

W. F. GREGORY.  
 TOY POWER MACHINE.  
 APPLICATION FILED DEC. 26, 1916.

1,260,664.

Patented Mar. 26, 1918.

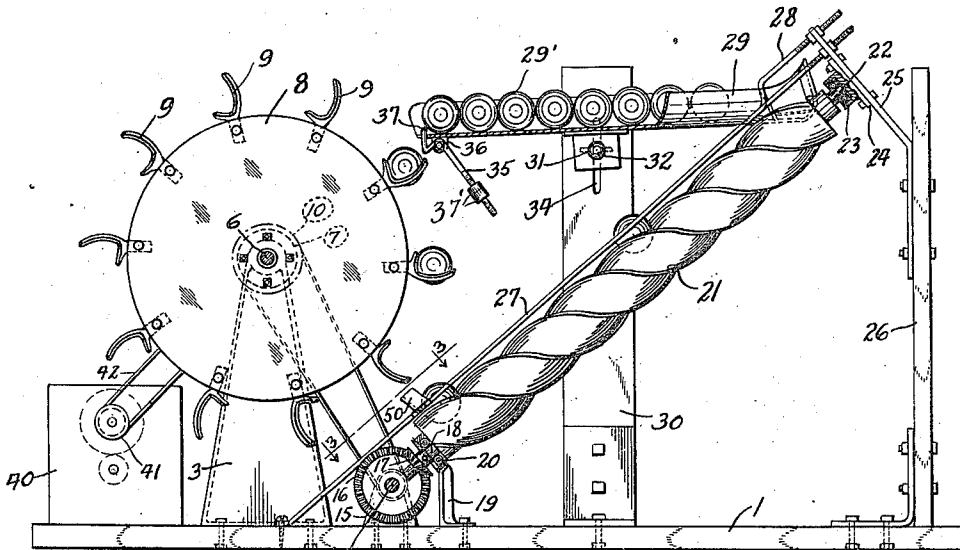


Fig. 1.

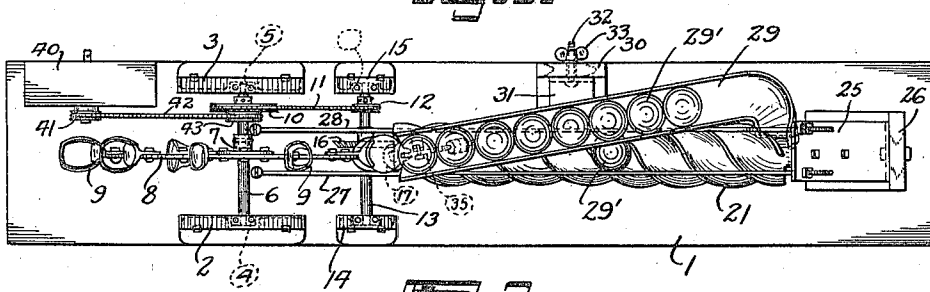


Fig. 2.

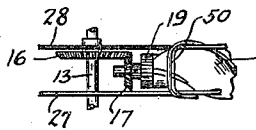


Fig. 3.

WITNESSES:

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 INVENTOR

# UNITED STATES PATENT OFFICE.

WILLIAM F. GREGORY, OF SAUSALITO, CALIFORNIA.

## TOY POWER-MACHINE.

1,260,664.

Specification of Letters Patent. Patented Mar. 26, 1918.

Application filed December 26, 1916. Serial No. 138,902.

*To all whom it may concern:*

Be it known that I, WILLIAM F. GREGORY, a citizen of the United States, residing at Sausalito, in the county of Marin, State of California, have invented a new and useful Toy Power-Machine, of which the following is a specification in such full and clear terms as will enable those skilled in the art to construct and use the same.

This invention relates to a toy power machine illustrating well known laws of mechanics in transmission, such as a rotary wheel, a screw conveyer, belt or chain drive, gear drive, etc. Its usefulness as an instructive device to children is one of the objects of this invention, and the construction of same may be of stamped material, the conveyer of twisted tin, and made in small sizes, and placed on the market at a reasonable price.

Further objects of this invention will appear as the description proceeds.

With these objects in view, the invention comprises various features of construction, as hereinafter set forth in the following specification, which consist of the drawings, description and claim, in which the same numeral is applied to the same portion throughout, however am aware that there may be many modifications thereof.

Figure 1 is a side elevation of complete machine taken on a line slightly beyond standards.

Fig. 2 is a plan view.

