DESCRIPTION

DRUM MOVING MOTOR FOR WASHING AND DRYER MACHINES

TECHNICAL FIELD

The invention relates to structurally uniting the some parts of washing machine to make one part. These parts are caldron, drum and electric motor providing motion to the drum.

PRIOR ART

In today world, basic searching and developing activities for washing machines, which are indispensable parts of our lives, are not only decrease of water consumption and energy savings but also reducing level of noise at working time of washing machines.

But the washing machines produced by techniques already known, work with a system which have single phase motor, drum and drum strap put in the caldron. Single phase motor driving drum back and forward by using drum strap.

Used additional apparatus such as large in diameter rotating pulley tied to the drum and stretching strap for decreasing velocity of the motor.

The electric motor drives the drum by using stretch strap and other apparatus for washing and squeezing operations. These apparatus are not only deformed inevitably but also make additional friction surfaces which increase energy consumption after every usage.

This deformation makes the strap slack. This causes that the electric motor can’t drive the drum effectively and also level of the machine noise will increase.

Thus, efficiency of the machine will decline, and noise of the machine will increase after every usage. Also this type of single phase motor works with alternating current. The city electric system of alternating current has vibrations causing that single phase motor works noisy.

BRIEF SUMMARYOF THE INVENTION

The invention is about that the body of the electric motor, which is mounted outside the caldron, having coils on is thought as fixed stator and the rotating drum covering with magnetic bars in the caldron is thought as rotor of the direct current electric motor. In this way there is no need to use additional electric motor and the other apparatus conveying driving of the electric motor to the drum for working of washing machine.

The drum, which has permanent magnetic bars on, rotating in the caldron works as a rotor of the direct current electric motor and the fixed body of the electric motor which has coils on works as a stator. In this way magnetic field occurs in the caldron and this field rotates the drum.

The production technology of high efficient servo motors having special compounds magnets, low loss of energy silicium sheet metals, brushless and synchronous reaches important level. Today different types of modified motors are used various fields. However, there isn't any research for using servo motors in washing and dryer machines. The invention is projected as a direct current electric motor for using washing and dryer machines. As it is known electric motors are formed by a pair of ferromagnetic parts having same axis. The fixed part (called stator) and rotating part like a cylinder shape (called rotor). Basically, there are stator and rotor being inside of the stator in this type of motor. But the body of the electric motor which has electric coils on is mounted outside of the caldron. The drum covered by natural magnet sheet metals has the function of rotor. Briefly explained that, the caldron used as a stator and the drum used as a rotor.

THE MEANING OF THE FIGURES

FIGURE 1. General Assembly View

FIGURE 2. B-B Section View

FIGURE 3. Exploded View

Description of the Reference Numerals.

1. Motor Body
   1.1. Coil

1.2. Protection Cover

2. Electric Motor

2.1. Rotor

2.1.1. Natural Magnet Bars

2.1.2. Magnet Protection

2.2. Stator

2.3. Bearing

3. Power Supply

4. Battery

DETAILED DESCRIPTION OF THE INVENTION

The character of the invention resembles electric motor (2). The function of caldron is like a stator (2.2) formed by body of the electric motor (1), coil (1.1), protection cover (1.2) and successive silicium sheet metals. The drum is like a rotor (2.1) which has natural magnet sheet metals (2.1.1) on and large in diameter bearing(2.3) enabling rotor rotates inside stator. There is a protection cover (2.1.2) for protecting natural magnet bars against the effects of exterior factors. These bars are on the drum which has the function of like rotor (2.1).

The electric motor (2) used for the invention shows the same properties of servo motor being brushless, synchronous and high efficiency. There are two ferromagnetic parts having same axis and separating each other with a little gap in the electric motor (2). One of the part is the stator (2.2) fixing to the body of the electric motor and the other part is the rotor (2.1) having a shape like a cylinder rotating inside the stator (2.2). Both of them form the electric motor (2). Rotor (2.1) can freely rotate inside of the stator (2.2) via large in diameter bearing (2.3). Basically there are two parts stator and rotor being inside of the stator in the invention. But the body (1) of the motor having electric coils on mounted outside of the caldron. The drum, which rotates inside the caldron, covering with bars having property of natural magnet, has the function of as rotor (2.1). Explaining briefly, caldron is being as a stator (2.2), and drum is being as a rotor (2.1).

