

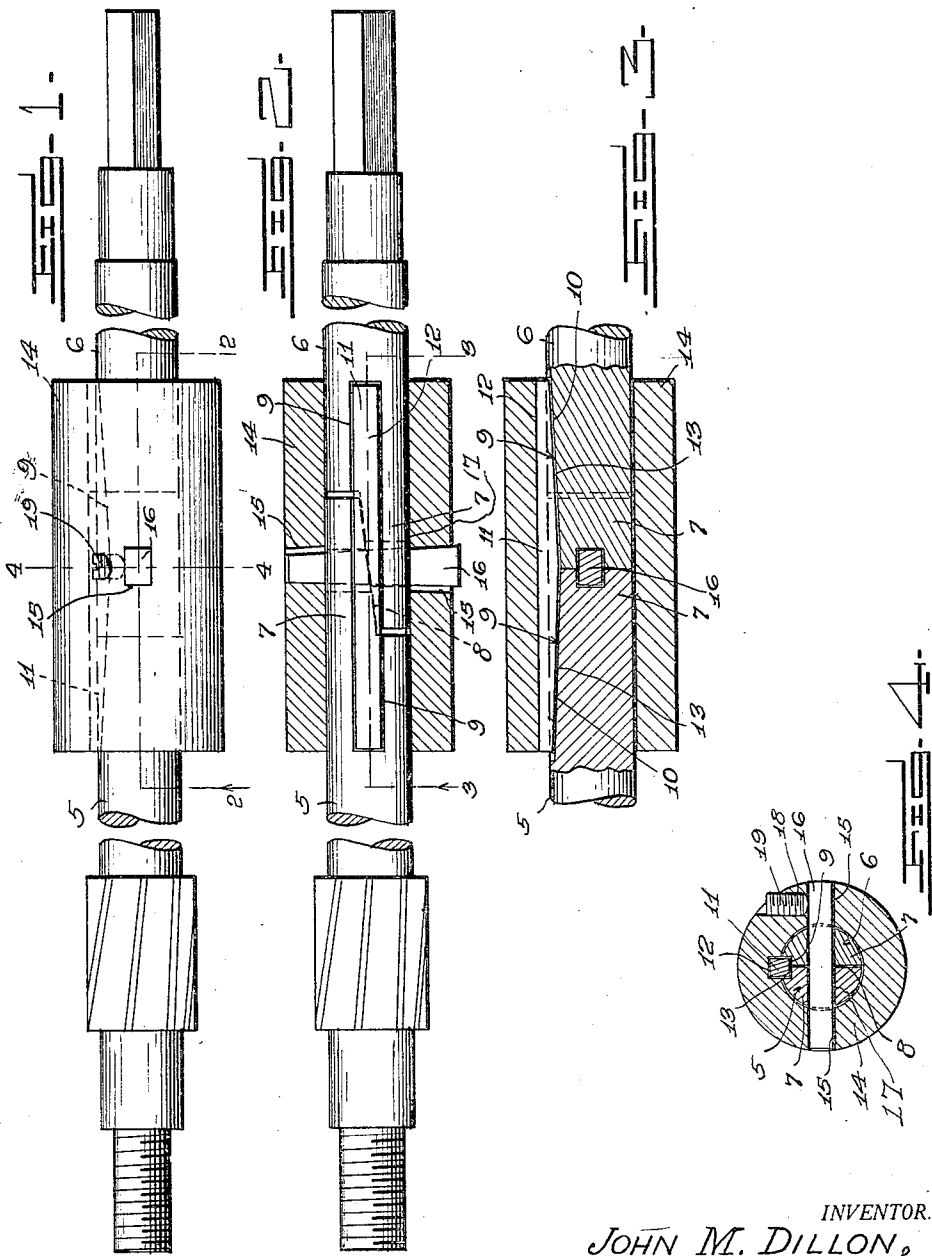
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SHAFT COUPLING

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## UNITED STATES PATENT OFFICE.

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## SHAFT COUPLING.

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My invention relates to shaft couplings.

In accordance with my invention, I provide a coupling having means for producing wedging actions, at substantially a right angle to each other, for binding the shafts to the sleeve. The coupling is adjustable so that wedging or binding actions may be effected for the purpose of taking up lost motion due to the wearing of parts. The coupling is simple in construction, strong and durable.

