

No. 736,254.

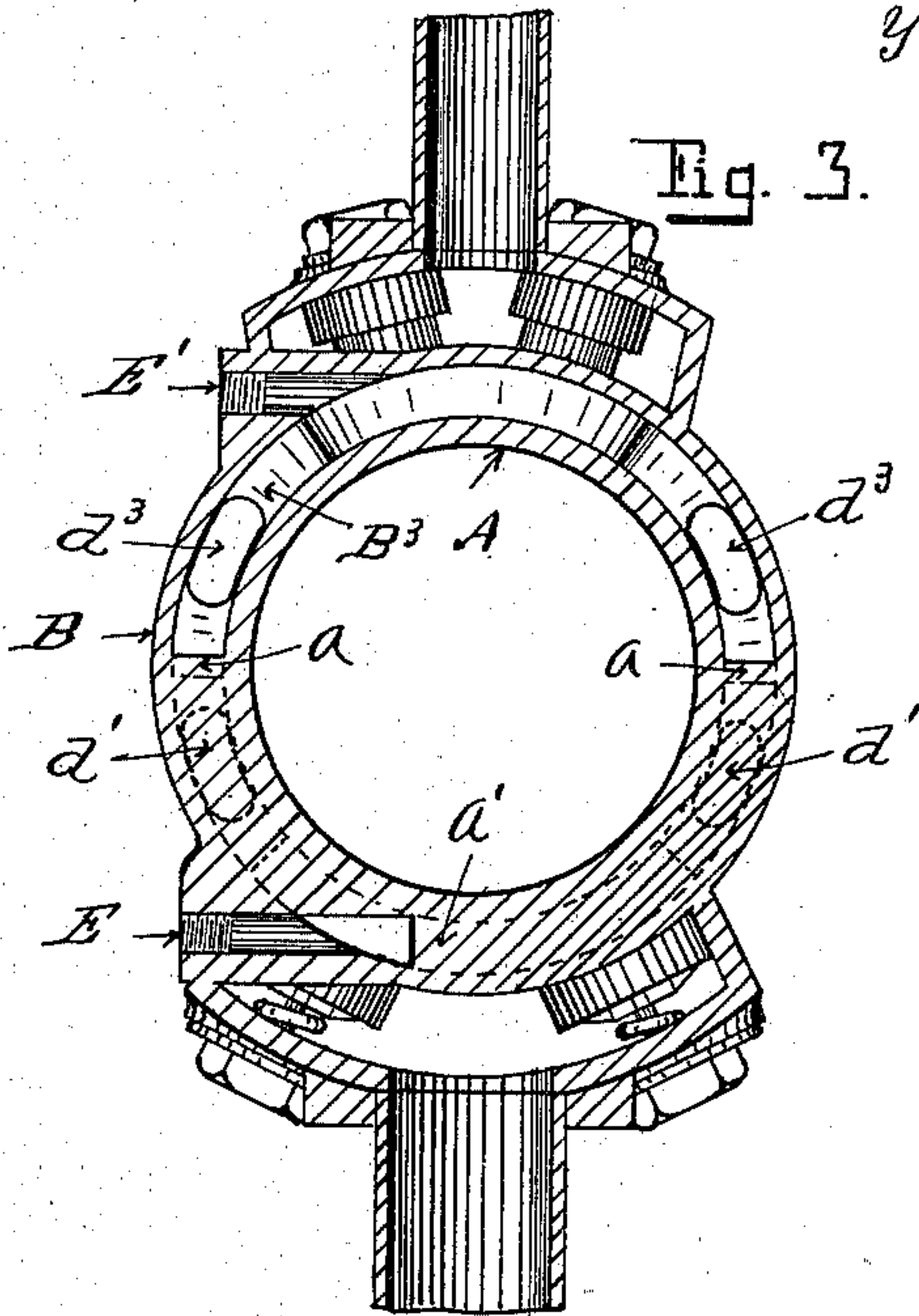
