A. SLIWORSKY AND P. DOROZYNSKY.

TOY POWER MACHINE.

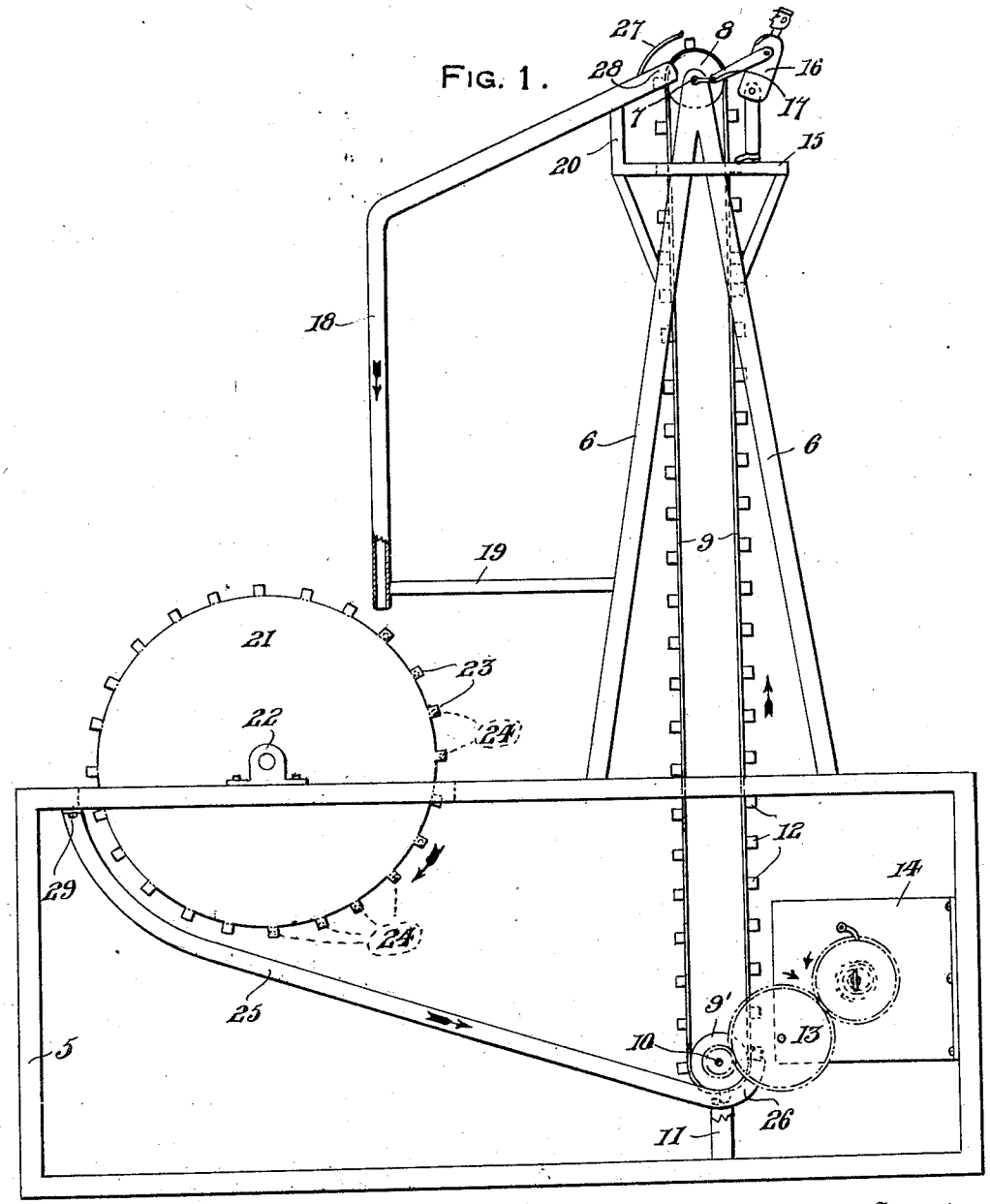
APPLICATION FILED MAR. 31, 1921.

1,408,412.

Patented Feb. 28, 1922.

3 SHEETS—SHEET 1.

FIG. 1.



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3 SHEETS—SHEET 2.

FIG. 2.

