

W. G. GIBBONS.
TELEMOTOR APPARATUS.
APPLICATION FILED DEC. 31, 1907.

930,955.

Patented Aug. 10, 1909.
3 SHEETS—SHEET 1.

FIG. 1.

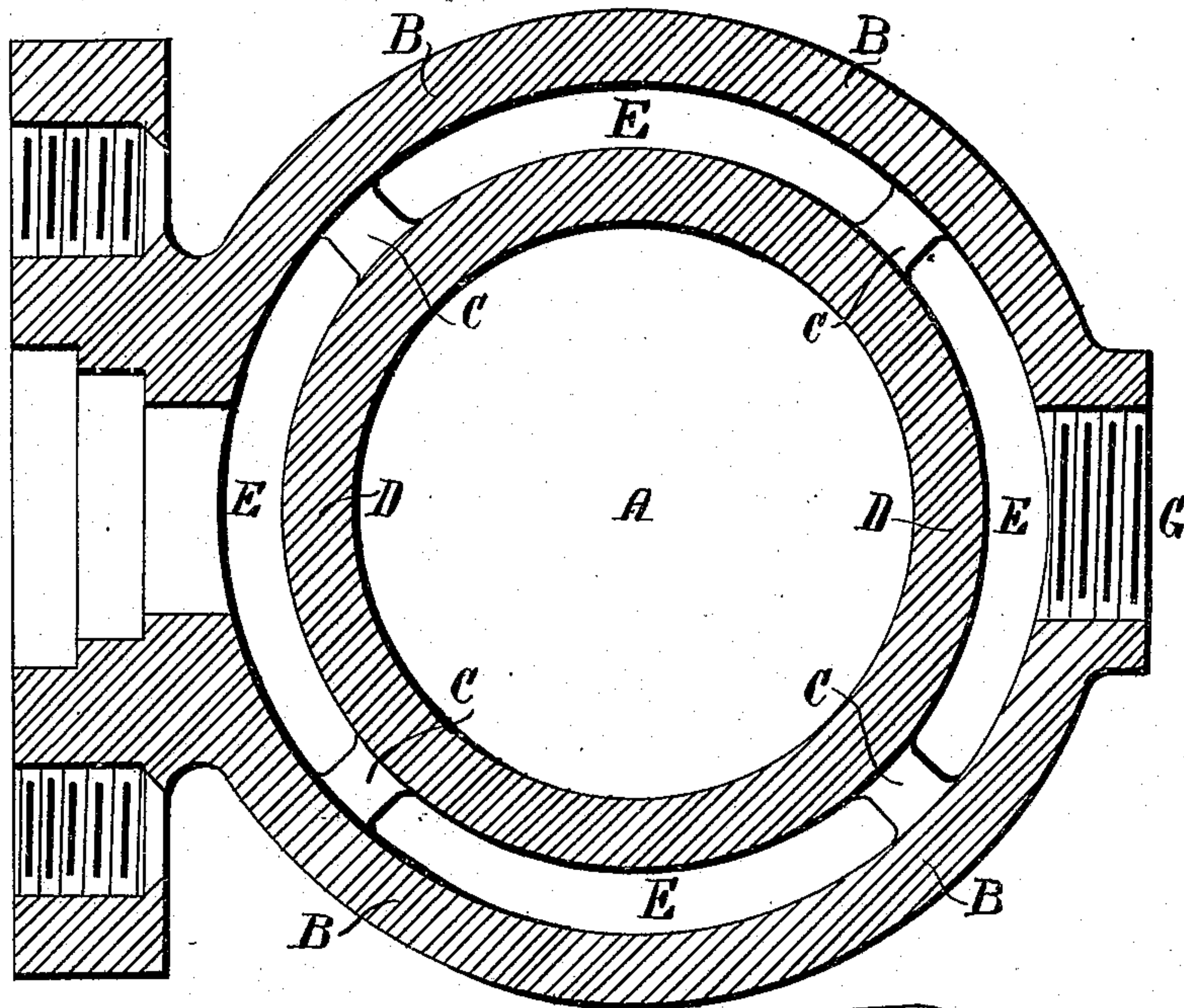
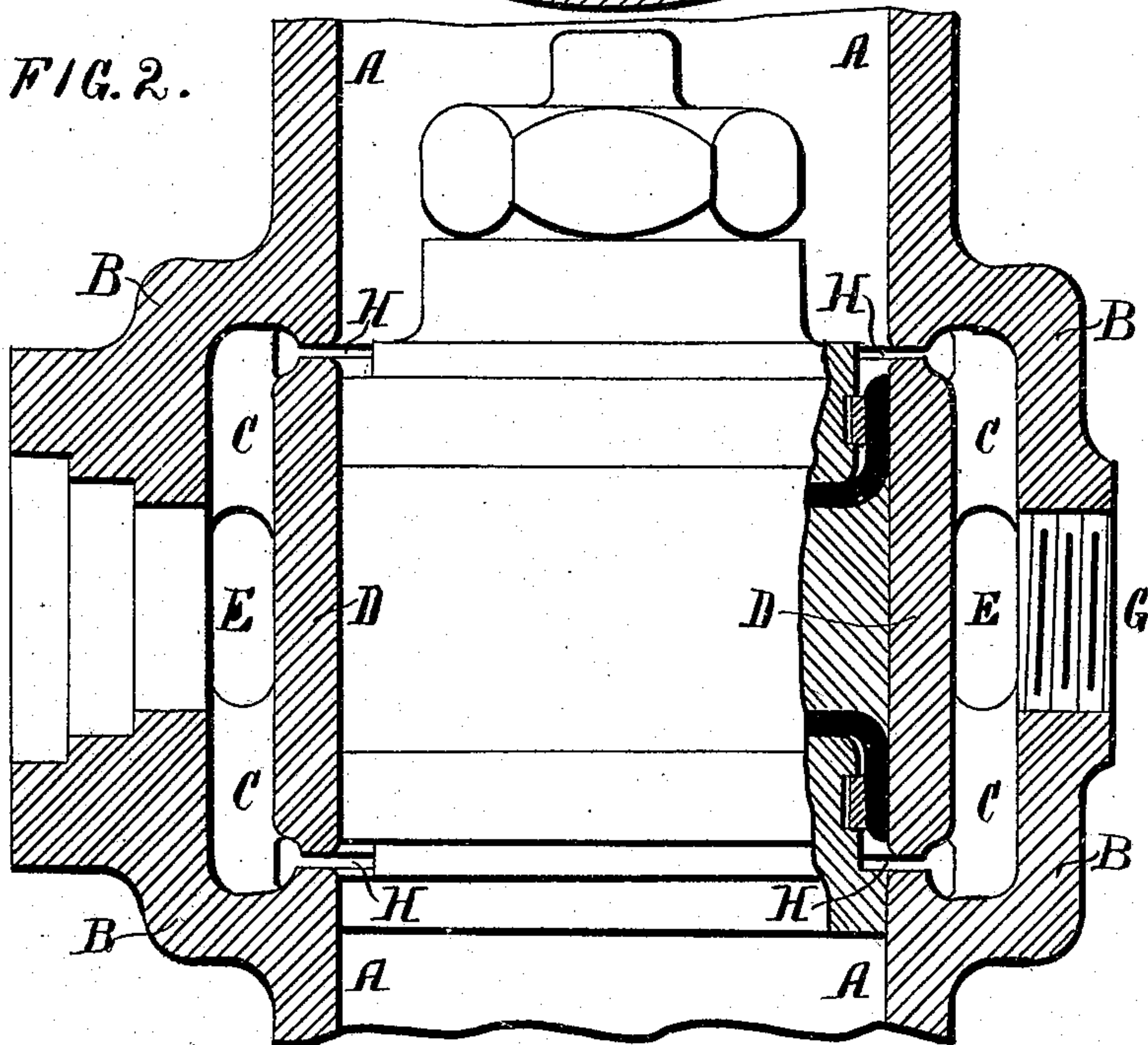


