No. 852,678. PATENTED MAY 7, 1907.

H. G. REIST.

BACK GEARED MOTOR.

APPLICATION FILED SEPT. 21, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

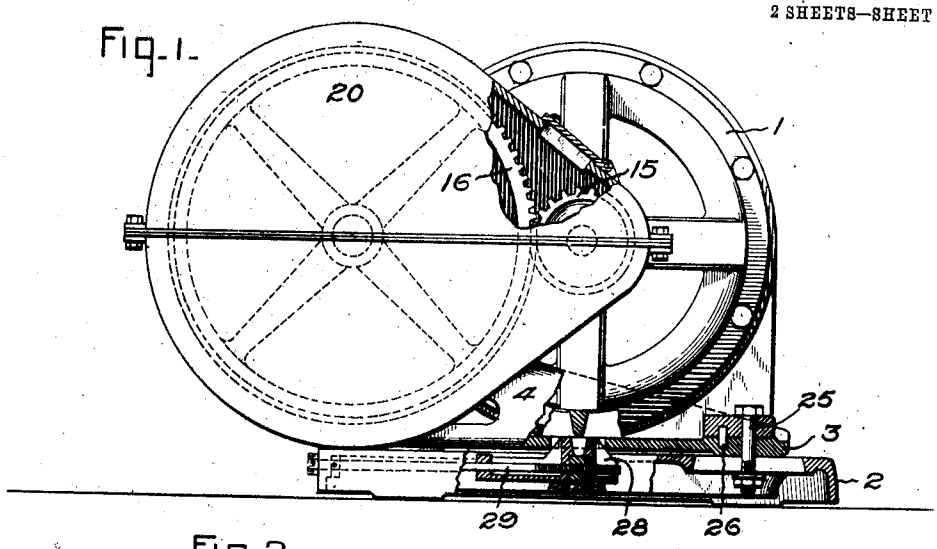


Fig. 2.

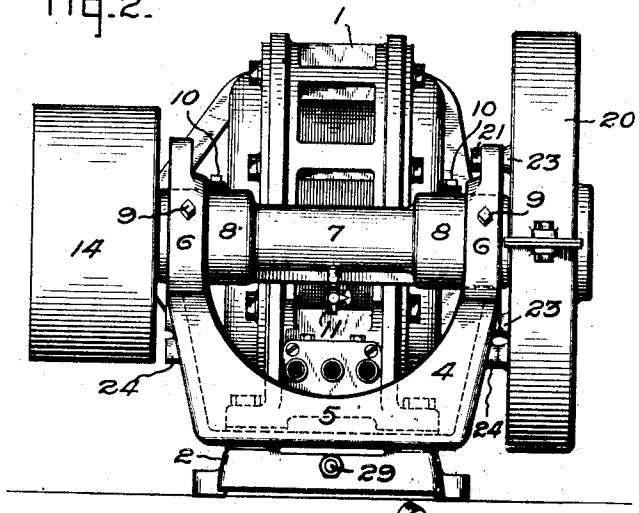
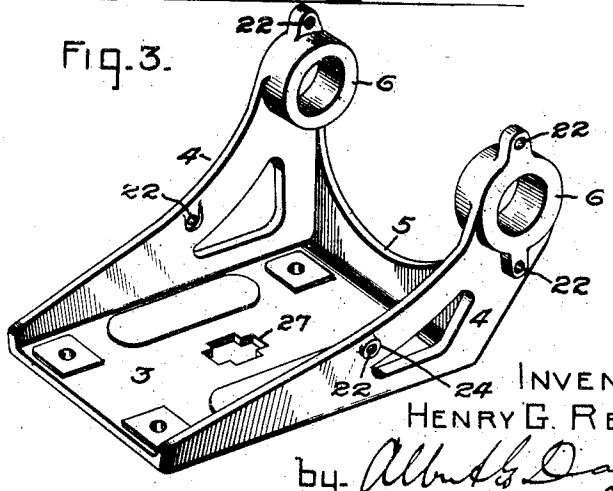


Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 4.

