H. L. WOOD.

COUPLING.

APPLICATION FILED FEB. 5, 1921.

1,411,468. Patented Apr. 4, 1922.

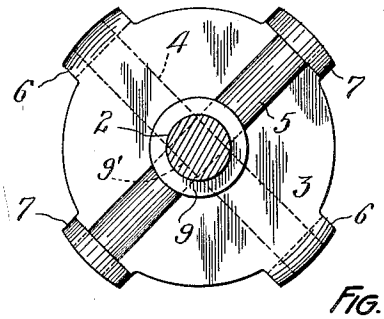


FIG. 2.

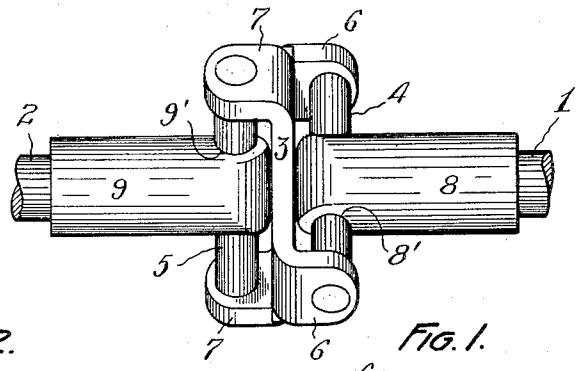


FIG. 1.

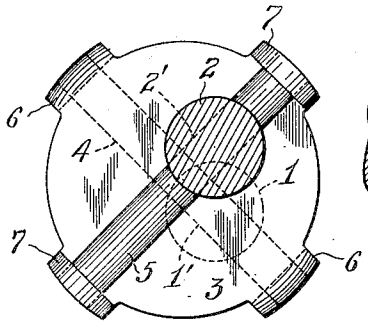


FIG. 4.

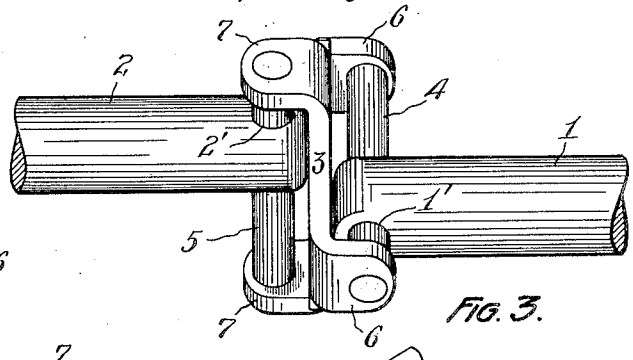


FIG. 3.

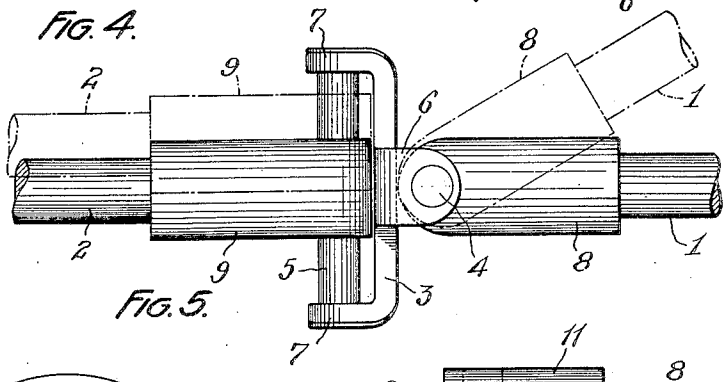


FIG. 5.

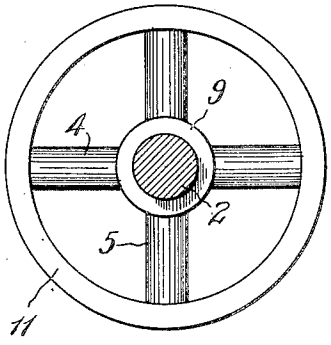


FIG. 7.