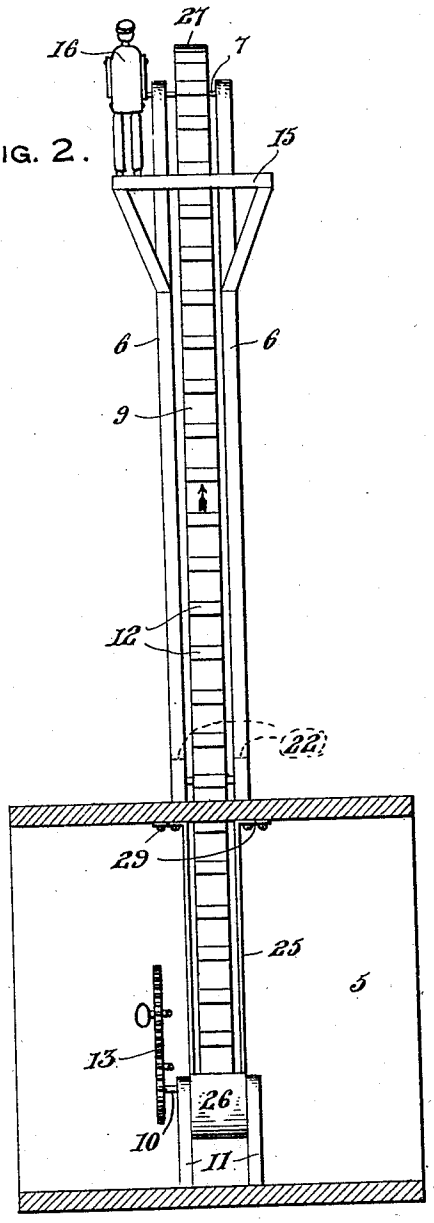
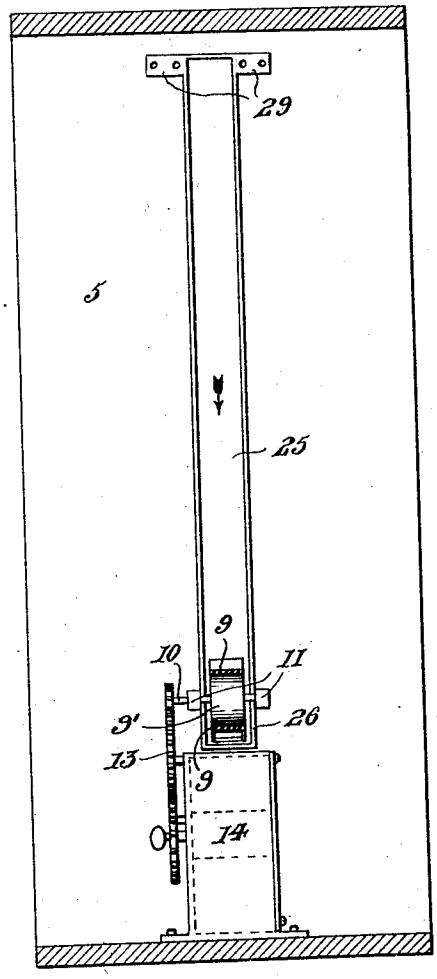


FIG. 3.



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3 SHEETS—SHEET 3.

FIG. 4.

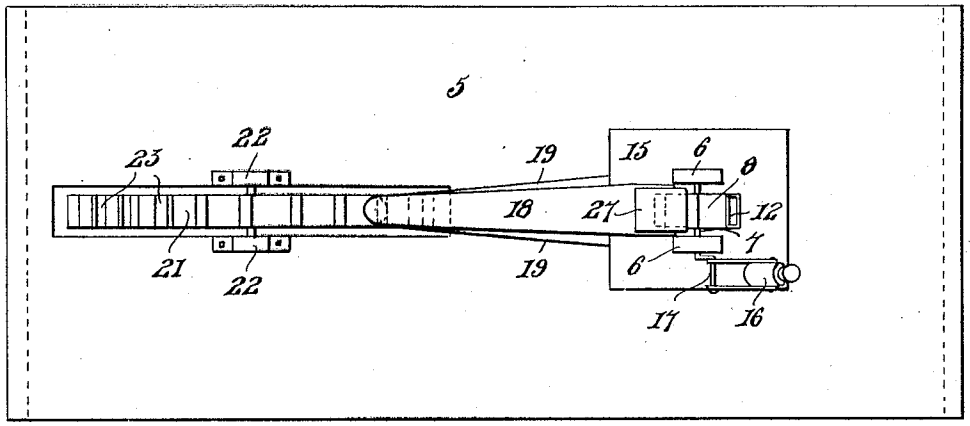


FIG. 5.