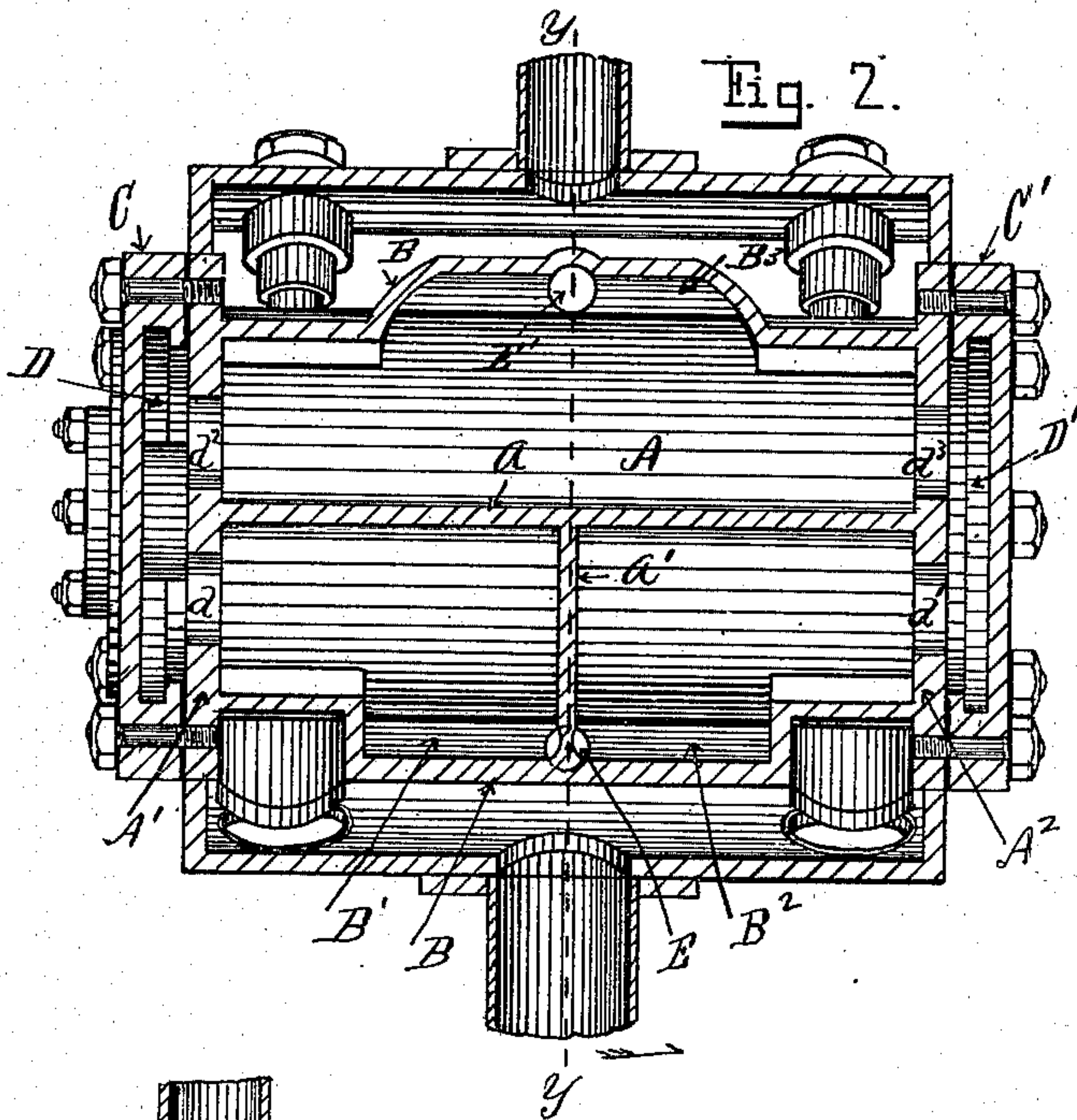
