Feb. 4, 1964 M. I. GLASS ETAL 3,120,079

WHEELED FIGURE TOY WITH SOUNDING AND DISPENSING MEANS

Filed Oct. 9, 1961 4 Sheets-Sheet 1

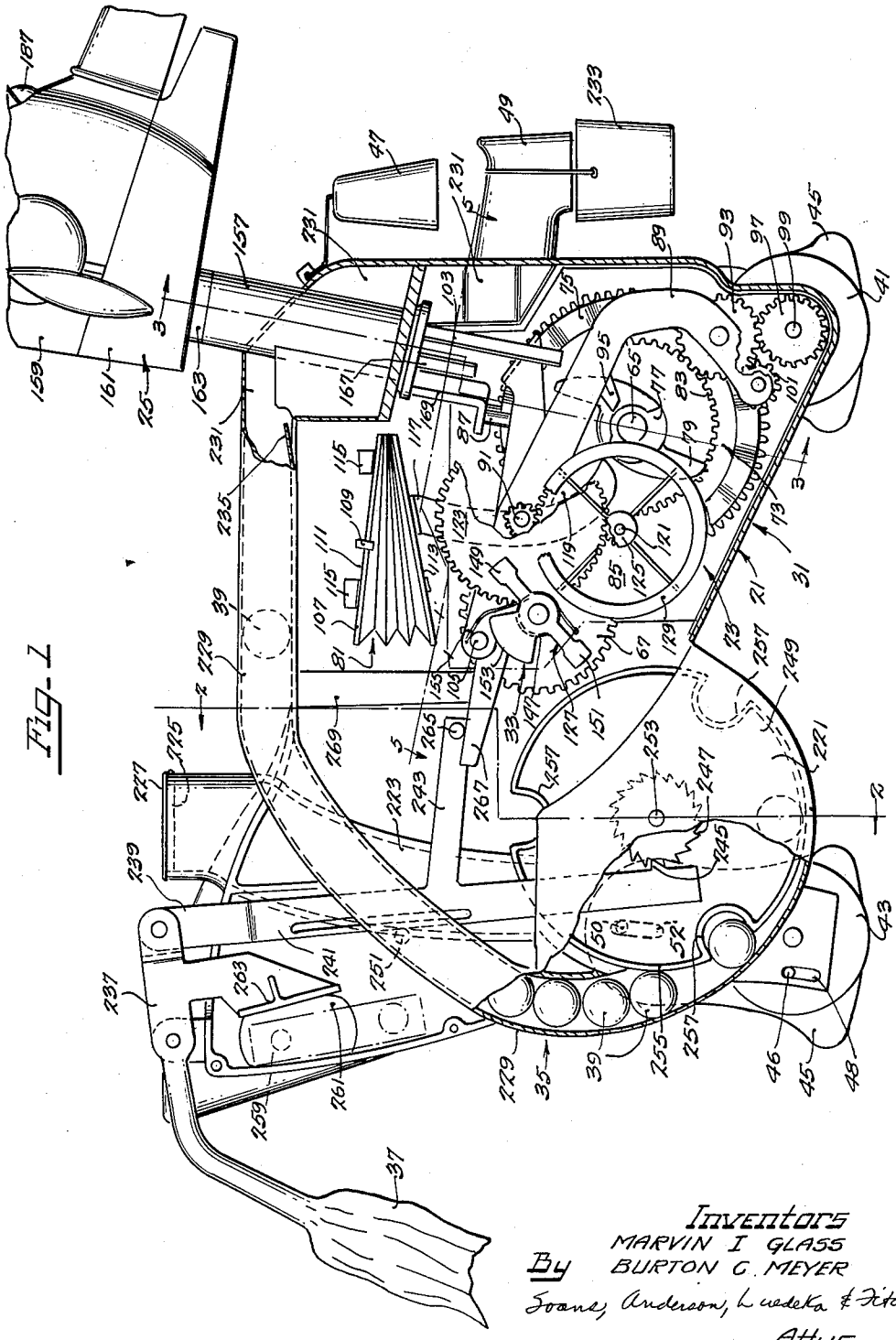

FIG. 1

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WHEELED FIGURE TOY WITH SOUNDING AND DISPENSING MEANS

Filed Oct. 9, 1961 4 Sheets-Sheet 2

Fig. 2

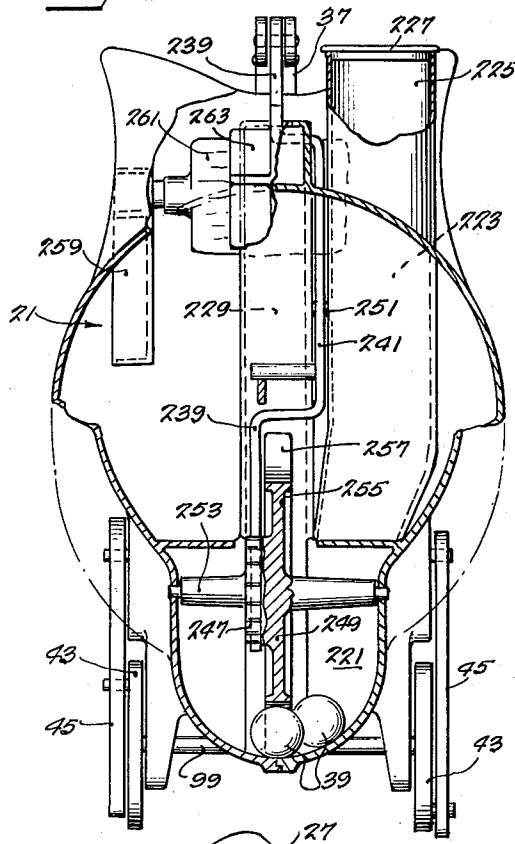


Fig. 3

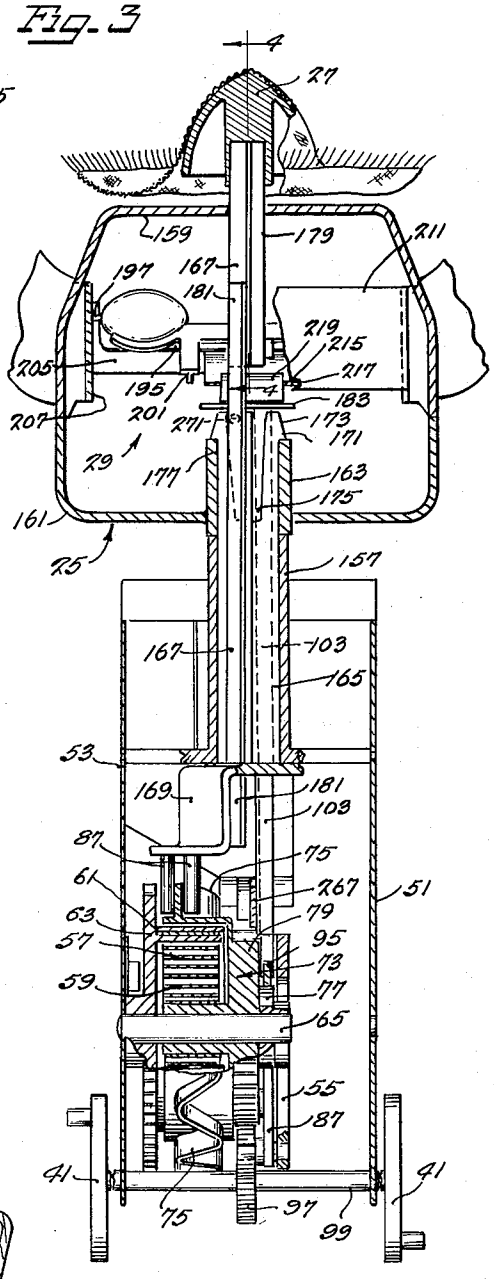
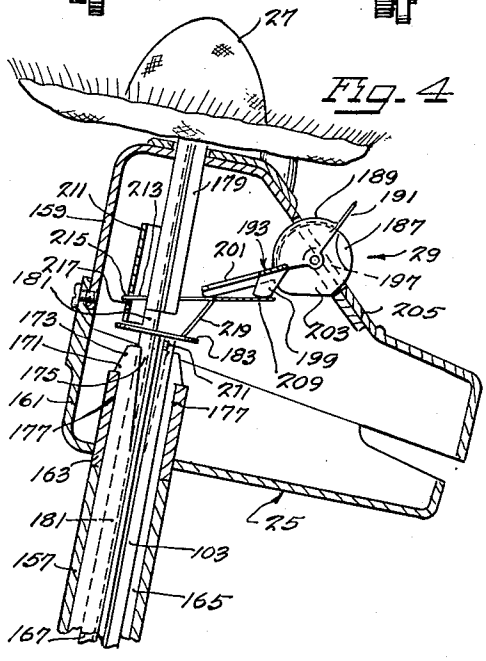


Fig. 4



