

PATENT SPECIFICATION

345,990

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COMPLETE SPECIFICATION.

Improvements in and relating to Coin-freed Amusement and Dispensing Devices.



I, ALFRED KNIGHT CROAD, Chartered Patent Agent, of 70, Chancery Lane, London, W.C.2, a subject of his Majesty the King of Great Britain and Ireland, do hereby declare the nature of this invention (which has been communicated to me from abroad by William Rabkin, of 445, West 31st Street, New York City, New York, United States of America, a citizen of the United States of America) and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to improvements in coin-freed amusement and dispensing devices and has reference particularly to an electrically operated traveling crane adapted to be set into motion by inserting a coin into a coin slot for the purpose of dispensing candy and toys.

The invention has for its object to provide a traveling crane of the character described, which enables a customer to first locate the boom and its hanging bucket over a desired part of the pile of candy and toys, and then, by inserting a coin, to watch the boom swing outwardly and the bucket open, fall into the pile of candy, thereafter close, and finally be lifted out of the pile and swing backwardly to discharge its contents into a chute which conveys the purchase to the outside of the machine.

I accomplish this object by means of the arrangement and combination of parts hereinafter described in the following specification, set forth in the claims and illustratively exemplified in the accompanying drawings, in which Figure 1 is a front elevational view of the mechanism for manipulating the traveling crane; and Figure 2 is a substantially longitudinal sectional view through the upper portion of the cabinet and operating mechanism.

Referring to the drawings, 10 denotes an upright cabinet having an upper compartment 11 enclosed in glass panels 12 and a front plate 13 beneath the front glass panel, the plate 13 being provided with coin slot 14, hand wheel or knob 15 for locating the crane and a hand opening 16 into which the candy and toys are

discharged after the crane has completed its operation.

The hand opening 16 is in communication with the lower end of an inclined chute 17, the upper end being spread to form a mouth portion, which is substantially the width of the machine and into which the candy 18 is discharged from a grab bucket 19. The bucket 19 obtains its supply of candy 18 from a supply bin 20 disposed on a platform 21 just behind the front glass panel 12, as illustrated in figure 2. The rear wall of the bin 20 is disposed directly over the forward edge of the mouth of the chute 17. The bottom wall of the chute adjacent the rear wall of the upper compartment 11 is provided with an opening 22 to accommodate the boom 23 in its movements from side to side and forwards and backwards.

The boom 23 is of open work metal construction and is mounted at its lower end below the plane of the bin 20 on a rod 24. The lower end of the rod 24 is supported and mounted in a universal socket joint 25 disposed close to the rear wall of the cabinet upon a bottom wall 26. The upper end of the boom 23 is provided with a forwardly projecting rod 27 from which two pulleys 28 are suspended. The grab bucket 19 is suspended from the pulleys 28 by means of two cords 29 and 30, the cord 29 being adapted to raise and lower the bucket while the cord 30 is operated to open and close the same.

The boom 23 through its universal support 25 may be swung to any position within the compartment 11 and the means used to allow movement from side to side comprises an upright plate 31 pivotally mounted at its lower end on a pivot pin 32 disposed on the back panel in line with the center of the universal joint 25. The upper end of the plate 31 carries a stirrup 33 which loosely embraces the rod 24 adjacent the upper end thereof. A second stirrup 34 is carried by the plate 31 adjacent its pivoted end so that the rod 24 may swing freely forward and still be under the control of the plate 31 to swing it from side to side. The plate 31 is supported in its upright position against the back panel by a horizontal

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guide bar 35 which has its opposite ends offset and secured to the panel by screws 36. The plate 31 is manipulated by the hand wheel 15 through a spindle 37 upon the front end of which the wheel 15 is mounted while the rearward end adjacent the back panel carries a pinion gear 38 and is mounted in a bearing in the panel. The pinion 38 is in mesh with a spur gear 39 which in turn is loosely mounted on a stud shaft 40 projecting from the front side of the guide bar 35. A crank pin 41 is mounted on the face of the spur gear 42, and carries one end of a pitman rod 43, the opposite end thereof being pivotally mounted on the plate 31 at a point a little above its mid portion, as illustrated in figure 2. It will be clear that by rotating the hand wheel 15 in one direction or the other, the gear and crank connection will cause the plate 31 to swing about its pivot 32 and carry with it the boom 23. In this manner the customer is able to bring the bucket 19 over any section of the bin 20 before setting the mechanism into operation.

