

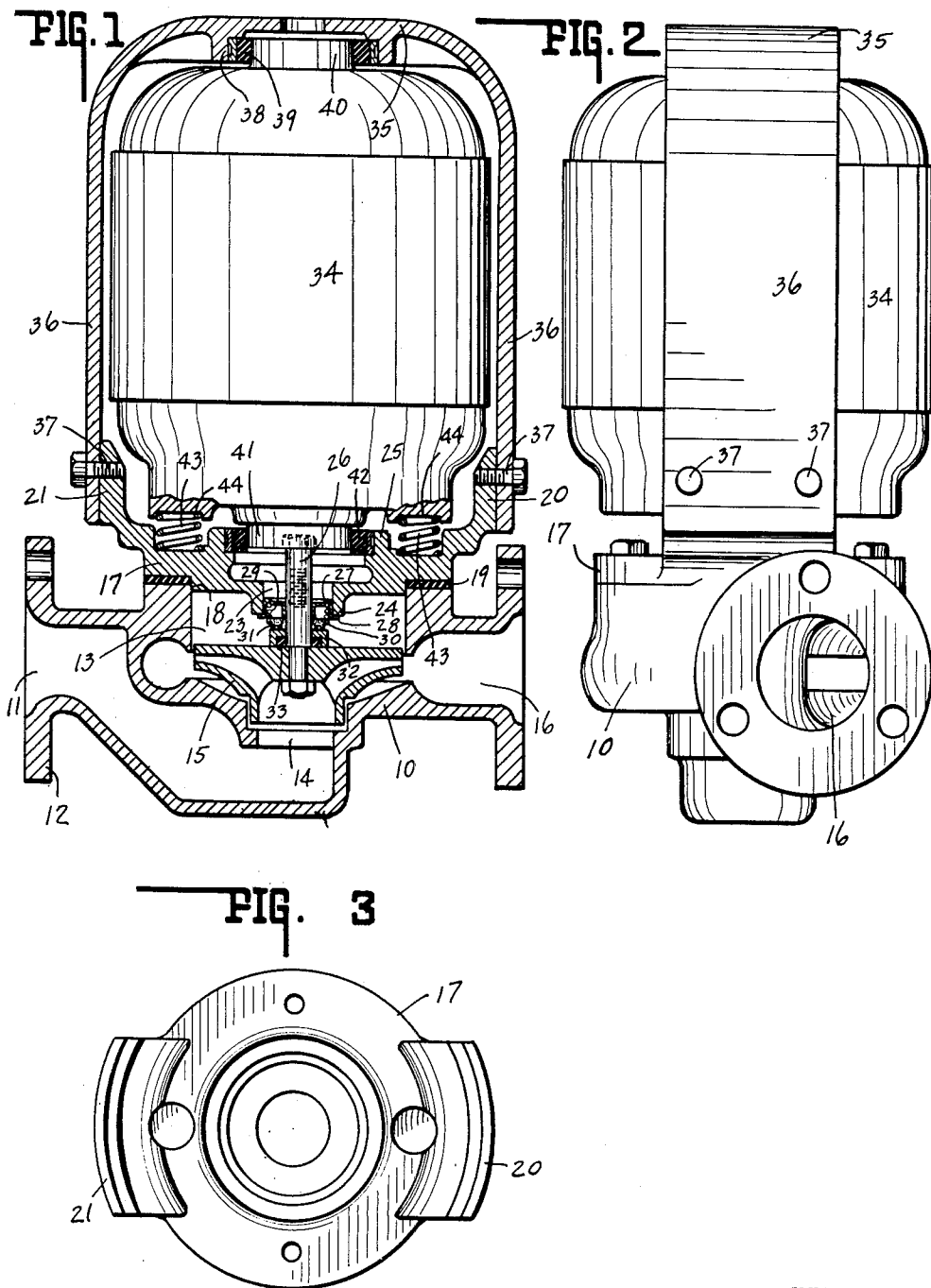
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RESILIENT SUPPORT FOR MOTORS

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RESILIENT SUPPORT FOR MOTORS

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1 Claim. (Cl. 248—26)

1

The present invention relates to improvements in circulators of the type for circulating heat through a heating system.

More specifically my invention relates to a supporting means for mounting the drive motor of the impeller or rotor of a rotor pump, in such a manner that the motor will be suitably suspended whether the shaft thereof is rotating on a vertical or horizontal axis.

