No. 647,781. Patented Apr. 17, 1900.

M. E. XANDER.

MOTOR.

(No Model.) (Application filed May 11, 1899.)

Fig. 1.

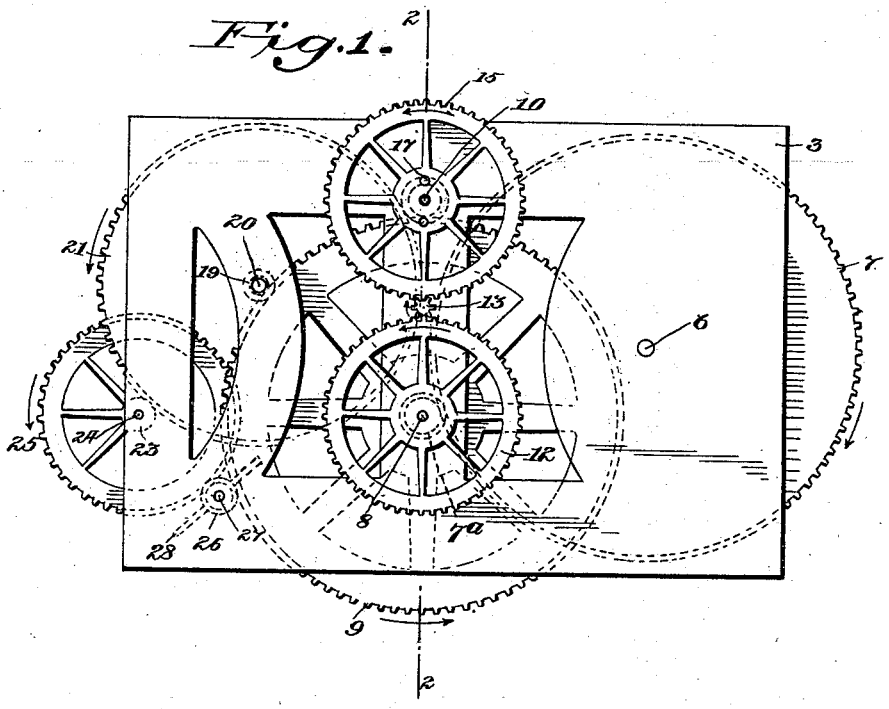
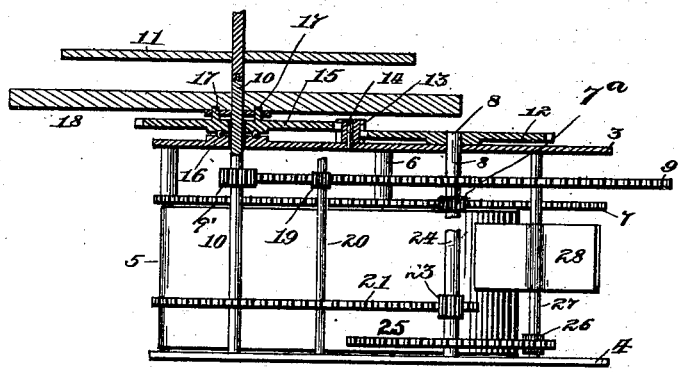


Fig. 2.



WITNESSES

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MOTOR.

SPECIFICATION forming part of Letters Patent No. 647,781, dated April 17, 1900.

Application filed May 11, 1899. Serial No. 716,463. (No model.)

To all whom it may concern:

Be it known that I, MARY ELLEN XANDER, a citizen of the United States, residing at Pennsburg, in the county of Montgomery and State of Pennsylvania, have invented certain new and useful Improvements in Motors for Display-Racks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention is in the nature of a motor for display-racks or any other machinery in which two parts are to be rotated in opposite directions on an axial line, the object of the invention being to provide a cheap, simple, and effective motor for such purposes.

With this object in view the invention consists in the improved construction, arrangement, and combination of parts hereinafter fully described and afterward specifically pointed out in the appended claim.