FIG. 2.



WITNESSES
L. H. Grote
M. E. Keir

INVENTOR
William Gregory Gibbons
BY
Horsman and Hanson
ATTORNEYS

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3 SHEETS—SHEET 2.

FIG. 3.

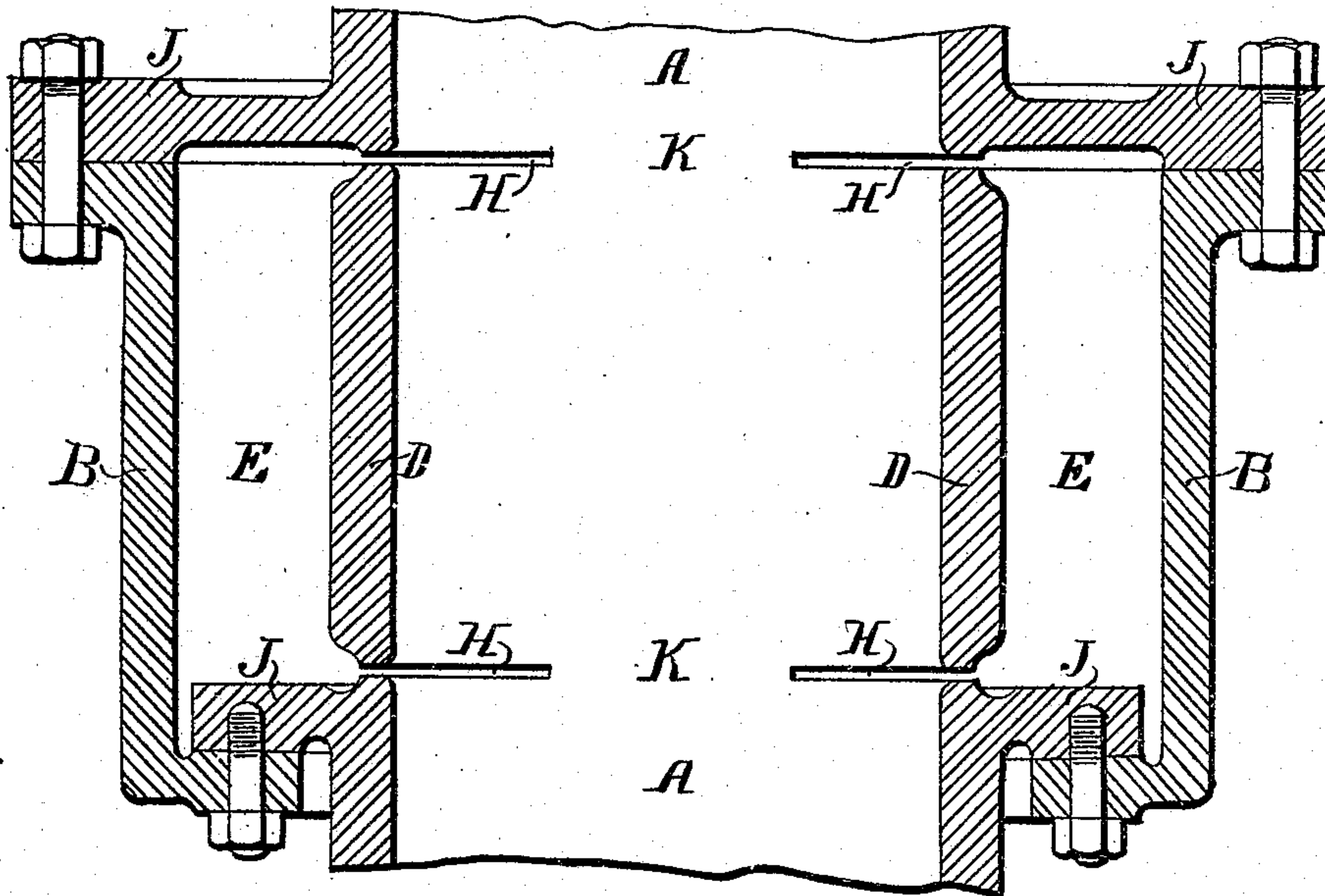
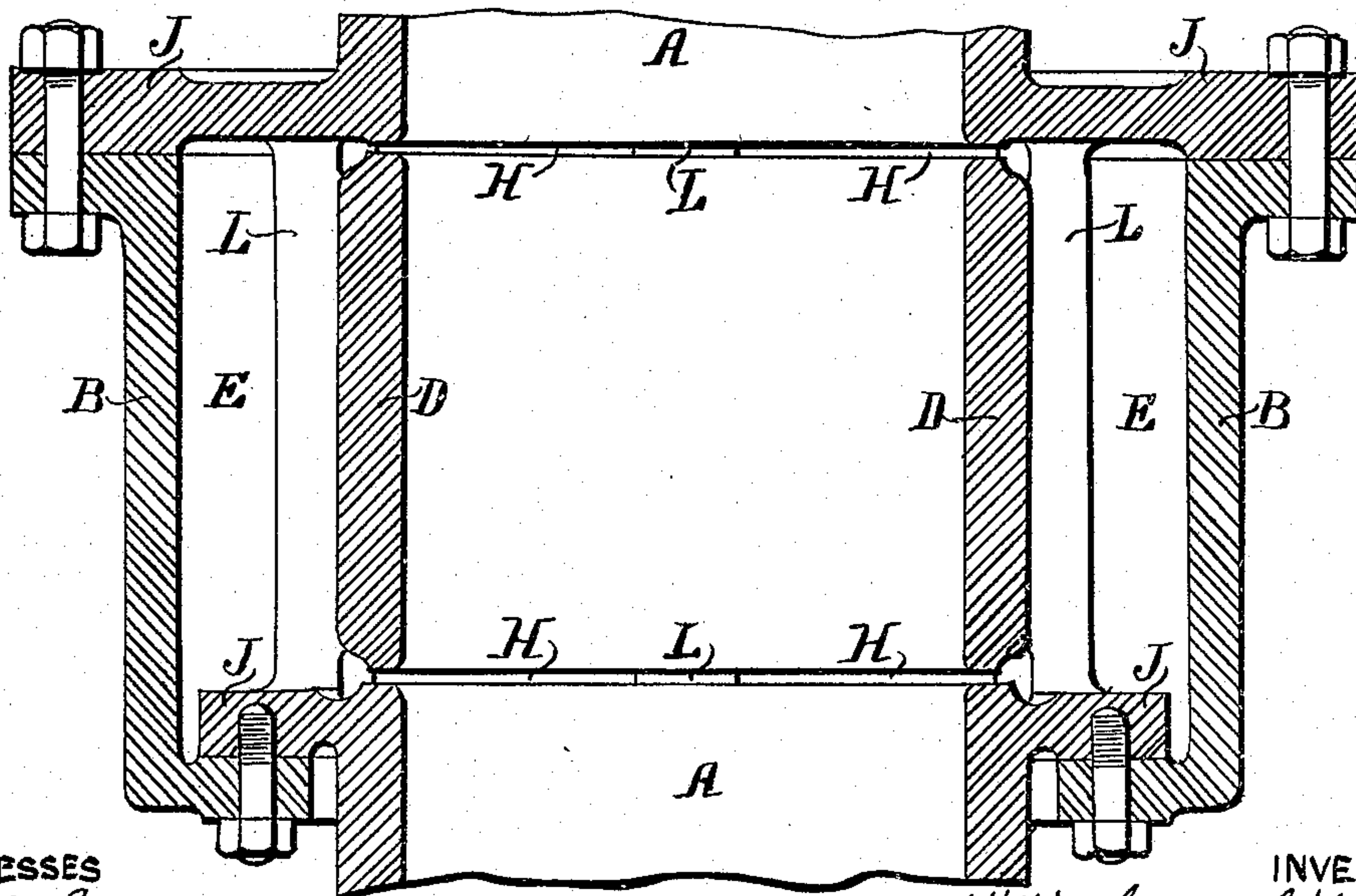


