

H. J. GRAHAM.  
UNIVERSAL JOINT.  
APPLICATION FILED DEC. 28, 1917.

1,315,604.

Patented Sept. 9, 1919.

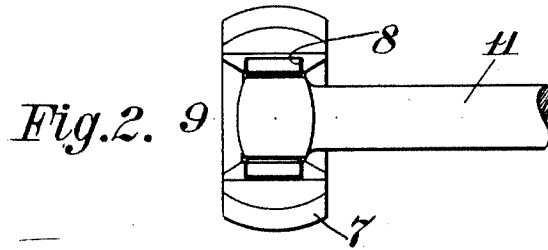
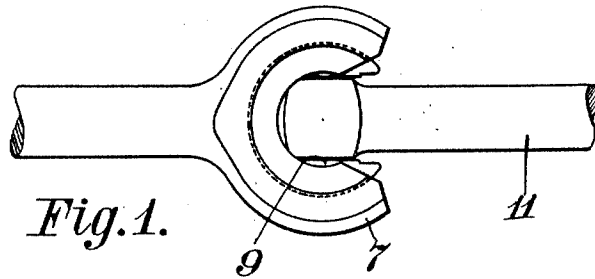


Fig. 4.

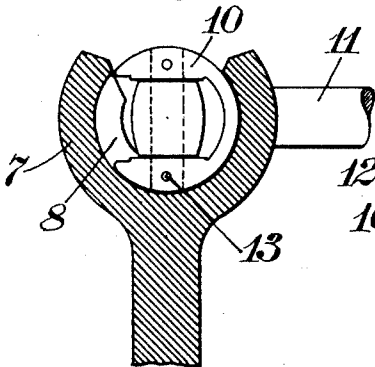
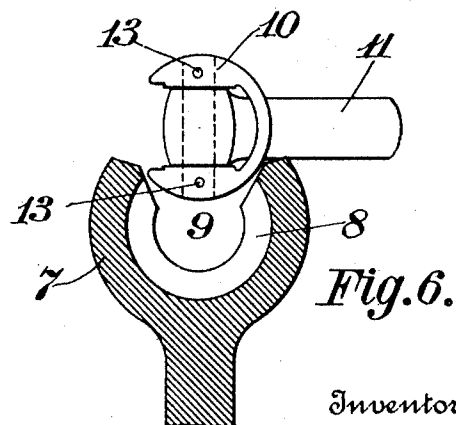
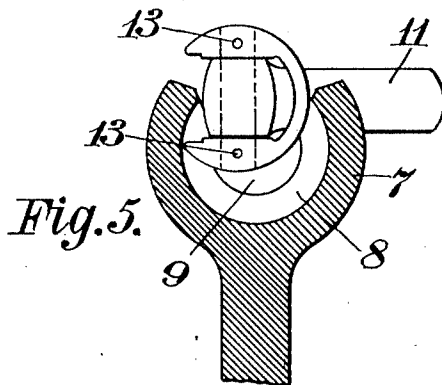
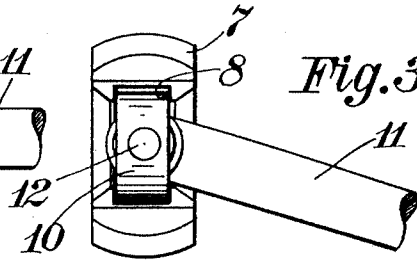


Fig. 3.



Inventor

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# UNITED STATES PATENT OFFICE.

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## UNIVERSAL JOINT.

1,315,604.

Specification of Letters Patent.

Patented Sept. 9, 1919.

Application filed December 28, 1917. Serial No. 209,206.

*To all whom it may concern:*

Be it known that I, HERBERT J. GRAHAM, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a certain new and useful Improvement in Universal Joints, of which the following is a specification.

The object of this invention is to provide an improved universal joint between two members one of which is employed to drive the other. The special feature of the invention is a construction in which the two members constituting the joint may be separated from each other in an intact condition, that is without altering the integrity of either of the joint members.

The invention is embodied in the example illustrated in the accompanying drawing and set forth in the following specification.

In the drawing—

Figure 1 is a plan view showing the members alined axially.

Fig. 2 is a view showing the parts standing at angles to each other.

Fig. 3 is a similar view showing the parts as they are positioned with relation to each other for separation.

Fig. 4 is a detail partly in section exposing the driving ring segment in position preparatory to separation of the parts.

Fig. 5 shows the parts partly separated.

Fig. 6 shows the parts separated.

It will be convenient for description to treat one of the parts as the driven member and the other as the driving member. The driven member consists of a head part 7 which is made with a groove 8 on the arc of a circle greater than a half circle. This head is open at one or both sides as seen at 9 so that the shank of the other part can be swung to stand at an angle to the head part as shown in Figs. 2 and 3.

The driving member includes an open segment of a ring 10 to fit circumferentially in the groove 8 when in place the segment being conveniently swiveled to the end of the shaft or shank 11 by means of bearing pin 12 to which the segment is secured by pins 13.

The horizontal diameters of the segment are such that when turned to the position shown in Fig. 4 the segment may be lifted

first leftward to the position shown in Fig. 5 and then rightward, as shown in Fig. 6, to entirely remove the segment from the socket member between the terminals of the groove therein.

The advantage of this construction is that in operative position a maximum of bearing engagement between the segment ring and socket member is secured plus the advantage of separability of the members from each other without disturbing their individual intactness. The socket member can therefore be made as an integral piece.

This invention will be especially useful in motor vehicles in which instance the socket member would be conveniently embodied in the hub of the wheel while the other member would be fashioned to constitute a driving axle or shaft.

It is obvious, however, that either of the members may constitute the driving member and the other the driven member.

The forms of the parts can be changed without departing from the gist of the invention as claimed.

What I claim is:

1. A universal joint device including, in combination, a socket member having a groove formed on an arc greater than a half circle, an open segmental engaging member fitting movably in said groove, said segmental engaging member having some diameters less than the distance between the terminals of the grooved member, and a shaft journaled within the opening of said segmental member and in the plane thereof.

2. A universal joint device including, in combination, a socket member having a groove formed on an arc greater than a half circle and an opening in its side, an open segmental engaging member fitting movably in said groove, said segmental engaging member having some diameters less than the distance between the terminals of the grooved member, and a shaft journaled within the opening of said segmental member and in the plane thereof, said shaft being adapted to be turned into the opening at the side of the socket member to permit the withdrawal of the segmental engaging member from the socket member.

HERBERT J. GRAHAM.