(No Model.)

J. RICHARDS.

SHAFT COUPLING.

No. 334,547. Patented Jan. 19, 1886.

Fig. 1.

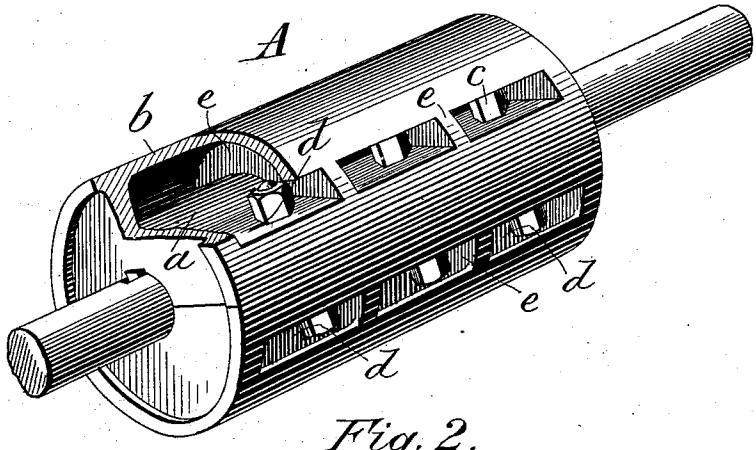
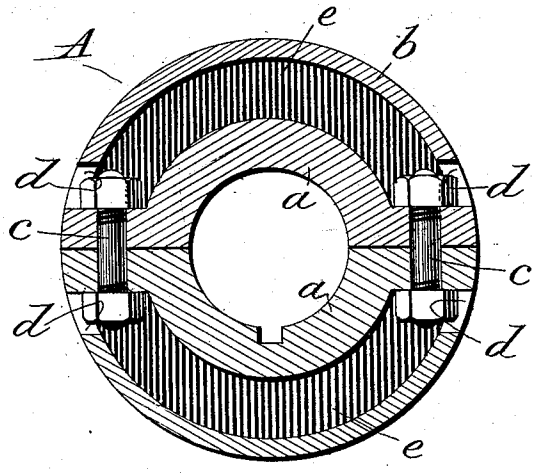


Fig. 2.



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N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

JOHN RICHARDS, OF SAN FRANCISCO, CALIFORNIA.

SHAFT-COUPLING.

SPECIFICATION forming part of Letters Patent No. 334,547, dated January 19, 1886.

Application filed November 18, 1885. Serial No. 183,194. (No model.)

To all whom it may concern:

Be it known that I, JOHN RICHARDS, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Shaft-Couplings; and I do declare the following to be a full, clear, and exact description of the invention, such as 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 and figures of reference marked thereon, which form a part of this specification.

This invention relates to an improvement in that class of devices known as "shaft-couplings;" and it consists in a coupling constructed in two parts or halves connected by clamping-screws, each half consisting of two semi-cylindrical walls or shells formed integral with each other by means of transverse partitions; and, further, it consists in certain peculiarities of construction, as will be hereinafter fully set forth.

In the annexed drawings, illustrating my invention, Figure 1 is a perspective view of my improved shaft-coupling with one corner broken away to show the interior space between the shells of one section, and Fig. 2 is a cross-section of the same.

Like letters of reference designate like parts in the several views.

A A represent the two hollow sections or parts of which the coupling is composed. Each of these sections is formed with two semi-cylindrical walls, *a b*, between which is an annular space, as clearly shown in Fig. 2. These two walls *a b* are formed integral with each other by means of end walls and transverse partitions or diaphragms *e e*, which divide up the hollow space into several chambers, within which are located the nuts for securing the clamping-bolts.

Reference to Fig. 2 will show that the inner shells, *a a*, are flanged longitudinally, these flanges being perforated for the passage of bolts *c c*. It is generally most convenient, also, to provide the interior surface of shells *a a* with one or more recesses for the insertion of keys, as is usually done in most shaft-couplings. The outer shells, *b b*, completely cover the inner shells, with the exception of the slots *d d*, which are left open, there being one of them between every two transverse partitions, preferably, and sufficiently large to allow of the easy manipulation through it of a wrench or other instrument for tightening the nuts upon the clamping-bolts. The number of partitions or diaphragms *e e* will obviously depend upon the length and size of the coupling, as will also the number of bolts *c*. In the smaller sizes two bolts on a side might be sufficient to clamp the two sections together. In larger sizes four bolts would be requisite, or an intermediate size might have three bolts, as shown in the drawings. By this construction a compression-coupling is effected which is simple, durable, cheap, and interchangeable, so as to be adjustable to the extent of clamping and connecting shafts of slightly-varying diameter. There are no projecting parts to catch or cause danger, since the heads of the bolts and the nuts are entirely shielded and covered by the outer shells. This covering also preserves the bolts by keeping them inclosed, so that they are not liable to rust. This coupling can be employed as a pulley to drive machinery, since its external surface is cylindrical and sufficiently large to carry a band or belt. A greater strength is also gained with the same amount of metal used by other couplings much less strong. Hitherto entire cylindrical sleeves have been used to cover the bolts. Such sleeves evidently add nothing to the strength of the coupling, for they are detachable therefrom and are merely used to cover the bolts. The interior parts have to be made as heavy as before—that is to say, they have to be made heavy enough to take the entire strains to which the coupling is subjected. This increases very much the relative proportion of the diameter of the coupling to that of the shaft. The bolts are consequently situated at some distance from the shaft itself. A great desideratum in a shaft-coupling is to have the bolts placed close to the shaft. This makes the coupling lighter, while at the same time it gives it greater strength. In the couplings just described recesses or notches are usually made for receiving the heads and nuts of bolts in order to attain this end. In my improved coupling the inner shells may be made very light, and yet not inconsistently so with the strength required, for

they are strengthened by means of the outer shell and the cross-partitions. Thus by my construction of a coupling in two parts, each one of which consists of shells integral with each other, material is saved and various additional advantages gained.

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

1. A shaft-coupling composed of two sections, each section consisting of two semi-cylindrical shells formed integral with each other by means of transverse partitions located in the annular space between the shells, and said sections being connected by clamping-bolts, substantially as shown and described.

2. A shaft-coupling composed of two sections, each section consisting of two semi-cylindrical shells formed together of a single piece of metal in such a manner as to leave a hollow space between them, substantially as shown and described.

3. In a shaft coupling, the combination of two sections, each section having an inner shell provided with a longitudinal flange perforated to receive clamping-bolts, an outer shell slotted to allow access to said bolts, and transverse partitions connecting the shells, substantially as shown and set forth.

4. In a shaft-coupling, the hollow chambered sections A A, provided with slots *d d*, and adapted to be secured together by bolts whose heads and nuts are inclosed within the hollow spaces, substantially as shown and described.

5. In a shaft-coupling, the sections A A, each cast in one piece, and consisting of an inner flanged semi-cylindrical shell, an outer slotted semi-cylindrical covering, and transverse partitions, substantially as shown and described.

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

JOHN RICHARDS.

Witnesses:
ALBERT E. HALL,
WILLIAM DAVIES.