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WHEELED FIGURE TOY WITH SOUNDING AND DISPENSING MEANS

Filed Oct. 9, 1961 4 Sheets-Sheet 3

Fig. 5

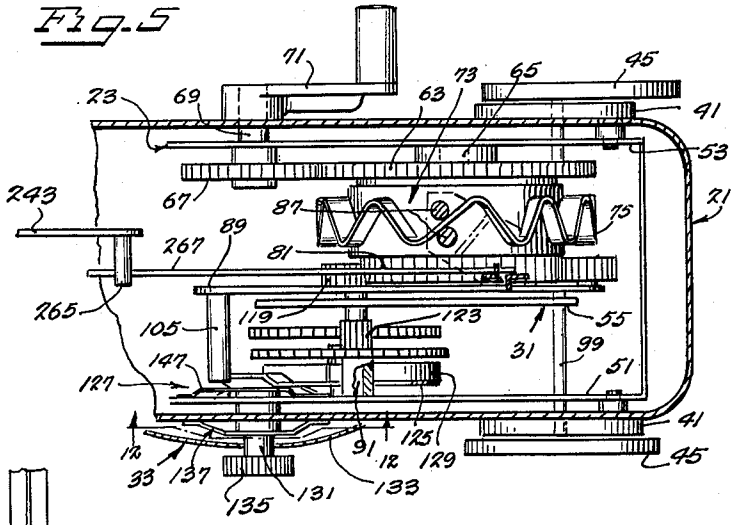


Fig. 6

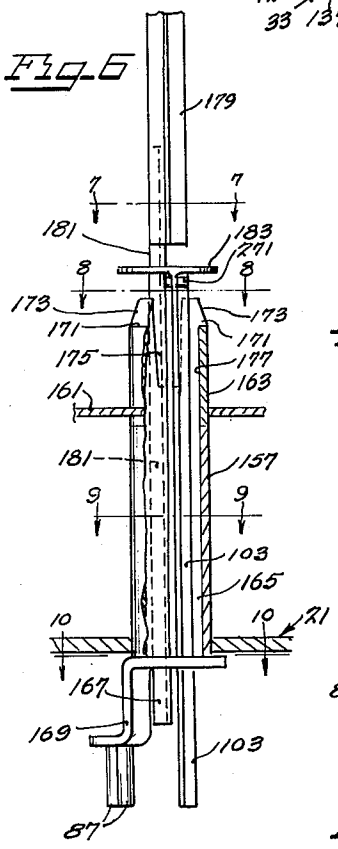


Fig. 7

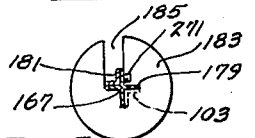


Fig. 8

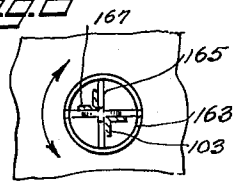
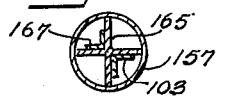


Fig. 9



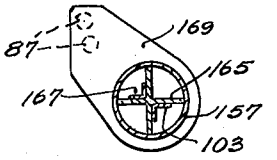


Fig. 10

Fig. 11

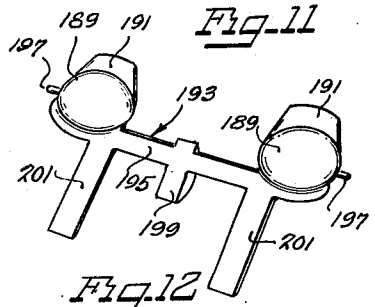
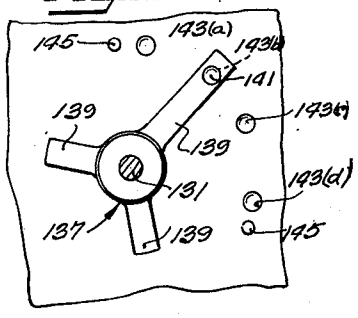


