No. 833,833. PATENTED OCT. 23, 1906.

J. HENRIKSON.

TRANSMISSION MECHANISM.

APPLICATION FILED JULY 3, 1905.

2 SHEETS—SHEET 1.

FIG. 1.

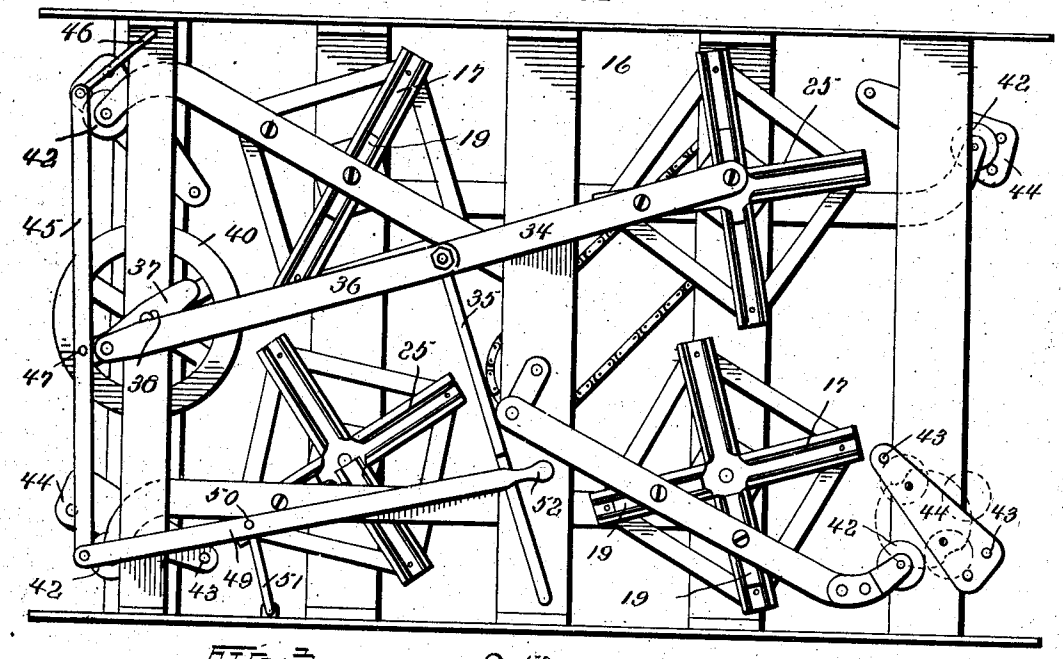
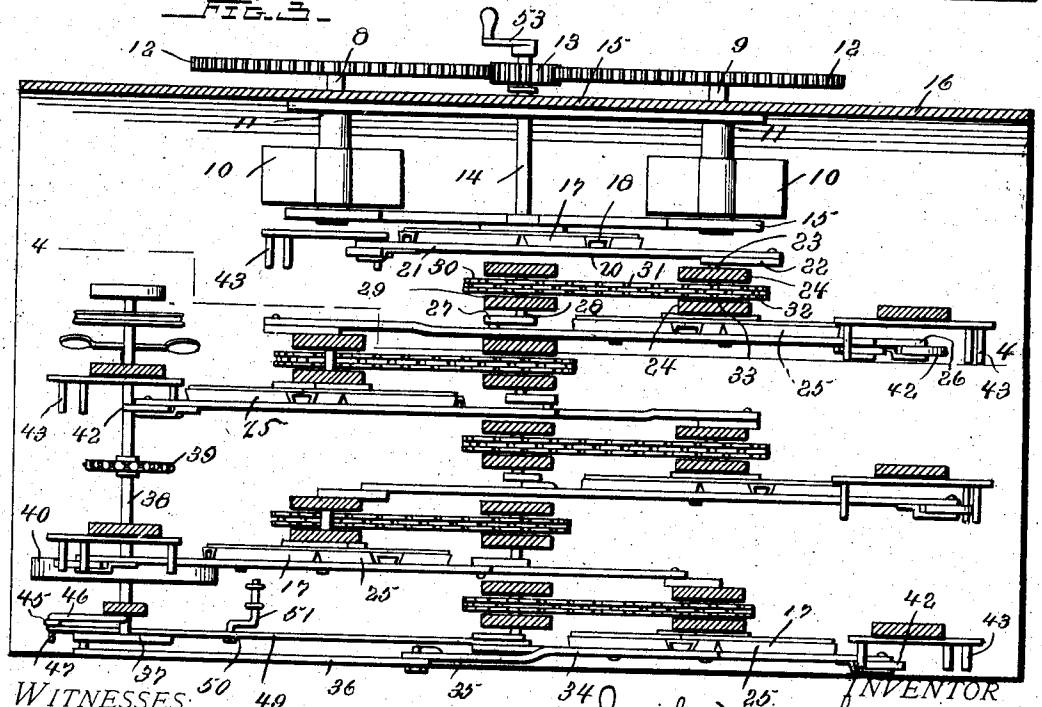


FIG. 2.