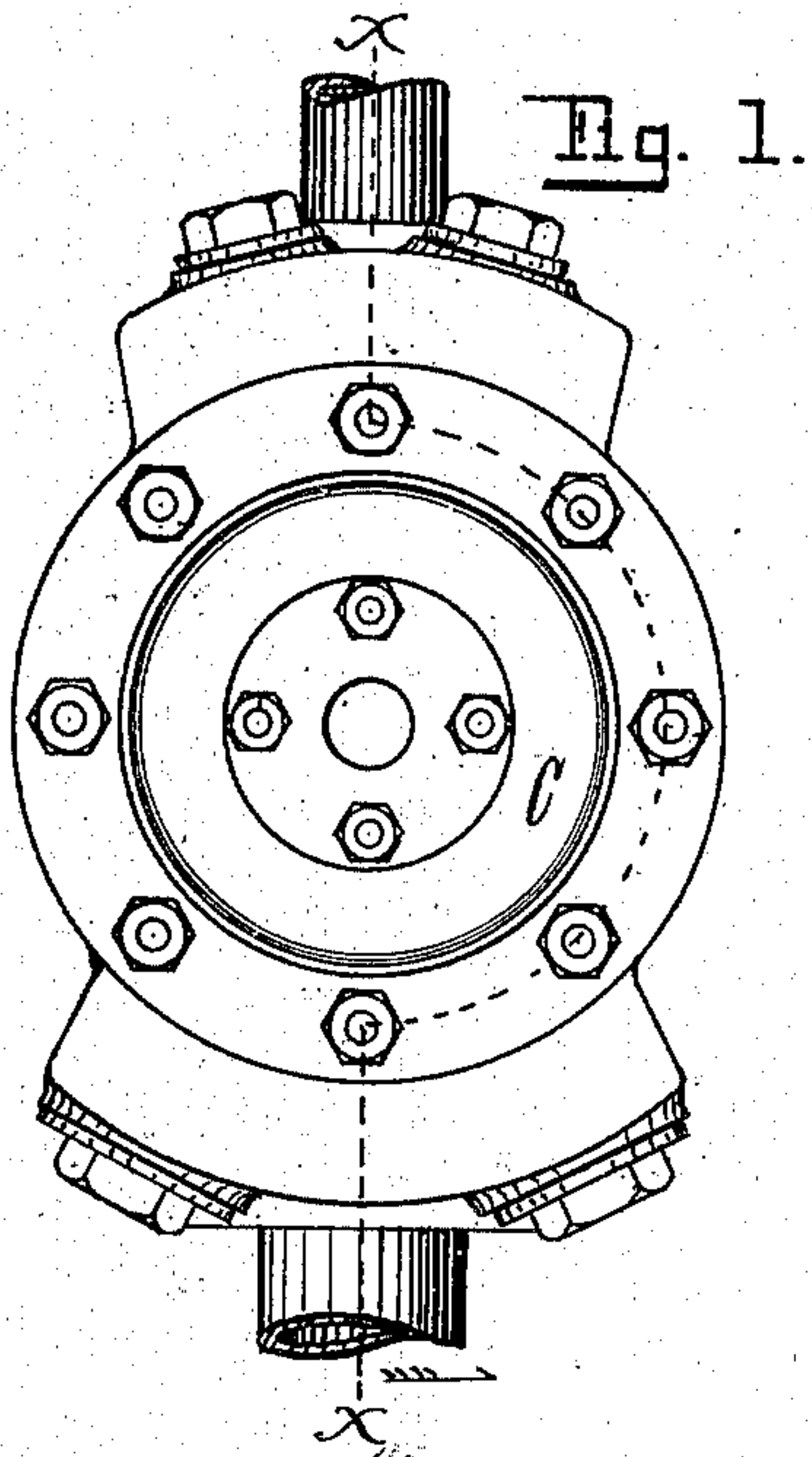
PATENTED AUG. 11, 1903.

