

F. O. BALL.
COUPLING.

APPLICATION FILED SEPT. 29, 1909.

980,900.

Patented Jan. 10, 1911.

Fig. 1.

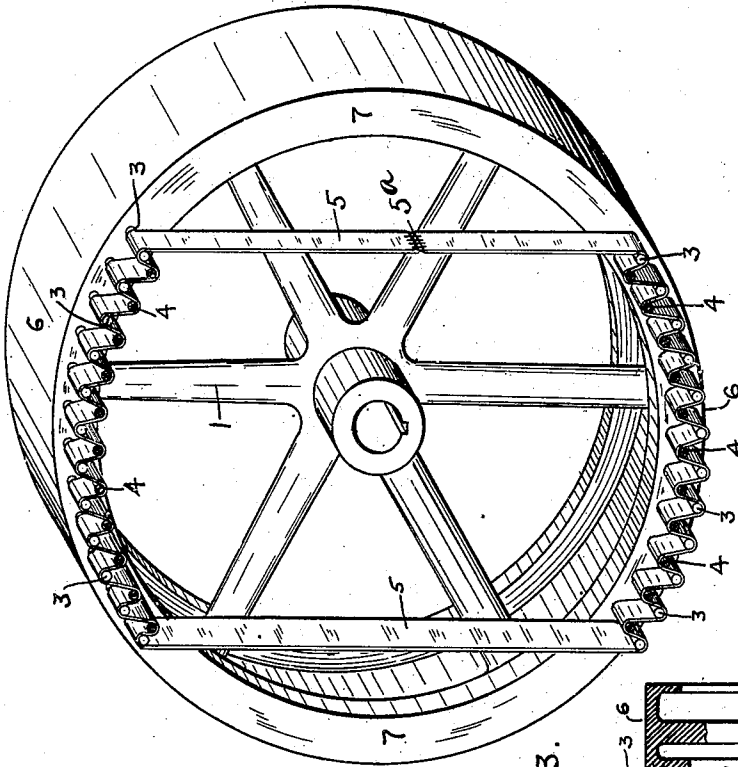


Fig. 3.

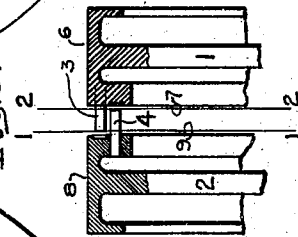
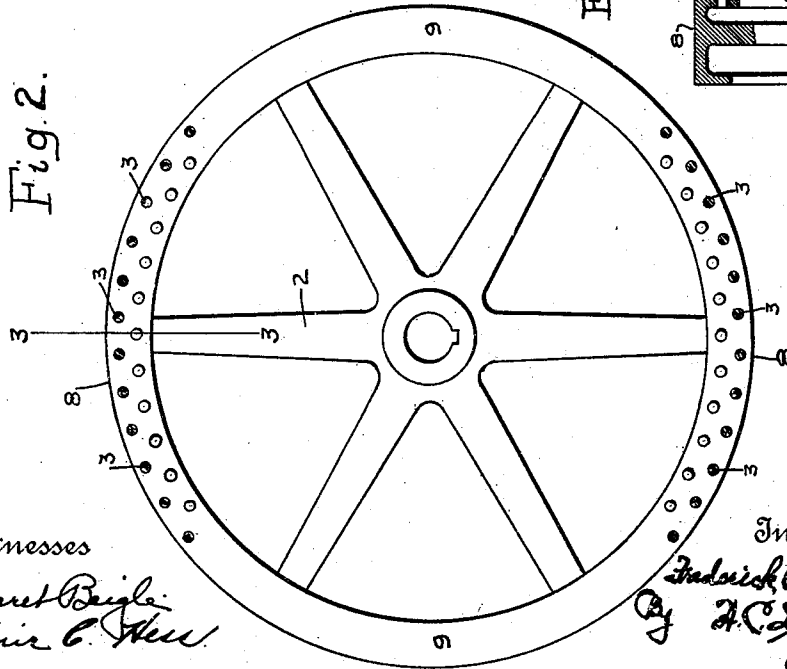


Fig. 2.



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UNITED STATES PATENT OFFICE.

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COUPLING.

980,900.

Specification of Letters Patent.

Patented Jan. 10, 1911.

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To all whom it may concern:

Be it known that I, FREDERICK O. BALL, a citizen of the United States, residing at Plainfield, in the county of Union and State of New Jersey, have invented new and useful Improvements in Couplings, of which the following is a specification.

This invention relates to couplings, and consists in certain improvements in the construction thereof as will be hereinafter fully described and pointed out in the claims.

More particularly this invention relates to that type of coupling used for coupling shafts together, the coupling having some flexibility. This has heretofore been accomplished by arranging a series of pins circumferentially around one such coupling member, and a similar series of pins on the other clutch member, one of said series being within the other, and the rope being interlaced through said pins so that one of said members may be driven by the other. Where the series of pins extend throughout the circumference of the members, the members can only be removed by moving one of the members in an axial direction, so that the pins on the member being removed may clear the pins on the other member.