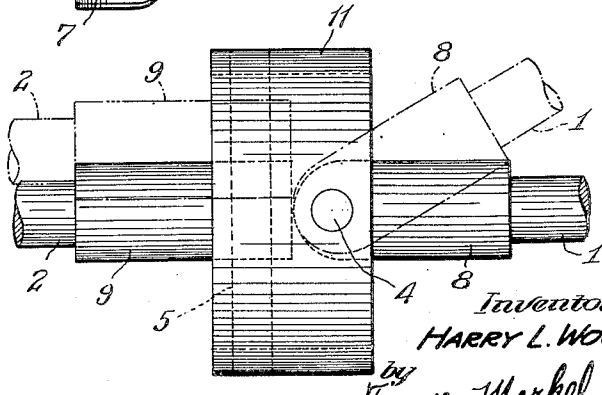


FIG. 6.

Inventor:
HARRY L. WOOD
by Frease, Merkel and Saywell
Attorneys.

UNITED STATES PATENT OFFICE.

HARRY L. WOOD, OF CLEVELAND, OHIO, ASSIGNOR TO THE AMERICAN SPEED-O-FEEDER COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

COUPLING.

1,411,468. Specification of Letters Patent. Patented Apr. 4, 1922.

Application filed February 5, 1921. Serial No. 442,748.

To all whom it may concern:

Be it known that I, HARRY L. WOOD, a citizen of the United States, resident of Cleveland, county of Cuyahoga, and State of Ohio, have invented new and useful Improvements in Couplings, of which the following is a specification, the principle of the invention being herein explained, and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

My invention relates to couplings, and particularly to apparatus of this character enabling two shafts to be alined without interfering with their connection. In fact, either or both of the two shafts can be subjected to an axial pull without pulling the coupling apart. Particularly, the invention relates to a coupling in which each of two shafts can be moved into a position parallel with its previous position. Furthermore, the invention provides means whereby the angularity of the two connected shafts can be changed. My invention, in addition to acting as a connection between two shafts, one of which is turned by the other, acts also as means whereby each of the shafts can be moved into a different working position, as well as providing an adjustment for any inaccuracies in the alinement of the shafts.

The annexed drawing and the following description set forth in detail certain means embodying my invention, the disclosed means, however, constituting but one of the various mechanical forms in which the principle of the invention may be applied.

In said annexed drawing:

Figure 1 represents a forty-five degree side elevation of the preferred form of my invention, the connected shafts being shown in a horizontal and central position;

Figure 2 a left hand elevation of the device, as shown in Figure 1;

Figure 3 represents a forty-five degree side elevation in which the connected shafts are in a horizontal position, but in which the two connected shafts have been moved, one upwardly and the other downwardly, so that neither is in a central position and both are in positions respectively parallel with the positions shown in Figure 1. Furthermore, in the view, the connected shafts are directly mounted upon certain guide shafts instead of being provided with certain end supports mounted upon said guide shafts, as shown in Figure 1;

Figure 4 represents a left hand elevation of the device as shown in Figure 3;

Figure 5 represents a direct side elevation of the device, the connected shafts being in a horizontal and central position, a dotted line position of one shaft being shown to indicate a position parallel to its previous position, and a dotted line position of the other shaft being shown to indicate that a change in the angularity of the shafts is permitted;

Figure 6 represents a side elevation of a modified form of my invention; and

Figure 7 represents a left hand elevation of the device, as shown in Figure 6.

Referring to the annexed drawing, in which the same ordinals refer respectively to the same parts in the several views, two shafts which are coupled by my improved device are indicated by the ordinals 1 and 2. Referring to the preferred form of device shown in Figures 1, 3 and 5, a body member of the coupling is indicated by the ordinal 3, the same being a circular plate formed adjacent its periphery with two pairs of oppositely extending ears 6 and 7 in which the ends, respectively, of guides 4 and 5, are secured. Planes passing respectively through the ears 6 and 7 are preferably angularly related and in the form shown in the accompanying drawings, are perpendicularly related. The members 4 and 5, in the form of device shown, are shafts upon which are slidably mounted open-ended cylindrical supports 8 and 9 for the connected shafts 1 and 2, which respectively are tightly fitted at their inner and adjacent ends in said supports 8 and 9. The shafts 1 and 2 may be otherwise suitably secured to the supports 8 and 9, as by means of pins, set screws, etc., or, as shown in Figures 3 and 4, the shafts 1 and 2 may be directly mounted upon the guides 4 and 5. Said supports 8 and 9 or the shafts 1 and 2, are formed with alined apertures 8′ and 9′ respectively, or 1′ and 2′, through which the guide shafts 4 and 5 pass. As plainly indicated in the drawing, it will be noted that the inner ends of the supports 8 and 9, or the inner ends of the shafts 1 and 2, are disposed adjacent the respective faces of the plate 3, so that any shock upon one shaft is transmitted to the other shaft, without bending the guides 4 and 5. By