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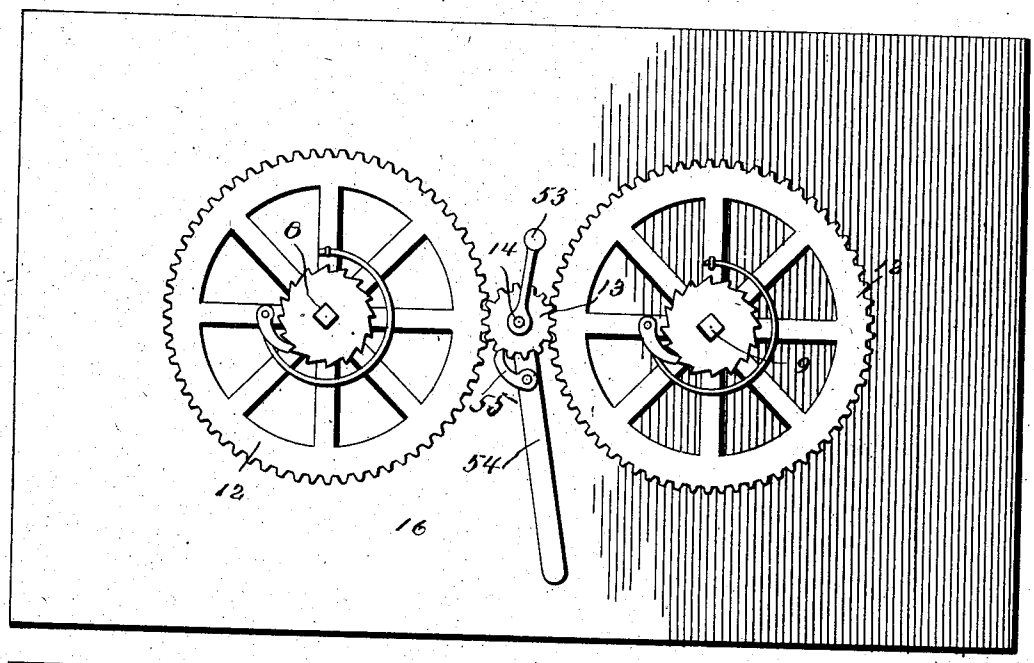
2 SHEETS—SHEET 2.

FIG. 2.



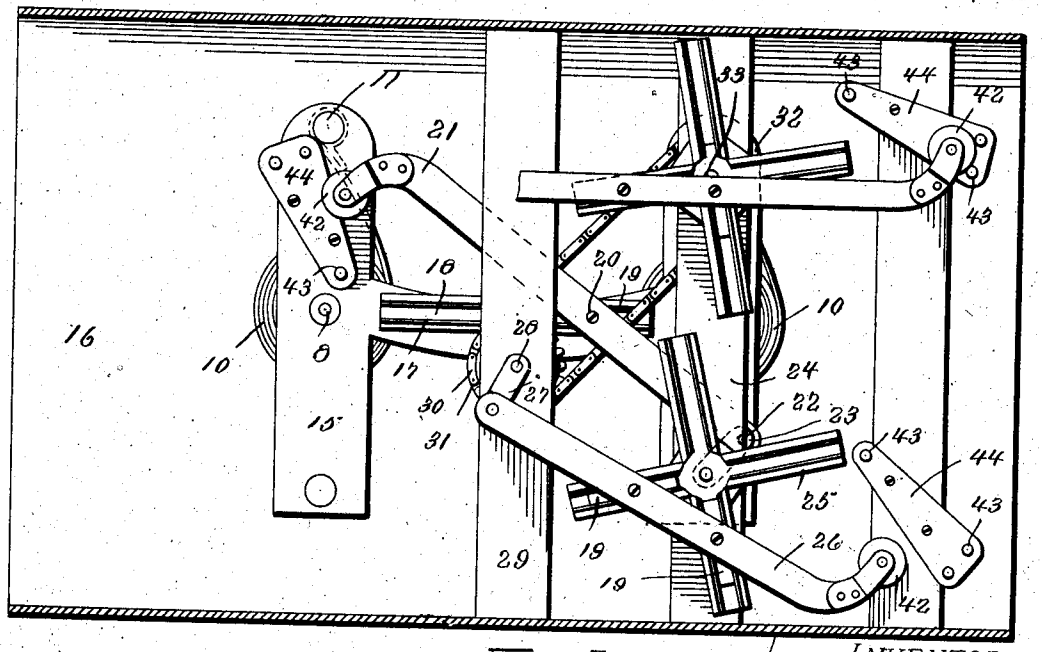


FIG. 3.