Fig. 3 is a plan view of that portion of lower end of conveyer below line 3—3 Fig. 1.

Numeral 1 indicates a base board, 2 and 3 standards, which are bolted to base board, and have an upper boss portion to receive radial and thrust bearings 4 and 5, these bearings fitting ends of shaft 6. Upon shaft 6 is mounted a flange sleeve 7 integral with shaft, and has bolted to it a circular disk 8, said disk having ten hand shaped pockets 9 equally spaced. 10 indicates a sheave pulley connected by a belt 11 to sheave pulley 12 on shaft 13 supported on ball bearings in standards 14 and 15. A gear 16 meshes with smaller gear 17 on conveyer shaft 18, said conveyer shaft being set into a bracket 19, which has a ball bearing 20. Conveyer 21 has its upper shaft portion 22 set into another ball bearing 23, said bearing being placed in a plate 24, which is bolted to an angle bar 25, this bar being fastened to an upright support 26. Two guide bars 27 and

28 parallel conveyer from base board 1 to angle bar 25. A chute 29 holding balls 29' is fastened to another upright support 30, by a corner bracket 31 having a bolt 32 and wing nut 33, for adjusting chute to a suitable pitch to feed balls into hand pockets on wheel. A slot 34 is provided in the upright support for lowering and raising chute to a given height. At end of chute is a tripping device 35, which is pivoted to bracket 36 on chute, this tripping arm has an upwardly projecting stub end 37 and below pivot point weights 37' for bringing arm back in original position to keep balls from moving ahead. A box containing a spring and gear reduction for the slow speed of mechanism of the machine is indicated at 40 and furnishes power to keep in motion for some-time the operation of the machine. Pulley 41 from power box 40, connects with belt 42 to pulley 43. A square stud shaft end is extended on side for the purpose of cranking or winding up of spring by the ordinary crank handle. It is to be understood that a small toy electric motor with dry batteries may be within box 40 in place of a heavy clock spring, and with proper gear reduction may operate the machine at a suitable speed.

The operation is as follows:—Balls 29' are placed in chute 29, the spring is wound up and wheel 8 commences to rotate, and as pockets 9 on wheel 8 pass the end of chute, the arched end portions of pockets 9 engage the extending end portion of the trip arm 35, thereby releasing one ball at a time into said pockets 9. The altitude of chute above center of wheel is the same as the delivery point into conveyer 21 below, in order to have the greatest leverage possible. The balls fall by gravity into slide 50 on guide bars 27 and 28, therefore holding balls in place to be pushed up by threads of conveyer which is of a pitch suitable for this purpose. At top of conveyer the balls are delivered into chute 29 which is at side of conveyer and below the line of ball, bar 28 being raised sufficiently to allow for the clearance of balls under same into chute, the balls falling by a slight gravitation. The desired ratio is obtained by the drive from wheel shaft 6 to gear shaft 13 at two to one, through bevel gears at five to one, therefore corresponding to the number of pockets on wheel 8. As there are always two balls in descent on wheel, and two balls in ascent on conveyer the pitch of conveyer is such

as to make two complete revolutions from time of receiving balls to time of delivering same into chute. It is possible that the machine may be self propelled with a heavy fly wheel on a countershaft and geared to wheel shaft 6 at the proper speed, by spinning said wheel it may continue to run for considerable length of time depending upon the easy bearing qualifications, and the perfect counterbalance of all moving parts.

Having thus described my invention what I claim as new and desire to secure by Letters Patent of the United States, express reservation being made of permissible modifications, is as follows:

I claim:

In a toy power machine, comprising a circular disk secured to a central shafting rotatable on stationary bearings; hand-shape pockets equally spaced and secured to the periphery of said circular disk; an inclined chute leading adjacent to said hand-shape pockets above the center axis of the circu-

lar disk; said chute adjustable and pivoted to a stationary support; a screw conveyer adjacent to the hand-shape pockets below the center axis of the circular disk and inclined to the other end of the chute; balls adaptable to travel under their own gravity tripping automatically onto said hand-shape pockets of the circular disk; said circular disk propelled by motive means to the central shaft; said balls deposited onto said screw conveyer; said screw conveyer rotatable by connecting means to said central shaft to elevate said balls to be deposited onto the chute for their repeated operation.

In testimony whereof I have hereunto set my hand on this 2d day of December, A. D. 1916, in the presence of the two subscribed witnesses.

WILLIAM F. GREGORY.

Witnesses:

SAMUEL MEYER,  
MARTIN ARONSOHN.