July 14, 1931. V. ALCALA 1,814,779

MOTOR DEVICE

Filed Dec. 28, 1927

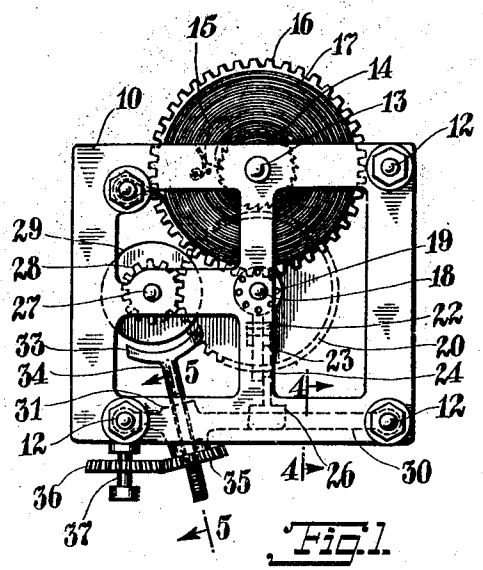


Fig. 1.

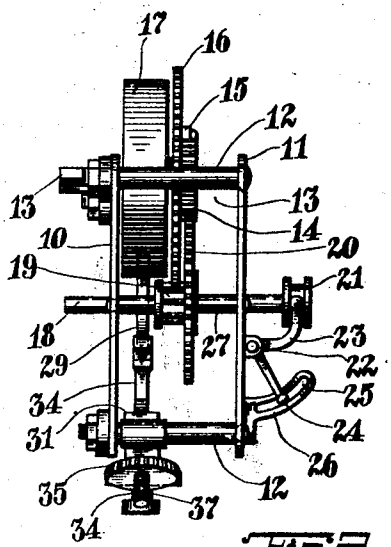


Fig. 2.

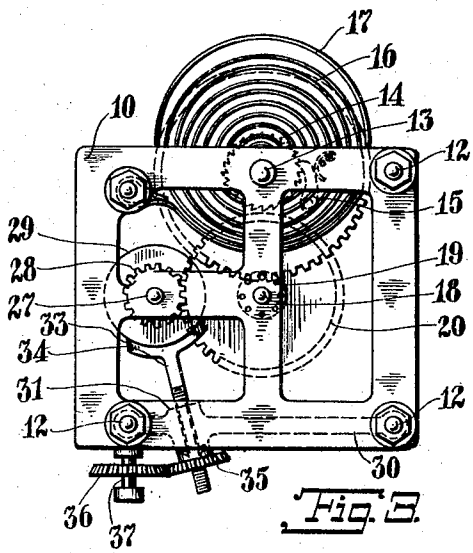


Fig. 3.

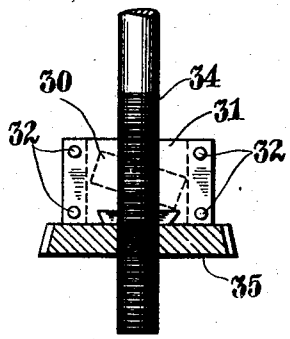


Fig. 5.

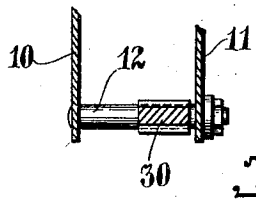


Fig. 4.

INVENTOR
Victoriano Alcalá
BY
Zoltan Polachek
ATTORNEY

Patented July 14, 1931 1,814,779

UNITED STATES PATENT OFFICE

VICTORIANO ALCALÁ, OF ELOTA, MEXICO

MOTOR DEVICE

Application filed December 28, 1927. Serial No. 243,180.

This invention relates generally to motor devices, and has more particular reference to a novel spring actuated motor device which can receive its energy from some suitable source, and thereafter deliver the energy to any mechanical machine, such as vehicles, trains, fans, sewing machines, pianolas, electric dynamos, or the like. The source of energy may be from electric motors, steam engines, alcohol, gasoline, petroleum, or hot air engines, or wind or water forces.

The invention has for an object the provision of a device of the class described, which is efficient, positive, and reliable in action, and which can be manufactured and sold at a reasonable cost.

For further comprehension of the invention and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

Referring to the accompanying drawings, forming a material part of this disclosure:

Fig. 1 is a front view of a device constructed according to this invention.

Fig. 2 is a side view thereof.

Fig. 3 is a view similar to Fig. 1 but with certain parts in different condition.

Fig. 4 is a fragmentary vertical sectional view, taken on the line 4—4 of Fig. 1.

Fig. 5 is a sectional view taken on the line 5—5 of Fig. 1.

