

No. 842,105.

PATENTED JAN. 22, 1907.

E. L. P. MORS.  
UNIVERSAL JOINT.  
APPLICATION FILED AUG. 21, 1906.

2 SHEETS—SHEET 1.

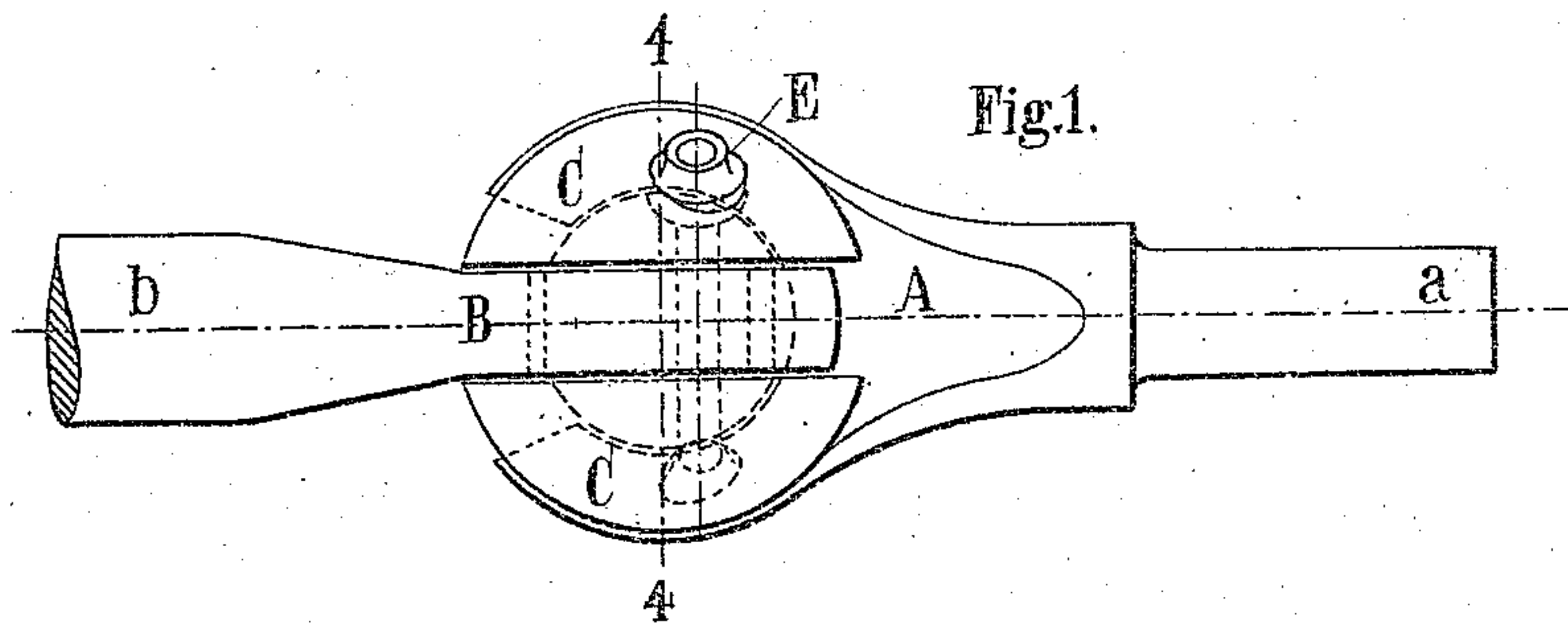


Fig. 1.

