This invention concerns improvements in vane-type rotary air pumps of the kind having a rotor and sliding vanes within that rotor, and is especially but not essentially directed to non-lubricated or "dry" pumps of this kind.

Air pumps of the kind referred to are in increasing demand for use in situations where noise above a certain level is intolerable for example in computing machines, but unfortunately the necessary running clearance between vane and rotor is inclined to induce a considerable clatter and this is particularly marked in "dry" pumps, where there is no film of oil to take up running clearance.

According to the invention I provide an air pump of the kind referred to characterised by the provision of means located within the rotor barrel whereby a force is applied to at least one of the major faces of the vane or vanes tending to press it against at least the other major face of the guide slot in which it operates.

In the preferred embodiment of the invention, a drilling led from the base of a preceding blade slot to the side of a following vane slot transmits oil pressure to the side of the following vane as the preceding vane presses against its slot. This arrangement is particularly adapted for use in lubricating pumps with chorial vanes.

In operation the pumps fitted with vane side thrust inducers are very noticeably quieter than similar pumps under similar duty not so fitted.

A preferred embodiment of the invention is illustrated in the accompanying drawing, which is a purely diagrammatic cross-section of a pump rotor taken at right angles to its axis of rotation.

Referring specifically to the drawing, a rotor 2, eccentrically operative within a cylindrical chamber 4, is provided with a plurality of vane slots 6 opening through the periphery of the rotor and having vanes 8 slideable in said slots with their outer edges in engagement with the peripheral wall of the chamber 4. The illustrated embodiment may be assumed to be in a lubricated pump having chordal vanes.

A bore 10 is drilled from the base of each guide slot 6 of a preceding vane 8 to the leading face of the guide slot 6 of the succeeding vane 8. The bores 10 constitute conduits from the bottom of each of the slots 6 opening only into a major face of the respective succeeding slots 6 and define a closed communication therebetween. It will be seen that, as each vane 8 approaches top dead centre, it is forced down its guide slot 6 and thus causes a build up of oil pressure in the bore 10 in communication therewith, which pressure is applied to the leading face of the succeeding vane 8.

There may of course be several bores such as 10 within the length of each vane guide slot 6.

I claim:

In a vane-type rotary air pump the improvements comprising a rotor having peripheral slots, vanes slideable in said slots, and conduits from the bottom of each of said slots opening only into a major face of the respective succeeding slot and defining a closed communication therebetween, whereby movement of each vane within its slot produces a fluid pressure within the conduit which is applied to a major face of the vane in the succeeding slot to press said succeeding vane against the face of the slot in which it operates.

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