

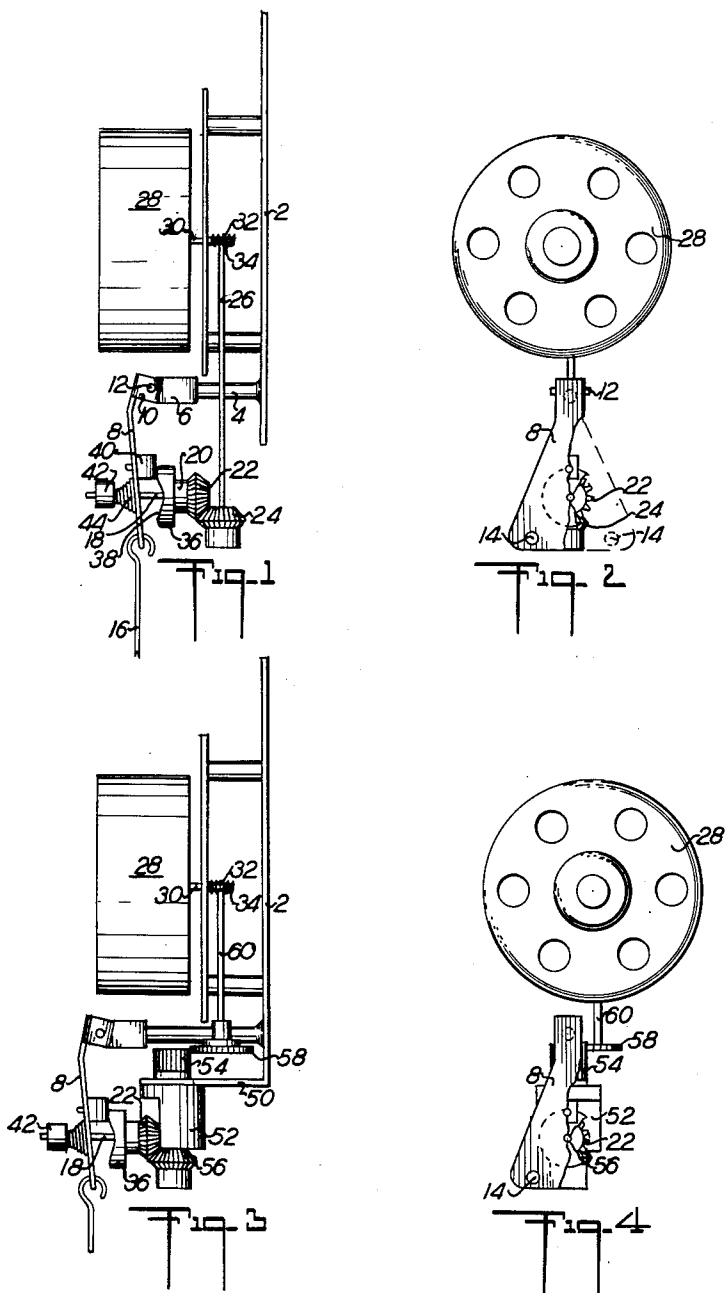
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DRIVE FOR PENDULUM SWING FOR ELECTRIC CLOCKS

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DRIVE FOR PENDULUM SWING FOR
ELECTRIC CLOCKS

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This invention is an improved drive for an electric clock provided with a swing pendulum, where the swing pendulum, as it swings, shows that the electric motor of the clock is in operation and also which, if desired, may be provided with one or more figurines on the pendulum for adding a decorative effect.

The principal object of the invention is to provide a simple, economical and reliable operating mechanism for a swing pendulum of this type.

The invention comprises essentially a hanger plate which is pivoted at its upper part on a horizontal axis. This plate is positively actuated back and forth in both directions, being impelled in one direction by a circular cam rotating on a horizontal axis and being impelled in the opposite direction by a spring. In some cases, the spring can be omitted and the hanger plate may be pressed into engagement with the cam by gravity.

The hanger plate, preferably along its lower edge, is provided with apertures for freely pivoting the supporting wires for the pendulum swing.

The hanger plate is provided with an aperture through which passes a horizontal actuating shaft. This shaft is connected by suitable gearing to the clock motor so that it rotates continuously in one direction and is adapted to bear against the hanger plate for giving it a plurality of impulses at each rotation. This causes the hanger plate to swing and causes the pendulum to swing. The pendulum, being freely pivoted to the hanger plate, has a period of oscillation more or less independent of the period of oscillation imposed on the hanger plate by the cam.

An important feature of the invention is that the hanger plate is pressed by a spring into operative engagement with the actuating cam, so that the hanger plate is subjected to impulses in one direction by the cam and in the opposite direction by this spring.

The spring which presses against the hanger plate as described is provided with means for varying its pressure, so that satisfactory operation is assured.

The invention will be further described in connection with the accompanying drawings wherein:

Fig. 1 is a side view of the improved drive for a pendulum swing for electric clocks, the casing of the clock being omitted.