Fig. 12



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WHEELED FIGURE TOY WITH SOUNDING AND DISPENSING MEANS

Filed Oct. 9, 1961 4 Sheets-Sheet 4

Fig. 13

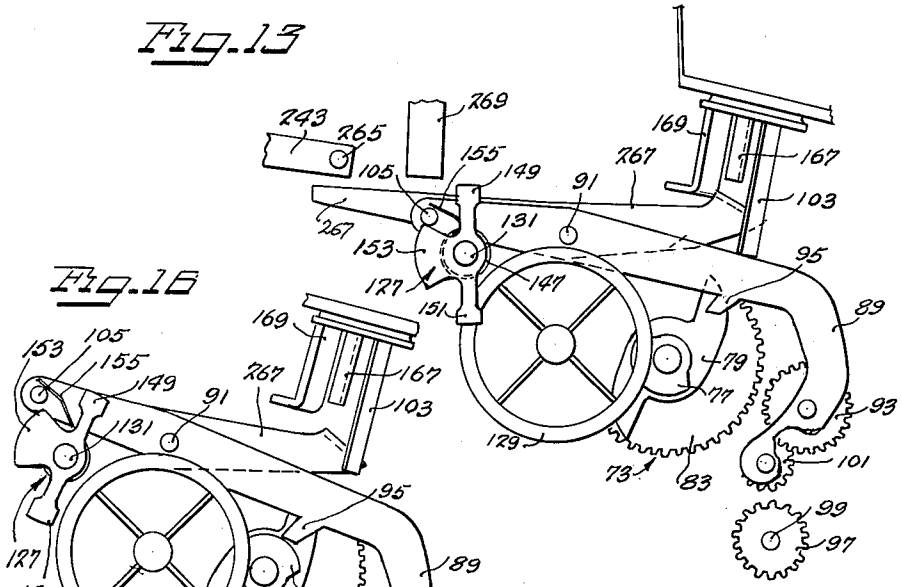


Fig. 16

Fig 14

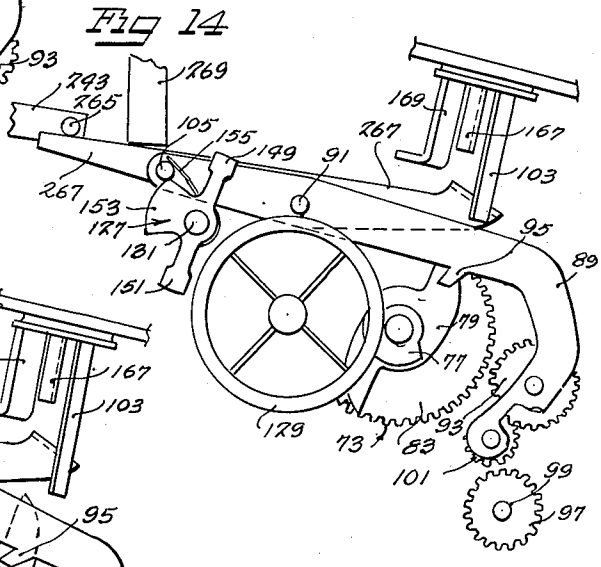
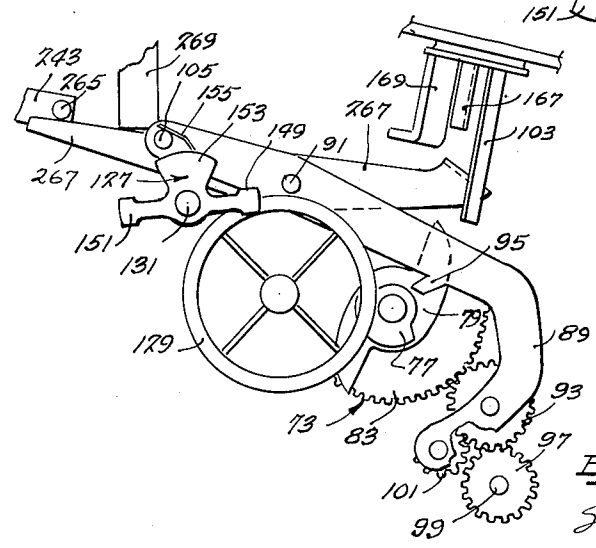


Fig. 15



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United States Patent Office 3,120,079 Patented Feb. 4, 1964

3,120,079

WHEELED FIGURE TOY WITH SOUNDING AND DISPENSING MEANS

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Filed Oct. 9, 1961, Ser. No. 143,940
9 Claims. (Cl. 46—98)

The invention relates generally to wheeled figure toys. More particularly, the invention relates to self-powered, wheeled figure toys with action features intended to simulate real-life activity, and/or to provide fanciful actions which are products of the imagination.

The principal object of the invention is the provision of a novel, wheeled figure toy which is self-powered and selectively operable to simulate various activities related to the figure. Another object of the invention is the provision of a wheeled figure toy of the type referred to above which is adapted to contain a supply of objects, such as gumballs, and which is operable, as desired, to discharge the objects from the figure.

Still other objects include the incorporation, in a toy of the type generally referred to above, of mechanisms for providing sound effects which will heighten the realism or fantasy of the activities of the toy figure. Another object of the invention is the provision of a toy figure including a head which is adapted for the performance of one or more action features controlled from the body and which can be manually swiveled relative to the body, as desired, without impairing the operability of the action features associated with the head.