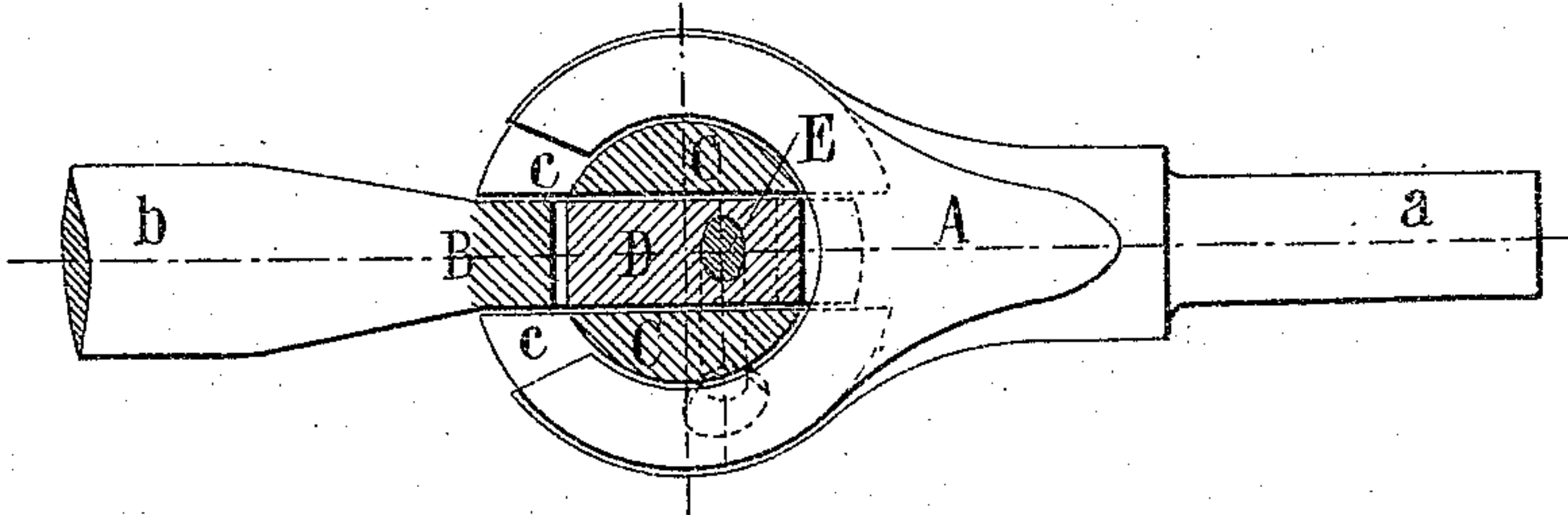


Fig. 2.