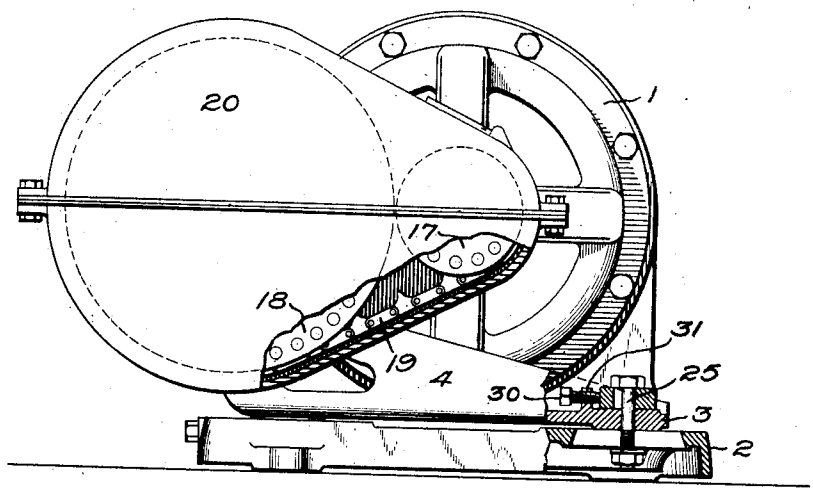


Fig. 5.

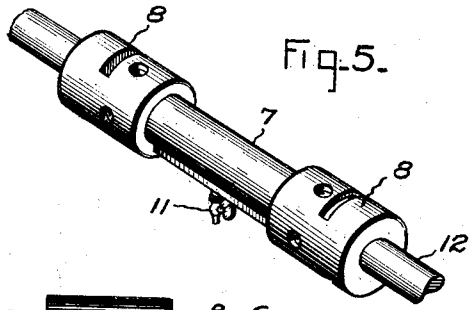
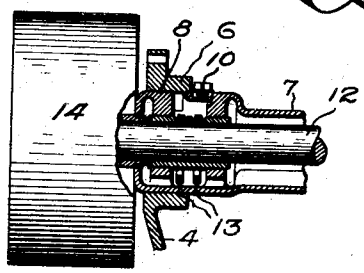


Fig. 6.



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UNITED STATES PATENT OFFICE.

HENRY G. REIST, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

BACK-GEARED MOTOR.

No. 852,678. Specification of Letters Patent. Patented May 7, 1907.

Application filed September 21, 1906. Serial No. 335,603.

To all whom it may concern:

Be it known that I, HENRY G. REIST, a citizen of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Back-Geared Motors, of which the following is a specification.

This invention relates to electric motors, and its object is to provide means whereby a standard motor can be converted into a back-geared motor without alteration of said motor or its sub-base.

To this end the invention consists in an intermediate frame adapted to be interposed between the motor and the sub-base; said intermediate frame supporting a counter-shaft and gear in proper position to receive power from the motor. Provision is made for angular adjustment of the oil cellar for said counter-shaft, so that the motor can be fastened to a wall, or inverted, if desired.

In the accompanying drawings, Figure 1 is an end elevation, partly in section, of a motor embodying my invention; Fig. 2 is a side view of the same; Fig. 3 is a perspective view of the intermediate frame; Fig. 4 is a sectional end view of a modified construction; Fig. 5 is a perspective view of the counter-shaft and its oil-cellar; and Fig. 6 is a section of one end thereof.