Other objects and advantages of the disclosed invention will be apparent from the following description and the accompanying drawings of one embodiment of the invention in which:

FIGURE 1 is an elevational view, with various parts broken away and in section, of a toy which is in the form of a cow and which embodies various of the features of the invention. The selective action mechanism is shown in the "dance" condition for movement of the toy in the forward direction;

FIGURE 2 is a sectional view taken generally along line 2—2 of FIGURE 1;

FIGURE 3 is a sectional view, with certain parts omitted, taken generally along line 3—3 of FIGURE 1;

FIGURE 4 is a sectional view taken generally along line 4—4 of FIGURE 3;

FIGURE 5 is a sectional view taken generally along line 5—5 of FIGURE 1;

FIGURE 6 is an elevational view, with certain parts broken away and with certain parts omitted, of the neck portion of the toy figure and of the operating components extending through the neck portion;

FIGURE 7 is a sectional view taken along line 7—7 of FIGURE 6;

FIGURE 8 is a sectional view taken along line 8—8 of FIGURE 6;

FIGURE 9 is a sectional view taken along line 9—9 of FIGURE 6;

FIGURE 10 is a sectional view taken along line 10—10 of FIGURE 6;

FIGURE 11 is a perspective view of the eyelid piece incorporated in the head of the toy figure;

FIGURE 12 is an enlarged view taken generally along line 12—12 of FIGURE 5;

FIGURE 13 is a diagrammatic view of the selective action mechanism in the "sleep" condition;

FIGURE 14 is a diagrammatic view of the selective action mechanism in the "awake" condition;

FIGURE 15 is a diagrammatic view of the selective action mechanism in the "rest" condition; and

FIGURE 16 is a diagrammatic view of the selective action mechanism in the "dance" condition, the arrangement providing for rearward movement of the toy.

The wheeled figure toy illustrated in the drawings is in the form of a cow, but could be fabricated to resemble other creatures, fanciful and real. The toy comprises, basically, a body 21 which is carried on a supporting frame 23, a head 25 which is carried by the body, which supports a hat 27 (see FIGURES 3 and 4) and which includes an eye mechanism 29 adapted to open and close the eyes of the cow. Also included in the body is a selective action mechanism 31 (see FIGURE 1) which is controllable by a selector switch 33 (see FIGURE 5) to execute several different visual and audible activities, which, in the disclosed construction are associated with a cow.

The selector switch 33 is selectively operable to dispose the cow in any one of several conditions, i.e., "sleep," "awake," "dance," and "rest." When "dancing," the cow moves back and forth, the head swings from side to side, the eyes are open, and a "mooing" sound is periodically produced. When "awake," the cow does not move, however the head oscillates from side to side, the eyes are open, and the "mooing" sound is periodically produced. When at "rest," the cow is stationary, the head does not swing from side to side, and there is no "mooing" sound. However, the eyes remain open. When "sleeping," the eyes are closed and the other previously mentioned features are inactive. As will appear in more detail hereinafter, the construction of the toy also permits "free wheeling" movement of the toy on a supporting surface when the cow is in either "sleep" or "awake" conditions.

The toy also incorporates a related arrangement 35 (see FIGURE 1) for storing and discharging objects or pellets from the cow by means of a crank which, in the disclosed construction, takes the form of a tail 37 and is operable to discharge gumballs 39 from the cow. Each crank of the tail 37 also serves to raise the hat 27 resting on the top of the head 25, to produce a "tooting" sound effect, and to blink the eyes should the cow be in either of the "awake," "dance," or "rest" conditions.

In addition, the head 25 is rotatably mounted on the body 21 to permit positioning of the head at any desired orientation relative to the body, without interfering with the previously mentioned side to side head movement, opening and closing of the eyes, or raising and lowering of the hat.

As already mentioned, the body 21 is fabricated to simulate the appearance of a fanciful cow and is suitably supported by a forward pair of drive wheels 41 (see FIGURE 1) and by a rearward pair of wheels 43. Each of the wheels is substantially concealed by a leg member 45 which is pivotally connected to the body 21 and to the wheels so as to simulate walking action during movement of the cow.

More specifically, the pivotal connection of each leg member 45 to the associated wheel includes, as seen in FIGURE 1, an off-center stud 46 which projects from the wheel and is movable in a slot 48 in the leg member, which slot 48 has an effective operating length which is approximately equal to the radial distance of the stud 46 from the rotational axis of the wheel.

Projecting from the body 21 is an upper stud 50 which is received in an upper slot 52 in the leg member. The upper slot 52 is positioned and dimensioned such as to maintain the bottom of the leg member in closely adjacent relation to the surface supporting the cow during the lower half-circle of rotation of the stud 46. However, when the stud 46 travels through its upper half-circle of rotation, the stud 46 engages the top of the slot 48 to rock the leg member in the counterclockwise direction as seen in FIGURE 1, about the stud 50. As a result, the leg member is initially raised, then pivoted forwardly, and

then lowered to the surface supporting the toy. During the lower half-circle of rotation of the stud 45, the bottom of the leg member pivots rearwardly, i.e., in the clockwise direction about the stud 50, thereby moving rearwardly relative to the associated wheel, but does not noticeably move linearly relative to the surface supporting the toy. Accordingly, a very realistic simulated walking action is produced.

Also carried by the body is a spout 49 which constitutes a part of the object-discharge arrangement 35, and a bell 47 which sounds incident to travel of the toy.

The frame 23 constitutes basically, as seen best in FIGURES 3 and 5, a pair of side plates 51 and 53 which may be constructed of metal or plastic and which are jointed together by several cross braces (not shown). Also forming a part of the frame 23 is an intermediate plate 55 (see FIGURES 3 and 5) which is suitably supported between and parallel to the side plates 51 and 53. The selective action mechanism 31 is supported generally by the frame 23 and includes a power means or motor, the before mentioned selector switch 33 which extends in part, exteriorly of the body, and various linkages which are controlled by the selector switch, and in some cases, driven by the power means.

Although various means can be employed for powering or delivering energy to operate the movable components of the cow, in the disclosed construction, a spring powered motor 57 (see FIGURE 3) is employed. More particularly, the motor 57 includes a coiled main spring 59 which is connected at its outer end to a flange 61 extending inwardly from a gear 63 mounted on a cross shaft 65 journalled between the side plate 53 and the intermediate plate 55. In turn, the gear 63 is meshed with a second gear 67 (see FIGURE 5) mounted on a stud shaft 69 which is journalled by the side plate 53 and extends exteriorly of the body 21 for connection with a crank 71. Thus, rotation of the crank 71 serves to rotate the outer end of the main spring 59 so as to store energy therein.