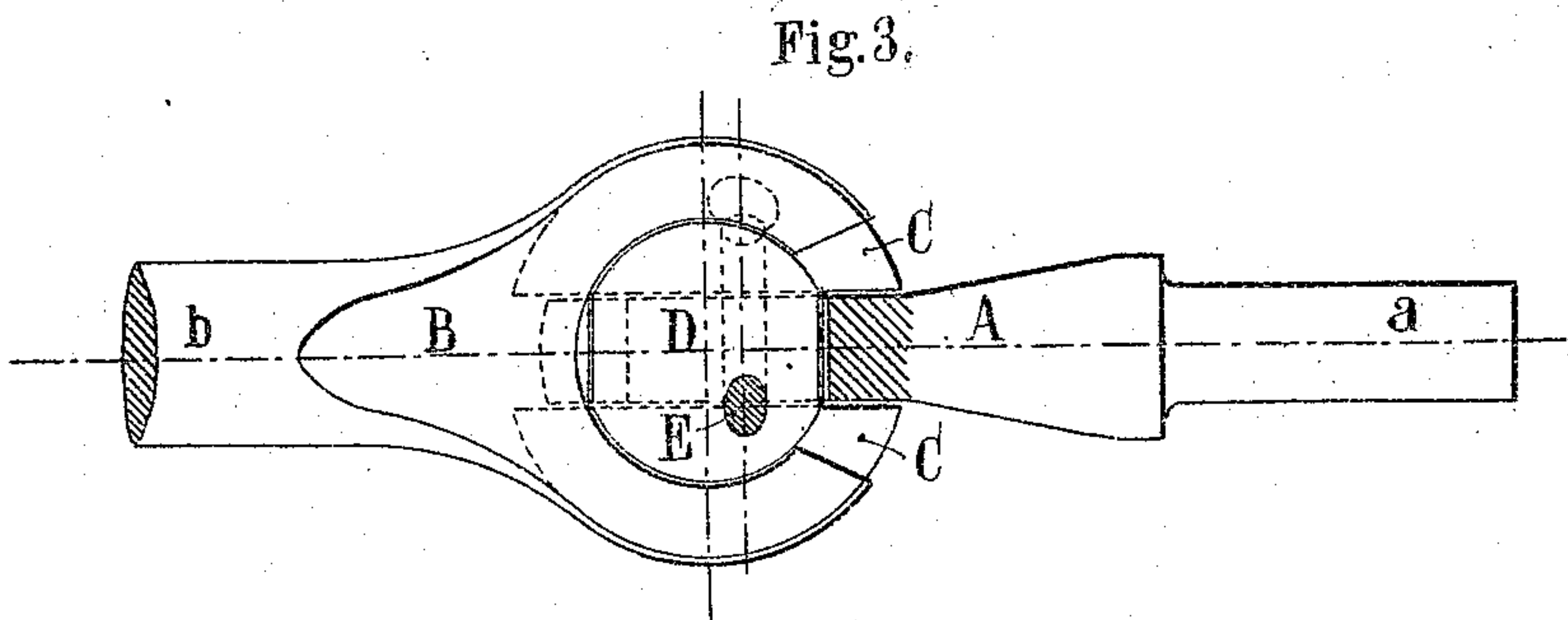


Fig. 3.

