

July 8, 1930.

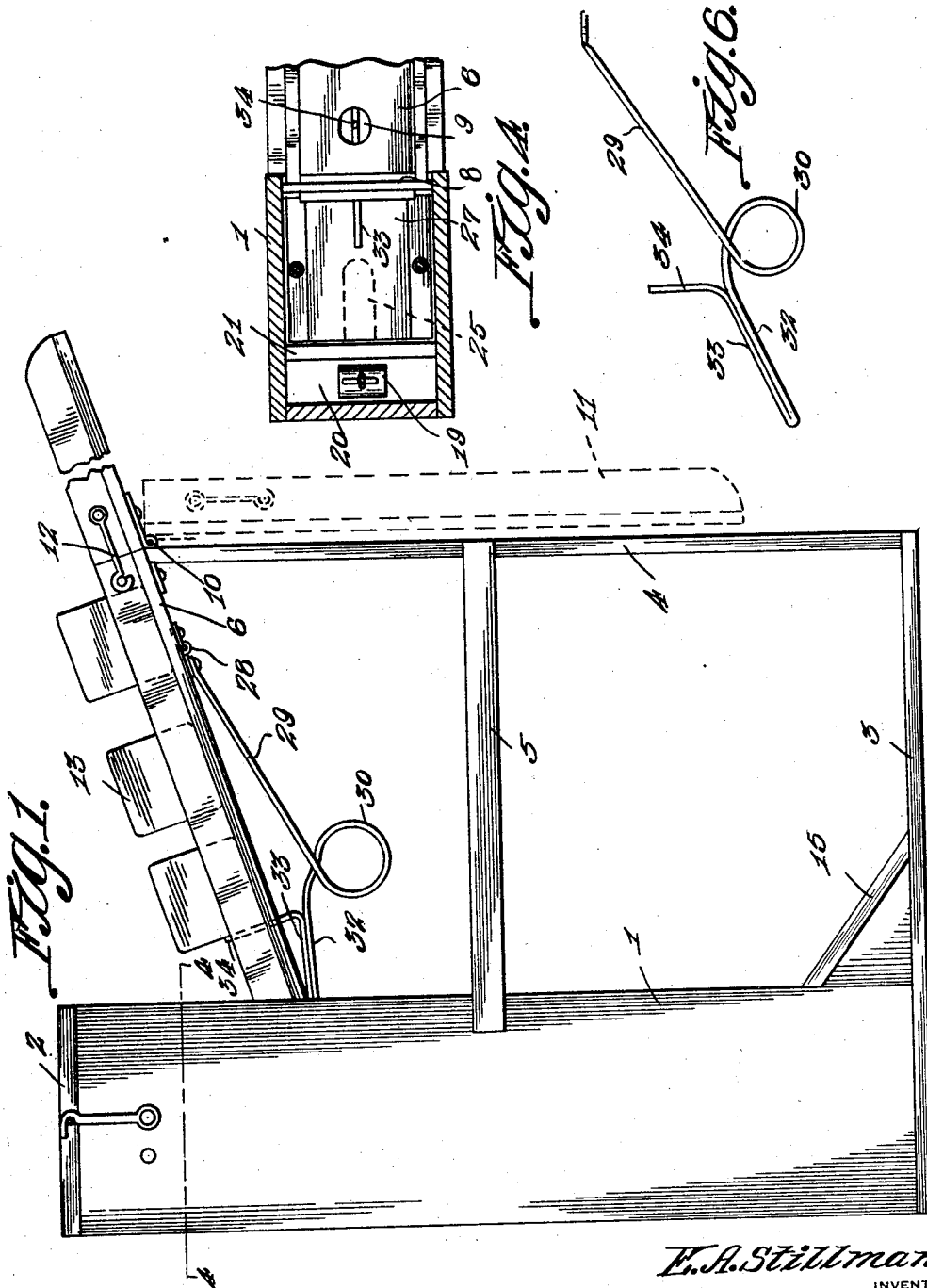
E. A. STILLMAN

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TOY ELEVATOR

Filed June 5, 1929

2 Sheets-Sheet 1



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INVENTOR

