No. 818,476. PATENTED APR. 24, 1906.

F. SHAW.

SHAFT COUPLING.

APPLICATION FILED AUG. 14, 1901.

2 SHEETS—SHEET 1.

Fig. 1.

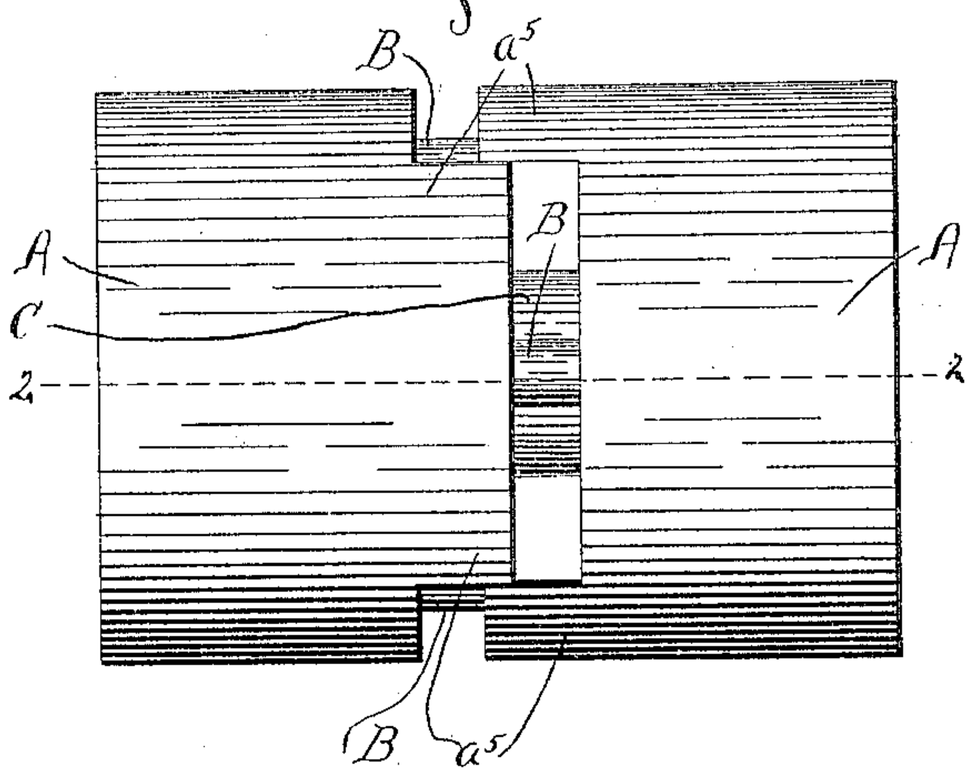
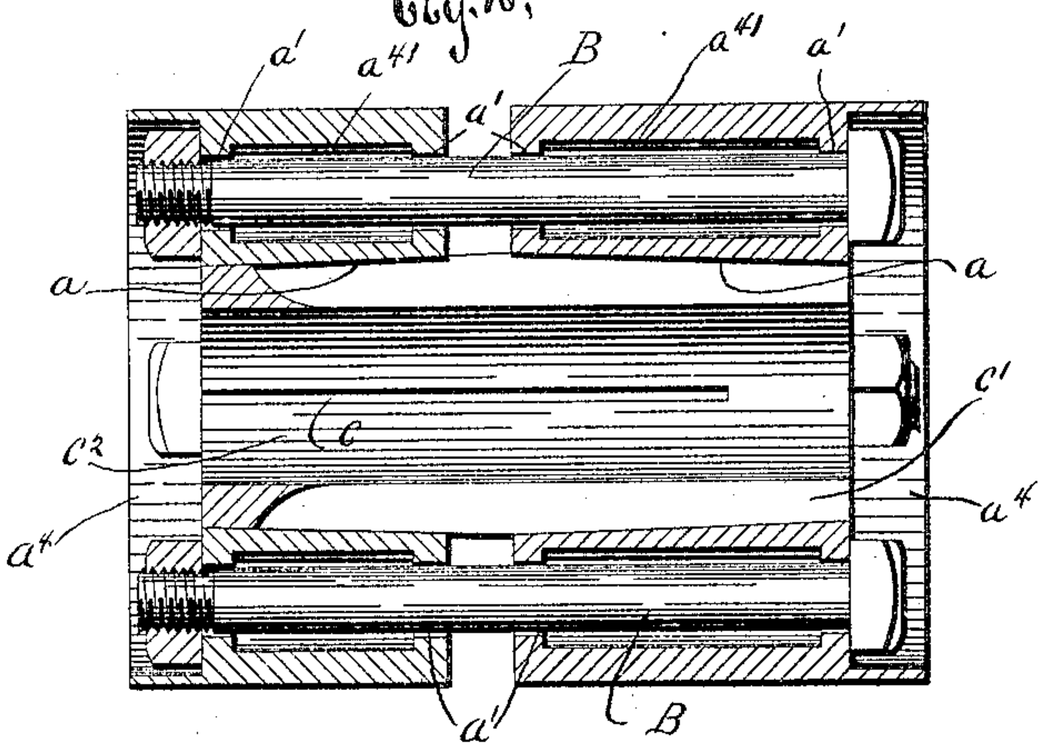