One of the objects of this invention is to so arrange these pins as to permit of the removing of one of the members without this preliminary axial movement of a member.

Other objects of the invention will appear from the specification and claims.

The invention is illustrated in the accompanying drawings as follows:

Figure 1 is a perspective view of one of the members with the pins of the other member in section, as on the line 1—1 in Fig. 3, the figure also including the interlocking member. Fig. 2 is a side elevation of the opposite member with the pins extending from the member shown in Fig. 1 in section on the line 2—2 in Fig. 3. Fig. 3 is a section through both members, the section being on the line 3—3 in Fig. 2.

1 marks one of the members; 2 the other member. Either of these members may be the driving member, and either, the driven member. A group of pins 3 extends in an axial direction from the member 1, and a group of pins 4 extends in an axial direc-

tion from the member 2. The pins 3 are arranged outside of the pins 4, the pins from the two members extending through the same plane, extending between the members as indicated in Fig. 3. The interlocking member, which, according to my invention is in the form of a belt 5, is interlaced around the pins 3 and 4. The single belt extends from one group to the other on the circumference.

The pins 3 are arranged on the member 1 in groups,—preferably in two groups extending approximately for a quarter of the circumference as indicated by the parts 6. The intervening spaces 7 between the parts 6 and which are preferably slightly more than a quarter of the circumference, extend between the groups, these spaces being free of the other obstructions or pins to permit of the removal of the groups of pins 4 through the spaces 7. The member 2 has the pins 4 similarly arranged in groups, the pins 4 occupying approximately a quarter of the circumference as indicated by the parts 8 in Fig. 2. The spaces 9 are arranged between the groups.

The parts are assembled as is clearly shown in Figs. 1 and 2, the group of pins 4 being arranged adjacent to the pins 3 and the interlocking member 5 being interlaced between the pins of each group, and extending across from one group to the other. When it is desirable to remove one of the members, the interlocking member is unlaced at 5^a, and removed from the pins. The members are then rotated relatively to each other, one quarter of a revolution, bringing the groups of pins 4 into the spaces 7 and the spaces 9 opposite the pins 3. The member can then be removed in a direction directly at right angles to the axis of the member, the group of pins 4 passing through the spaces 7.

By using an interlocking member in the form of a belt of greater width than the spaces between the ends of the pins, and the opposing member, pins of cylindrical shape may be used without danger of disengagement of the locking member from the pins. Such an interlocking member is very desirable as it can be readily put in place, and removed. The spaces between the groups also form such a span in the interlocking

member as to make it possible to readily apply the usual tools for uniting the ends of the belts for uniting the interlocking member.

What I claim as new is:

5 1. In a coupling, the combination of a driving member; a driven member; groups of pins extending from said members through the same plane between the members, there being vacant spaces between the groups, 10 each group on the members occupying less space than a vacant space on the other member to permit of the lateral displacement of one of the members relatively to the other, said pins being at different distances from 15 the axis of the coupling to permit the pins on one member to swing past the pins on the other member to bring the groups of pins into the vacant spaces, and the groups on one member being normally in juxtaposition with companion groups on the other 20 member; and a flexible member interlaced on said pins by extending back and forth between the pins of a group on one member and the pins of a group on the other member 25 in juxtaposition.

2. In a coupling, the combination of a driving member; a driven member; groups of pins extending from said members through the same plane between the members, each group on the members occupying 30 less space than a vacant space on the other member to permit of the lateral displacement of one of the members relatively to the other, said pins being at different distances 35 from the axis of the coupling to permit the pins on one member to swing past the pins on the other member to bring the groups of pins into the vacant spaces, and the groups of one member being normally in juxtaposition with companion groups on the other 40 member; and a flexible member interlaced on

said pins, extending back and forth between the pins in a group of one member and the pins of a group on the other member in juxtaposition, said flexible member extending 45 from one pair of groups to another pair of groups, the pairs of groups being formed by one group on one member and another group on the other member.

3. In a coupling, the combination of a 50 driving member; a driven member; groups of pins extending from said members through the same plane between the members, there being vacant spaces between the groups, each group on the members occupying 55 less space than a vacant space on the other member to permit of the lateral displacement of one of the members relatively to the other, said pins being at different distances from the axis of the coupling to permit the pins on one member to swing past 60 the pins on the other member to bring the groups of pins into the vacant spaces, and the groups on one member being normally in juxtaposition with companion groups on 65 the other member; and a flexible member interlaced on said pins, by extending back and forth between pins in a group of one member and the pins of a group on the other member in juxtaposition, said flexible member 70 being in the form of a belt and extending from one group to another on the same member, said belt being joined in the space between the groups.

In testimony whereof, I have hereunto set 75 my hand in the presence of two subscribing witnesses.

FREDERICK O. BALL.

Witnesses:

F. H. BALL,
ROBT. T. BRAMPTON.