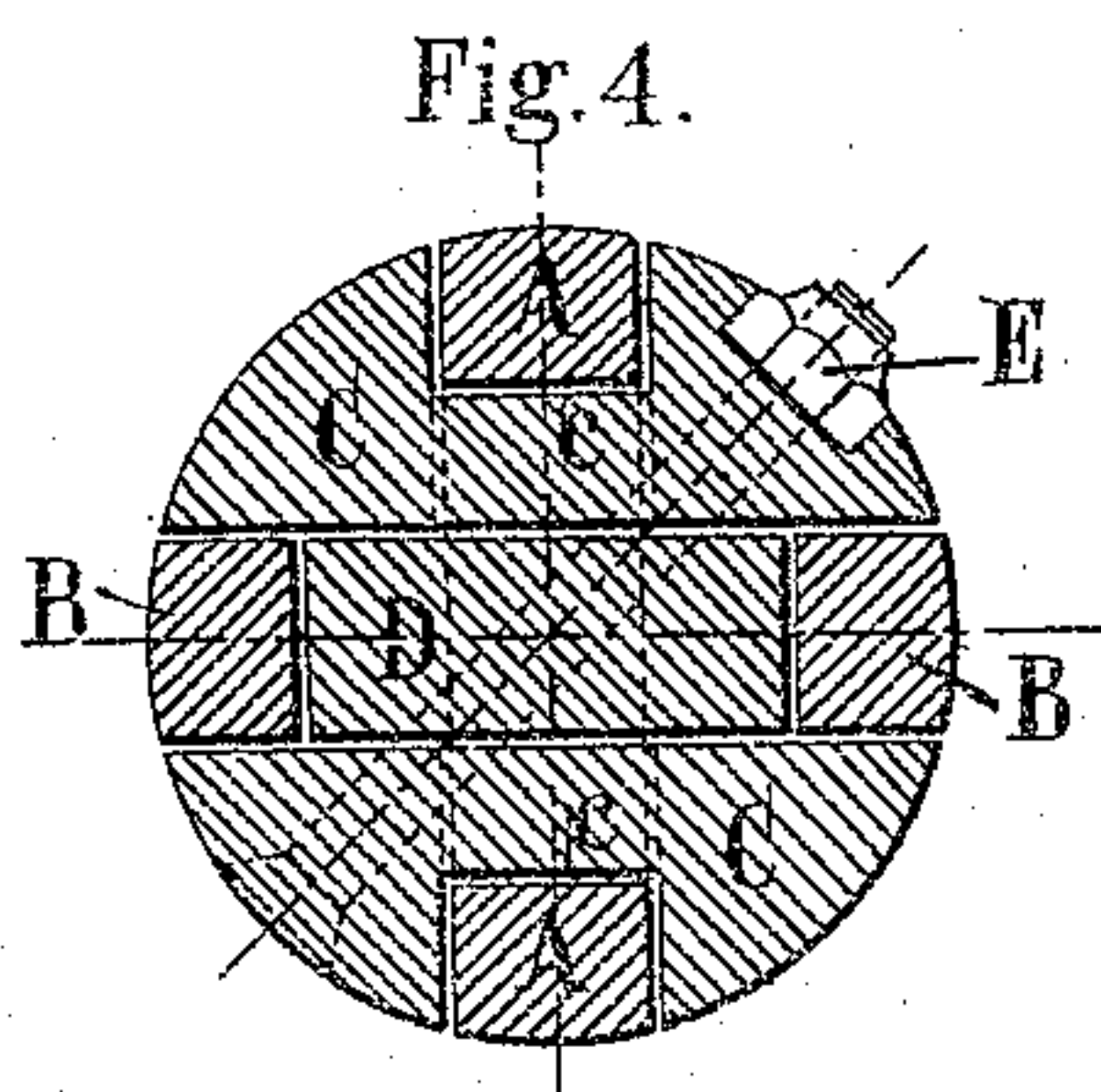


Fig. 4.

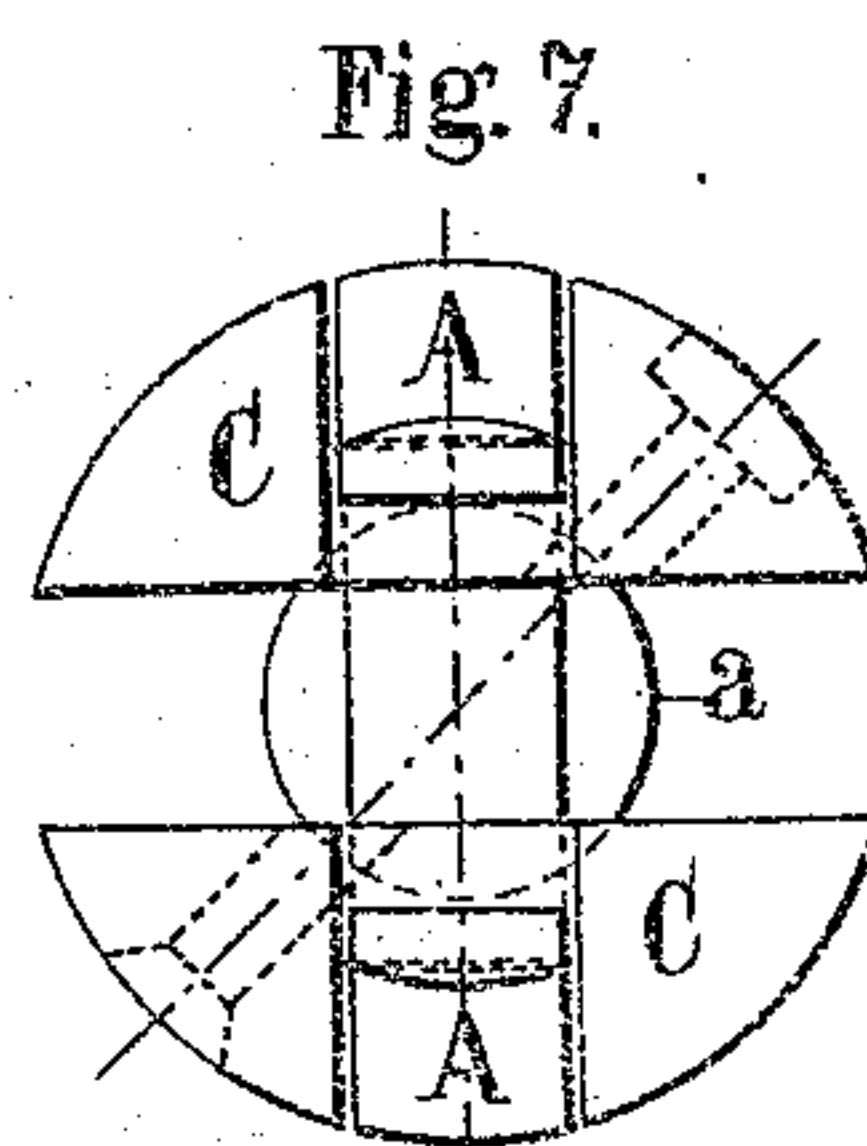


Fig. 7.

WITNESSES

*Walter Abbott*  
*M. E. Keir*

INVENTOR

*Emile Léon Prosper Mors*

BY

*Harrison and Harrison*

ATTORNEYS

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Fig. 5.