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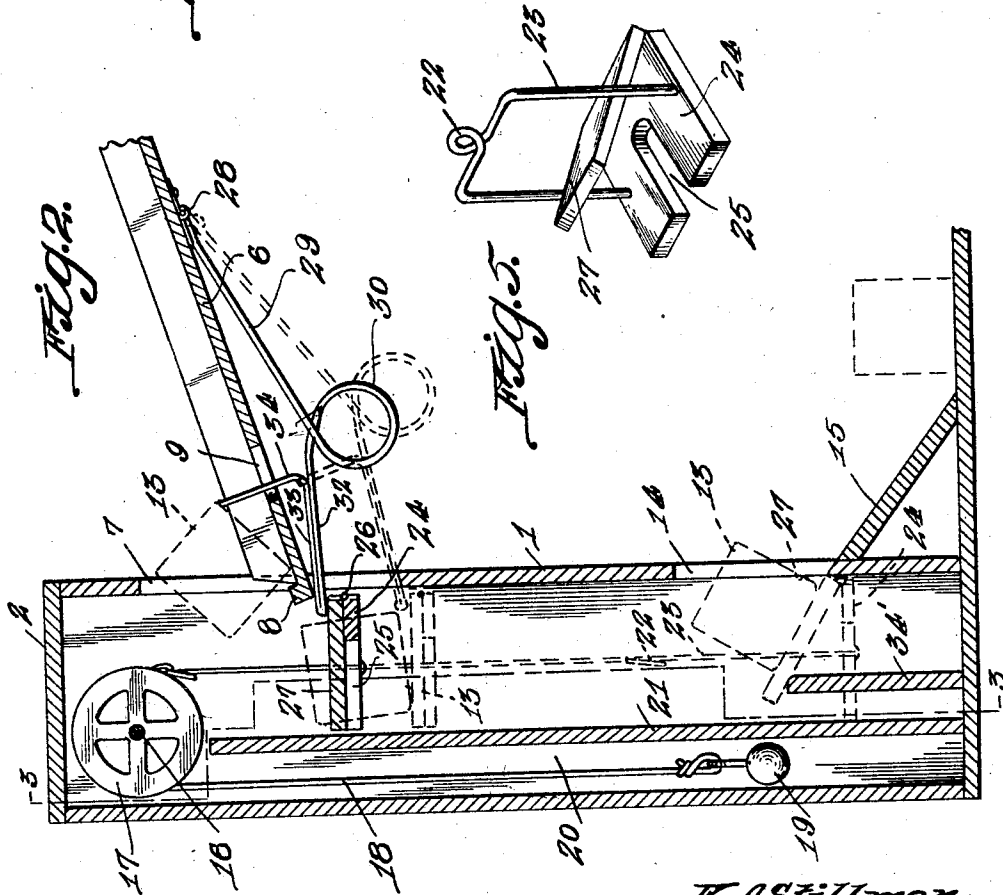
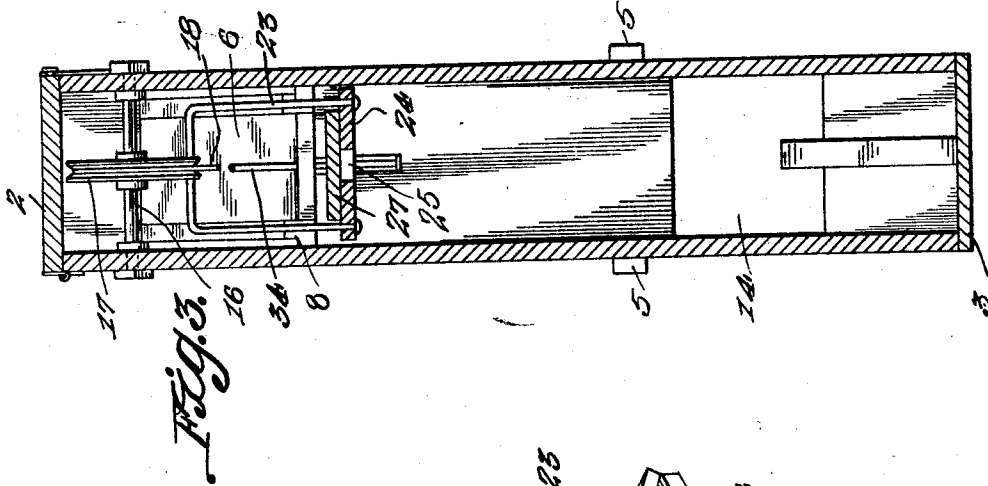
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UNITED STATES PATENT OFFICE

ELDYN A. STILLMAN, OF WELLSVILLE, NEW YORK

TOY ELEVATOR

Application filed June 5, 1929. Serial No. 368,569.