At its other or inner end, the main spring 59 is attached to a combination cam and gear 73 (see FIGURE 3) which is rotatably supported by the cross shaft 65. The combination cam and gear 73 includes a series of three cams which operate, during release of energy from the motor, to control the side to side movement of the head, the backward and forward dancing movement of the cow, and the production of the "mooing" sound. In this regard, as seen in FIGURE 1, the combination cam and gear includes a first or serpentine ribbon cam 75 which effects side to side oscillation of the head 25, a second cam 77 which acts to effect alternate forward and rearward movement of the cow when the selector switch 33 is on "dance," and a third cam 79 which operates a mechanism 81 for producing the "mooing" noise effect. In addition, the combination cam and gear 73 also includes a gear portion 83 which is drivingly engageable with the forward drive wheels 41 and which forms a part of an escapement gear train through which release of energy from the main spring is controlled.

The serpentine or ribbon cam 75, as seen best in FIGURE 3, is engageable by a pair of spaced followers 87 which, during rotation of the combination cam and gear are oscillated back and forth to impart a corresponding movement to the head 25. The associated linkage for oscillating the head will be more fully described hereinafter.

Backward and forward dancing movement of the cow is effected by the cam 77 in cooperation with a lever arm 89 (see FIGURE 1) which is rockably mounted, intermediate its ends, on a cross shaft 91 extending between the side plate 51 and the intermediate plate 55. The lever arm 89 includes at its forward end, as seen in FIGURE 1, a gear 93 which, incident to rocking of the lever arm 89 by the selector switch 33, is engageable with the gear portion 83 of the combination cam and gear 73 to propel the cow along a supporting surface.

When the gear 93 is in engagement with the gear portion 83 of the combination cam and gear 73, the lever arm 89 is rockable by the cam 77 to control the direction of movement of the cow. More specifically, the lever arm 89 includes, intermediate its pivotal mounting and the gear 93, a tab or ear 95 which is engageable with the cam 77 so as to rock the lever arm 89 and the gear 93 from a first position of engagement with the gear portion 83 in which the cow moves forwardly, as shown in FIGURE 1, to a second position of engagement with the gear portion 83, as shown in FIGURE 16, in which the cow moves rearwardly. Still more specifically, when the lever arm 89 is in the first or forward-drive position, the gear 93 is meshed with a drive gear 97 on a shaft 99 which also carries the forward drive wheels 41. However, when the gear 93 is moved to the rearward drive-position, as seen in FIGURE 16, the gear 93 is disengaged from the drive gear 97, which drive gear is then driven through an idler pinion 101 which is rotatably mounted on the forward end of the lever arm 89 in meshed relation with the gear 93.

As will be explained more fully hereinafter, movement of the lever arm 89 also acts to effect opening and closing of the eyes. In this regard, the eye mechanism 29 is biased toward an open condition and is closed by a push rod 103 which is engageable by the upper edge of the lever arm 89 in its extreme counterclockwise position, as seen in FIGURE 13. At its rearward end, the lever arm 89 includes a post 105 which is engageable with the selector switch 33 to rockably position the lever arm.

The sound mechanism 81 which produces the "mooing" sound is contained in the body 21 above the selective action mechanism 31 and comprises a bellows 107 and a reed 109 which is operable on the inflow of air into the bellows to produce the "mooing" sound. The bellows 107 includes two hinged plates or boards 111 and 113 with the board 111 being supported by a pair of brackets 115 fixed to the body. The other board 113 includes a curved arm 117 which is engaged by the third cam 79 of the combination cam and gear 73 to swing the lower board 113 relative to the upper board 111, thereby providing the desired air flow.

Control of the release of energy from the main spring 59 is provided, in part, by the gear train 85 which includes the gear portion 83 of the combination cam and gear 73. In this regard, the gear part 83 is meshed with the pinion part of a first gear and pinion assembly 119 (see FIGURE 5) rotatably carried on a shaft 121 (see FIGURE 1) extending between the side plate 51 and the intermediate plate 55. In turn, the gear part of the gear and pinion assembly 119 is meshed with the pinion part of a second gear and pinion assembly 123 which is rotatably mounted on the cross shaft 91 extending between the side plate 51 and the intermediate plate 55. The gear part of the second gear and pinion assembly is meshed with the pinion part of a combination pinion and fly wheel assembly 125 which is mounted on the cross shaft 121 between the first gear and pinion assembly 119 and the side plate 51.

Release of energy from the main spring 59 through operation of the motor is controlled by a cam plate 127 (see FIGURE 1) which forms a part of the selector switch 33 and which is engageable with the fly wheel part 129 of the pinion and fly wheel assembly 125 to prevent rotation thereof, thereby halting release of energy from the coil spring 59.

The selector switch 33, as shown best in FIGURE 5, is mounted on the side of the cow opposite from the crank 71 and includes a shaft 131 which is journalled in the side plate 51 and in the adjacent outer wall of the body. Mounted on the exterior end of the shaft is a decorative cover shell 133 and a knob located outwardly of the cover shell. The knob 135 is selectively positionable to change

the activity of the cow and includes an indicating arm or pointer (not shown) which indicates the position of the selector switch by reference to "sleep," "awake," "dance," and "rest" markings (not shown) on the exterior of the cow.

The selector switch 33 is retainable in any of four operating positions by a detent member 137 which is fixedly carried on the shaft 131 between the cover shell 133 and the outer surface of the side wall of the body. The detent member, as shown in FIGURE 12, includes three approximately equiangular arms 139 one of which is relatively longer than the other and includes adjacent its outer end, a detent 141 which is receivable into any one of four cooperating sockets 143(*a*), 143(*b*), 143(*c*), and 143(*d*) in the side wall of the body. Each of the sockets 143 is associated with one of the "sleep," "awake," "dance," and "rest" activities of the cow. Also provided in the side wall of the body are a pair of projections or lugs 145 which prevent overtravel of the selector switch The detent member 137 is urged against the side wall of the body by a spring 147 (see FIGURE 5) which includes at least one compression coil located in surrounding relation to the shaft 131 intermediate the side plate 51 and the before mentioned cam plate 127.