2 SHEETS—SHEET 2.

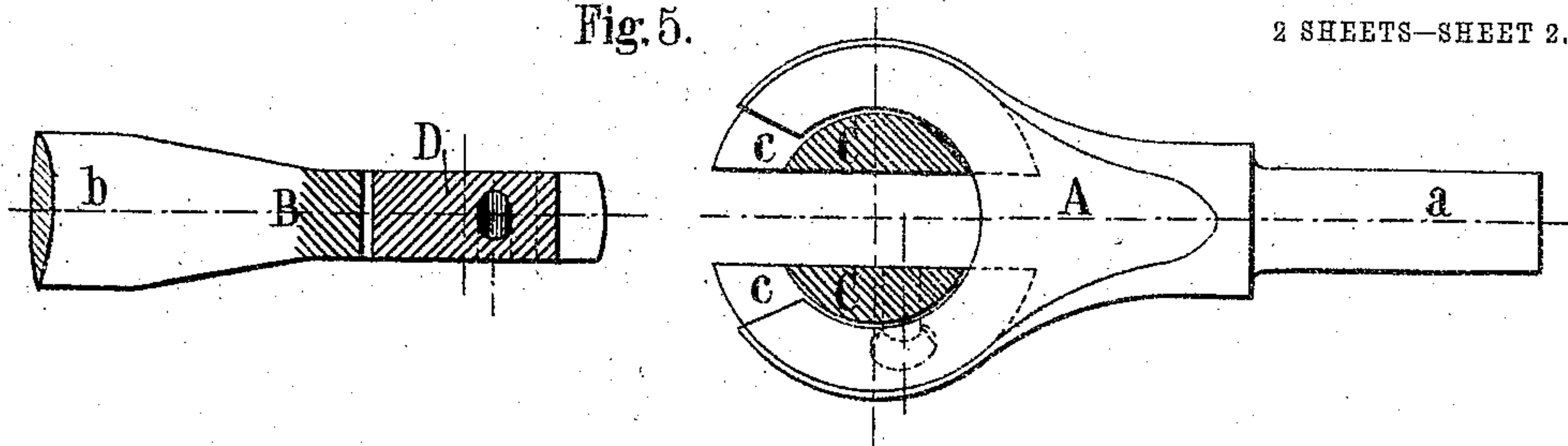


Fig. 6.

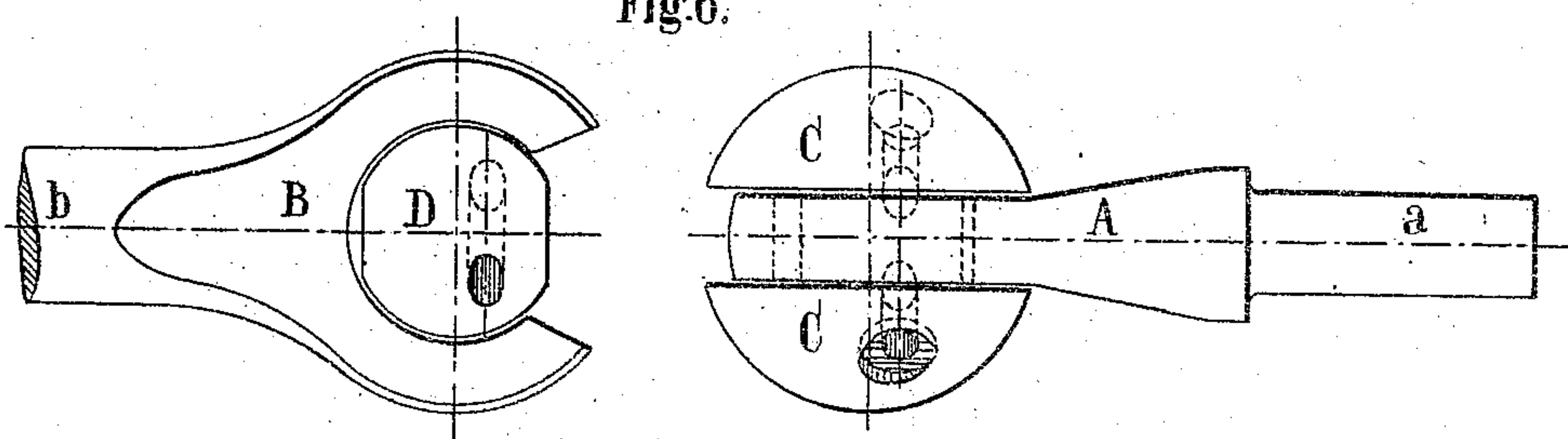


Fig. 8.