My present invention relates to mechanical toys, and particularly to automatic toys of the gravity operated type. The primary object of my invention is to provide a toy in which blocks or similar devices are caused to gravitate through a chute into an elevator shaft or casing and to be intermittently delivered onto and lowered by the elevator in the casing and delivered from the elevator through an opening in the lower portion of the casing, the device including novel means operated by the elevator for imparting a turning or kicking motion to the block or cube adjacent thereto to cause the same to be delivered onto the elevator so that the weight of the said block or cube will cause the elevator to travel downwardly, the said elevator carrying a hinged platform which is contacted by an element in the bottom of the elevator casing which tilts or cants the same to cause the positive delivery of the block or cube through the lower opening in the said elevator casing.

To the attainment of these and many other objects which will present themselves as the nature of the invention is better understood, the improvement also resides in certain other novel features of construction, combination and operative association of parts, one satisfactory embodiment of which is disclosed by the accompanying drawings.

In the drawings:

Figure 1 is a side elevation of my improved toy, the outer element of the chute being shown in its lowered position by dotted lines.

Figure 2 is an approximately central vertical longitudinal sectional view through the improvement, the dotted lines illustrating a manner in which the block or cube is forced onto the elevator and likewise the manner in which the platform of the elevator is caused to assume an inclination to deliver the block or cube through the lower opening in the elevator casing.

Figure 3 is a sectional view approximately on the line 3—3 of Figure 2.

Figure 4 is a sectional view approximately on the line 4—4 of Figure 1.

Figure 5 is a perspective view of the elevator.

Figure 6 is a similar view of the combined stop, starting and block kicking member.

In the drawings, the numeral 1 designates a vertically disposed substantially rectangular casing that has an open top which is normally closed by a hinged door 2. The door is latched in its closed position.

The casing 1 rests on a base 3 and secured to and arising from the outer end of the base there is an upright 4. Suitable brace members 5 are provided between the edges of the upright 4 and the sides of the casing 1. The upright supports on its top the inner section 6 of an inclined flanged chute. The chute communicates with an opening 7 in the casing 1. The bottom of the chute, at the portion thereof that is received through the lower part of the opening 7 is formed with an upstanding transversely arranged ledge 8 and outward of the ledge the base of the chute is formed with a somewhat elongated slot 9.

There is hinged, as at 10, to the top of the upright the outer or extension member 11 for the chute 6. When the section 11 is brought into alinement with the fixed chute section 6, these parts are latched together, as indicated in the drawings by the numeral 12. The chute is, of course, arranged at a downward inclination, the said inclination being sufficient to cause blocks or cubes 13 which are arranged on the chute to gravitate there-through and to pass through the opening 7 into the casing 1.

The casing 1 is provided on the face thereof having the opening 7 with a lower opening 14, and there is arranged between the base 3 and the lower and inclined wall pro-

vided by the opening 14 an angularly arranged plate 15.

5 Either fixed or journaled transversely in the casing, adjacent to the top thereof there is the shaft 16 for a grooved or sheave wheel 17. The wheel 17 has trained in its groove a flexible element such as a strong cord 18. One end of this cord has attached thereto a weight 19 and the weight is designed to move in a compartment 20 provided by arranging a vertical partition 21 in the casing 1, adjacent to what I will term the rear thereof. The second end of the element 18 is connected to the eye portion 22 of a substantially U-shaped bail 23 whose parallel arms have their ends secured to a plate 24 that provides the elevator. This plate is formed with a central longitudinally extending slot 25, the purpose of which will presently be apparent and the plate 24 has hingedly secured to one of its ends, as indicated by the numeral 26, a second plate in the nature of a platform 27.

25 There is hingedly secured, as at 28, to the bottom of the fixed chute section 6 one end of a spring wire member 29. The wire member is looped upon itself to provide the same with a finger ring 30 and from thence is extended to provide an arm 32 which is received through the opening 7 and whose end is in the path of contact with the elevator. The arm 32 is bent and formed with a return portion 33 whose end is bent to form the same with a finger 34 that is received through the opening 9 in the chute section 6.