The drum rotates freely inside the caldron like the other washing machines still being produced today. There isn't any difference between the drum having function of rotor (2.1) for this invention and the drum for washing machines being produced today. Inside and outside structures of both drums are same and both of them have holes. As a result the body of the motor mounting to the caldron and the drum with magnetic bars make a monoblock structure. Rotating magnetic field produced inside the caldron applies an effect on the drum then the drum rotates forward and back. Via this effect washing machine implements washing, drying and squeezing applications respectively.

It can be just seen the body of the motor, coils put inside of the holes being on the body of the motor and isolation material covering all of them outside of the united (monoblock) caldron. There is no need to use additional motor which rotates the drum and the other systems such as pulleys, stretching apparatus, balancing wheel , straps conveying driving of the motor to the drum .For conventional washing machine, the strap of the motor get attired and become larger with time . Then this situation increase vibrations and washing machine works very noisy. There isn't any this kind of problem for new invented machine. Also the new invented system's washing and drying applications are implemented with more silence. Because the new invented system works with direct current which hasn't vibrations like alternative current at 50 Hz. This is predicted that the new system will provide more energy saving and more silence. Because additional apparatus such as balance wheel, stretched strap which are sources of the friction are not used in the new system.

"Drum Moving Motor "shows all properties such as high efficiency, brushless, synchronous of servo motor. That is possible that this kind of motors' speed are adjusted from least level to highest level and also they can rotate both forward and back directions. The other important property of these kinds of motors is that they can work many years without maintenance. The other advantages of this motor are that they don't need to be taken to the service a lot for being repaired and there is no need to use a lot of replacement parts. Lesser motor parts mean that lesser friction and attrition. These advantages provide fewer problems, lower noise level and less energy consumption. That is

predicted that the guaranty period may be 5 years or even 7 years because of durable servo motor being brushless and having long life.

Used a power supply (3) called inverter converts city alternating current to direct current with appropriate voltage for working of direct current electric motor, and used a battery (4) in order to protect the system against instantaneous voltage falling and the interruption of electricity.

CLAIMS

1. This is sort of an electric motor (2) having drum moving for washing and dryer machines that characterized as normal electric motor using today according to properties that the body of the motor (1) having coils installed outside the caldron, successive silicium sheet metals put on the caldron in order to constitute stator (2.2), natural permanent magnetic bars on the drum functioning as a rotor (2.1), large in diameter bearing (2.3) enables drum to rotate inside the caldron.

ABSTRACT

DRUM MOVING MOTOR FOR WASHING AND DRYER MACHINES

The invention is about that the body of the motor, which is outside the caldron, having coils on used as a fixed stator of an electric motor. The drum, which rotates inside the caldron, having naturel permanent magnetic bars, used as a rotor of a direct current electric motor. In this way, there is no need to use additional electric motor and connection parts for working of washing machine.