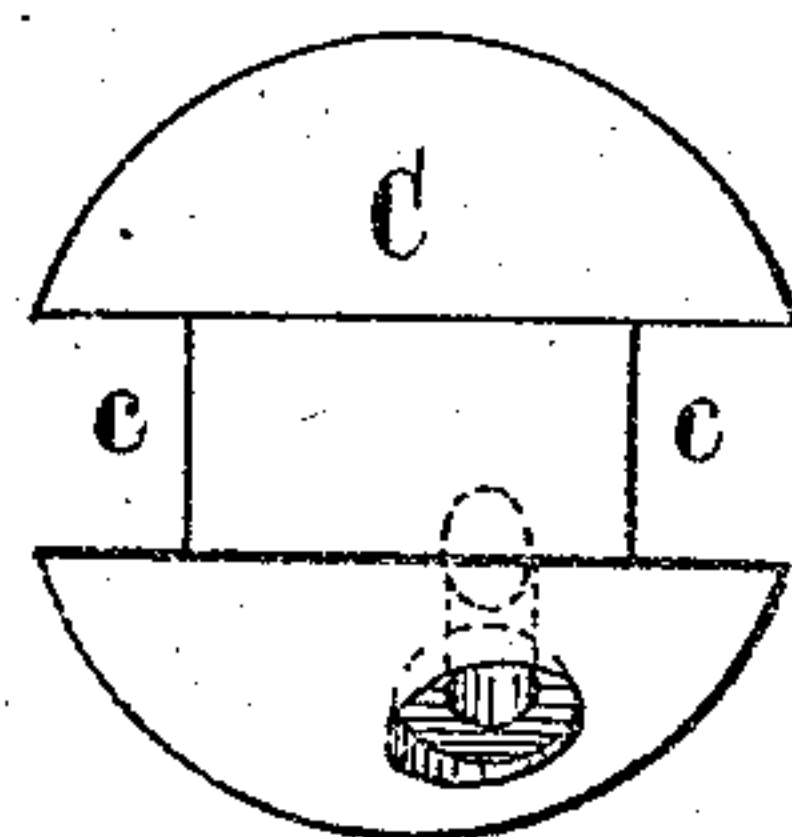


Fig. 9.



Fig. 10.

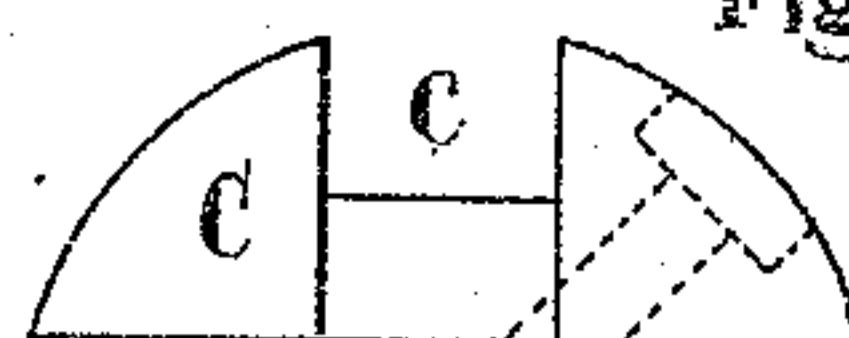


Fig. 14.



Fig. 11.



Fig. 12.

