

T. A. B. CARVER.  
SUPPORTING APPLIANCE.  
APPLICATION FILED JAN. 8, 1909.

952,184.

Patented Mar. 15, 1910.

3 SHEETS—SHEET 1.

FIG. 1.

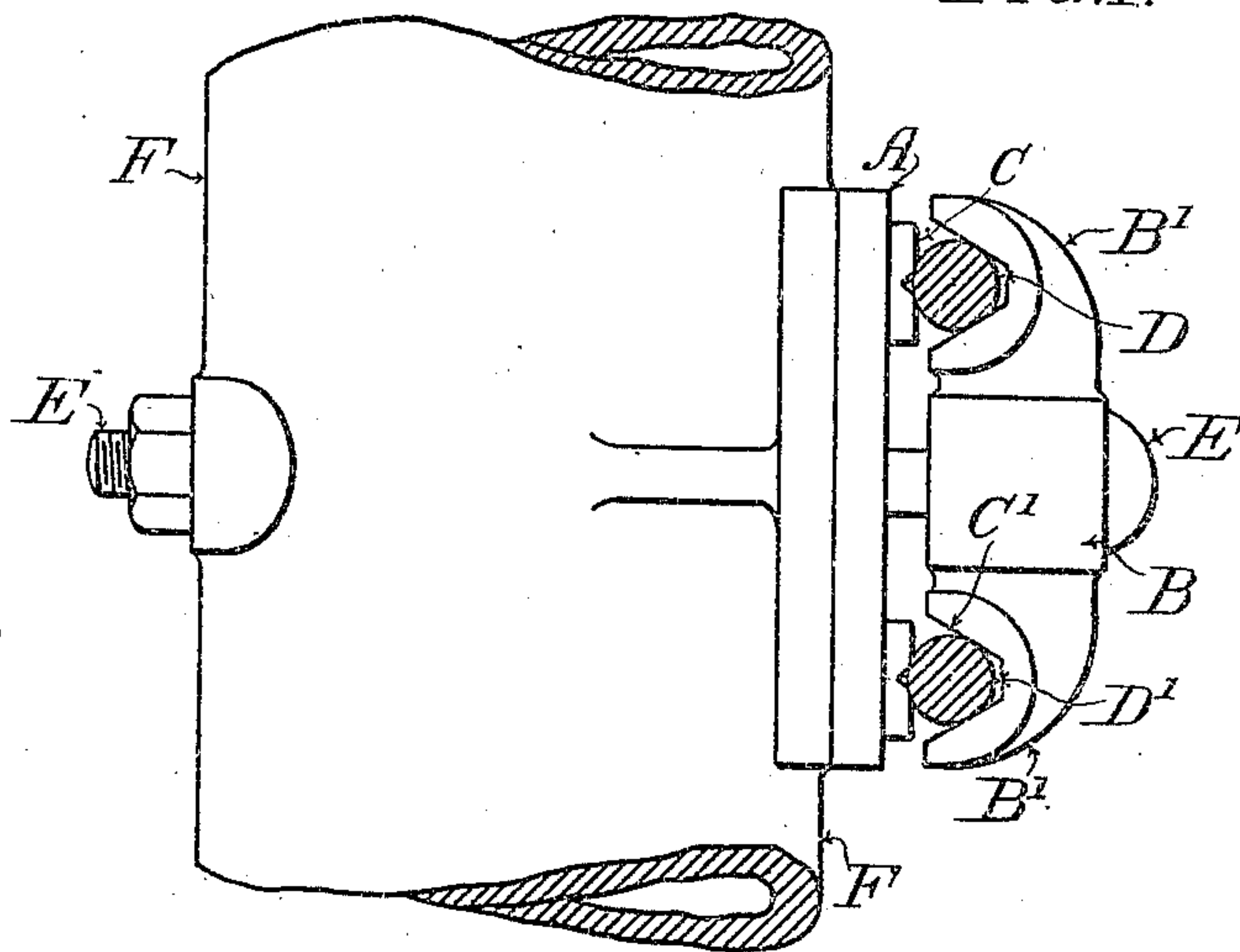
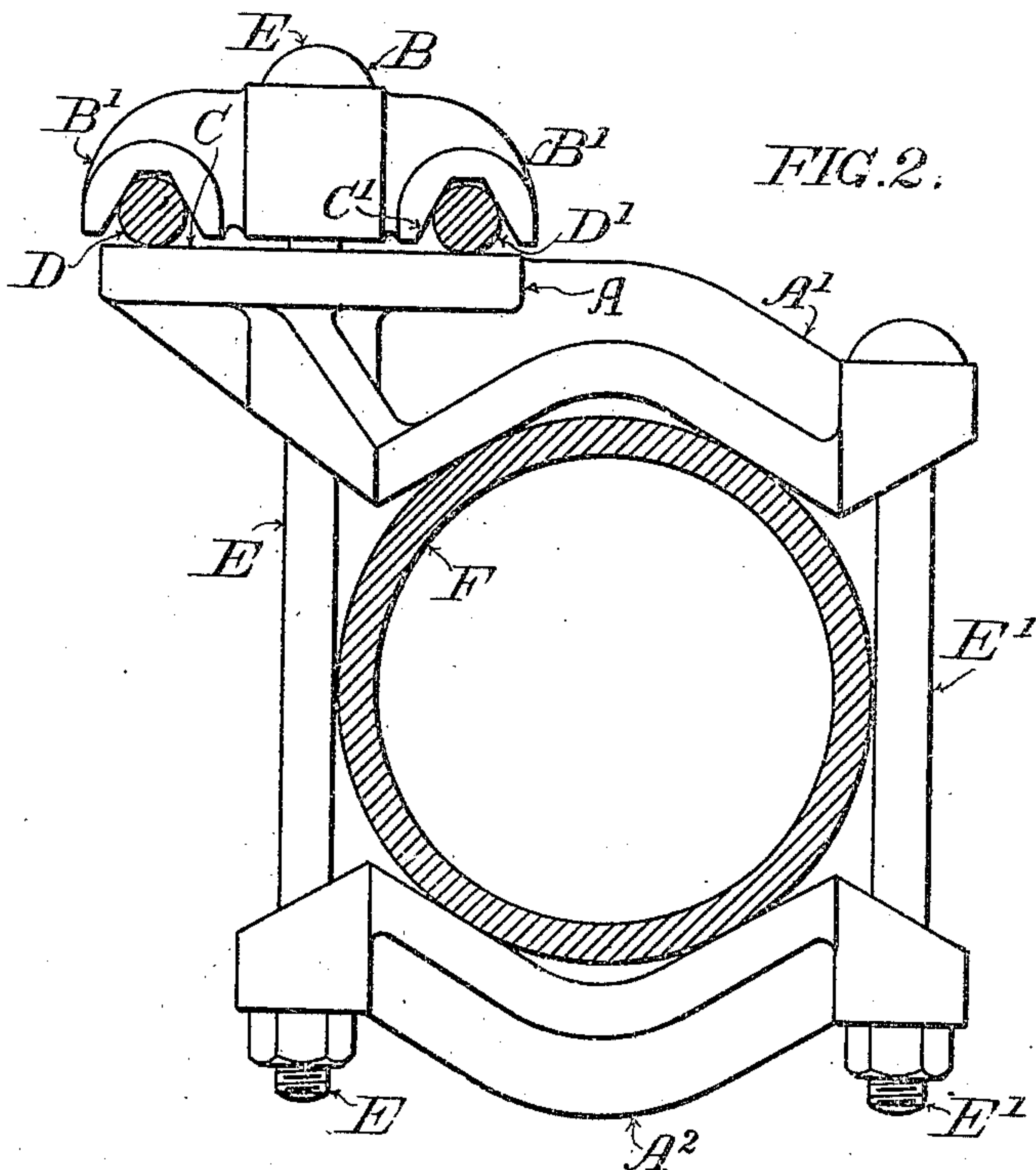