The motor 1 is of standard construction, and is usually bolted directly to a sub-base 2 of standard construction. In the present instance, there is interposed between the motor and the sub-base an intermediate base-plate 3, which forms part of a frame composed of said base-plate and two upright arms 4, preferably connected by a web 5. The arms preferably diverge somewhat, to give as long a bearing as possible for the counter-shaft, and are highest at a point near one end of the base-plate. In the upper end of each arm is a cylindrical bearing 6, the two having a common axis parallel with but transverse to the base-plate. A combined tubular journal box and oil cellar 7 is supported in said bearings, having cylindrical ends 8 which rotate readily in the bearings and are fastened by set-screws 9 in any given position of angular adjustment. In the top of the oil cellar are oil holes closed by screw-plugs 10, and in the bottom is a drain-cock 11. The counter-shaft 12 is suitably journaled in the box 7 and is lubricated in any preferred manner, as by oil rings 13.

On one end of the counter-shaft is a belt-pulley 14. The other end is geared to the motor shaft by speed-reducing gearing, such as a pinion 15 and spur-gear 16, as shown in Fig. 1; or a small sprocket 17, large sprocket 18 and chain-belt 19, as shown in Fig. 4. In either case, a gear cover 20 is provided, which can be conveniently supported by screws 21 passing through suitable holes 22 in the arms of the frame into lugs 23 on the gear case; abutting lugs 24 being formed on the frame, if desired. The frame is symmetrical, both arms being alike, so that the gear and gear case can be put on either side as desired.

When pinion and spur-gear are used, the motor is rigidly fastened to the frame in order to keep the gears in mesh. In addition to the usual bolt 25, which passes down through the sub-base, a dowel pin 26, or other suitable fastening, may be used between the motor and the frame. The base-plate of the frame has a central hole 27 to receive and engage with the standard slide 28 of the sub-base, so that by loosening the bolts 25 and turning the screw-shaft 29 the frame and the motor will be slid along the sub-base in the same manner that the standard motor would be adjusted if the counter-shaft frame were not used.

An additional adjustment for the motor is provided in Fig. 4, the base of the motor being slotted where the bolts 25 pass through, and adjusting screws 30 being tapped through lugs 31 on the frame and bearing against the motor-base. By this means the belt 19 can be kept tight without disturbing the position of the belt pulley 14.

When the motor is to be fastened to a wall, with the sub-base in a vertical position, the set-screws 9 are backed off and the box 7 is given a quarter rotation in the bearings 6, in order to keep the oil holes uppermost and the drain-cock at the lowest point. So, too, if the motor is inverted, for attachment to a ceiling, the box 7 can be given the proper angular adjustment to keep it in operative position.

What I claim as new, and desire to secure by Letters Patent of the United States, is,—

1. The combination with a standard motor and a standard sub-base, of an interposed frame for carrying a counter-shaft.

2. The combination with a standard motor and a standard sub-base, of a frame interposed between them, and a counter-shaft supported by said frame.

3. The combination with a standard motor and a standard sub-base, of a frame having a base-plate interposed between said motor and sub-base, and counter-shaft bearings on said frame.

4. The combination with a standard motor and a standard sub-base, of a frame for a counter-shaft interposed between them, and means for adjusting said frame relatively to the motor.

5. A frame for a counter-shaft comprising a base-plate, upright arms thereon, and alined bearings on said arms.

6. A frame for a counter-shaft, comprising a base-plate having bolt holes, two upright diverging arms, alined bearings on said arms, and means for supporting a gear-case.

7. A frame for a counter-shaft, comprising a base-plate, upright arms thereon, alined bearings on said arms, and a combined journal box and oil cellar rotatably mounted in said bearings.

8. The combination with a standard motor and a standard sub-base, of an interposed frame, a journal-box and oil cellar rotatably mounted in said frame, and a counter-shaft journaled in said box and geared to said motor.

9. The combination with a motor sub-base provided with devices for adjusting the motor, of an interposed counter-shaft frame adapted to be actuated by said adjusting devices.

10. The combination with a standard motor and a standard sub-base, of an interposed frame adjustable with the motor, a counter-shaft mounted in said frame and geared to said motor, and a gear-case supported on said frame.

In witness whereof, I have hereunto set my hand this 20th day of September, 1906.

HENRY G. REIST.

Witnesses:

BENJAMIN B. HULL,

HELEN ORFORD.