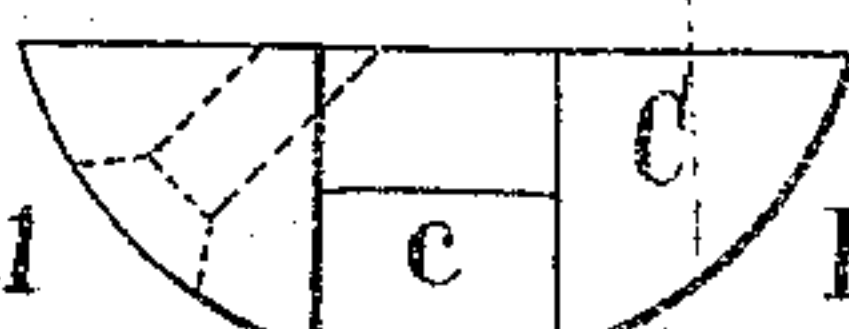


Fig. 15.

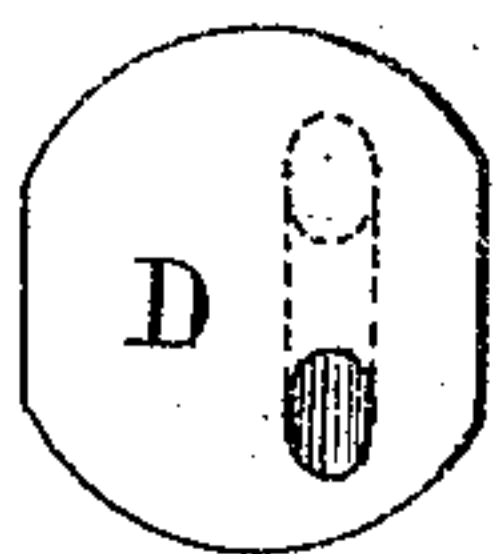
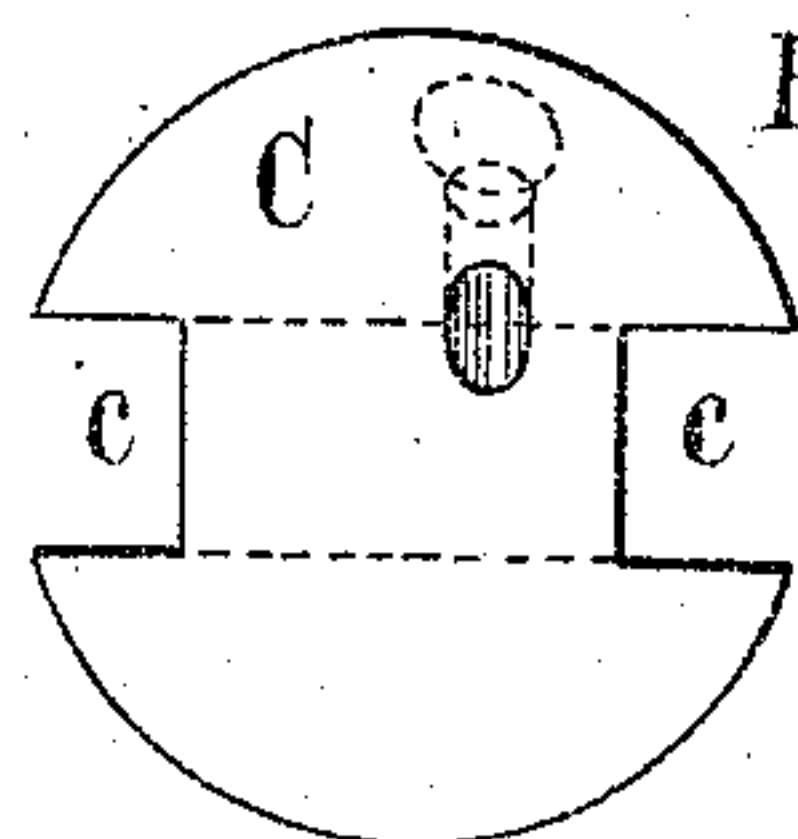


Fig. 13.



WITNESSES

*Walter Abbott*  
*M. E. Keir*

INVENTOR

*Emile Léon Prosper Mors*  
BY

*Hawson and Hawson*

ATTORNEYS



# UNITED STATES PATENT OFFICE.

EMILE LEON PROSPER MORS, OF PARIS, FRANCE, ASSIGNOR TO THE  
SOCIÉTÉ ANONYME D'ELECTRICITÉ ET D'AUTOMOBILES MORS, OF  
PARIS, FRANCE.