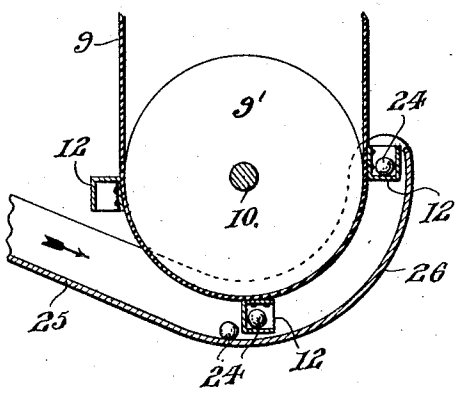


FIG. 6.

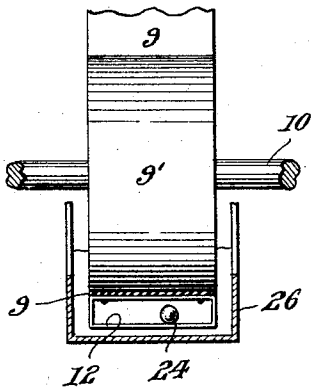
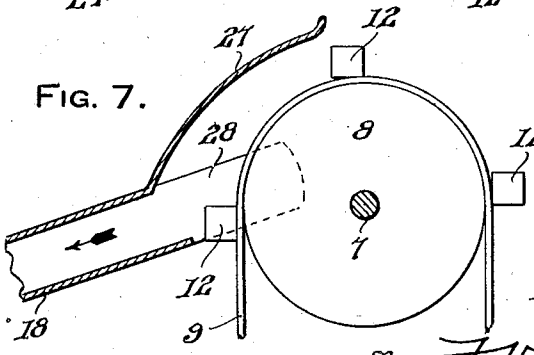


FIG. 7.



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UNITED STATES PATENT OFFICE.

ADAM SLIWORSKY AND PAUL DOROZYNSKY, OF WINNIPEG, MANITOBA, CANADA.

TOY POWER MACHINE.

1,408,412. Specification of Letters Patent. **Patented Feb. 28, 1922.**

Application filed March 31, 1921. Serial No. 457,358.

To all whom it may concern:

Be it known that we, ADAM SLIWORSKY and PAUL DOROZYNSKY, citizens of the Dominion of Canada, residing at Winnipeg, in the Province of Manitoba and Dominion of Canada, have invented certain new and useful Improvements in Toy Power Machines, of which the following is a specification.

This invention relates to a toy power machine illustrating well known laws of mechanics in transmission, such as a rotary wheel, an endless conveyor, gear drives and the like. Its usefulness as an instructive device to children is one of the objects of the invention, and the construction of the same may be of simple and durable form and made in small sizes as well as placed on the market at a reasonable price.

Further objects of the invention will appear as the nature of the invention is better understood.

With these objects in view; the invention comprises the various features of construction as hereinafter set forth in the following specification and the accompanying drawings, wherein like characters of reference indicate corresponding parts throughout the several views.

In the drawings.

Figure 1 is a side elevational view of a complete toy power machine constructed in accordance with the present invention, partly broken away to illustrate details of construction,

Figure 2 is a rear elevational view of the device shown in Figure 1 with the rear end of the casing removed,

Figure 3 is a horizontal sectional view of the device shown in Figure 1 taken above the chute conveyor and motor as well as below the rotary wheel and through the endless conveyor.

Figure 4 is a top plan view of the device shown in Figure 1,

Figure 5 is an enlarged sectional view showing details of construction adjacent the meeting point of the conveyor chute and endless conveyor,

Figure 6 is a sectional view of the device shown in Figure 5 taken on a line at right angles to that upon which Figure 5 is taken, and

Figure 7 is an enlarged fragmentary view, partly in longitudinal section and partly in side elevation showing details of the invention at the point adjacent the discharge end of the elevating or endless conveyor.