35 In the casing, forward of the partition 21 and fixed to the base 3 there is an upstanding member which may be in the nature of a block or rod and which is indicated by the numeral 34. The member 34 is in a position to be received through the slot 25 of the plate 24 in the bottom of the elevator and to contact with the hinged plate 27 to cause the said plate 27 to assume the angular position disclosed by the dotted lines in Figure 2 of the drawings when the elevator is lowered. This it will be noted arranges the plate 27 at the same inclination as the member 15.

40 Any desired number of blocks or cubes 13 are arranged in the chute, and the block nearest the elevator casing will be contacted by the finger 34 and, therefore, held from gravitation into the casing 1. When the blocks are so arranged the operator exerts a pressure upon the finger ring 30 to bring the combined stop and block kicker member 29 to the dotted line position as disclosed in Figure 2 of the drawings. This, of course, lowers the elevator. It should be stated that the weight 19 is sufficient to move the elevator to its raised position. It should be further stated that the distance between the ledge 8 and the kicker finger of the spring wire 29 is less than the width of the blocks or cubes. Thus 65 when the member 27 is depressed or sprung

downwardly as above described the end block will be arranged against the ledge 8 and the weight will again raise the elevator. The elevator will contact with the inner end of the arm 32 of the member 29 and by virtue of such contact will force the finger 34 against the bottom of the block adjacent thereto thereby causing the finger to exert a kicking action against said block to turn the same and deliver the same onto the elevator. The elevator, by virtue of the weight of the block thereon descends, but the block will have contacted with the inwardly extending arm 32 of the spring member 29 to cause the same to be again depressed so that the remaining blocks on the chute will gravitate to bring one of the blocks again against the ledge 8. When the elevator reaches its full descent the upright member 34 will pass through the slot 25 and will contact with the under face of the hinged member 27, causing the same to assume the angular position disclosed by Figure 2 of the drawings and thereby deliver the block onto the inclined plane 15 and from thence onto the base. The elevator being relieved of the weight of the block will again ascend and will again exert a pressure upon the end of the arm 32 to cause the finger thereof to be projected through the opening 9 and kick and turn the block thereunder to deliver the block into the casing and onto the elevator and this operation is continuous as long as there are blocks in the chute.

Obviously the hinged section of the chute or runway may be swung downwardly against the upright 4 when the toy is not required for use so that the said toy can be stored in a comparatively small space or can be readily packed and shipped.

The construction and operation of my improvement will, it is thought, be understood and appreciated by those skilled in the art to which such invention relates so that further detailed description will not be required. It is, however, believed necessary to state that I do not wish to be restricted to the precise details herein set forth and, therefore hold myself entitled to make such changes therefrom as fairly fall within the scope of what I claim.

Having described the invention, I claim:

1. A mechanical toy including an elevator weight influenced to raised position, a hinged plate on the bottom of the elevator, an inclined chute designed to receive blocks therein which gravitate therethrough onto the elevator, a hinged spring rod having an eye portion and an arm extension in the path of contact with the elevator, a finger on the rod, said finger being movable through the chute and engageable with the blocks for normally halting the gravitation of the blocks through the chute, and for likewise kicking or exerting a tumbling movement to the blocks arranged thereover to project the

same onto the elevator, and means engage-
able with the slidable plate on the elevator
when the said elevator has descended for
canting the same to deliver the block there-
on from said elevator.