Fig. 2.



WITNESSES:

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D. Lavine

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Frank Shaw.

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2 SHEETS—SHEET 2.

Fig. 3.

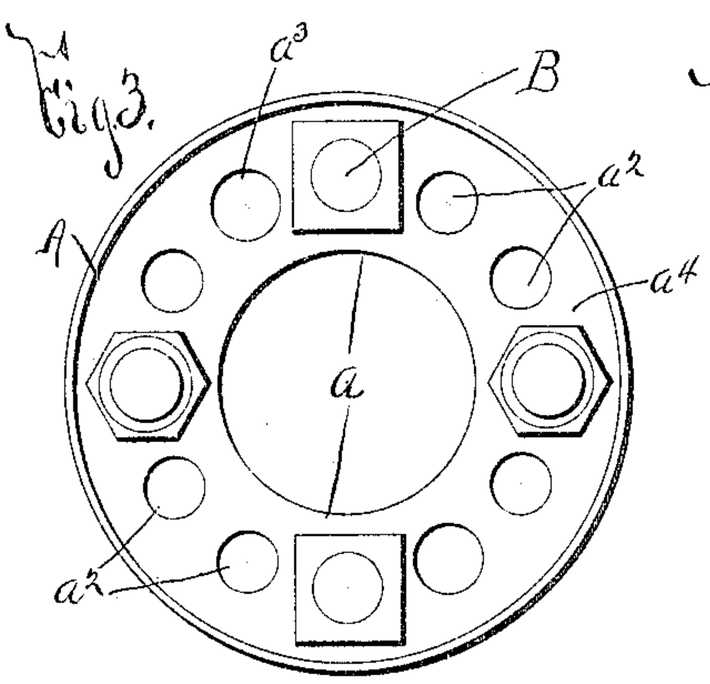


Fig. 4.

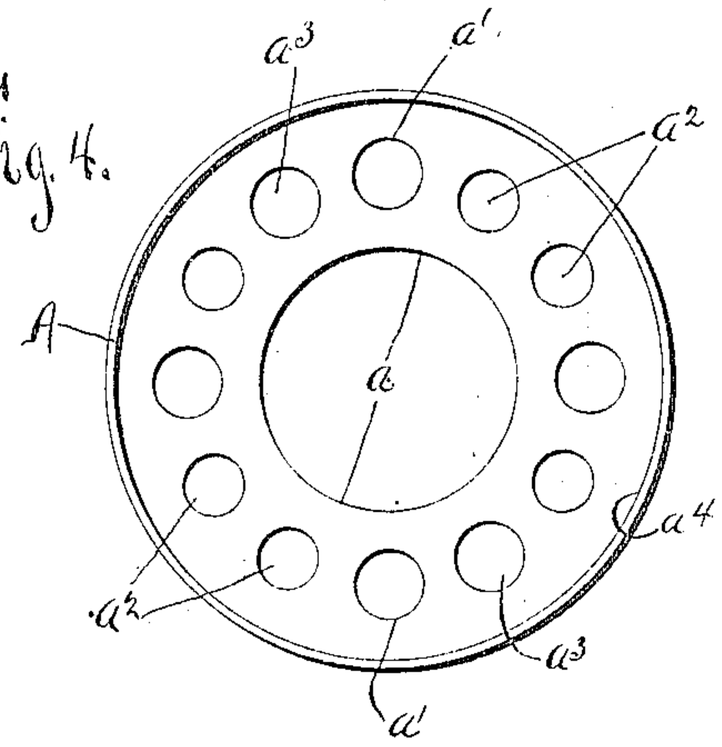


Fig. 5.

