

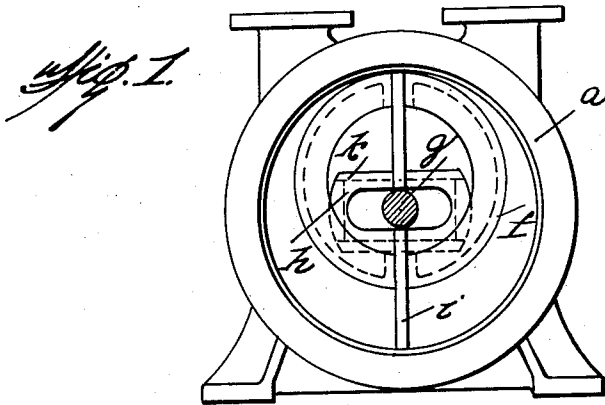
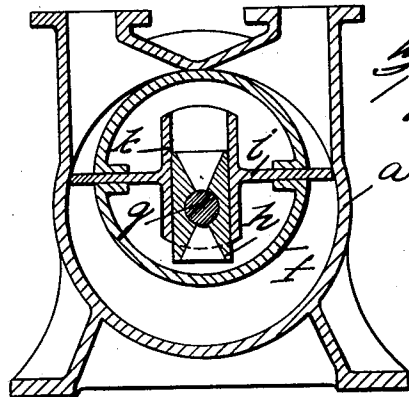
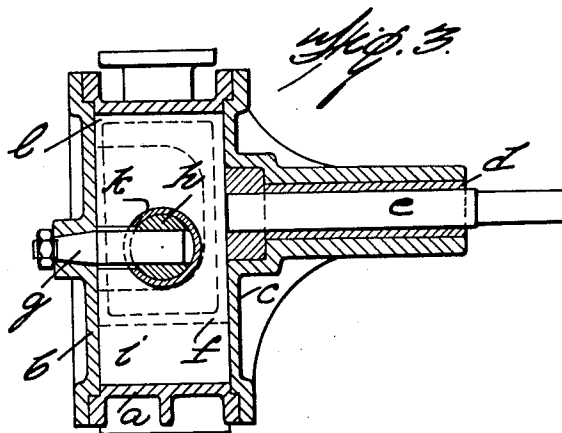
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J. H. AXIEN

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CAPSULAR PUMP

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INVENTOR
J. H. AXIEN

BY *Arthur H. Smith* ATTORNEY

UNITED STATES PATENT OFFICE

JOHANN H. AXIEN, OF HAMBURG, GERMANY, ASSIGNOR TO HINRICH SPRINGER, OF
ALTONA, GERMANY

CAPSULAR PUMP

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My invention relates to an improvement in connection with capsular pumps whose rotary piston is supported eccentrically in the casing. A wing designed as a flat slide valve moves in a slot in the axis of the piston. In the case of the pumps already known this wing glides with its ends in the polar track of the pump casing, and, being actuated in this way, is pushed forward and backward in the slot of the piston.

Accordingly, the force acting upon the polar track of the casing is the same as is necessary for the purpose of accelerating the movement of the wing in the direction of the slot in the piston. This force gives rise to a considerable amount of friction at the place where the ends of the wing come into contact with the polar track of the casing. Thus, there arise great losses due to friction, the ends of the wing are soon worn out, and the accuracy of the polar track of the casing is destroyed. The consequence is that the efficiency of the pump rapidly diminishes and that it begins to move noisily.

The design which forms the essential part of the present invention eliminates these drawbacks by providing that the polar track of the wing ends is formed positively and independently of the polar track of the casing, so that the wing ends run freely in the polar track of the casing. In this way the losses due to friction as well as the wear and tear of the wing ends and of the polar track of the casing are done away with.

The drawings show the following particulars:

Fig. 1.—View of the pump, the front cover having been removed, so that the pump is open, and the wings occupying a vertical position.

Fig. 2.—Cross section of the pump, the wings occupying a horizontal position.

Fig. 3.—Longitudinal section of the pump, the wings occupying a vertical position.

The pump casing (a) is provided on one of its faces with the front cover (b) and on the opposite face with the bearing cap (c). The shaft (e) of the rotary piston (f) is supported in the bush (d) which is eccentrically supported in the casing. The front cover

(b) is fitted with a pin (g), the axis of which coincides with that of the casing. The stone or guide block (h), which is of cylindrical cross section, has a hole bored at right angles to its longitudinal axis and which enables it to rotate around the pin (g). The wing (i), which is designed as a flat slide valve, has a guide bush (k) which is also of cylindrical cross section (hollow cylinder) and which is firmly connected to the wing itself. This guide bush is fitted to a place on the wing situated halfway between the wing ends which describe the polar track. It stands at right angles to the sliding faces of the wing, these latter being guided by the slot in the piston. The stone or guide block (h) slides in the guide bush and can be adjusted to a certain extent. When the piston (f) rotates, the bush (k) of the wing, after a quarter of a revolution on the stone or guide block (h), exchanges the position shown in Fig. 1 for that shown in Fig. 2, but after another quarter of a revolution it returns to the former position. During the succeeding half revolution this process is repeated, the stone or guide block (h) sliding into the opposite end of the guide bush (k). This working process positively generates the polar track of the wing ends, such track being the result of the distance between the axis of the casing and the axis of the piston. If, therefore, the polar track of the casing is accurately made, the wing ends are enabled to move quite freely, and yet to do so close to the polar track of the casing.

To ensure the safe lubrication of the working parts inside the rotary piston, the piston is provided with an edge (l), which projects towards the interior. Thus a ring-shaped space is provided in the piston, and this space is sufficient to retain the quantity of oil required for lubricating purposes, no matter how rapidly the piston may rotate. The stone or guide block (h) is provided with axial holes (m) of conical shape. Through them the oil is conveyed to the pin (g) owing to the immersion of the stone into the quantity of oil contained in the ring-shaped space inside the piston. At the same time, also in consequence of the immersion of the stone

or guide block into the oil, a little oil is conveyed by the guide bush (*k*), so that the safe lubrication of the inside parts is ensured.

What I claim to be new is:

- 5 In a capsular pump, a cylindrical casing having vertically disposed inlet and outlet ports and formed with a chamber, a centrally disposed stub shaft rotatably mounted in one side of the casing, an elongated cylindrical guide block mounted on the stub shaft, an
10 elongated cylindrical guide mounted to reciprocate on the guide block and provided with a slot to straddle the stub shaft, a blade equal in length to the diameter of the chamber and extending from the cylindrical guide,
15 a cylindrical piston mounted eccentrically in the chamber and on the blade, and a driven shaft extending centrally from the piston and eccentrically with reference to the chamber and mounted in the opposite side of the
20 casing.

In testimony whereof I affix my signature.
JOHANN H. AXIEN.

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