FIG. 2.



Witnesses

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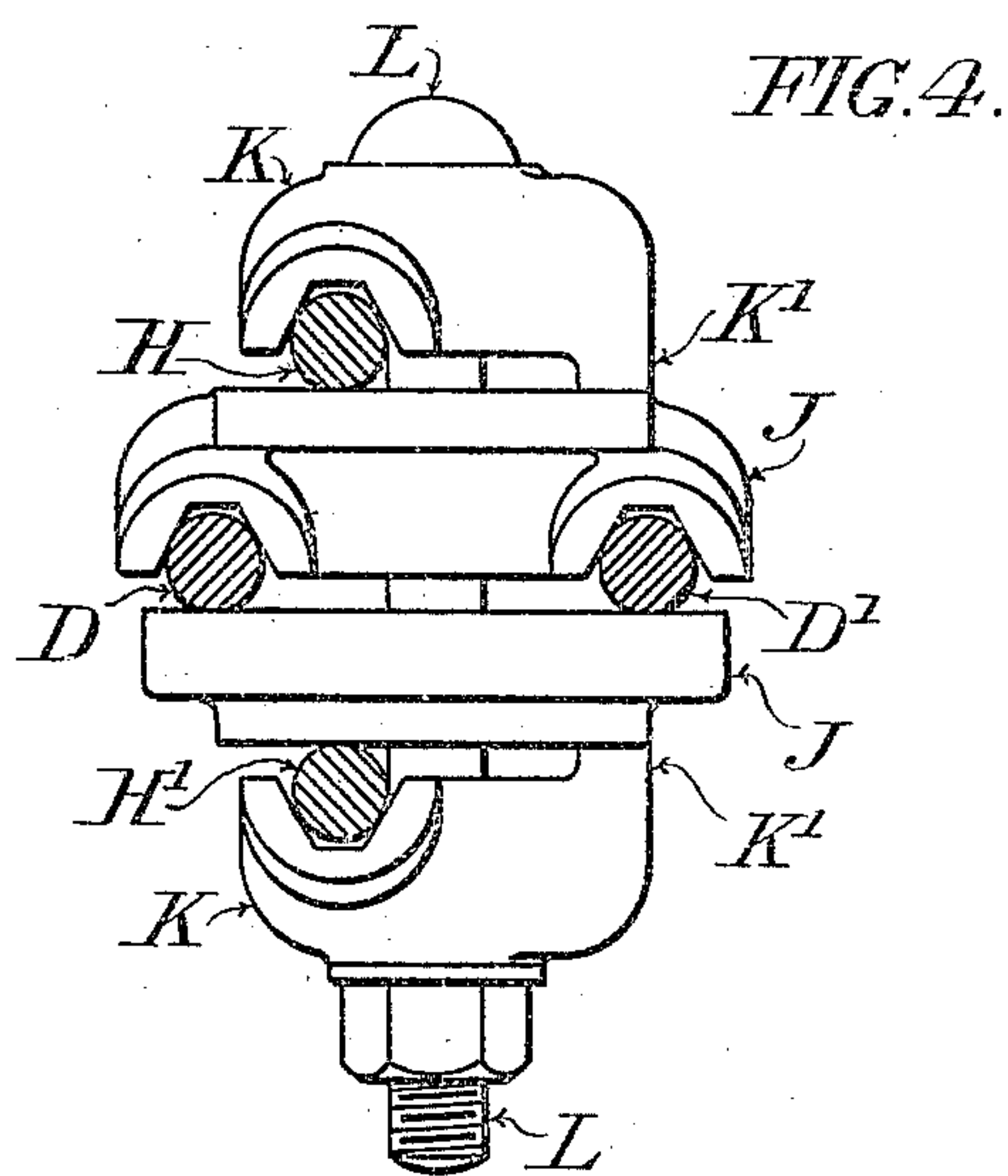
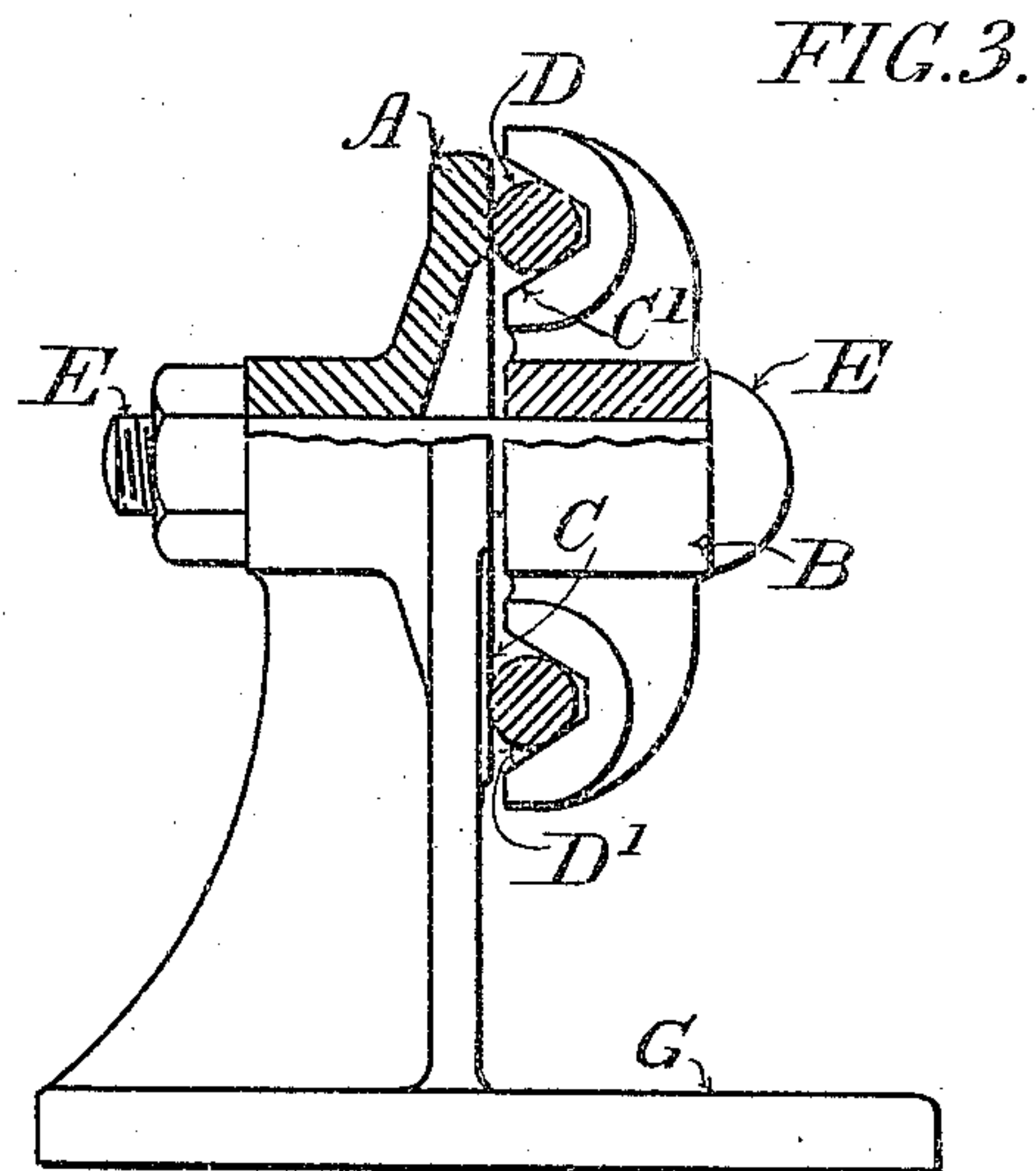
his atty.

