T. GREGERSEN.

DISTRIBUTING VALVE FOR HYDRAULIC GOVERNORS AND THE LIKE.

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1,123,273. Patented Jan. 5, 1915.

Fig. 1.

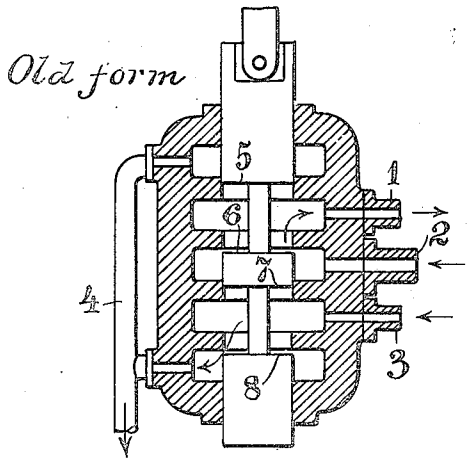
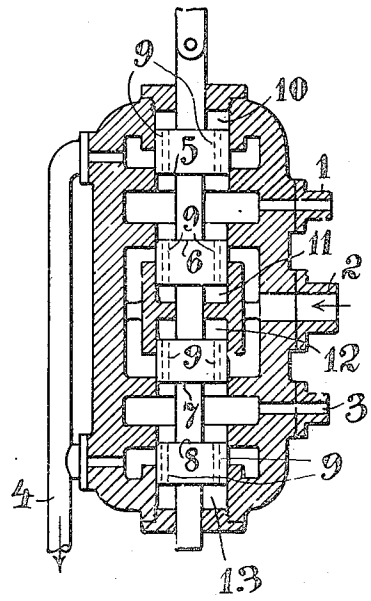


Fig. 2.



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DISTRIBUTING-VALVE FOR HYDRAULIC GOVERNORS AND THE LIKE.

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To all whom it may concern:

Be it known that I, THOROLF GREGERSEN, a subject of the King of Norway, residing at Christiania, Norway, have invented certain new and useful Improvements in Distributing-Valves for Hydraulic Governors and the like; 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 letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to an improved distributing valve for hydraulic governors and the like and consists in the combination of parts and features of construction hereinafter described and as set forth in the claims.

In the following I shall proceed to describe the principles of my invention and a preferred form for same reference being had to the accompanying drawings wherein—

Figure 1 is a sectional elevation of a distributing valve of a known type whereas Fig. 2 is a similar sectional view of a distributing valve embodying my invention.

The distributing valves commonly used for hydraulic governors even when they are statically balanced, have the disadvantage of being exposed to pressures in one direction or other as soon as fluid passes through the valve. Fig. 1 illustrates a distributing valve of this kind. In the position of the valve depicted on the drawing the fluid passes from pressure conduit 2 to the motor conduit 1 and from the motor (not shown) through conduit 3 to the outlet conduit 4. Owing to the energy of the fluid a reduction of pressure is created between 2 and 1 and between 3 and 4. Therefore the pressure on the surfaces 5 and 6 and that of the surfaces 7 and 8 will be different. In addition hereto comes the reaction pressures, due to the change in the direction of flow. These pressures can be quite high and may make it impossible to use distributing valves of this kind directly connected with the tachometer. This difficulty is mostly met by letting the tachometer act on a small valve which in turn controls the main valve by hydraulic transmission. By my invention these difficulties are overcome by the means illustrated in Fig. 2 wherein the controlling surfaces 5, 6, 7 and 8 of the individual pistons are connected by means of passages 9 with closed chambers 10, 11, 12, and 13 respectively on the opposite sides of the pistons so that the pressure on the opposite sides of the pistons will balance. The pressure in said closed chambers must always be the same as that on the controlling surfaces for the reason that there is no flow through the passages. Thus there will be no pressures to act on the valve even though the head be a very big one.

I claim—

1. A distributing valve for controlling auxiliary machines for hydraulic regulators, comprising a casing, a plurality of individual pistons fixed on the valve stem and arranged to work in closed chambers formed in the casing, the opposed faces of each piston being of the same effective area, and each of said pistons having a passage therethrough communicating with its respective closed chamber, whereby the pressure on both sides of the piston will be balanced.

2. In a distributing valve for controlling auxiliary machines for hydraulic regulators, a valve casing, inlet and outlet fluid pressure conduits communicating therewith, means to control communication between said conduits through said casing, comprising ports in the latter between said conduits, pistons adapted to close said ports and arranged to work in closed chambers situated on both sides of said ports, the opposed faces of each piston being of the same effective area, and each of said pistons having a passage therethrough communicating with its respective closed chamber to balance the pressure on both sides of the pistons and thereby prevent displacement of the latter by the actuating fluid.

In testimony that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

THOROLF GREGERSEN.

Witnesses:
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