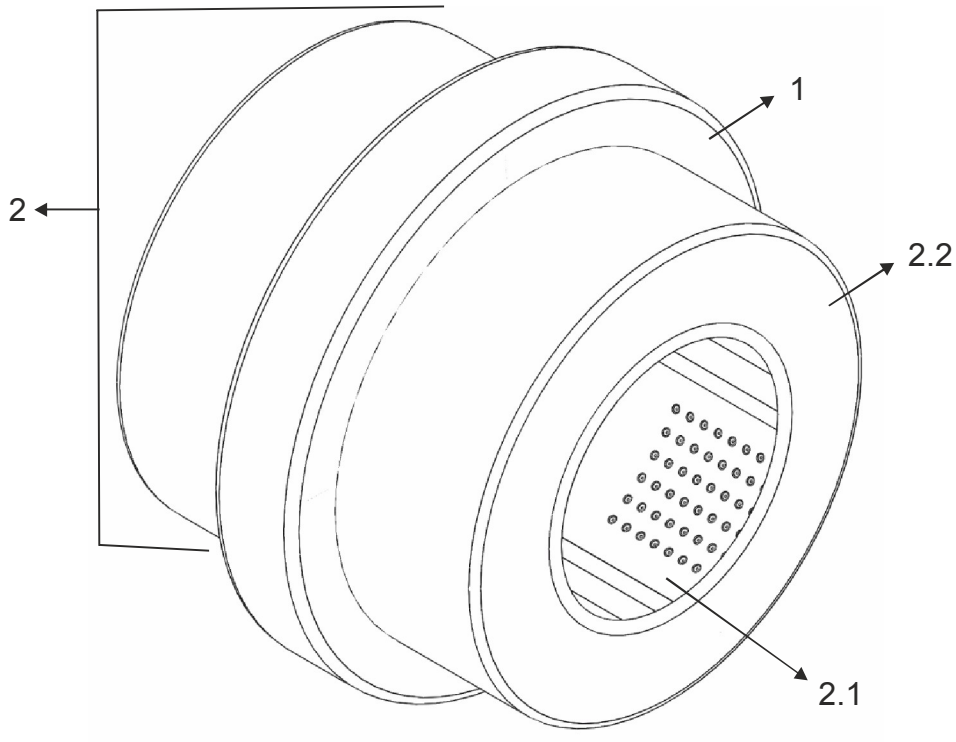

FIGURE 1

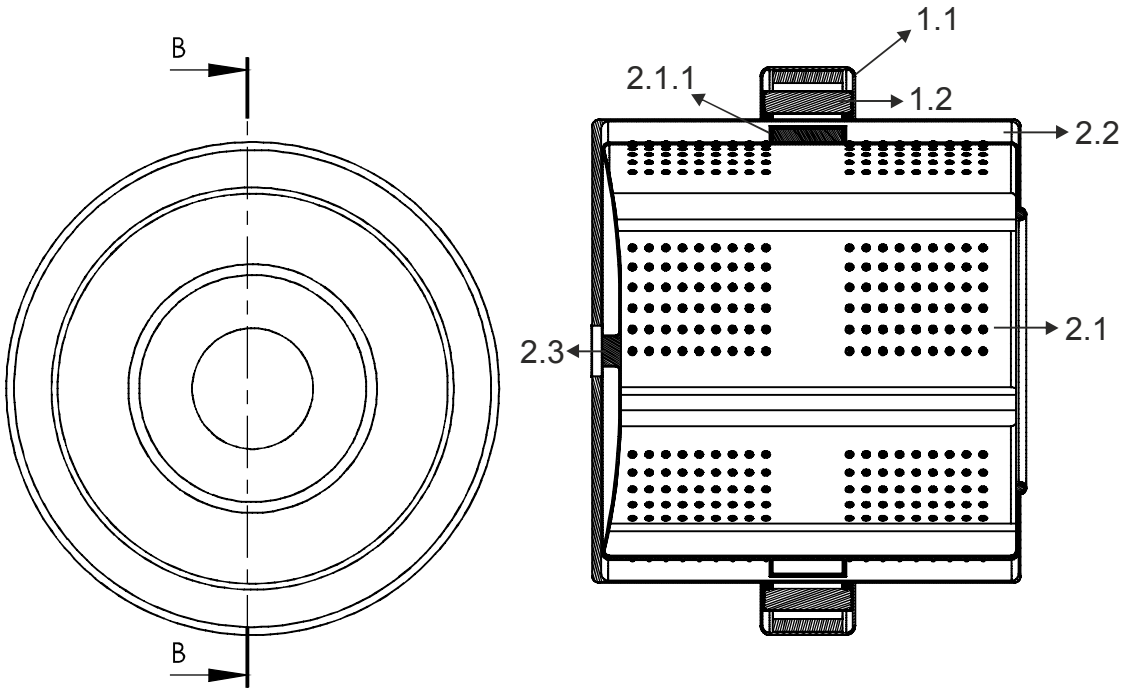