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3 SHEETS—SHEET 2.



Witnesses

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3 SHEETS—SHEET 3.

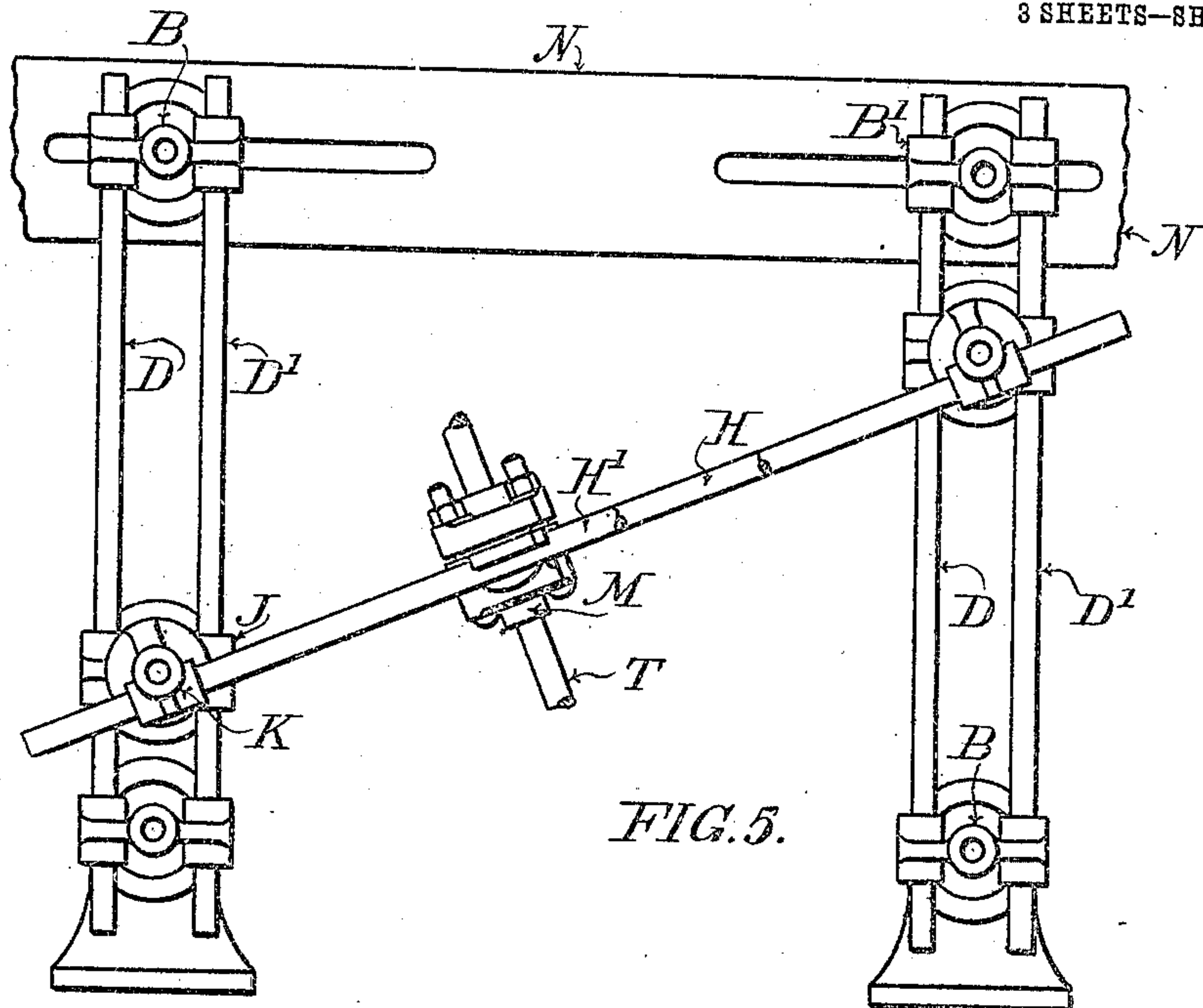


FIG. 5.