The coin slot 14 opens into a rearwardly and downwardly inclined chute 43, which leads into a coin drawer 44 at its lower end, and which is provided with a slot 45 in its mid portion to accommodate a wire trigger 46. The trigger 46 is an angular member pivotally mounted at one end on the rocker plate 47 of a mercury switch 48. The weight of the coin striking the end of the trigger 46 in the chute 43 causes the former to tilt and with it the switch 48 to close an electric circuit, which sets an electric motor 49 in motion. A pivotally mounted dog 50 moving with the trigger 46 is arranged on the side of the rocker plate 47, the dog being disengaged from a notch 51 in a pivoted plate 52 by the weight of the coin as the switch swings to closed position. The dog 50 is yieldably urged into contact with the plate 52 by a spring 53 and the pivoted plate 52 is likewise urged to swing away from the dog 50 by a spring 54 connected to its lower end beyond the pivot. The switch is opened by a chain 55 attached at its end to the lower end of the pivoted plate 52 so that at a certain time in the operation of the machine the plate 52 is rocked against the tension of its spring 54 until the dog 50 engages the notch 51. Tension on the chain 55 is then released and the spring 54 swings plate 52, dog 50 trigger 46 and switch 48 back to initial or open position. Figure 2 shows the plate 47 after having been tilted by a coin.

Referring now to the automatically operated mechanism for swinging the boom 23 forward and lowering and raising the bucket 19, particular reference will be had to figure 2. The motor 49 is operatively connected to a shaft 56 through a worm 57 and worm wheel 58, the shaft 56 being supported in hangers 59 arranged along the upper wall of the compartment 11 and of a length to project from one side of the compartment to the other adjacent the back panel. The shaft 56 at its mid portion carries two cams 60 and 61, the former (left side) engages a lever arm 62, which is pivotally mounted on a pin 63 supported beneath a plate 64 on the top wall of the compartment 11, and which is attached at its free end to the other end of the chain 55, the latter being guided over a pulley 65 adjacent the top of the back panel and a second pulley 66 opposite the mercury switch 48. The other cam 61 (right side) operates an S-shaped lever 67 pivotally mounted on the pin 63. The lever 67 is connected at its free end to a second chain 68, which is guided over an upper pulley 69 and is then directed downwardly to pass about a second pulley 70 mounted upon the upper free end of the plate 31 above the stirrup 33, and which chain connects at its lower end to a portion of the boom 23 between the upper section thereof and the rod 24. As the cam 61 lifts the arm 67 the chain 68 is brought up and with it the boom 23. Cam 60 is set to precede cam 61 so that just before the boom 23 is returned to upright position the switch chain 55 is drawn tight to rock plate 52 and allows dog 50 to engage notch 51. Continued movement of cam 60 allows lever arm 62 to drop, the chain 55 to be drawn down by spring 54 and the switch plate 47 to be tilted to its initial or horizontal position through the dog 50, thus breaking the circuit and bringing the motor to a standstill just as the cam 61 is in the position of holding the arm 67 in its raised position and through the chain 68 to keep the boom 23 in raised position.

The bucket 19 is manipulated by cams 71 and 72 adjacent opposite ends of the shaft 56. Cam 71 (left side) engages and depresses a lever arm 73 pivotally mounted at one end on a bracket 74 on the back panel, the free end of the arm 73 being connected to the upper end of cord 30 to open the jaws of the bucket 19. Arm 73 is yieldably held upwardly against cam 71 by a spring 75. Cam 72 (right side) engages a second lever arm 76 which is yieldably supported by a spring 77 and pivotally mounted on a bracket 78, and which is connected at its free end to the cord 29 to raise and lower the bucket 19. The high points of cams 60 and 61 are set so that both are depress-