Another object of my invention is to provide a mounting for a motor for driving the impeller of a circulator which will permit the positioning of the circulating unit in any desired manner without the necessity of an adjustment or altering the motor support.

For the purpose of disclosing my invention an embodiment thereof is illustrated in the accompanying drawings in which:

Fig. 1 is a longitudinal sectional view of an impeller and the motor support, the motor however, being shown in elevation.

Fig. 2 is a side elevation of the structure illustrated in Fig. 1.

Fig. 3 is a top plan of the impeller casing closure cap.

In the structure illustrated the impeller casing 10 is provided at one side with an inlet passage 11 surrounded by a flange 12 whereby the casing at this point may be connected to a heat circulating system. The casing has centrally located therein an impeller chamber 13 having an intake passage 14 and in which is disposed the rotary impeller 15. The impeller delivers through an outlet passage 16, likewise provided with an annular flange by which the circulating casing may be secured in the heating system.

The impeller chamber 13 is preferably circular in shape and opens through the top wall of the casing. The opening in the casing is closed by a cover cap 17 preferably circular in shape and having circular shoulder 18 which fits within the walls of the opening. A suitable gasket 19 is interposed between the cover cap 17 and the top of the casing. This insures a water seal at this point. The cover cap 17 has a pair of outwardly extending yoke receiving arms 20 and 21 the purpose of which will appear more fully hereinafter.

The cover cap 17 is provided with a central opening 23 surrounded by an inwardly projecting annular flange 24 and this opening is enlarged on the outer face of the cap and provided with an annular flange 25. The driving shaft 26 for the impeller 15 extends axially through the opening and this shaft may be an extension of the drive shaft of an electric motor. The open-

2

ing 23 receives an inverted metal cup 27 having an annular flange 28 bearing on the annular flange 24. This cup provides a rigid seat for a coiled spring 29 bearing upon the seal collar 30 provided with an annular rib 31 which in turn bears upon the top surface of a metal cup 32 surrounding the shaft 26 and containing therein a sealing ring 33. Preferably the ring 30 is formed of a carbon or like material which is sufficiently hard to resist friction but which is sufficiently soft to make a water seal contact with the top of the cup. The impeller chamber accordingly is sealed by this structure against the escape of water around the impeller shaft 26.

An electric driving motor 34 which may be of any of the standard commercial types has its shaft drivingly connected with the propelling shaft 26 by threading the end of the motor shaft into the impeller shaft or the impeller shaft may be an extension of the motor shaft. This provides an operating connection between the motor and the impeller which in effect is a single shaft.

A supporting yoke is provided for the free end of the electric motor and this yoke comprises an inverted U-shaped member. The base 35 supportingly receives the free end of the motor while the legs 36 are secured as at 37 to the arms 20 and 21 extending from the casing closure cap 17.

The base 35 of the U-shaped yoke is provided with an internal annular flange 38 in which is mounted a resilient supporting ring 39 receiving annular supporting flange or boss 40 on the free end of the motor casing. The opposite end of the motor casing is likewise provided with an annular supporting flange 41 which seats in a resilient supporting ring 42 disposed within the annular flange 25 on the impeller cap 17.

By this arrangement the motor is resiliently supported from the impeller casing and may be positioned with its shaft disposed vertically or horizontally or at any angle.

In order to resiliently support the motor when the structure is disposed in a position with a motor shaft extending vertically I interpose between the end of the motor and the casing closure cap 17 of the circulator coiled springs 43 the ends of which are preferably seated in recesses such as 44 in the end of the motor casing.

I claim:

In an electric motor for use with a heating system circulator having an annular opening formed through the upper wall thereof, said motor including annular bosses formed at opposite ends thereof, one of said motor ends having a pair of diametrically opposed recesses formed

3

therein and spaced outwardly from one of said bosses; a mounting for said motor comprising a cover for said opening, a pair of opposed outwardly and upwardly extending arms on said cover, said arms having a pair of recesses formed therein in vertical alignment with said recesses of the motor, resilient means nesting in each of said opposed recesses for vertical support of said motor, said cover having an annular flange formed centrally thereof and being coaxial with said opening, resilient means disposed between one of said bosses and said flange, an inverted substantially U-shaped yoke embracing said motor, the free ends of said yoke being detachably connected to the arms of said cover, said yoke having an annular internal flange disposed on

4

the inner face of the base thereof, and a resilient supporting ring interposed between said flange and the other of said bosses.

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