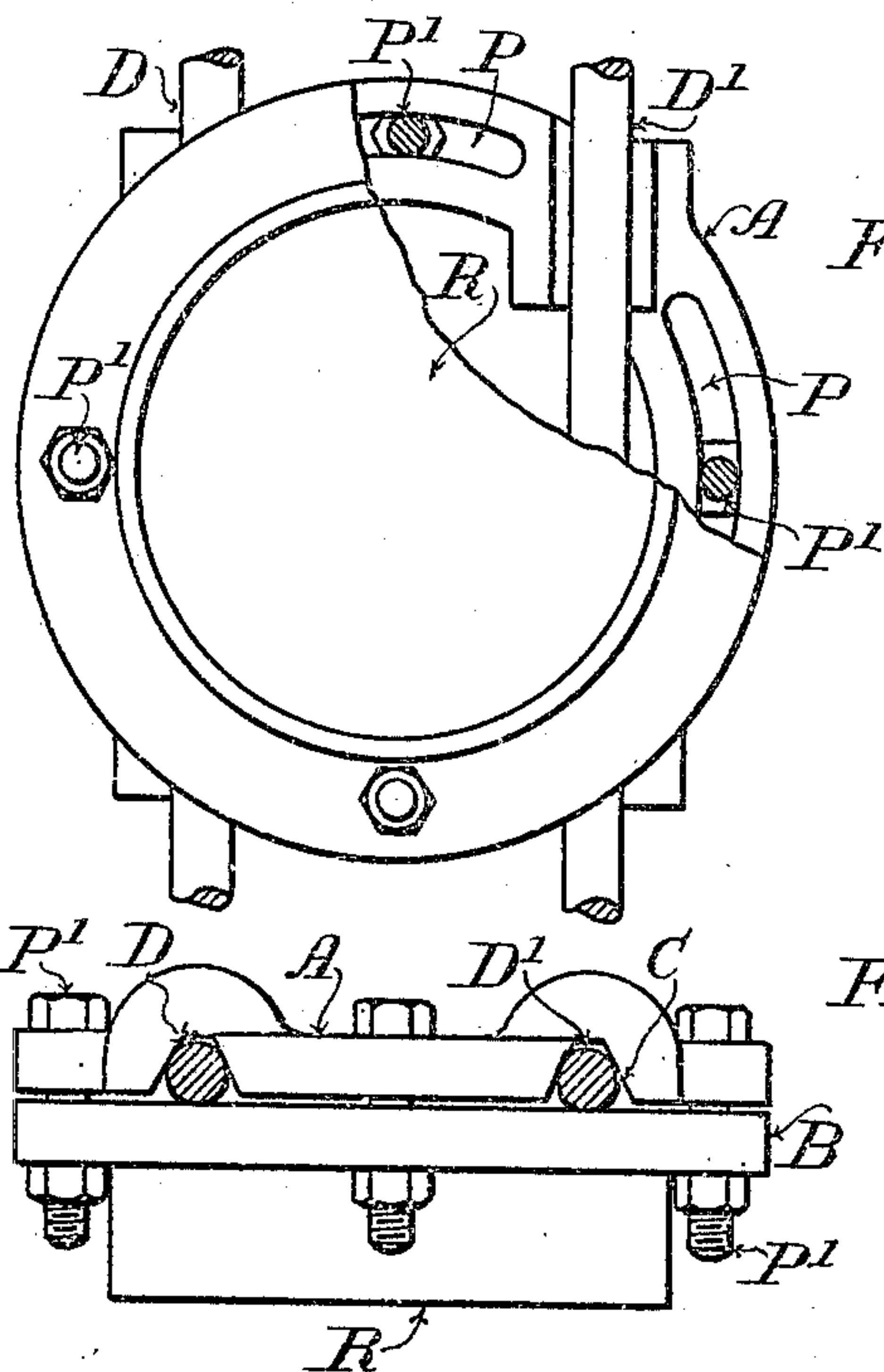


FIG. 6.