The numeral 5 indicates a base preferably in the form of a rectangular casing with open sides and composed of top, bottom, and end walls, the top wall having a pair of standards 6 fixed thereon so as to project some distance above the same. The upper ends of the standards 6 are provided with alined bearings having a shaft 7 journaled therein and a roller 8 is fixed upon the shaft 7 between the standards 6, while an endless belt 9 passes around the roller 8 and downwardly therefrom through suitable openings in the top wall of the casing 5 where it also passes around another similar roller 9′ directly beneath the roller 8 and fixed upon a shaft 10 suitably journaled above the bottom of the casing 5, a bracket for supporting the shaft 10 being shown broken away at 11 in Figure 1. The endless belt 9 is provided with a number of spaced receptacles or buckets 12 as is usual in conveyors of this type, and this conveyor is driven by a suitable gearing broadly denoted by the numeral 13 in the form of spur gears and pinions between the shaft 10 and the power shaft of a suitable spring motor 14. It is to be understood, however, that the motor 14 may be of any desired type although it is preferably of the spring type as shown, and fixed to the adjacent end wall of the casing 5.

A suitable platform construction as at 15 is rigidly mounted near the upper ends of the standards 6, and the figure of a man or the like as denoted by the numeral 16 is disposed in a stationary posture upon this platform with his feet suitably attached to the platform and with a pivoted connection between the legs and body of the vehicle, the arms of the figure being pivoted to the body of the same and pivotally connected to a crank 17 formed upon one projecting end of the shaft 7. An angular tube 18 is suitably supported as by means of members 19 and 20 respectively connected to the standards 6 and the platform 15 so that its upper end is disposed as shown in Figure 7 to have the buckets 12 discharge their contents into said end of the tube and a rotary wheel 21 is suitably journaled in brackets 22 fastened upon the top of the casing 5, the wheel 21 being provided with peripheral pockets 23 disposed to receive the contents of the conveyor pockets 12 as said contents

is conveyed through the discharge end of the angular tube 18. The angular tube 18 is so formed as to have its upper leg inclined from the discharge end of the endless conveyor and with the other leg of the tube vertically disposed as shown in Figure 1 so that the contents will travel by gravity to the buckets of the wheel 21. As shown clearly in Figure 5, these contents are preferably in the nature of heavy balls 24 so that when they impinge the wheel 21 by dropping into the buckets of the latter, said wheel is caused to rotate until the balls are dumped from the buckets 23. An inclined conveyor chute 25 is disposed with its upper end beneath the wheel 21 so as to receive the balls from the buckets 23, and this chute extends downwardly where it has a curved end as at 26 partially embracing the lower end of the endless conveyor in such position as to insure scooping of the balls one at a time into the buckets 12 of said endless conveyor. The inlet end of the tube 18 is preferably provided with guard plates 27 and 28 at the top and sides respectively so as to insure passage of the balls from the buckets 12 into said tube 18 and the higher end of the chute 25 is also curved to partially embrace the wheel 21 and to extend to a point adjacent the top of the casing 5 where it is flanged and rigidly secured as at 29 to the underside of said top of the casing 5. The course taken by the balls as well as the direction of movement of the parts is clearly denoted by the arrows in several Figures, and it will be seen that the construction is extremely simple and durable.

The operation is as follows:—Balls 24 are placed in the chute 25, the motor 14 is placed into operation through any well known means, and the endless conveyor consisting of the belt 9 and buckets 12 is thereby rotated so as to cause the balls to be scooped up into said buckets 12 whereby the balls are elevated and then discharged into the inlet end of the angular tube 18. When the endless conveyor is actuated, rotation of shaft 7 ensues, and relative movement of the arms and body of the Figure 16 as well as swinging movement of the body relative to the legs of said figure is had so that the appearance is one of a man manually actuating the endless conveyor by rotating a crank. The balls pass by gravity through the tube 18 and are discharged into the pockets of the wheel 21, thus causing rotation of said wheel and as the buckets 23 come to the proper position, the balls are discharged into the inclined chute 25 by which they are returned by gravity to the point where the buckets 12 may again pick them up. It is possible that the machine may be self-propelled by the proper ratio of gearing, etc., with a heavy fly wheel on a counter shaft and geared to the shaft which carries the wheel 21, by spinning said fly wheel whereby the machine may continue to run for a considerable length of time depending upon the easy bearing qualifications and the perfect counterbalance of all moving parts.

From the foregoing description, it is believed that the construction and operation as well as the advantages of the present invention will be readily understood and appreciated by those skilled in the art. Minor changes may be made without departing from the spirit and scope of the invention as hereinafter claimed.

