G. E. RIDER.

SHAFT-COUPLING.

No. 183,071. Patented Oct. 10, 1876.

Fig. 1.

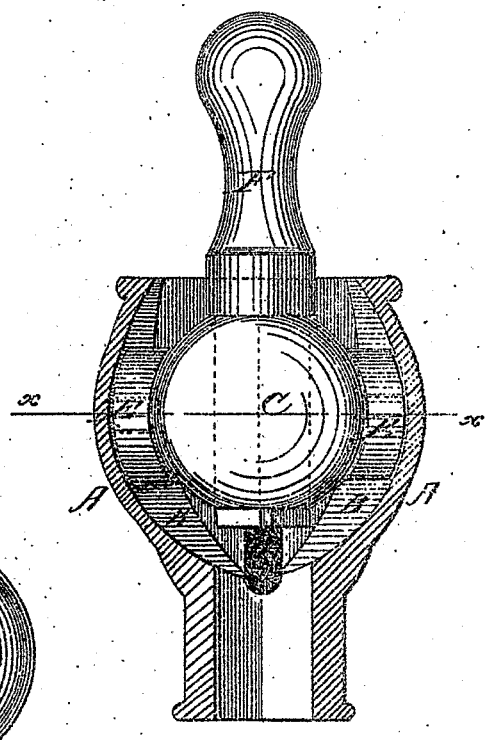


Fig. 3.

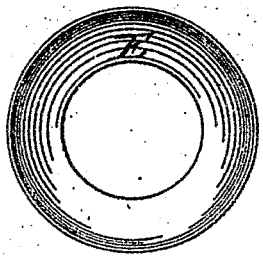


Fig. 4.

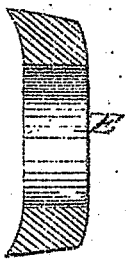
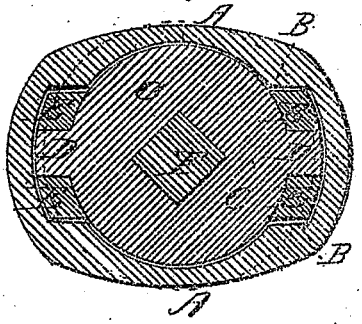


Fig. 2.



Witnesses.
Fred. G. Dieterich
L. Bigelow

Inventor
George E. Rider
per H. Breed
Atty

UNITED STATES PATENT OFFICE.

GEORGE E. RIDER, OF MARTIN'S FERRY, OHIO.

IMPROVEMENT IN SHAFT-COUPLINGS.

Specification forming part of Letters Patent No. 183,071, dated October 10, 1876; application filed May 17, 1876.

To all whom it may concern:

Be it known that I, GEORGE E. RIDER, of Martin's Ferry, in the county of Belmont and State of Ohio, have invented certain new and useful Improvements in Shaft-Couplings; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

In the accompanying drawings, Figure 1 represents my improved shaft-coupling, partly in section. Fig. 2 is a section on line *x x* of Fig. 1. Figs. 3 and 4 represent the anti-friction rollers.

My improved shaft-coupling relates to that class of couplings which have balls and sockets; and one object which I have in view is to chill the wearing-surfaces, and also to prevent friction. This object is accomplished by casting the ball and socket separately in a chill, and by the use of anti-friction rollers.

In casting the shell A I place in the mold or upon the core two chills, of suitable shape, to form the mortises or track B for the anti-friction rollers to work in, as will be soon explained. By these chills the wearing-surfaces of the mortise or track B are made very hard, and they require no fitting. In like manner the ball C is cast in a chill, having two trunnions, D, to receive the anti-friction rollers E, which are also cast in a chill. The tread of these rollers is slightly beveled, as shown in Fig. 4, and the mortise B is also beveled, or the roller-tracks correspond to the tread of the rollers, so that both bevel surfaces tend to keep the rollers in place upon the trunnions of the ball C, and prevent them from working outward, which would produce great friction and binding upon the outside shell. By the use of two trunnions on the ball C the two rollers E work on the same axis, and thus it is impossible for them to bind.

The wide mouth of the shell A is concave within, so as to grasp and hold the ball C and rollers E in working position, and thus make it impossible for the ball to come out of the shell while working, or when the shaft F is coupled therewith, and yet the mouth of the shell is sufficiently broad to allow the ball and rollers to be removed from the shell or replaced therein when the shaft F is uncoupled and the ball turned so as to bring one trunnion and roller opposite the mouth of the shell.

Having described my invention, I claim—

In contradistinction to shaft-couplings composed of a two-part shell and four rollers, the shell in one piece, provided with grooves for the rollers, in combination with the ball and two rollers, the frictional contact of shell, ball, and rollers being chilled, and the whole arranged in the manner shown and described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

GEORGE E. RIDER.

Witnesses:

DANIEL BREED,

WILLIAM L. BRAMHALL.