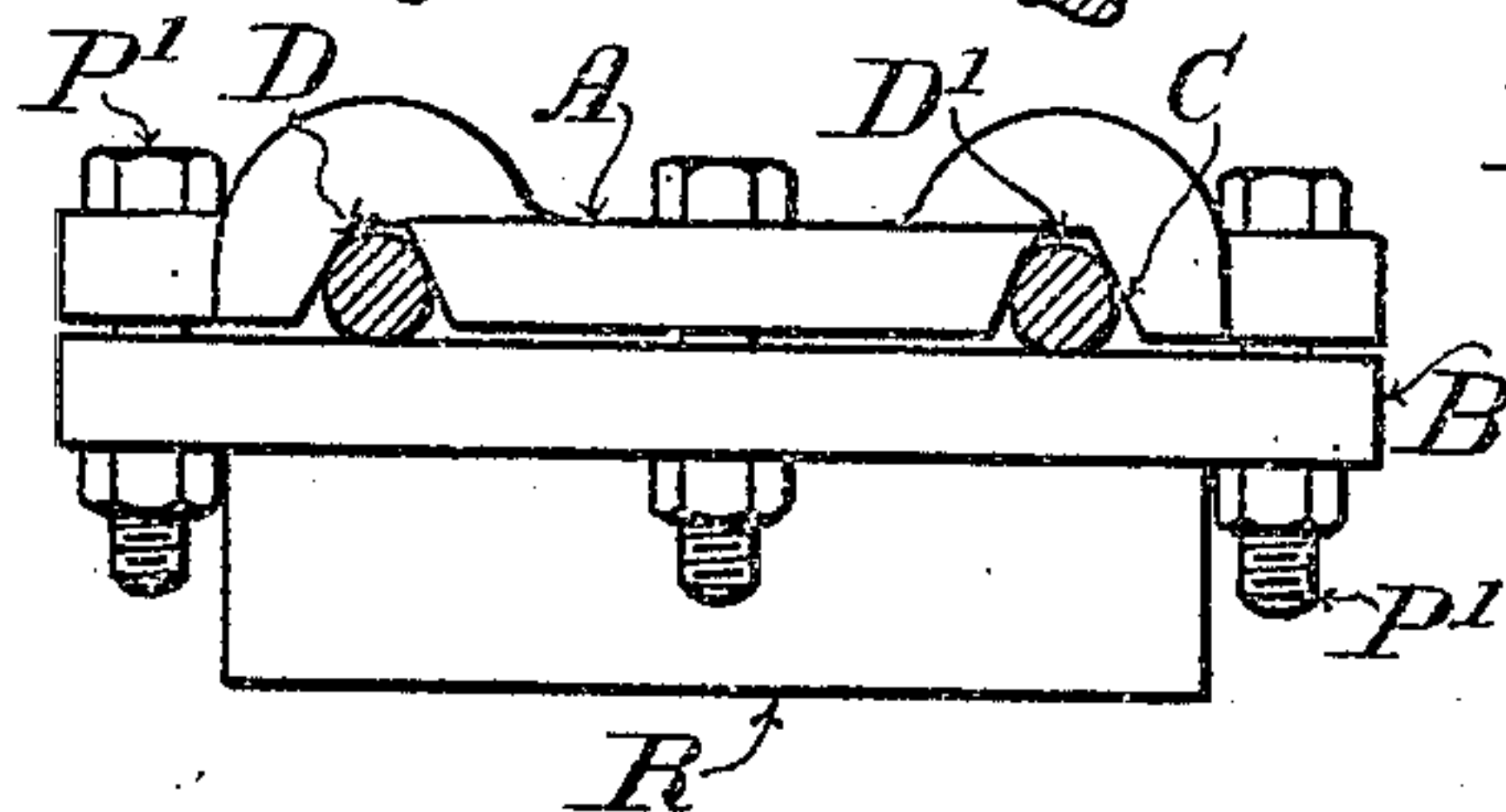


FIG. 7.