In the accompanying drawings, forming a part of this specification, and in which like numerals are employed to designate like parts throughout the same,

Figure 1 is a side elevation of a shaft coupling embodying my invention,

Figure 2 is a central vertical longitudinal section of the coupling taken on line 2—2 of Figure 1,

Figure 3 is a central horizontal longitudinal section taken on line 3—3 of Figure 2, and,

Figure 4 is a transverse vertical section taken on line 4—4 of Figure 1.

In the drawings, wherein for the purpose of illustration, is shown a preferred embodiment of my invention, the numerals 5 and 6 designate shaft sections, the adjacent ends of which are to be connected. These shaft sections are illustrated as embodied in the propeller shaft of a Ford truck. While it is believed that the invention is particularly useful as applied to this propeller shaft, yet the invention is in no sense restricted to this particular use. The shaft sections 5 and 6 are provided at their inner adjacent ends with overlapping reduced extensions 7, having longitudinal inclined wedging faces 8.

The inner ends of the shaft sections 5 and 6 are provided with longitudinal grooves 9, forming in effect a continuous groove. These grooves extend through the reduced extensions 7, and cut through the inclined wedging faces 8. These grooves are arranged at 180° from the inclined wedging faces 8 or at a right angle with relation thereto. The bottom walls 10 of the grooves 9 are longitudinally inclined and decrease in depth toward the outer ends of the grooves. The grooves 9 are adapted for the reception of a longitudinal key 11, having an outer straight side 12, and inner sides or walls 13, which are longitudinally inclined and extend inwardly toward their inner

ends. The faces 13 of the key 11 are adapted to have wedging action with the bottom walls 10 of the grooves 9, as shown.

The numeral 14 designates a sleeve, for receiving the inner ends of the shaft sections 5 and 6. This sleeve is provided with diametrically oppositely arranged tapered radial openings 15 for receiving a transverse tapered or wedging key 16, which passes through transverse openings 17, formed in the reduced extensions 7. The transverse key 16 is arranged at a right angle to the longitudinal key 11.

The sleeve 14 is provided with a screw-threaded opening 18 for receiving a set screw 19, arranged to engage with the transverse key 16, and lock it against movement.

In operation, to clamp or bind the sleeve 14 to the ends of the shaft sections 5 and 6, the transverse key 16 is adjusted inwardly or toward its reduced end, and may be locked in the adjusted position by manipulation of the set screw 19. This action of the transverse wedge serves to draw the reduced extensions 7 inwardly, bringing their inclined faces 8 into wedging action, whereby the inner ends of the shaft sections 5 and 6 are expanded and have clamping engagement with the sleeve 14. As the reduced extensions 7 are thus moved inwardly, the inclined walls 10 of the grooves 9 have a wedging action with the inclined faces 13 of the key 11, and the extensions 7 thus have clamping engagement with the sleeve 14 through the medium of the longitudinal key 11. It is thus apparent that the expanding or clamping actions between the parts of the shaft sections 5 and 6, are directed at substantially a right angle to each other.

It is to be understood that the form of my invention, herewith shown and described, is to be taken as a preferred example of the same, and that various changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of my invention, or the scope of the subjoined claims.

Having thus described my invention, I claim:—

1. In a shaft coupling, shaft sections having overlapping reduced extensions which are provided with longitudinally inclined wedging faces, said shaft sections also having longitudinal grooves and the reduced extensions having transverse openings which are longitudinally staggered, a sleeve re-

ceiving the inner ends of the shaft sections and provided with a longitudinal groove and transverse openings, a longitudinal key fitting within the longitudinal grooves and a  
5 transverse tapered key within the transverse opening of the sleeve and within the transverse openings of the reduced extensions and engaging opposed walls thereof.

10 2. In a shaft coupling, shaft sections having overlapping reduced extensions which are provided with longitudinally inclined wedging faces, said shaft sections also having longitudinal grooves provided with longi-

tudinally inclined bottom walls, said reduced extensions having transverse openings, a  
15 sleeve receiving the inner ends of the shaft sections and provided with a longitudinal groove and transverse openings, a longitudinal key having longitudinally inclined faces to co-operate with the longitudinally  
20 inclined bottom walls of the grooves in the shaft sections, and a tapered transverse key for insertion through said transverse openings.

In testimony whereof I affix my signature.

JOHN M. DILLON.