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TRANSMISSION MECHANISM.

No. 833,833. Specification of Letters Patent. Patented Oct. 23, 1906.

Application filed July 3, 1905. Serial No. 268,052.

To all whom it may concern:

Be it known that I, JOSEF HENRIKSON, a citizen of the United States, residing at Dyerville, in the county of Humboldt and State of California, have invented new and useful Improvements in Transmission Mechanism, of which the following is a specification.

My invention is a transmission mechanism, and has for its object certain novel features of construction hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a front elevation of a spring-motor embodying my invention. Fig. 2 is a rear elevation thereof. Fig. 3 is a top plan view with the top of the motor-casing removed. Fig. 4 is a vertical section on the line 4 4 of Fig. 3.

Referring specifically to the drawings, 8 and 9 indicate two parallel shafts, around each of which a spring 10 is coiled and made fast to a fixed pin 11. The shafts carry gears 12, meshing with a pinion 13 on a counter-shaft 14. These parts are mounted in a suitable frame 15, secured to the rear wall 16 of the motor-casing.

On the counter-shaft a crank-frame is mounted, comprising arms 17, having undercut grooves 18, which intersect at right angles with each other. Blocks 19 are slidably mounted in the grooves 18 and are connected by wrist-pins 20 with a pitman 21. These parts constitute a trammel-gear. The pitman connects with a crank 22 on a shaft 23, journaled in a frame 24 within the motor-casing. The shaft 23 carries a crank-frame 25, which is similar to the crank-frame 17 and in which sliding blocks, as before, are mounted which are connected to a pitman 26. The latter pitman connects with a crank 27 on a shaft 28, journaled in a frame 29 within the motor-casing. On this shaft is a sprocket 30, which is geared by a chain 31 to a sprocket 32 on a shaft 33, mounted in the frame 24 above the crank 22. A number of crank-frames 17 and 25 are employed, which are geared together, as herein described. The last one of the crank-frames has its sliding blocks connected by a link 34 with a rocker-arm 35, which in turn is connected by a pitman 36 to a crank 37 on a shaft 38, fitted with a sprocket 39, from which the power is taken. The shaft also carries a fly-wheel 40.

The object of the multiplication of the crank-frames 17 and 25, with their sliding blocks, is to multiply the speed of the motor. Each of said frames doubles the speed of the next one to which it is geared, as the pitman makes two strokes to every revolution of the shafts, from which they derive their motion. The free ends of the pitman are fitted with rollers 42, arranged to engage pins 43, projecting from plates 44, secured to the motor-frame. The pins are in the path of the roller and are so located that they are struck by the roller when the blocks are about to cross the grooves, or at dead-center. At this instance the cranks are also at dead-center. When the rollers strike the pins, the pitman is given a slight lateral push, which carries the blocks and crank over the dead-center.

The reversing mechanism comprises an arm 45, carried at the outer end of a link 46, pivoted to the motor-casing. The arm has a projecting stem 47 arranged to engage the crank 37. The lower end of the arm is connected to an operating-lever 49, which is pivoted, as at 50, on a rocker-arm 51. The lever 49 has a suitable handle 52. To reverse the shaft 38, the crank 37, when at dead-center, is set slightly past this point in either direction, according to the direction the shaft is desired to turn. This is readily accomplished by proper manipulation of the hand-lever 52, the link 46 and the rocker-arm 51 permitting the arm 45 to be swung up or down and also sidewise, so that the stem 47 can be brought over into engagement with the crank to push it up or down past the dead-center. After this the arm 45 will be swung outwardly to carry the stem 47 outside the path of the crank.

The springs are wound by a key 53, fitted on the counter-shaft 14.

To stop the motor, a suitable brake is employed, comprising a lever 54, carrying a pivoted dog 55, arranged to be slipped between the teeth of the pinion 13. The shafts 8 and 9 are provided with the usual pawl-and-ratchet mechanism.

Having thus described my invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. In a transmission mechanism; a driving-shaft carrying a grooved frame, which grooves intersect at right angles to each other; a sliding block in each groove; a pitman connected to said blocks; a shaft having a crank to which one end of the pitman is connected; a roller on the opposite end of the pitman; and

means engageable by the roller for tripping the pitman to overcome the dead-center of the blocks.

2. In a transmission mechanism; a driving shaft carrying a grooved frame, said grooves being arranged to cross at right angles to each other; a sliding block in each groove; a pitman connected to said blocks; a driven shaft having a crank connected to the pitman; an arm having a projecting stem; and a lever for swinging said arm to bring the stem into engagement with the crank for shifting the same to reverse the driven shaft.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEF HENRIKSON.

Witnesses:

ALECK R. WHEAT,

LEVI H. WHEAT.