Witnesses  
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# UNITED STATES PATENT OFFICE.

THOMAS A. B. CARVER, OF GLASGOW, SCOTLAND.

## SUPPORTING APPLIANCE.

952,184.

Specification of Letters Patent. Patented Mar. 15, 1910.

Application filed January 8, 1909. Serial No. 471,224.

*To all whom it may concern:*

Be it known that I, THOMAS ALBERT BRIGGS CARVER, a subject of the King of Great Britain and Ireland, and of 9 Springfield road, Dalmarnock, Glasgow, Scotland, have invented certain new and useful Improvements in or Connected with Supporting Appliances, for which I have made application for a patent in Great Britain, No. 20,310, dated September 28, 1908, of which the following is a specification.

This invention relates to the construction of supporting appliances involving the provision of two rigid rods of rounded formation arranged parallel to one another and set in a plane in which the pair are capable of angular adjustment and in which each rod is capable of independent axial adjustment.

According to this invention a chair is provided in association with a cap between which the rods are adapted to be gripped, provision being made for insuring their parallelism and for drawing the cap and chair together and for securing them to a structure to which the support is to be fixed.

In the accompanying drawings some examples of the construction and application of appliances according to this invention are illustrated, in which:—

Figures 1, 2, 3 and 4, illustrate some examples of supporting appliances, Fig. 5 is an illustration showing some examples of the application of this invention, and Fig. 6 is a sectional elevation and Fig. 7 is a plan showing a method of fixing a device according to this invention.

In the forms of construction illustrated, with special reference to Figs. 1, 2 and 3 of the drawings, A designates a chair of disk formation and B a cap having two shoulders  $B^1$   $B^1$  extending from opposite sides of a central boss. The chair A and boss of the cap B are centrally bored, and the chair and shoulders are formed to present opposing seatings  $C$   $C^1$  respectively to receive two round rods  $D$   $D^1$  in a plane at right angles to the axis of the bores of the chair A and cap. E designates a bolt which passes through the cap B and chair A and through or into the structure to which the appliance is to be attached, so that, in tightening the bolt E, the rods  $D$   $D^1$  are gripped between the cap B and chair A, the chair A being

gripped between the rods  $D$   $D^1$  and the supporting structure, whereby the parts are locked together. By slackening the bolt E the rods  $D$   $D^1$  may be adjusted angularly in the plane in which they lie, and also in the direction of their axes thereby enabling the length to which the rods shall project from the clamps to be regulated. To insure an efficient grip on the rods  $D$   $D^1$  and the parallelism of the rods, one or both of the seatings  $C$   $C^1$  may be channeled to receive the rods, the channels being preferably of angular formation examples of which are shown in the drawings.

In the form of construction illustrated at Fig. 1, the chair is shown applied to a structure representing a column F, through which the bolt E passes, and as an example of a modified form of construction suitable for application to a structure, such as a column F, as represented at Fig. 2, under conditions where it is not desirable for the bolt E to be passed therethrough, the chair A is formed with an arm  $A^1$  constituting a saddle to bear upon the surface of the column, and a yoke  $A^2$  is provided for application to the opposite side of the column, the fixing of the appliance in position being effected by the bolt E in conjunction with a bolt  $E^1$ . In action it will be recognized that in fixing, after the bolt  $E^1$  has been adjusted, by tightening the bolt E, the parts are simultaneously locked together as in the form of construction illustrated at Fig. 1.

In the form of construction as illustrated at Fig. 3, the chair A is formed to extend at right angles from a base support G which is adapted to be fixed to the surface of a structure lying at right angles to the face of the chair A, in which case, it will be noted that the bolt E would not act to fasten the appliance to the structure. A further modification in the construction of such appliances is to provide two pairs of rods arranged to lie in planes at right angles to one another, all capable of independent axial adjustment and angularly adjustable in pairs independently about a common axis. In the example of this form of construction as illustrated at Fig. 4, two pairs of rods  $D$   $D^1$  and  $H$   $H^1$  are provided, and the appliance comprises two central clamps J J presenting faces between which the pair of rods  $D$   $D^1$  are adapted to be clamped, the exterior



surfaces of these clamps constituting chairs each furnished with a cap K adapted to bear upon a single rod of the pair H H<sup>1</sup>. As shown, the central clamps J J and the caps K K are centrally bored at right angles to their faces, a bolt L passing through the members when assembled, the central rods D D<sup>1</sup> passing on opposite sides and the outer rods H H<sup>1</sup> both passing on the same side of the bolt L, a projecting lug K<sup>1</sup> being furnished on the face of each cap K on the opposite side of the bolt L to that occupied by the rod, in order to present a support for the cap, complementary to that produced by the rod and so prevent its tilting under the action of tightening the bolt L.