More particularly, the cam plate 127 is fixed on the inner end of the selector switch shaft 131 and is engageable with the fly wheel part 129 to control release of energy from the motor. In this regard, the cam plate 127 includes, as seen best in FIGURE 1, a pair of oppositely directed arms 149 and 151 each of which can be engaged with the fly wheel part 129 to control the motor, and a central arcuate cam portion 153 engageable with the post 105 at the rearward end of the arm 89 to control opening and closing of the eyes in the head and movement of the cow.

Still more specifically, when the selector switch 33 and therefore the cam plate 127, are in the position shown in FIGURE 13, i.e., when the detent 141 is in socket 143(*a*) (see FIGURE 12), the cow is in the "sleep" condition. In this position of the selector switch 33, the arm 151 engages the fly wheel part 129 to prevent release of energy from the spring motor, thereby preventing side to side movement of the head and operation of the "mooing" sound mechanism 81. In addition, the lever arm 89 is positioned, by reason of engagement of the post 105 with the side of the central cam portion 153, so that the eye push rod 103 is engaged and elevated by the lever arm to close the eyes, and so that the gear 93 is held out of engagement with the gear portion 83 of the combination cam and gear 73.

When the selector switch 33 is rotated about 30 degrees in the clockwise direction as seen in FIGURES 1, and 13 through 16, to seat the detent 141 in the second socket 143(*b*), (see FIGURE 14), the cow is "awake." This rotation of the selector switch, as seen in FIGURE 14, disengages the arm 151 from the fly wheel part 129 permitting release of energy from the spring motor. Thus, the combination cam and gear 73 is rotated, thereby driving the head 25 from side to side and causing production of the "mooing" sound. At the same time, movement of the central cam portion 153 relative to the post 105 permits sufficient clockwise movement of the lever arm 89, as seen in FIGURE 14, to permit lowering of the eye push rod 103, thereby opening the eyes. However, the clockwise movement of the lever arm 89 is insufficient to engage the gear 93 with the gear portion 83 of the combination cam and gear 73 so as to propel the cow. As a result of the disengagement of the gear 93 from the gear portion 83 of the combination cam and gear 73 when the cow is in the "sleep" and "awake" conditions, the toy may be wheeled freely on a supporting surface.

When the selector switch is rotated a further 30 degrees in the clockwise direction to seat the detent 141 in the socket 143(*c*) (see FIGURE 12), the selective action mechanism 31 is in the "dance" position as shown in FIGURES 1 and 16. In this condition, the spring motor continues to run as both cam arms 149 and 151 are clear of the fly wheel part 129. Therefore, the side to side head movement and the production of the "mooing" sound are continued. However, this further rotation of the camming plate 127 relative to the post 105, permits clockwise rocking of the lever arm 89 to effect engagement of the gear 93 with the gear portion 83 of the combination cam and gear 73 and to effect engagement of the ear 95 with the second cam 77 of the combination cam and gear 73. As already explained, this cam operates to cause alternate forward movement (see the arrangement shown in FIGURE 1) and rearward movement (see the arrangement shown in FIGURE 16) of the cow.

Finally when the selector switch 33 is moved another 30 degrees to seat the detent 141 in the socket 143(*d*) (see FIGURE 12), the cow is at "rest." In this condition, as shown in FIGURE 15, the other cam arm 149 engages the fly wheel part 129 to halt release of energy from the spring motor. This action discontinues the side to side movement of the head 25, the operation of the sound means 81 which produces the "mooing" effect, and movement of the cow along the supporting surface. However, because the forward end of the lever arm 89 is still in a depressed position, the eyes of the cow remain open. Because the spring motor is halted and in view of the engagement of the gear 93 between the drive gear 97 and the gear portion 83 of the combination cam and gear 73, the drive wheels 41 are locked and the toy is not free wheeling on a supporting surface.

When the selector switch 33 is turned to the counterclockwise direction from the "dance" to the "awake" positions, the previously mentioned spring 147 (see FIGURE 5) serves to depress the rearward end of the lever arm 89 thereby rocking the lever arm in a counterclockwise direction to insure disengagement of the gear 93 from the gear portion 83 of the combination cam and gear 73. More specifically, the spring 147 also includes a leg 155, as seen best in FIGURE 1, which extends from the compression coil and is positioned for engagement with the upper edge of the post 105 on the rearward end of the lever arm 89, so as to bias the post for continued engagement with the edge of the central cam portion 153 of the cam plate 127.

As already mentioned, the head 25 is movable back and forth through an angular range determined by the serpentine ribbon cam 75 on the combination cam and gear 73 and the eye mechanism 29 is biased open by gravity. In addition, the head 25 can be freely swung about its connection with the body 21 to any angular position relative to the body and to the hat 27 on the head of the cow. In addition, the hat 27 is elevated as an incident to gum-ball discharging operation. More specifically, as shown in FIGURES 3 and 4, the head 25 is rotatably mounted on the top of a neck section 157 in the form of a tube which extends fixedly upwardly from the body. The head 25 is formed of upper and lower members 159 and 161 which are suitably attached to each other and which support a pair of ears and a pair of horns. Extending from the lower head member 161 is a sleeve 163 which rests on, and in axial alignment with, the neck section 157.

Extending within the neck section 157 and sleeve 163 are various linkages by which the various activities associated with the head are produced. These linkages include an elongated shaft 165 (see FIGURES 3, 4, and 6) which, in the disclosed construction, is cruciform in cross section and is constructed to afford connection of the head 25 to the neck section 157 to impart the before mentioned side to side head motion, and at the same time, to permit the head to be freely swung to any position about the axis of the neck section 157. Also included are the before mentioned elongated eye push rod 103 and an

elongated hat push rod 167, each of which extends within a separate one of the open quadrants of the cruciform shaft 165.

More specifically, the cruciform shaft 165 has a diameter which corresponds generally to the inner diameter of the neck section 157 and to the inner diameter of the sleeve 163 extending from the bottom of the lower head member 161. At its lower end, the cruciform shaft 165 has formed thereon a bracket 169 which, in turn, supports the two studs which serve as the followers 87 to the ribbon cam 75 of the combination cam and gear 73.