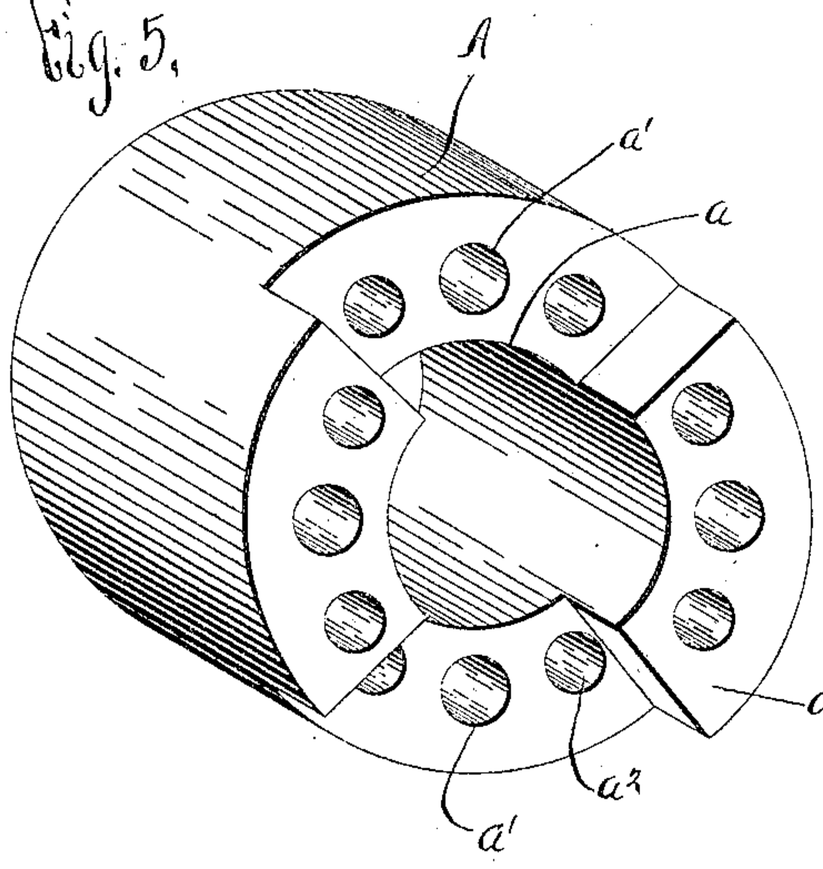


Fig. 6.