ing their lever arms when the boom is in its inoperating and upright position. As soon as shaft 56 begins to rotate, lever arm 73 is allowed to rise and lever arm 76 is held depressed. Cam 72 then releases arm 76 allowing cord 29 to slacken and the bucket to fall into the bin. Cam 71 moves lever arm 73 to close the jaws. Cam 61 then moves against lever 67 to lift boom 23 and by the time it is raised, cam 60 has effected the release of the mercury switch 48. As soon as the boom is brought to upright position, cam 71 releases jaws of bucket 19 to discharge contents into the mouth of the chute 17. Cam 72 holds bucket up and the jaws remain open as soon as boom 23 swings outwardly over the bin. Both cams 71 and 72 are off levers 73 and 76, respectively, and then cam 71 and lever 73 draws cord 30 to close jaws followed by movement of cam 72 to release and allow lever 76 to drop and raise bucket. A weight 79 suspended from a chain 80 is arranged on each side of the back panel, the chains passing over pulleys 81 mounted on the panel and thence to the boom 23 where they are connected to a point substantially midway of its length. The weights 79 are used to aid in the lifting movement of the boom.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. In an article dispensing device com-

prising a boom carrying a grab bucket for taking articles from a store thereof and conveying them to a discharge chute, the arrangement of manually operated means for moving the boom and bucket to a selected part of the store and coin controlled automatically operating means for actuating the bucket to take a quantity of articles from the store and convey such quantity to the discharge chute, substantially as set forth.

2. In an article dispensing device as claimed in claim 1, the arrangement in which the coin controlled automatically operating means comprises a motor, a switch having a trigger projecting through a slot into a coin chute and a cam connection for breaking the switch connection when the device has performed one complete operation, substantially as set forth.

3. In an article dispensing device as claimed in claim 1, the arrangement in which the manually operated means for moving the boom comprises a shaft carrying an exteriorly accessible hand wheel at one of its ends and a pinion at its other end meshing with a gear wheel carrying a pitman connected to a rod on which the boom is mounted, substantially as set forth.

Dated this 23rd day of December, 1929.

PHILLIPSS,

Chartered Patent Agents,
70, Chancery Lane, London, W.C. 2,
For the Applicant.

[This Drawing is a reproduction of the Original on a reduced scale.]