FIG. 4.



WITNESSES

L. H. Grote
M. E. Keir

INVENTOR

William Gregory Gibbons
BY

Hanson and Hanson

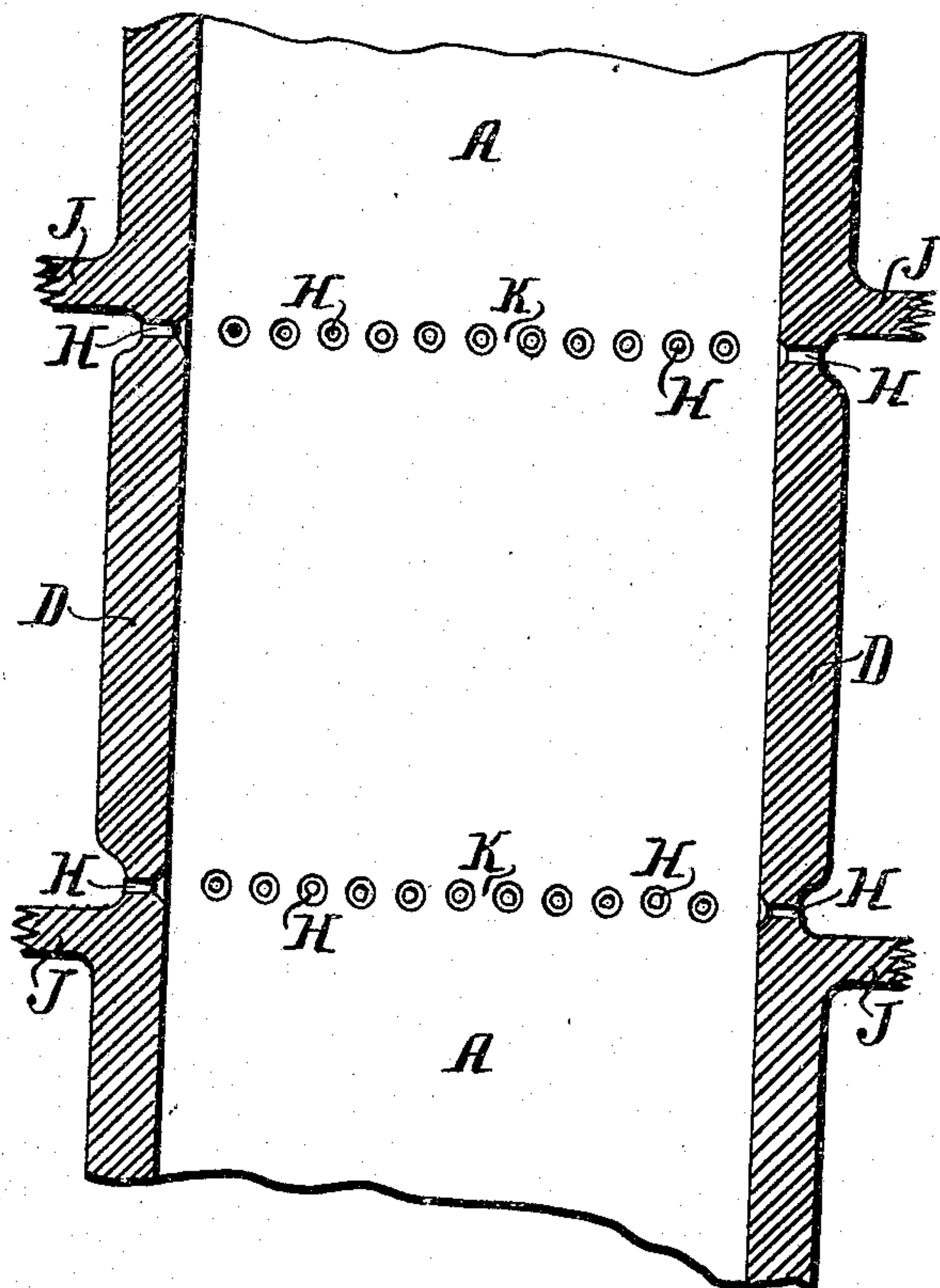
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3 SHEETS—SHEET 3.

FIG. 5.



WITNESSES
L. H. Grote
M. E. Leir

INVENTOR
William Gregory Gibbons
BY

Hanson and Hanson
ATTORNEYS

UNITED STATES PATENT OFFICE.

WILLIAM GREGORY GIBBONS, OF EDINBURGH, SCOTLAND.

TELEMOTOR APPARATUS.

No. 930,955.

Specification of Letters Patent.

Patented Aug. 10, 1909.

Application filed December 31, 1907. Serial No. 408,851.

To all whom it may concern:

Be it known that I, WILLIAM GREGORY GIBBONS, a subject of the King of Great Britain and Ireland, and a resident of Edinburgh, in the county of Mid-Lothian, Scotland, have invented certain new and useful Improvements in Telemotor Apparatus, and of which the following is a specification.