The reference numeral 10 indicates the front side, and 11, the rear side of a frame having a plurality of spacers 12 holding the front and rear sides in position. A shaft 13 is rotatively mounted between the sides of the frame, and has a ratchet wheel 14 rigidly fixed thereto. A spring pressed pawl 15 engages this ratchet wheel, and acts from the side of a gear wheel 16 loosely mounted on the shaft 13. Adjacent the gear wheel 16 is a spring 17 having its outer end fixed to one of the spacers 12, and its inner end fixed to the shaft 13.

A second shaft 18 is rotatively mounted in the sides of the frame, and has a pinion 19 of considerable width fixed thereon and meshing with gear 16, and also a gear 20 fixed thereon, and engageable with the teeth of ratchet wheel 14 to hold this latter mentioned wheel from turning. The shaft 18 projects to the outer side of the frame, and a grooved wheel 21 is fixed to this portion of the shaft. Secured to the side 11 is a bracket 22 pivotally holding a lever 23 intermediate of its ends. One end of this lever is forked and engages the grooved wheel 21, while the other end is provided with a bolt 24 engaging in slot 25 of an arcuate bracket 26 also secured to the side 11.

A third shaft 27 is rotatively mounted in the sides of the frame, and has rigidly mounted thereto a pinion 28 of considerable width, the pinion 28 meshing with the gear 20. A wheel 29 is fixed to the shaft 27. Firmly connected between two of the spacers 12 is a bar 30 made of two parts provided with an inclined boss 31 bolted together as at 32. A moon shaped brake member 33 has a projecting rod 34 slidably passing through the boss 31 and this rod is provided with threads, threadedly engaged by threaded aperture in the center of a bevel gear 35, rotatively connected to the boss. A second bevel gear 36 meshes with gear 35, and is secured to shaft 37 rotatively arranged and supported from the frame of the device.

The operation of the device consists in connecting some source of power to shaft 13, turning this shaft so that spring 17 is wound up. The power stored in the spring may be later used by loosening bolt 24, moving lever 23 so that the forked end moves shaft 18 longitudinally, freeing gear 20 from ratchet wheel 14. The pinion 19 remains in mesh with the gear 16, and the spring 17 rotates shaft 18 as it unwinds. With a proper tool the shaft 37 may be rotated, to rotate gear 36 and 35. The rotation of gear 35 causes the rod 34 to move longitudinally, and the brake member 33 may be forced against the wheel 29 to stop the device. Then lever 23 may be moved back into original condition so that gear 20 locks ratchet wheel 14 against rotation. Fig. 3 shows the spring 17 in unwound condition, and also shows the brake member 33 against wheel 29.

While I have illustrated and described the preferred form, construction and arrangement of the several elements employed, it will be understood that the device is nevertheless, susceptible of considerable modification therein, and I therefore reserve the right and privilege of resorting to all such changes as may be fairly embodied within the spirit and scope of the invention as claimed.

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

1. A spring motor device comprising, a frame, a driver shaft mounted in said frame, a spring connected at its inner end to the driver shaft and at its outer end to the frame, a ratchet wheel rigidly secured to said driver shaft, a gear wheel rotatably mounted on said driver shaft, a spring pressed pawl pivoted to said gear wheel for engaging said ratchet wheel, a driven shaft mounted in said frame and slidable axially therein, a pinion secured to said driven shaft and engaging the gear wheel on the driver shaft in all positions, a gear wheel secured to said driven shaft and engaging said ratchet wheel when the driven shaft is in one position of its axial movement, means for making and breaking connection between said gear wheel on the driven shaft and the ratchet wheel, said means comprising a grooved wheel mounted on the driven shaft and a two pronged yoke pivoted to the frame and engaging the grooved wheel.

2. A spring motor device comprising, a frame, a driver shaft mounted in said frame, a spring connected at its inner end to the driver shaft and at its outer end to the frame, a ratchet wheel rigidly secured to said driver shaft, a gear wheel rotatably mounted on said driver shaft, a spring pressed pawl pivoted to said gear wheel for engaging said ratchet wheel, a driven shaft mounted in said frame and slidably axially therein, a pinion secured to said driven shaft and engaging the gear wheel on the driver shaft in all positions, a gear wheel secured to said driven shaft and engaging said ratchet wheel when the driven shaft is in one position of its axial movement, means for making and breaking connection between said gear wheel on the driven shaft and the ratchet wheel, a brake drum mounted on a third shaft connected to said driven shaft, a supported bar with a boss, a threaded rod slidably mounted in said boss, a brake shoe on the inner end of said rod, a member rotatably connected to said boss and threadedly connecting with said rod, and means for rotating said member.

In testimony whereof I have affixed my signature.

VICTORIANO ALCALÁ.