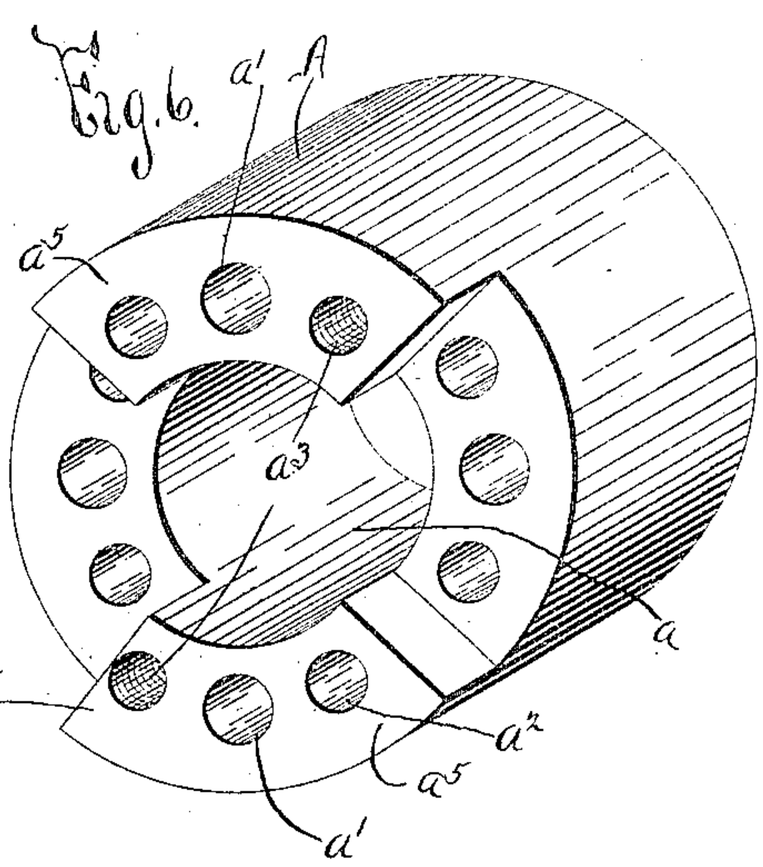
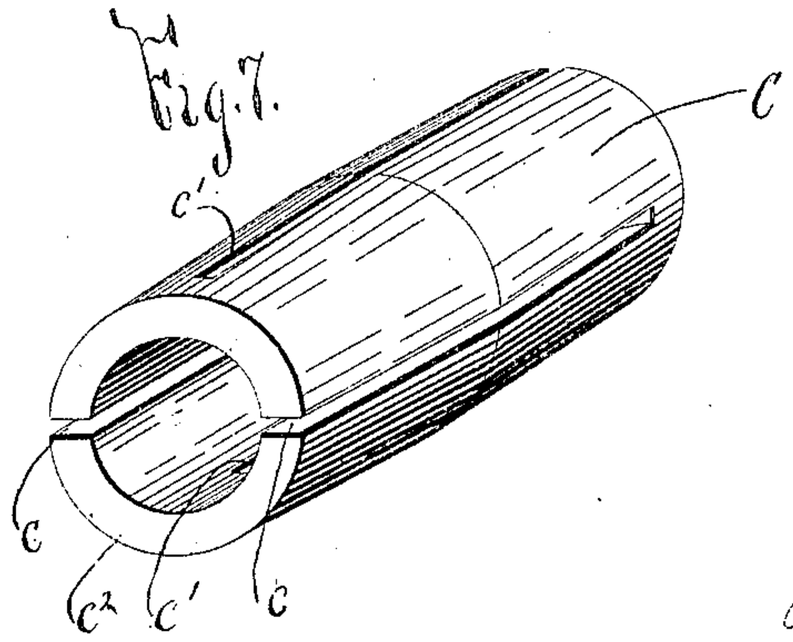


Fig. 7.



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UNITED STATES PATENT OFFICE.

FRANK SHAW, OF SYRACUSE, NEW YORK.

SHAFT-COUPLING.

No. 818,476. Specification of Letters Patent. Patented April 24, 1906.

Application filed August 14, 1901. Serial No. 72,010.

To all whom it may concern:

Be it known that I, FRANK SHAW, of Syracuse, in the county of Onondaga and State of New York, have invented certain new and useful Improvements in Shaft-Couplings, of which the following is a specification.

My invention relates to shaft-couplings of the class set forth in my previous patents, Nos. 674,024 and 674,479, issued, respectively, May 14 and May 21, 1901; and it consists in certain novel parts and combinations hereinafter fully described, and pointed out in the claims.

In describing this invention reference is had to the accompanying drawings, in which like letters designate corresponding parts in all the views.

Figure 1 is a face view of my shaft-coupling. Fig. 2 is a longitudinal sectional view taken on a plane at right angles with that indicated by line 2 2, Fig. 1. Fig. 3 is an end elevation of the outer shell of said shaft-coupling. Fig. 4 is a similar elevation of the outer shell of the shaft-coupling, the securing means for its sections being removed. Figs. 5, 6, and 7 are isometric views of detached parts of said coupling.

My shaft-coupling consists, essentially, of an outer shell and an inner contractile sleeve. The outer shell is preferably composed of cast sections A, arranged end to end and movable axially toward each other by suitable clamping means, as bolts B, provided with the usual heads and nuts. Said sections A are formed with conical tapering inner faces a, increasing in diameter toward their contiguous ends, and with lengthwise-cored openings a' a^2 a^3, extending through their end faces and usually arranged in a circular series of greater diameter than the faces a. The outer ends of the sections A are provided with inwardly-extending sockets a^4 for receiving the heads and nuts of the bolts B, and their contiguous ends are each formed with opposite interlocking parts or lengthwise extensions a^5 of unequal width having substantially radial engaging faces. The openings a' receive the clamping means B and are formed with contracted ends and enlarged intermediate portions a^{41}. The openings a^2 are arranged between the openings a' and are of less diameter than said openings a', and the openings a^3 are provided in only one of the sections A and are formed with threaded inner ends, Fig. 6, for receiving the threaded ends of the bolts B.

