

W. J. BAMFORD.

Improvement in Shaft-Couplings.

No. 131,146.

Patented Sep. 10, 1872.

Fig. 1.

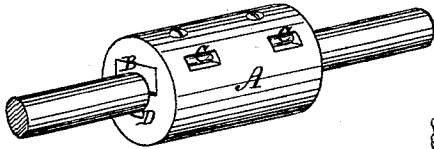


Fig. 2.

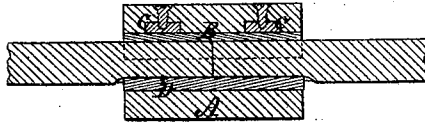


Fig. 3.

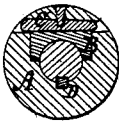
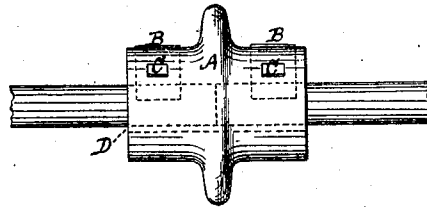


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM J. BAMFORD, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR OF ONE-HALF HIS RIGHT TO DENNIS HIGGINS, OF SAME PLACE.

IMPROVEMENT IN SHAFT-COUPLINGS.

Specification forming part of Letters Patent No. 131,146, dated September 10, 1872; antedated September 5, 1872.

To all whom it may concern:

Be it known that I, WILLIAM J. BAMFORD, of the city and county of Providence and State of Rhode Island, have invented a certain new and useful Shafting-Coupling.

My invention consists in a novel combination of an exterior shell or sleeve, provided with a movable or fixed spline, or equivalent device; a gib, which is seated longitudinally upon the two lengths of shafting, at their abutting ends, and held thereto by means of wedge-keys crossing the gib at right angles through suitable apertures in the sleeve, by means of which shafting may be firmly and economically coupled in such a manner that a connection or disconnection may be easily and rapidly effected, if desired; and I do hereby declare that the following specification, taken in connection with the drawing furnished and forming part of the same, is a clear, true, and exact description of my invention.

Referring to the drawing, Figure 1 represents one of my couplings in perspective, as if applied to the abutting ends of two lengths of shafting. Fig. 2 represents the same entire, in similar position, but in longitudinal vertical section. Fig. 3 represents the same in cross-vertical section. Fig. 4 represents another form of shell or sleeve.

A, in all the figures, denotes the shell or sleeve, which embraces the two abutting ends of shafting. It is provided with a longitudinal opening which may be readily described as partially concave, and of such a curve as will enable it to snugly receive the shafting, and also partially rectangular, having a straight, long side, and two shorter sides at right angles thereto. At the lower side of the curved portion it is also grooved throughout its length. B denotes a rectangular gib, which is of equal length with the sleeve, and is fitted to readily enter the opening in the sleeve. On one side it is partially concave, with a circular line corresponding with that of the partial concave opening in the sleeve A, in such a manner that when in position the gib and the concave portion of the sleeve will embrace closely the shafting when interposed between them. C

denotes, in each instance, a plain wedge-key, two of which are fitted to enter slots cut through the sleeve at right angles to the central opening, adjacent to its longest straight side before referred to. D denotes, in this instance, a movable spline, fitted to corresponding key-slots cut longitudinally in each length of the shafting for a short distance from the ends. Instead of a movable spline, a fixed projection can readily be formed on the interior of the shell or sleeve; or one side of the concave interior may be made on a straight plane, if desired, and the shafting fitted to the projection, or flattened off to correspond with the plain surface, as it is essential that there should be between the shafting and the coupling two surfaces of such a character as will practically secure unity between the two, when the several parts of the coupling are properly adjusted.

It will be readily observed that approximate results may be obtained if the concave portion of the gib be made with a partially-plain surface, or provided with a spline, or its equivalent, for engaging with the shafting; but it is obviously preferable to have these devices on the opposite side of the shafting. In practice, there should be sufficient space between the broad flat side of the gib and the portion of the sleeve next adjacent, to admit of a ready movement of the gib away from the shafting, and also between the other sides of the gib and the sleeve, so as to admit of the ready withdrawal of the gib from the sleeve in either direction. The wedge-keys should, of course, be fitted with as little incline as will produce the requisite pressure on the gib, and be provided with any of the well-known appliances for holding them in position after proper adjustment. In the present instance I have represented an ordinary set-screw of the simplest kind, as bearing through the sleeve upon each key at a central point. By having the wedge-keys fitted to enter their slots in the sleeve from opposite sides, desirable results can be attained, as the tendency to work loose when so placed is somewhat lessened.

It will be readily comprehended that the simple loosening of the wedge-keys will admit

of the free withdrawal of the gib, and the whole coupling may then be shifted to either shaft, as may be desired. If the fixed spline be employed, the shafting may be made to occupy the space vacated by the gib, and if the movable spline be used, it can be freely withdrawn from the sleeve after the removal of the gib.

I am aware that sleeves and gibs have heretofore been used combined as couplings; but in such cases heavy set-screws have been employed for bearing through the sleeve upon the gib. With such couplings it was deemed essential to form a lock-joint between the abutting ends of the shafting, which rendered it impossible or difficult to uncouple them when desired.

My improved coupling is well adapted for use in factories and workshops where economy in power is to be closely observed, for the coupling and uncoupling may be accomplished in a few minutes at any time, as occasion may demand. With the shafting properly formed or grooved on one of its sides, and fitted to corresponding forms or projections in the sleeve, it is practicable to cast a sleeve and a gib,

which, without special finish, could at once be employed with cast-iron wedges, and form a practically-perfect coupling.

For light shafting the plain barrel sleeve, as shown in Figs. 1, 2, and 3, is a desirable form, while for heavy shafting the sleeve may be employed midway between its two ends, as shown in Fig. 4, thus giving it the general exterior form of the match-faced bolted couplings so long in use. When constructed in this form the gibs B may be fitted into vertical slots in the sleeve, as shown.

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

The combination of the slotted sleeve, provided with a spline, groove, or interior plain surface, for close contact with corresponding surfaces on the shafting with which it is to be used, the gib, and the wedge-keys, substantially as and for the purposes specified.

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Witnesses:

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