The transmitting cylinders of certain types of telemotor apparatus—for example, such as is described in Brown's patent specification No. 622600 dated 4th April, 1899—are made with central distance pieces between which and the opposite ends of the cylinders circumferential ports are formed. It is essential that these ports should be as short axially as possible and it is indeed for this reason—that is that in this manner they could more easily be made very short—that the distance piece is used. But such an arrangement is open to several disabilities, in the first place, it is structurally very expensive; in the second place, if for any reason the parts be disconnected (the cylinder ends from the distance piece) their reassembly in alinement, with such appliances as are usually to be found on shipboard, is practically impossible—and obviously they must be in alinement, as otherwise the cup leathers on the piston will catch on the inner lips of the ports and speedily be rendered useless.

The present invention has for its object to obviate these disabilities by forming the whole cylinder—its opposite ends and the central distance piece—in one piece.

In order that the invention and the manner of performing the same may be properly understood there are hereunto appended three sheets of explanatory drawings throughout which like reference letters indicate like parts, and in which—

Figures 1 and 2, Sheet 1, are, respectively, horizontal and vertical sections of parts of a transmitting cylinder sufficient to show one example of the invention, while Figs. 3 and 4, Sheet 2, and Fig. 5, Sheet 3, are all vertical sections showing three other examples.

In carrying out the invention according to the example shown in Figs. 1 and 2, the walls of a transmitting cylinder, A, are formed initially without break from end to end. About the center is formed an outer cylindrical or conveniently shaped part, B, merging in the walls above and below but

centrally cored out so as to leave, with the exception of webs, C, extending inward to what afterward forms the distance piece, D, an annular space, E, between the part of the cylinder wall forming the distance piece and the wall of the part, B, embracing it. Apertures, G, afterward closed by doors are, of course, made in the embracing part, B, for the removal of the cores. After boring the whole cylinder the part, B, forming the equivalent for the usual distance piece is severed from the walls by convenient means—a fine circular saw, for example. The severing cuts, H, are so positioned above and below the part forming the distance piece, D, as to pass into the annular space, E, referred to and they are, of course, circumferential. The lips of the cuts are then rounded off in order that they may offer no obstruction to the passage of the piston.

Alternatively, as shown in Fig. 3, the cylinder, A, may be formed with flanges, J, above and below the ports, H, to which flanges the outer casing or jacket, B, is bolted. Of course, it is obvious in this case that completely circumferential ports cannot be made. Instead there are a series of segmental ports, H, in line—leaving between them buttress-like parts, K, of sufficient strength. Or as shown in Fig. 4, instead of leaving buttress parts in the thickness of the cylinder walls external buttresses, L, may be formed upon the cylinder, A, and the ports, H, be cut completely through the walls to them. Again as shown in Fig. 5, the segmental ports shown in Fig. 3, may be in the form of rings, H, of small holes drilled through the wall, A, at such distance apart as to leave between them buttress-like parts, K. The holes are counter-sunk on their inner side so as to practically eliminate the possibility of the piston packing catching in the ports.

It will be seen that the circumferential cuts or small holes form the narrow ports, H, referred to in a very effective manner, while at the same time cost of manufacture is considerably reduced, and the whole being in one part cannot be put out of alinement; and consequently there is practically no possibility of the cup leathers catching in the ports and their life is therefore considerably increased.

It is to be understood that the method of

forming the outer part, B, either in a piece with the cylinder walls, A, or separate therefrom may be alternatively employed in any of the examples described.

5 What I claim is:—

In telemotor apparatus of the type described, an integral transmitting cylinder having two series of narrow circumferential ports opening through the wall of said cylinder, and a jacket surrounding said cylinder and forming an annular chamber into which the ports of both series open, said series being spaced apart a distance only slightly greater

than the length of the piston head so that the fluid on the opposite sides of the piston head communicates through said annular chamber and its pressure is equaled when the piston head is in said position between said series. 15

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses. 20

WILLIAM GREGORY GIBBONS.

Witnesses:

FRANK EDDINGTON,
FREDERICK PIATT.