplings, and has for its object the coupling of the abutting ends of two sections of shafting in perfect alinement by friction without the aid of keys or screws in a simple, cheap, and efficient manner.

My invention is fully described, and illustrated in the following specification and the accompanying drawings, the novel features thereof being specified in the claims annexed to the specification.

In the accompanying drawings, representing a shaft-coupling embodying my invention, Figure 1 is an end view. Fig. 2 is a longitudinal section. Fig. 3 is an end view as seen from the right hand in Fig. 2. Fig. 4 is an end view of one of the clamping-jaws. Fig. 5 is a side elevation of the same. Fig. 6 is a longitudinal section showing the manner of coupling shafts of different sizes.

The construction and mode of operation of my improved shaft-coupling will be understood from the accompanying drawings, in which—

A and A' represent the portions of shafting to be coupled; B, a sleeve or shell forming the body of the coupling, its outer surface being cylindrical and of even diameter, its inner surface being that of two truncated cones, the bore of the shell tapering from its outer ends toward the center, as shown in Fig. 2.

Into each end of the shell B is fitted a set of shaft-engaging jaws, a pair of jaws C and C', D and D' being shown in Figs. 1, 2, and 3. These jaws are semicircular in section, of a length somewhat less than one-half the length of the shell B, their inner surfaces being made to fit the shafts to be coupled, their outer surfaces of conical form to correspond to the inner surface of the shell B. These jaws are provided with bolt-holes E, through which pass bolts F for the purpose of drawing these jaws together, their outer surfaces bearing against the inner conical surface of the shell B, causing them to grip the shaft as the bolts are tightened.

Fig. 4 represents an end view of one of

these jaws, in this case the jaw D, Fig. 3 and Fig. 5 a side view of the same. These jaws are provided with a semicircular groove G, running lengthwise on their outer surface, as shown in Figs. 4 and 5, to reduce the rigidity of the jaw, so as to allow it to more easily conform to and grip the shaft. This groove also serves another purpose to be described later on.

To insure the better alinement of the shafts, it has been found best to arrange these jaws as shown in Figs. 1 and 3, with the line of separation of each pair forming an angle of ninety degrees with that of the pair on the opposite end. By this arrangement any uneven tension of the bolts is more nearly equalized, and it is less easy for one jaw to be drawn in ahead of its mate, thereby destroying the alinement.

It is desirable that the opposing pairs of jaws shall not meet in the center of the assembled coupling, thereby assuring the proper amount of compression on the shafts and also allowing a small space to accommodate a burred, battered, or upset shaft end.

It is desirable that the shell B shall project beyond the outer ends of the jaws sufficiently far to protect the bolt-heads and nuts, as shown at H, Figs. 2 and 6.

The coupling is most easily tightened by means of a socket-wrench.

In many forms of couplings no means are provided for removing the same from the shafts, often causing great annoyance. By means of the grooves G in the jaws we are enabled to introduce a bar, punch, or one of the coupling-bolts and drive out the jaws on the opposite end, thereby providing an easy and efficient means of removal.

My improved coupling has an advantage over many forms of couplings, especially those embodying a split sleeve to embrace both shafts, in that it will accommodate itself to shafts of considerable difference in diameter, one pair of jaws drawing in farther than the other to close on the smaller shaft.

Fig. 6 represents how by the introduction of a pair of jaws with a smaller shaft-opening a shaft of any diameter may be coupled with a larger one.

I claim as my invention—

1. In a shaft-coupling, the combination with a casing having oppositely-inclined surfaces therein, of a set of independently-operable jaws arranged to cooperate with each of said inclined surfaces and having shaft-

engaging surfaces thereon, the adjacent edges of the jaws of each set being out of alinement with those of the other and devices connecting the jaws of one set with those of the other set.

2. In a shaft-coupling, the combination with a casing having oppositely-inclined cone-surfaces therein, of a set of jaws adapted to fit each cone-surface, the jaws of each set being independently adjustable in a direction axially of the casing and having shaft-engaging surfaces thereon, the adjacent edges of the jaws of one set being out of alinement with those of the other and bolts connecting the jaws of one set with those of the other set for drawing them together.

3. In a shaft-coupling, the combination with a casing having oppositely-inclined surfaces therein, of a set of jaws adapted to cooperate with each of said surfaces and having shaft-engaging surfaces thereon, the jaws of

one set having recesses formed therein at points opposite to the meeting edges of the jaws of the opposite set to admit a tool for removing the jaws.

4. In a shaft-coupling, the combination with a casing having oppositely-inclined surfaces formed therein, of a pair of jaws adapted to cooperate with each of said inclined surfaces, and having shaft-engaging surfaces thereon, the adjacent longitudinal edges of the jaws of one pair being arranged at right angles to those of the other pair, and clamping-bolts connecting the jaws of one pair with those of the other pair.

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

GEORGE SAMUEL SEARLE.

Witnesses:

GEORGE A. GILLETTE,  
GILBERT S. DEY.