Fig. 2 is a back view of Fig. 1, looking toward the face of the clock.

Fig. 3 is a view similar to Fig. 1 showing a modification.

Fig. 4 is a back view of Fig. 3.

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Referring now to these figures, the usual mounting plate 2 of the clock is provided with a post 4 extending backwardly from the face of the clock, this post carrying a pivot block 6. A hanger plate 8 is provided with mounting ears 10 through which ears pass a pivot pin 12 carried by the mounting block 6. The hanger plate is provided with apertures 14 for loosely receiving the two wires or supports 16 for the pendulum swing. A horizontally extending drive shaft 18 passes through an aperture in the hanger plate 8, this shaft 18 passing through a bearing block 20 anchored in any suitable way to the clock frame, and is fixed to a bevel gear 22 meshing with bevel gear 24 carried by a shaft 26. Shaft 26 is provided with suitable gears for continuous rotation from the clock motor 28. For example, the continuously driven shaft 30 of the clock motor may be provided with a worm 32 driving a toothed wheel 34 carried by the upper part of shaft 26.

Drive shaft 18 carries a circular cam 36 having a sinuous operating edge 38 adapted to bear against an abutment 40 carried by the hanger plate 8.

The outer end of the shaft 18 is provided with a nut 42 threadably mounted thereon, and held between this nut and the hanger plate is a light coil spring 44 which presses against the hanger plate. The pressure of the spring may be varied by the setting of the nut 42.

In operation, the operating cam 36 is continuously rotated in one direction by the clock motor, the successive high portions of the cam giving successive impulses to the hanger plate, while the spring 44 presses the hanger plate in the opposite direction so that the hanger plate is positively impelled in both directions, which causes the pendulum 16 to swing back and forth.

In the modification shown in Figs. 3 and 4 where corresponding parts are similarly numbered, the back plate 2 of the clock is provided with a horizontally extending bracket 50 which is provided with a bearing block 52, through which passes a shaft carrying at its upper end a gear 54 and at its lower end a bevel gear 55.

Gear 54 is driven by a gear 58 carried by shaft 60 which is gear driven in any convenient way by the motor shaft 30.

Gear 22 in Fig. 3 corresponds to gear 22 in Fig. 1 and operates drive shaft 18, cam 36 and hanger plate 8 in substantially the same way as described in Fig. 1.

There has thus been provided an actuating mounting for a pendulum swing which is simple and reliable in operation and which provides

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positive impulses in both directions to the hanger plate for oscillating the pendulum freely pivoted thereto.

While the invention has been described in some detail, it should be understood that the invention is not to be limited to the precise details shown, but may be carried out in other ways.

I claim as my invention:

1. A drive for a pendulum swing for motor driven electric clocks, comprising an apertured hanger plate pivoted at its upper part on a horizontal axis, a horizontally extending shaft extending through the aperture in said hanger plate, a circular cam carried by said horizontal shaft in operative engagement with said hanger plate, gear means operatively connecting said horizontal shaft with the clock motor, and a pendulum swing carried by said hanger plate.

2. A drive for a pendulum swing for motor driven electric clocks, comprising an apertured hanger plate pivoted at its upper part on a horizontal axis, a horizontally extending shaft extending through the aperture in said hanger plate, a circular cam carried by said horizontal shaft in operative engagement with said hanger plate, a spring for pressing said hanger plate towards said cam, gear means operatively connecting said horizontal shaft with the clock motor, and a pendulum swing carried by said hanger plate.

3. A drive for a pendulum swing for motor driven electric clocks, comprising an apertured hanger plate pivoted at its upper part on a horizontal axis, a horizontally extending shaft extending through the aperture in said hanger plate, a circular cam carried by said horizontal shaft in operative engagement with said hanger plate, a spring for pressing said hanger plate towards said cam, means for varying the pressure of said spring on the hanger plate, gear

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means operatively connecting said horizontal shaft with the clock motor, and a pendulum swing carried by said hanger plate.

4. A drive for a pendulum swing for motor driven electric clocks, comprising an apertured hanger plate pivoted at its upper part on a horizontal axis, and having an abutment, a horizontally extending shaft extending through the aperture in said hanger plate, a circular cam in operative engagement with the abutment on said hanger plate, a spring carried by said shaft and adapted to press the hanger plate toward said cam, gear means operatively connecting the horizontal shaft with the clock motor, and a pendulum swing carried by the hanger plate.

5. A drive for a pendulum swing for electric clocks, comprising an apertured hanger plate pivoted at its upper part to swing on a horizontal axis, a vertical drive shaft, a horizontal drive shaft passing through the aperture in the hanger plate, and having a cam thereon in operative engagement with said hanger plate, gears operatively connecting said vertical and horizontal shafts, and a pendulum swing member carried by the lower part of said hanger plate.

6. The combination as claimed in claim 5, further including a variably positionable spring for pressing the hanger plate into engagement with said cam.

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