reference to Figures 5 and 6, it will be noted that the inner ends of the supports 8 and 9 are semi-spherical, so that a universal or angular position with reference to the other shaft, is permitted each of the shafts 1 and 2. An end of one of the supports only may be thus rounded and in the form shown in Figure 3, the ends of the shafts 1 and 2 are thus rounded.

Referring to Figures 6 and 7, the plate 3 and ears 6 and 7 are replaced by a ring or annular open-ended box 11, within whose peripheral wall are secured the ends, respectively, of the spaced guide shafts 4 and 5, which are similar to the shafts 4 and 5 shown in Figure 1, and are similarly relatively disposed and perform the same function. It will be noted from Figure 6, as is also true of Figure 5, that a dotted line position of the shaft 2 and its support 9 is shown indicating how a connected shaft can be moved into a position parallel to its previous position, by sliding the same upon the corresponding guide shaft, without interfering with its connection to the shaft with which it turns.

What I claim is:

1. A coupling comprising, a plate having two oppositely extended pairs of ears formed adjacent its edge, the ears of one pair lying in a plane angularly related to a plane passing through the other pair; a pair of guides whose ends are respectively mounted in said ears; and means for slidably mounting the ends of two shafts upon said guides, respectively, whereby each of said shafts is movable into any desired position parallel to a previous position.

2. A coupling comprising, a circular plate having two oppositely extended pairs of ears formed adjacent its edge, the ears of each pair being diametrically opposed, and the ears of one pair lying in a plane angularly related to a plane passing through the other pair; a pair of guides whose ends are respectively secured in said ears; and independent and adjacent supports for the ends of two shafts slidably mounted upon said guides, respectively, whereby each of said shafts is movable into any desired position parallel to a previous position.

3. A coupling comprising, a circular plate having two oppositely extended pairs of ears formed adjacent its edge, the ears of each pair being diametrically opposed, and the ears of one pair lying in a plane perpendicularly related to a plane passing through the other pair; a pair of guides whose ends are respectively secured in said ears; and independent and adjacent supports for the ends of two shafts slidably mounted upon said guides, respectively, whereby each of said shafts is movable into any desired position parallel to a previous position.

4. A coupling comprising, a plate having two oppositely extended pairs of ears formed adjacent its edge, the ears of one pair lying in a plane angularly related to a plane passing through the other pair; a pair of guide shafts whose ends are respectively secured in said ears; and means for independently slidably mounting upon said guide shafts the adjacent ends, respectively, of two aligned shafts.

5. A coupling comprising, a circular plate having two oppositely extended pairs of ears formed adjacent its edge, the ears of each pair being diametrically opposed, and the ears of one pair lying in a plane perpendicularly related to a plane passing through the other pair; a pair of guide shafts whose ends are respectively secured in said ears; and independent supports for the ends of two shafts mounted to slide upon said guide shafts.

6. A coupling comprising, a circular plate having two oppositely extended pairs of ears formed adjacent its edge, the ears of each pair being diametrically opposed, and the ears of one pair lying in a plane perpendicularly related to a plane passing through the other pair; a pair of guide shafts whose ends are respectively secured in said ears; and independent supports for the ends of two shafts mounted to slide upon said guide shafts, said supports having rounded inner ends disposed closely adjacent the faces, respectively, of said plate.

7. A coupling comprising, a plate having two oppositely extended pairs of ears formed adjacent its edge; a pair of guide shafts whose ends are respectively secured in said ears; and means for independently slidably mounting upon said guides the adjacent ends, respectively, of two aligned shafts.

Signed by me this 20th day of January, 1921.

HARRY L. WOOD.