J. H. HERRON.

AIR COMPRESSOR CYLINDER WATER JACKET.

APPLICATION FILED NOV. 4, 1902.

NO MODEL.



Witnesses.  
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## UNITED STATES PATENT OFFICE.

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## AIR-COMPRESSOR-CYLINDER WATER-JACKET.

SPECIFICATION forming part of Letters Patent No. 736,254, dated August 11, 1903.

Application filed November 4, 1902. Serial No. 130,049. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES H. HERRON, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Air-Compressor-Cylinder Water-Jackets; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, forming part of this specification.

My invention relates to air-compressor-cylinder water-jackets, and has for its object the construction of a cylinder and the water-jacket thereon in such a manner that water entering at a central point at the lower side of the cylinder passes both ways along the lower half thereof and through openings into jacketed cylinder-heads and thence through openings back along the upper half of the cylinder to and out of an opening at a central point at the top of the cylinder, thus insuring a constant circulation of water from the time it enters the jacket until it leaves it.

The features of my invention are hereinafter set forth and explained, and illustrated in the accompanying drawings, in which—

Figure 1 is an end view of an air-compressor cylinder embodying my invention. Fig. 2 is a side view of the same with one-half of the jacket removed on the line  $xx$  in Fig. 1. Fig. 3 is a vertical section of the cylinder and jacket on the line  $yy$  in Fig. 2.

In the drawings illustrating my invention, A is an air-compressor cylinder, and B a jacket surrounding the cylinder. The cylinder-heads C and C' are also made double, so that there are water-chambers D and D' therein. Along the central part of each side of the cylinder there is a longitudinal rib  $a$ , which joins the inside of the jacket B, so as to separate the lower half of the water-chamber between the cylinder and the jacket from the upper half thereof, and from the center of these longitudinal ribs  $a$  an annular rib  $a'$  extends around the lower half of the cylinder,

so as to divide the lower half of the water-chamber vertically, so as to form two chambers B' and B<sup>2</sup>. At the junction of the water-chambers B' and B<sup>2</sup> there is a water-inlet E, which opens into the chambers B' and B<sup>2</sup> at each side of the annular rib  $a'$ , as shown in Fig. 2, so that water entering thereby flows into both the water-chambers B' and B<sup>2</sup>. In the flanges A' and A<sup>2</sup> at the ends of the cylinder I make openings  $d$   $d'$ , leading from the water-chambers B' and B<sup>2</sup> into the lower portions of the water-chambers D and D' in the cylinder-heads C and C', and through the flanges A' and A<sup>2</sup>, I also make openings  $d^2$  and  $d^3$ , leading from the upper portions of the chambers D D' into the water-chamber B<sup>3</sup> between the upper half of the cylinder A and the jacket B, these openings  $d$ ,  $d'$ ,  $d^2$ , and  $d^3$  being clearly shown in Figs. 2 and 3, and at the top of the central part of the water-chamber B<sup>3</sup>, I provide a water-outlet E'.

In operation water entering at the water-inlet E passes in at each side of the rib  $a'$  into the chambers B' and B<sup>2</sup> and travels along the lower half of the cylinder A to and through the openings  $d$   $d'$  into the lower parts of the chambers D D' and thence back through the openings  $d^2$  and  $d^3$  into the outer ends of the chambers B<sup>3</sup> and thence longitudinally toward the center of the chamber B<sup>3</sup> and out through the water-outlet opening E'. Thus a complete circulation of the water entering at E is kept up until it passes out at E', thereby subjecting all parts of the periphery and heads of the cylinder to the cooling action of constantly-changing currents of water.

Having thus described my invention, so as to enable others to construct and utilize the same, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination of an air-compressor cylinder, radially-projecting flanges on the ends thereof having openings therein, chambered cylinder-heads secured to said flanges and communicating with the openings therein, a water-jacket having water-inlet and water-outlet openings therein surrounding said cylinder and secured to the peripheries



- of the flanges thereon, longitudinal and annular ribs between the cylinder and water-jacket whereby the water entering the inlet-opening of the water-jacket is compelled to travel predetermined paths along the cylinder and through the cylinder-heads before passing out of the outlet-opening in the water-jacket, substantially as and for the purpose set forth.
- 10 2. The combination of an air-compressor cylinder having openings through the flanges at the ends thereof, a water-jacket surrounding said cylinder, chambered cylinder-heads in said cylinder communicating with the open-  
15 ings in the flanges thereof longitudinal ribs between the cylinder and the jacket at each side thereof, an annular rib extending from the ribs at the sides of the cylinder between the cylinder and jacket around the central part of the lower half of the cylinder, a water- 20 inlet into the jacket under the cylinder discharging at both sides of said annular rib, and a water-discharge opening at the central part of the top of the jacket, substantially as and for the purpose set forth. 25
- In testimony whereof I affix my signature in presence of two witnesses.

JAMES H. HERRON.

Witnesses:

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