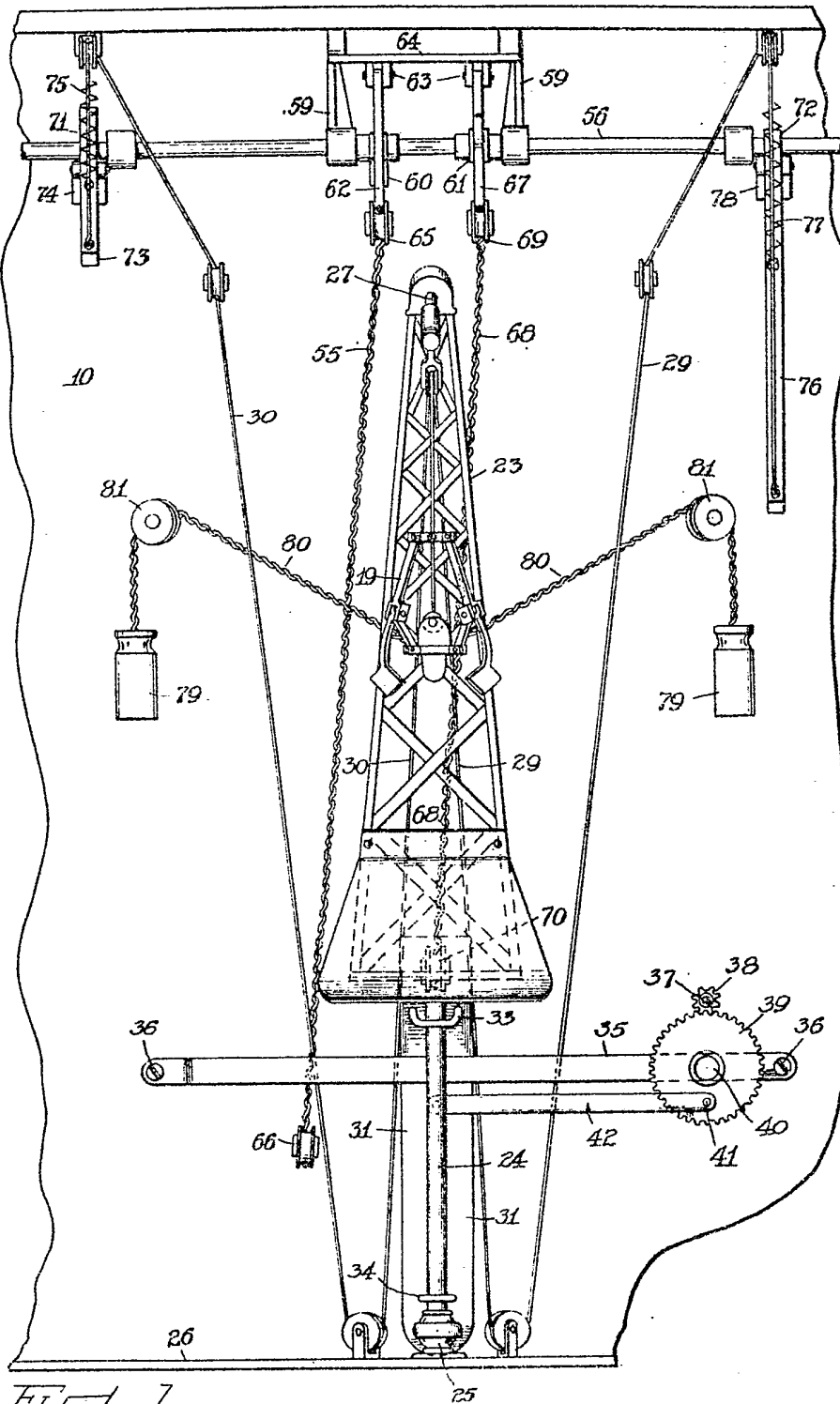
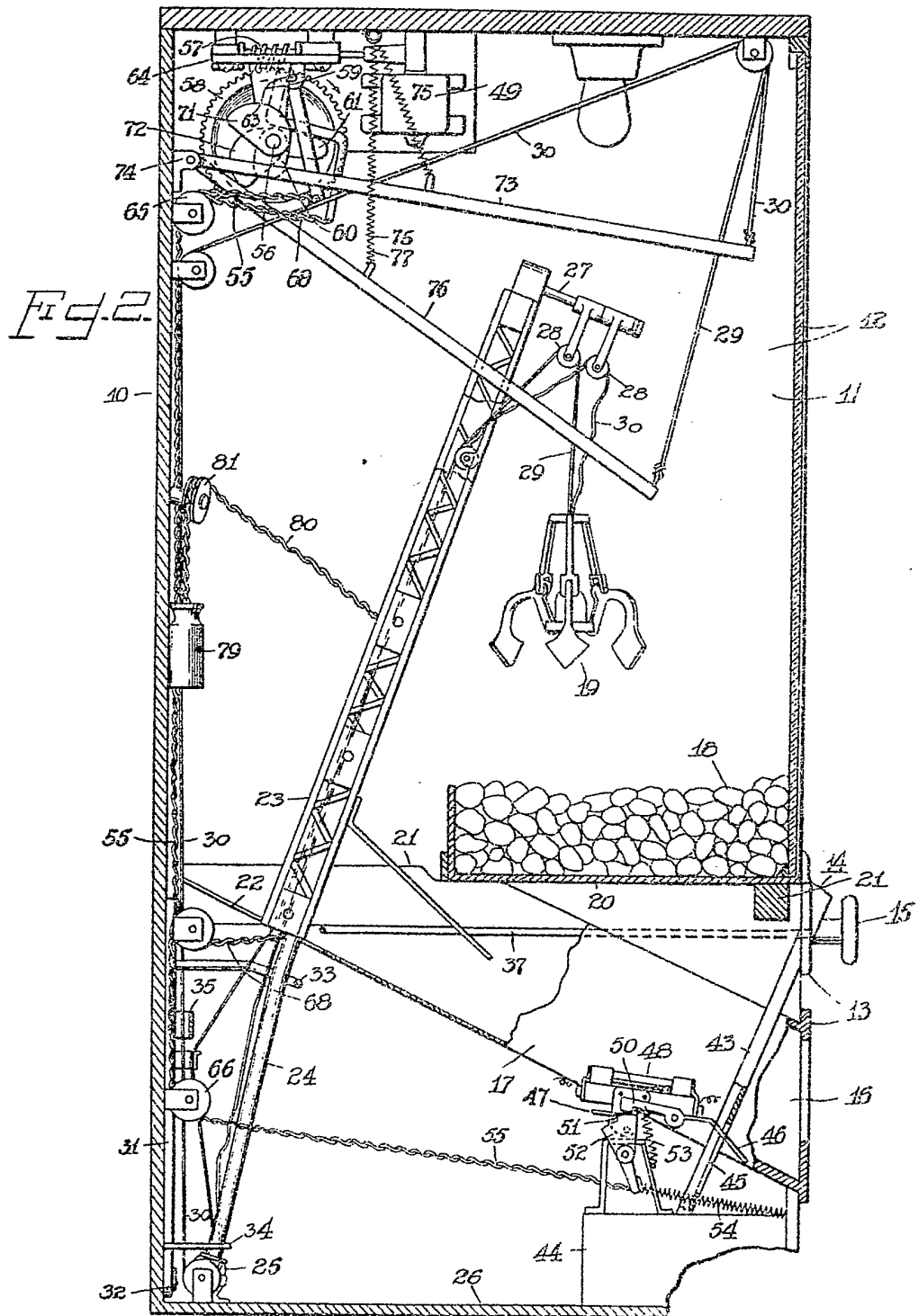