At its upper end, each of the arms or wings of the cruciform shaft 165 includes an outwardly extending hook 171 having an upwardly and inwardly inclined camming surface 173. The central portion of the upper end of the cruciform shaft is relieved, as indicated at 175 in FIGURES 3, 4, and 6, to facilitate inward displacement of the hooks 171, so as to permit passage of the cruciform shaft 165 through the neck section 157 and through the sleeve 163 extending from the lower head member 161.

In assembly, when the upper end of the cruciform shaft 165 is passed out the upper end of the sleeve 163, the hooks 171 move radially outwardly engaging the upper edge of the sleeve 163 and preventing disassembly of the head 25 from the body 21. Radially outward movement of the hooked upper end portions of the cruciform shaft 165 also serves to bring the edge portions 177 of the wings at the upper end of the cruciform shaft 165 into frictional engagement with the sleeve 163. The resulting frictional engagement is sufficient to effect side to side angular movement of the head corresponding to the angular movement of the cruciform shaft, while at the same time, permits the head to be manually rotated about the cruciform shaft 165 to any angle relative to the body.

The hat push rod 167 which extends through the neck section 157 and sleeve 163 includes an upper element 179 which, in the disclosed construction, is cross-shape in cross-section and is fixed to the hat 27 which normally rests on the top of the cow's head 25. The upper element 179 extends downwardly through the head and, at a point above the top of the cruciform shaft 165, is connected to a second or lower element 181 of L-shaped formation which passes into the sleeve 163 and neck section 157. The lower end of the second element 181 terminates in position for operation in connection with the gumball discharging feature of the invention.

The eye push rod 103 is also of L-shaped formation, including, at its upper end, a disc 183 which normally rests on the top of the cruciform shaft 165. The disc 183 includes a notch 185 (see FIGURE 7) which permits passage of the lower element 181 of the hat push rod 167. At its lower end, the eye push rod terminates in position for operational engagement by the upper edge of the lever arm 89 of the selective action mechanism 31.

The eye mechanism 29 is mounted in the upper head member 159 and includes a pair of eyeballs 187 (see FIGURE 4) formed on the upper head member 159 and a pair of eyelids 189 which are movable through apertures in the upper head member and over the eyeballs 187 to close the eyes. More specifically, the eyelids 189 are each curved to permit covering movement relative to the eyeballs and include, at their lower edges, simulated eyelashes 191.

The eyelids 189 form part of an irregular shaped piece 193 which is pivotally supported at the sides of the head. In this regard, the eyelid piece 193, as shown in FIGURE 11, includes a cross-bar 195 which, at each end, has a pivot pin 197. Extending rearwardly of the cross-bar 195 with respect to the eyeballs 187 is a central arm or projection 199 which is engageable to pivot the eyelid piece 193 to the eyeball covering or closed position, and a pair of spaced arms 201 which, when the eyelid piece 193 is assembled on the upper head member 159, overbalances the eyelid piece 193 for rotation in the counterclockwise direction, as seen in FIGURE 4, i.e., to the eyeball exposing or open position. The arms 201 also serve to establish the limiting rotative positions of the eyelid piece 193 by engaging, when the eyes are closed, the upper inner surface of the upper head member 159 and, when the eyes are open, by engaging a pair of supports 203. In this last regard, the supports 203 are projections extending from a retaining yoke 205 which extends transversely of the upper head member 159 and includes, at each end, as seen in FIGURE 3, a retaining wing or plate 207. Each plate 207 is secured to the upper head member 159 to hold the retaining yoke 205 in place and includes an edge which bears tangentially against the adjacent pivot pin 197 of the eyelid piece 193 to retain the pivot pin in a three-sided pocket formed in the inner wall surface of the upper head member 159.

The eyelids 189 are moved into covering relation to the eyeballs 187 through engagement of the central arm 199 by an actuator 209 (see FIGURE 4) which, in turn, is controlled by the eye push rod 103. More specifically, the actuator 209 is a generally horizontal, transversely extending member which is pivotally supported by a vertically disposed cross member 211 extending between the sides of the upper head member 159 rearwardly of the hat push rod 167. Still more specifically, the actuator 209 includes rearwardly extending fork members 213 which straddle the hat push rod 167 and include, at their rearward ends, tabs 215 which are inserted in a pair of slots or sockets 217 in the cross member 211 to provide for pivotal movement of the actuator 209 about a horizontal axis. Forwardly of the hat push rod 167 the actuator 209 extends into position for engaging the control arm 199 to pivot the eyelid piece 193 in a clockwise direction, i.e., to its closed position, incident to counterclockwise rocking of the actuator 209. The actuator 209 also includes a downwardly extending leg 219 which engages and rests upon the disc 183 at the top of the eye push rod 103, so that, incident to elevation of the eye push rod 103, the actuator 209 can be rocked counterclockwise. In this last regard, the circular shape of the disc 183 affords retention of the engagement with the actuator leg 219 so as to facilitate operation of the eye mechanism 29, regardless of the orientation of the head 25 relative to the body 21.

When the cow is in either of its "awake," "dancing," or "rest" conditions, the eye push rod disc 183 rests on the top of the cruciform shaft 165. However, when the selector switch 33 is turned to "sleep," the eye push rod 103 is elevated, as already explained, thereby rocking the actuator 209 counterclockwise which, in turn, rocks the eyelid piece 193 to its closed position. The width of the lower free end of the leg 219 is sufficiently larger than the width of the notch 185 (see FIGURE 7) in the disc 183 so that the eye mechanism 29 is operable regardless of the orientation of the head relative to the body.

The gumball dispensing feature of the disclosed cow is operable incident to pumping or cranking of the cow's tail 37. Of course, as already mentioned, other kinds and types of objects other than the gumballs 39 can be dispensed. As will be explained, each pumping operation also serves to provide a "tooting" noise effect, to momentarily elevate the hat 27 from the cow's head 25, and if the cow is in either the "awake," "dance," or "rest" condition to momentarily blink the eyes.