What is claimed as new is:

1. A toy power machine of the class described including an elevating conveyor, a rotary pocketed wheel mounted beneath the discharge end of said conveyor, means for delivering weighted elements from the discharge end of the conveyor by gravity to the pockets of said wheel, and means for delivering the weighted elements by gravity from the pockets of the wheel into position to be elevated at the lower supply end of the conveyor, said elevating conveyor including a shaft at its upper end having a crank extension upon one end, a platform rigidly mounted adjacent and directly beneath said crank, and a human figure mounted upon said platform and provided with jointed parts including arms pivotally connected to said crank.

2. A toy power machine of the class described including an elevating conveyor, a rotary pocketed wheel mounted beneath the discharge end of said conveyor, means for delivering weighted elements from the discharge end of the conveyor by gravity to the pockets of said wheel, means for delivering the weighted elements by gravity from the pockets of the wheel into position to be elevated at the lower supply end of the conveyor, said elevating conveyor including a shaft at its upper end having a crank extension upon one end, a platform rigidly mounted adjacent and directly beneath said crank, a human figure mounted upon said platform and provided with jointed parts including arms pivotally connected to said crank, a rectangular open sided casing through the top of which and upon the top of which said rotary wheel extends and is journaled, a pair of standards mounted on the top of said casing, and means to rigidly attach the platform to the standards adjacent the upper ends of the latter.

3. A toy power machine of the class described including an elevating conveyor, a rotary pocketed wheel mounted beneath the discharge end of said conveyor, means for delivering weighted elements from the discharge end of the conveyor by gravity to the pockets of said wheel, means for delivering the weighted elements by gravity from the

pockets of the wheel into position to be elevated at the lower supply end of the conveyor, said elevating conveyor including a shaft at its upper end having a crank extension upon one end, a platform rigidly mounted adjacent and directly beneath said crank, a human figure mounted upon said platform and provided with jointed parts including arms pivotally connected to said crank, a rectangular open sided casing through the top of which and upon the top of which said rotary wheel extends and is journaled, a pair of standards mounted on the top of said casing, and means to rigidly attach the platform to the standards adjacent the upper ends of the latter and means to drive said elevating conveyor.

4. A toy power machine of the class described including an elevating conveyor, a rotary pocketed wheel mounted beneath the discharge end of said conveyor, means for delivering weighted elements from the discharge end of the conveyor by gravity to the pockets of said wheel, means for delivering the weighted elements by gravity from the pockets of the wheel into position to be elevated at the lower supply end of the conveyor, said elevating conveyor including a shaft at its upper end having a crank extension upon one end, a platform rigidly mounted adjacent and directly beneath said crank, a human figure mounted upon said platform and provided with jointed parts including arms pivotally connected to said crank, a rectangular open sided casing through the top of which and upon the top of which said rotary wheel extends and is journaled, a pair of standards mounted on the top of said casing, means to rigidly attach the platform to the standards adjacent the upper ends of the latter and means to drive said elevating conveyor, said elevating conveyor including a lower roller and a rotary shaft to which the roller is fixed, and a motor fixed to an end wall of the casing and operatively geared to said shaft.

5. A toy power machine of the class described including an elevating conveyor, a rotary pocketed wheel mounted beneath the discharge end of said conveyor, means for delivering weighted elements from the discharge end of the conveyor by gravity to the pockets of said wheel, means for delivering the weighted elements by gravity from the pockets of the wheel into position to be elevated at the lower supply end of the conveyor, said elevating conveyor including a shaft at its upper end having a crank extension upon one end, a platform rigidly mounted adjacent and directly beneath said crank, a human figure mounted upon said platform and provided with jointed parts including arms pivotally connected to said crank, a rectangular open sided casing through the top of which and upon the top of which said rotary wheel extends and is journaled, a pair of standards mounted on the top of said casing, means to rigidly attach the platform to the standards adjacent the upper ends of the latter and means to drive said elevating conveyor, said elevating conveyor including a lower roller and a rotary shaft to which the roller is fixed, and a motor fixed to an end wall of the casing and operatively geared to said shaft, said conveyor further including an endless member extending outwardly through said platform.

In testimony whereof we affix our signatures in the presence of two witnesses.

ADAM SLIWORSKY.
PAUL DOROZYNSKY.

Witnesses:
F. C. CLARKE,
J. W. ARSENYCH.