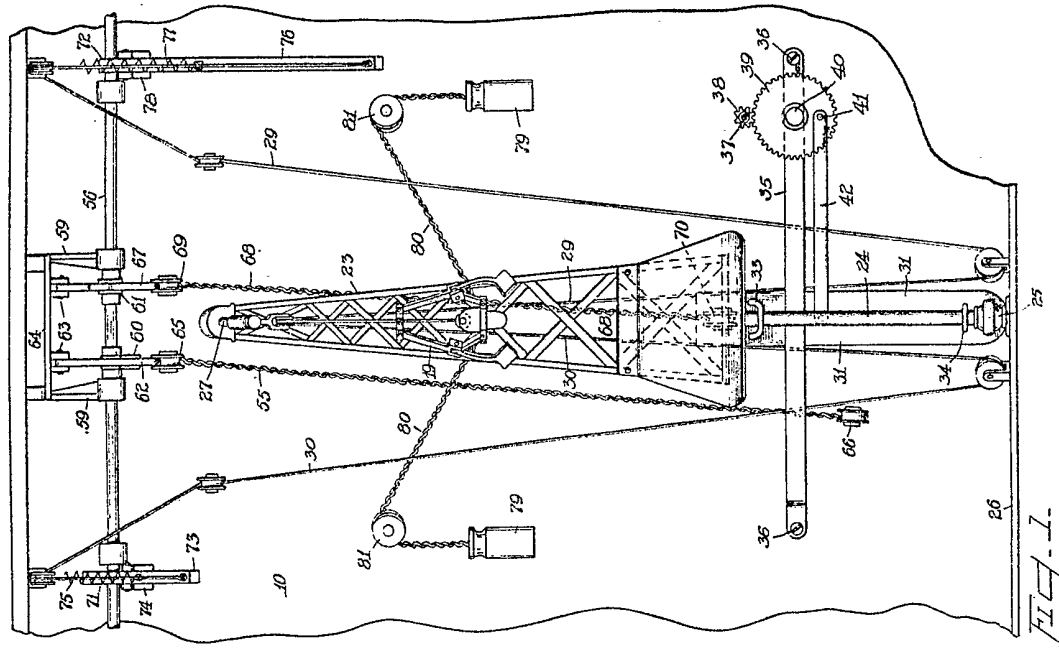


FIG. 1.

FIG





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