## UNIVERSAL JOINT.

No. 842,105.

Specification of Letters Patent.

Patented Jan. 22, 1907.

Application filed August 21, 1906. Serial No. 331,472.

*To all whom it may concern:*

Be it known that I, EMILE LEON PROSPER MORS, engineer, a subject of the King of Belgium, and a resident of Paris, France, have  
5 invented a certain new and useful Improvement in Universal Joints, of which the following is a full, clear, and exact description.

This invention relates to an improved construction of joint of the Hooke or universal  
10 type for transmission-shafts and the like, designed with a view to presenting large rubbing-surfaces, to having none of the ordinary cross-pins, and to allowing easy and rapid dismembering and reassembling.

15 The description is given hereinafter with reference to the annexed drawings, in which—

Figure 1 is an external elevation of the arrangement assembled. Figs. 2 and 3 are two  
20 views which are longitudinal sections at right angles one to the other. Fig. 4 is a cross-section upon line 4 4 of Fig. 1. Figs. 5 and 6 are two longitudinal views at right angles, corresponding to Figs. 2 and 3, but showing the device in process of assembling. Fig. 7  
25 represents in end view that one of the forks in which are engaged the spherical junction-caps. Figs. 8, 9, and 10, on the one hand, and 11, 12, and 13, on the other hand, represent separately the two spherical junction-caps. Figs. 14 and 15 represent a washer or kernel  
30 intended to be engaged between the branches of one of the forks.

This universal-joint device comprises two fork-shaped members A and B, attached to  
35 the two shaft portions *a* and *b* to be connected, these two similar forks being placed in two planes at right angles one to the other. The prongs or arms of these forks are in the form of an arc of a circle. These two forks A and  
40 B are connected together by means of two spherical caps C C and a kernel or washer D.

The two parts C C are shown in detail in Figs. 8, 9, and 10 as regards one of them and in 11, 12, and 13 as regards the other.  
45 They have the shape of a spherical cap, along a great circle of which is cut a groove *c* of such size that these two parts C can be engaged by these grooves upon the curved arms of one of the forks, in the drawings the  
50 fork A. The dimensions of these caps C C are such that when they are thus engaged in

the fork A the clearance between their flat faces corresponds to the thickness of the arms of the other fork B, so that the latter can be engaged in this space, being thus placed in a  
55 plane at right angles to the fork A. In the empty space existing between the arms of the fork B thus engaged between the flat faces of the two caps C is inserted a small washer or kernel D of corresponding shape. The  
60 whole is assembled by means of a bolt E engaged in a hole passing through the two caps C and the kernel D.

This universal-joint device presents the advantage of being very strong, of having no  
65 cross-pins, of presenting large rubbing-surfaces, and of being easily and rapidly taken apart and replaced. It will be remarked that the security-bolt E has only to maintain the parts assembled, but undergoes  
70 practically no strain, and has in no way the function of the ordinary cross-pin or an axle.

The invention may of course be carried out with all modifications which are consistent  
75 with the general arrangement described.

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

1. A joint device of the Hooke or universal type, formed of two forks with circular  
80 arms attached to the two shafts to be connected, of two spherical caps provided along a great circle with a groove by which they are engaged upon one of the forks and of a kernel inserted between the arms of the other  
85 fork engaged between the flat faces of the two spherical caps before mentioned, in combination with means to retain the parts in operative position.

2. A universal joint comprising a forked  
90 member secured to the one shaft, a second forked member secured to the second shaft, said second fork being in a plane at right angles to that of the first, a washer arranged between the forks of one forked member, a cap arranged about each fork end of the other member, said caps bearing upon  
95 opposite faces of said washer, and means for maintaining the parts in position.

3. A universal joint comprising a forked  
100 member, a second forked member which is at right angles to the plane of the first, a washer

located between the forks of one of the said members, a cap arranged about each fork end of the other forked member, said caps bearing upon opposite faces of said washer, and  
5 a security-bolt passing through said caps and central washer.

In testimony whereof I have signed my

name to this specification in the presence of two subscribing witnesses.

EMILE LEON PROSPER MORS.

Witnesses:

GUSTAVE DUMONT,  
AUGUSTUS E. INGRAM