In application, the rods of appliances constructed according to this invention are adapted to carry devices, and are particularly suitable for carrying devices under conditions where in the setting, adjustment along the rods is desirable, or where subsequent adjustment is required, giving facility of application and accuracy of adjustment. An example of this application is indicated at Fig. 5 which shows a device M mounted upon the pair of rods H H<sup>1</sup>. It will also be recognized that the clamping appliances may be used for fixing pairs of rods to structures, and that clamping appliances as herein described may also be adopted for fixing devices to the rods an example of which is indicated at Fig. 5 in which a device N is shown secured to the two pairs of rods D D<sup>1</sup> by appliances of the form illustrated at Fig. 1, or the appliances may be used for establishing connections between two parts or structures, such, for example, as that shown in Fig. 5 by means of the pair of rods H H<sup>1</sup>. The compound association of two pairs of rods is capable of many applications.

In fixing devices to a pair of rods a modified form of clamp may be adopted an example of which is shown at Figs. 6 and 7, comprising a chair A having transverse channeled seatings C the channels being preferably of angular formation, the chair A being formed with segmental slots P near the periphery thereof, for the reception of bolts P<sup>1</sup> adapted to pass through the chair and, say, through a flange of a device R to be fixed to the rods D D<sup>1</sup>, the base of the device constituting a cap B, between which and the chair A the rods may be clamped. These rod supports are also particularly adapted for use in supporting bearings, under conditions where the bearings are required to be set and retained in a definite position, the bearing being fixed to the rods by means of suitable clamping devices designed to give the required facilities of adjustment before fixing, an example of which is indicated at Fig. 5, the device M as indicated comprising a bearing for a shaft T. Rods for use in accordance with this inven-

tion, although preferably of circular cross section, may be of hexagonal or other approximately rounded formation.

What I do claim as my invention, and desire to secure by Letters Patent, is:—

1. A supporting appliance comprising two central clamps and two caps in association with two pairs of rigid rods arranged in planes at right angles to one another, the two central clamps presenting faces for gripping one pair of rods and formed to insure the parallelism of the pair of rods gripped, the exterior surfaces of the clamps constituting chairs to act in conjunction with the caps for gripping the other pair of rods, together with means for drawing the caps together, for the purposes set forth.

2. A supporting appliance comprising two central clamps and two caps in association with two pairs of rigid rods arranged in planes at right angles to one another, the two central clamps presenting faces for gripping one pair of rods, one of the faces being formed with parallel channels, the exterior surfaces of the clamps constituting chairs to act in conjunction with the caps for gripping the other pair of rods, together with means for drawing the caps together, for the purposes set forth.

3. A supporting appliance comprising two central clamps and two caps in association with two pairs of rigid rods arranged in planes at right angles to one another, the two central clamps presenting faces for gripping one pair of rods, the exterior surfaces of the clamps constituting chairs to act in conjunction with the caps for gripping the other pair of rods, together with means for drawing the caps together, for the purposes set forth.

4. A supporting appliance comprising two central clamps and two caps in association with two pairs of rigid rods arranged in planes at right angles to one another, the two central clamps presenting faces for gripping one pair of rods, and formed to insure the parallelism of the pair of rods gripped, the exterior surfaces of the clamps constituting chairs to act in conjunction with the caps for gripping the other pair of rods, the clamps and caps being bored axially at right angles to their faces in conjunction with a bolt passing therethrough, for the purposes set forth.

5. A supporting appliance comprising two central clamps and two caps in association with two pairs of rigid rods arranged in planes at right angles to one another, the two central clamps presenting faces for gripping one pair of rods, one of the faces being formed with parallel channels, the exterior surfaces of the clamps constituting chairs to act in conjunction with the caps for gripping the other pair of rods, the clamps and caps being bored axially at right



angles to their faces in conjunction with a bolt passing therethrough, for the purposes set forth.

5 6. A supporting appliance comprising two central clamps and two caps in association with two pairs of rigid rods arranged in planes at right angles to one another, the two central clamps presenting faces for grip-  
10 ping one pair of rods, the two faces being formed with parallel channels, the exterior surfaces of the clamps constituting chairs to act in conjunction with the caps for grip-

ping the other pair of rods, the clamps and caps being bored axially at right angles to their faces in conjunction with a bolt passing 15 therethrough, for the purposes set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THOMAS A. B. CARVER.

Witnesses:

J. ALOUA BREWER,  
M. S. THORNTON.