As will be readily understood by those skilled in the art the openings a' a^2 a^3 decrease the weight of the sections, while the strength and durability of the sections are preserved, as the inclosing walls of these openings are formed of hard scale. The interlocking parts a^5 prevent shearing strain on the clamping means B or the strain incidental to the tendency of movement of one of the sections of the shell around the sleeve relatively to the other, and the openings a^3 facilitate separation of the sections A after the removal of the clamping means B, since any two of the removed bolts B may be inserted into the openings a^3 and turned in the threaded ends thereof, thereby engaging their inner ends with the opposite section A and forcing the sections A apart.

The inner sleeve C of my shaft-coupling encircles the divisions of the shaft to be coupled, is arranged within the outer shell of said coupling, is composed of spring metal, and is formed with conical or tapering ends which engage the inner faces a of the sections A. The inner face of the sleeve C is normally of slightly less diameter than the divisions of the shaft to be coupled, and said sleeve is provided with a plurality of longitudinal substantially equidistant slots c, extending from one of its end faces into proximity to the opposite end face and with a plurality of additional substantially equidistant longitudinal slots c', extending alternately between the slots c from said opposite end face into proximity to the former end face. The slots c divide the sleeve C into a number of longitudinal yielding parts c^2, which taper or decrease in thickness toward the ends of the sleeve, are formed with substantially concave inner faces, are connected together at opposite sides at one end of the sleeve, are separable at opposite sides from their connected portions to the opposite end of the sleeve, and engage the inner faces a of the sections A and the periphery of the shaft to be coupled inserted within the sleeve, and each slot c' divides one of the yielding parts c^2 into lengthwise divisions or branches connected together at the free end of said yielding part.

The construction and operation of my shaft-coupling will now be readily under-

stood upon reference to the foregoing description and the accompanying drawings.

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

1. In a shaft-coupling, the combination with a contractile clamping-sleeve; of a shell comprising a pair of sections having openings fitting the periphery of the sleeve, said sections being arranged end to end thereon and operating to contract said sleeve, and devices for adjusting the sections axially relatively to each other, there being means for relieving said devices from strain incidental to the tendency of movement of one of the sections of the shell around the sleeve relatively to the other, substantially as and for the purpose described.

2. In a shaft-coupling, the combination with a contractile clamping-sleeve; of a shell comprising a pair of sections having openings fitting the periphery of the sleeve, said sections being arranged end to end thereon and operating to contract said sleeve, and bolts extending through the sections lengthwise of the sleeve for adjusting the sections axially relatively to each other, there being interlocking lugs projecting from the contiguous ends of said sections for relieving the bolts from shearing strain, substantially as and for the purpose set forth.

3. In a shaft-coupling, the combination with a contractile clamping-sleeve; of a shell comprising a pair of sections having openings fitting the periphery of the sleeve, said sections being arranged end to end thereon and operating to contract said sleeve and being provided with interlocking lugs projecting from their contiguous ends, and openings extending through the main parts of the sections and the lugs lengthwise of the axis of the shell, and bolts in the last-mentioned openings of the sections for adjusting said sections axially relatively to each other, said bolts being relieved by the interlocking lugs from shearing strain, substantially as and for the purpose described.

4. In a shaft-coupling, the combination with a contractile clamping-sleeve; of a shell comprising a pair of sections having openings fitting the periphery of the sleeve, said sections being arranged end to end thereon and operating to contract said sleeve and being provided with interlocking lugs projecting from their contiguous ends, and openings extending through the main parts of the sections and the lugs lengthwise of the axis of the shell, and bolts in the last-mentioned openings of the sections for adjusting said sections axially relatively to each other, said bolts loosely fitting in the openings for receiving the same and being relieved by the interlocking lugs from shearing strain, substantially as and for the purpose specified.

In testimony whereof I have hereunto signed my name, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 28th day of March, 1901.

FRANK SHAW.

Witnesses:
S. DAVIS,
D. LAVINE.