5 2. A toy comprising a casing mounted on
a base, an upright arising from one end of
the base, a fixed inclined chute section sup-
ported on the casing, a hinged chute section
10 on the upright swingable to alinement with
the fixed chute section, latching means be-
tween the fixed and swingable chute sections,
said casing having an opening receiving one
end of the fixed chute therein and the said
15 end of the chute having at its bottom a trans-
verse ledge, a weight influenced elevator in
the casing normally sustained in elevated po-
sition, a rod having one end hingedly se-
cured to the outer face of the fixed chute section,
20 said rod being rounded upon itself to pro-
vide a finger ring and having the portion
thereof extending from the finger pro-
jecting into the casing to arrange the sec-
ond end of the rod in the path of contact
25 with the elevator, a finger on said rod mov-
able into the chute when the rod is swung in
the direction of the chute, said chute de-
signed to have arranged for gravitation
thereon a plurality of blocks which are nor-
30 mally halted in their downward movement
by contact with the finger, the distance be-
tween the finger and ledge being less than the
width of the blocks, whereby the finger will
underlie the block contacted by the ledge
35 when the swingable member is depressed
and by virtue of such depression to partly
lower the elevator which, upon its return po-
sition will contact with the arm to cause the
finger to engage with the block to impart a
40 tumbling motion thereto and deliver the
block into the casing and onto the elevator,
the weight of the block overbalancing the
influencing weight of the elevator and caus-
ing the latter to descend and said casing hav-
45 ing an outlet opening adjacent to the bottom
thereof for the passage of a block over the
elevator.

3. A toy comprising a casing mounted on a
base, an upright arising from one end of the
50 base, a fixed inclined chute section supported
on the casing, a hinged chute section on the
upright swingable to alinement with the fixed
chute section, latching means between the
fixed and swingable chute sections, said cas-
55 ing having an opening receiving one end of
the fixed chute therein and the said end of the
chute having at its bottom a transverse ledge,
a weight influenced elevator in the casing nor-
mally sustained in elevated position, a rod
60 hingedly secured to the outer face of the fixed
chute section rounded upon itself to provide
a finger ring and formed with an arm exten-
sion which is arranged below the chute and
projects into the casing and is in the path of
35 contact with the elevator, an arm on said rod

movable through the chute, a finger on said
rod movable into the chute, said chute de-
signed to have arranged for gravitation there-
on a plurality of blocks, which are normally
halted in their downward movement by con-
70 tact with the finger, the distance between the
finger and ledge being less than the width of
the blocks, whereby the finger will underlie
the block contacted by the ledge when the
swingable member is depressed, and by virtue
75 of such depression to partly lower the ele-
vator which, upon its return position will
contact with the arm to cause the finger to en-
gage with the block to impart a tumbling mo-
tion thereto and deliver the block into the
casing and onto the elevator, the weight of
80 the block overbalancing the influencing
weight of the elevator and causing the latter
to descend, said elevator having its bottom
slotted and having hingedly secured to its
top a plate, an upright in the bottom of the
casing designed to be received through the
slot and to swing the hinged plate over the ele-
85 vator, said casing having an outlet opening
adjacent to the bottom thereof and an in-
clined plane in a line with the bottom there-
of, for the purpose set forth.

4. In a toy of the class described, a casing
having one of its faces provided with top
and bottom openings, an inclined plane com-
95 municating with the bottom of the lower
opening, an oppositely inclined chute com-
municating with the upper opening, and said
chute having its end received through said
opening provided with a transverse ledge, a
100 sheave wheel journaled in and arranged ad-
jacent to the top of the casing, a cable trained
thereover having a weight on one end there-
of, an elevator on the second end, a partition
in the casing dividing the same into compart-
105 ments for the weight and for the elevator, a
member hingedly secured to the under face
of the chute having a finger ring and an
arm extension which projects through the
upper opening in the casing, and is in the
110 path of contact with the elevator, a finger
on said member freely received through the
bottom of the chute, said chute designed to
have arranged thereon for gravitation a plu-
rality of blocks which are normally stopped
115 by contact with the finger, the elevator in-
cluding a base which is slotted and a hinged
platform which is arranged over the base,
the distance between the ledge and the finger
being less than the width of the blocks, where-
120 by when the finger hold of the hinged member
is depressed the finger will be disposed be-
low one of the blocks and when the arm of
the said member is contacted by the ele-
vator, the said finger will be moved into the
125 chute to impart a kicking motion to the
block engaged thereby to cause the same to
travel through the upper opening and onto
the elevator, and to permit of the next block
130 when the finger is depressed to contact with

the ledge, an upstanding element in the bot-
tom of the compartment for the elevator of
a height greater than the lower wall of the
lower opening designed when the elevator de-
scends by the weight of a block thereon to be
received through an opening in the bottom of
the elevator and to contact with the hinged
member thereon to swing the same to an angle
coincident to that of the inclined plane.

In testimony whereof I affix my signature.
ELDYN A. STILLMAN.

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