In the accompanying drawings, Figure 1 is a top plan view of a motor constructed in accordance with my invention, parts being shown in dotted lines. Fig. 2 is a view illustrating the motor and parts of the display-rack, the top plate of the motor and all the parts above it being in section on the broken line 2 2 of Fig. 1 and all the parts below the plate in end elevation.

Like numerals of reference mark the same parts wherever they occur in both figures.

Referring to the drawings by numerals, 3 indicates the upper and 4 the lower plate of the frame of a spring-motor, said plates being connected together by pins, as is usual, and provided with the bearings of the arbors or shafts, as hereinafter described.

5 indicates the spring by which the motor is driven, secured in the usual manner to a shaft or arbor 6, upon which is a large gear-wheel 7, meshing with a pinion 7^a on a shaft 8, which carries a gear-wheel 9, engaging a pinion 9′ on a shaft 10, which shaft is coupled to the inner rotating member 11 of a display-rack or other machine to be driven in the manner hereinafter specified.

The motor herein described is a simple ordinary clock mechanism so far as the spring, shafts, and gearing between the upper and lower plates are concerned, and any other suitable train of gearing may be used in which the two shafts 8 and 10 are parallel and geared together to be driven in opposite directions. No special arrangement or construction of the mechanism is preferred to thus drive the shafts 8 and 10, such mechanism forming no part of my invention. The shaft 8 projects above the plate 3 of the motor and carries a gear-wheel 12, which meshes with a pinion 13 on a short shaft 14, also projecting above the frame of the motor, said pinion engaging a gear-wheel 15, mounted loosely on the shaft 10 and supported on a ball-bearing, one ring or plate of which is secured on the top of the frame-plate 3 and the other on the under side of the wheel, said ring-plates being provided with opposite registering annular grooves carrying balls 16. The wheel 15 is provided with upwardly-projecting pins or points 17, by means of which it is coupled to the outer member 18 of the rack or machinery to be driven. The gear-wheel 9 also engages a pinion 19 on a shaft 20, carrying a gear-wheel 21, which meshes with a pinion 23 on a shaft 24. A gear-wheel 25 on shaft 24 engages a pinion 26 on a shaft 27, carrying a fan-governor 28, which regulates the movement of the motor.

Arrows are shown in Fig. 1 indicating the direction of rotation of the principal gear-wheels, and from an inspection thereof it will be seen that by reason of its connections the shaft 10, which has a square or angular head on its upper end to enter a corresponding socket in the lower end of the shaft of the inner rotating member 11 of the rack or machine, rotates in the opposite direction to that of the rotation of shaft 8, and, further, by reason of the interposed pinion 13 the gear-wheel 15, which carries the member 18 of the rack or machine to be driven, rotates in the same direction as shaft 8, and consequently in the opposite direction to shaft 10, thereby causing the two members 11 and 18 to rotate in opposite directions. The whole weight of the member 11 will be borne by shaft 10, which might be mounted in a step-bearing on balls at its lower end, and the weight of member 18 on the ball-bearing, the rack or machine thus offering the least possible interference with the smooth and easy running of the parts of the motor.

While I have illustrated and described the various details of construction in what at this time I deem to be the preferred form, I hold that any slight changes therein or variations therefrom such as might be made by the ordinary mechanic after inspecting my specification will clearly be included within the limit and scope of my invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

In a motor, the combination for operating two members of a display-rack in opposite directions, with the upper plate 3 and lower plate 4 of the motor, of a train of gearing between the plates comprising two shafts 8 and 10, journaled in the plates and projecting through and above the upper plate, gear-wheels on shafts 8 and 10, directly engaging each other to cause the two shafts to rotate in opposite directions, means on the shaft 10 for connecting it to one member of the display-rack, a gear-wheel 12 fixed on the shaft 8 above the plate 3, a gear-wheel 15 loosely mounted on the shaft 10 above plate 3, a short shaft intermediate the shafts 8 and 10, a pinion 13 on said short shaft connecting the gear-wheels 12 and 15, and means, on the loose gear-wheel, for coupling it to the other member of the display-rack, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

MARY ELLEN XANDER.

Witnesses:
E. W. SCHOLL,
SALLIE FREY.