FIGURE 2

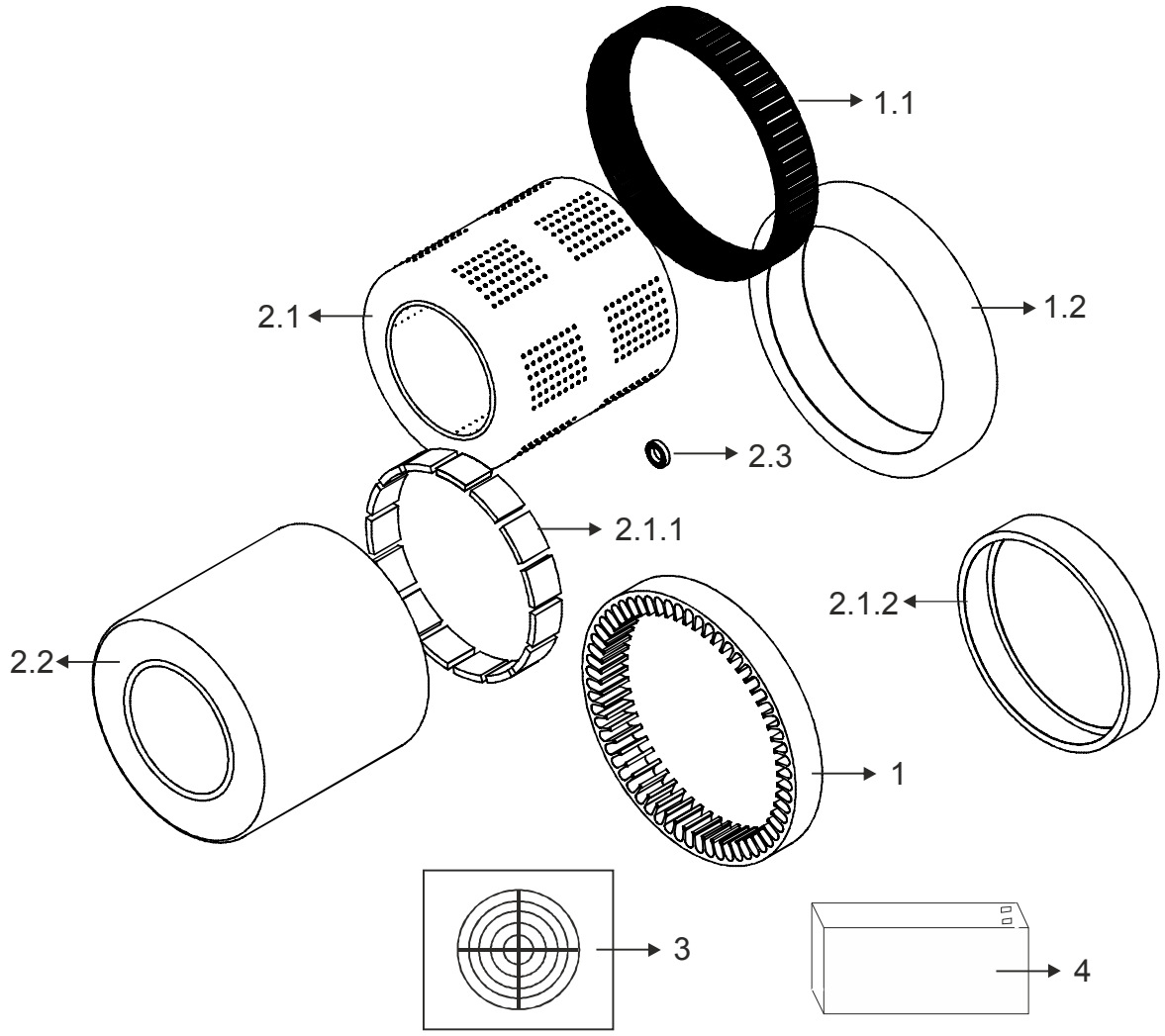

FIGURE 3