The body 21 of the cow includes a transparent udder 221 (see FIGURE 1) which serves as a reservoir or storage chamber for the gumballs 39. The udder 221 can be filled with gumballs through a supply chute 223 which extends through the opaque hind-quarter of the body and leads to a supply port 225 covered by a removable closure or hatch 227. The gumballs 39 are delivered from the udder 221 through a transparent tube 229 which extends upwardly from the rear of the udder through the opaque hind-quarter of the body. The tube 229 comes into view and runs along the top of the back of the cow, emptying into a circuitous passage 231 around the neck section 157

and in front of the selective operation mechanism 31, which passage 231 connects with the spout 49 extending from the front of the body 21. Removably carried by the spout 49 is a bucket 233 for receiving a gumball discharged from the cow. At the point where the delivery tube 229 empties into the passageway 231, there is an upward incline 235 in the floor of the tube, which incline 235 constitutes a spring detent and is provided by a tab or ear which resiliently projects upwardly relative to the floor of the tube to prevent passage of the gumballs in the absence of a force sufficient to flex the tab downwardly into alignment with the remainder of the floor of the tube.

Such a force is provided by the cranking or pumping of the cow's tail 37. The tail constitutes a lever which is pivotally mounted, intermediate its ends, between a pair of upstanding brackets 237 on the rear of the body. Connected pivotally to the forward end of the tail 37 is a generally vertically extending push bar 239 which incorporates a central off-set portion 241 affording passage of the push rod 239 past the gumball delivery tube 229. Extending from the off-set portion 241 is an arm 243 which, as will be later explained, serves to operate the hat elevating and eye blinking features. At its lower end, the push bar 239 includes a tooth segment 245 which is operable, each each time the tail 47 is pumped downwardly, i.e., rocked in the counterclockwise direction, to engage a ratchet 247 so as to rotate a feeding wheel 249 in the clockwise direction, as seen in FIGURE 1. The push bar 239 is retained in position for engagement of the tooth segment 245 with the ratchet 247 by a stud 251 which engages the rear edge of the push bar 239.

As seen best in FIGURE 2, the ratchet 247 is formed on a cross shaft 253 which is journalled in the side walls of the udder 221 and which also carries the feeding wheel 249. Incorporated in the feeding wheel 249 is a peripheral flange 255 in which there are formed three spaced pockets 257, each adapted for containing a gumball. Of course, the number of pockets 257 in the periphery of the feeding wheel 249 may be varied as desired. The feeding wheel 249 is so located, in relation to the side walls of the udder 221 and the entrance into the delivery tube 229, and the transition between the side wall of the udder 221 and the delivery tube 229 is so shaped that a gumball located in one of the pockets 257 will be discharged from the feeding wheel 249 into the delivery tube 229 incident to clockwise rotation of the feeding wheel as shown in FIGURE 1.

In the disclosed arrangement, several pumps on the tail 37 are required to lift one gumball into the delivery tube 229. If the delivery tube has been previously filled with gumballs, sufficient force is transmitted from one gumball to another, incident to delivery of a gumball into the delivery tube, to discharge a gumball up the incline or spring detent 235 at the end of the delivery tube 229 for travel through the passageway 231 and out the spout 49. Except during delivery of a gumball to the delivery tube 229 the peripheral flange 255 of the feeding wheel 249 serves to close off the lower end of the delivery tube, thereby preventing return travel of the gumballs from the delivery tube 229 to the udder 221.

The "tooting" sound effect, produced as an incident to pumping of the tail 37, is produced by a whistle 259 which, as seen in FIGURE 1, is located in the rear of the body 21. More specifically, the "tooting" sound is produced by a flow of air from a resiliently compressible bulb 261 which is collapsible by a paddle 263 extending from the tail 37. The paddle 263 is arranged so as to compress the bulb 261 each time the tail 37 is rocked clockwise, as seen in FIGURE 1.

As before mentioned, the hat raising and eye blinking features accompanying pumping of the tail 37 are operated by the arm 243 which extends forwardly of the push bar 239. In this regard, the outer end of the arm 243 includes a stud 265 engageable with the rearward end of a lever 267 which is rockably carried on the cross shaft 91 in the selective action mechanism 31. The forward end of the lever 267 is heavier than the rearward end so as to bias the lever for rotation in the clockwise direction as seen in FIGURE 1. Movement of the lever 267 in the clockwise direction is limited by engagement of its upper edge with a stop 269 (see FIGURE 13), projecting from the body. The lever 267 is rocked in the counterclockwise direction to liftingly engage its forward end with the lower end of the hat push rod 167, incident to downward movement of the push bar 239, which results from clockwise rocking of the tail 37. As already mentioned, when the hat push rod 167 is elevated, the hat 27 is correspondingly elevated from the head 25 of the cow.

If the cow happens to be in either of the "rest," "dance," or "awake" conditions when the tail 37 is pumped, the eyes are blinked. In this connection, the hat push rod 167 includes, as seen best in FIGURES 6 and 7, a tab 271 which engages the underside of the disc 183, thereby raising the eye push rod 103 sufficiently to cause movement of the eyelid piece 193 to its eyeball covering position, in the manner previously explained. Of course, when the tail 37 is rocked counterclockwise to its normal lowered position, the hat 27 is replaced on the head 25 and the eyeballs are exposed to view if the cow is not "asleep."

The disclosed toy will provide many hours of amusing entertainment for a child. As explained, the cow is selectively operable by the mechanism 31 to perform several action features. The cow also incorporates a gumball discharging feature which, in addition to dispensing gumballs, is also operable to actuate related action features, including the eye mechanism 29 which is additionally controllable by the selective action mechanism 31. As a result, there is provided a mechanically integrated and exceptionally attractive toy.

Various of the features of the invention are set forth in the appended claims.

What is claimed is:

1. An animated toy simulating a cow, said toy comprising a frame simulating a body, power means on said frame, head-simulating means carried on said frame, said head-simulating means being connected to said power means for moving said head-simulating means continuously from side to side incident to operation of said power means, wheel means on said frame for supporting said toy on a supporting surface and for propelling said toy, said wheel means being drivingly connectable to said power means, eye-simulating means on said head-simulating means, said eye-simulating means being positionable in either a first open position and a second closed position, and means operable selectively to control operation of said power means, to connect said wheel means to said power means, and to effect positioning of said eye-simulating means in either of said first and second positions.

2. An animated toy comprising a frame, first means on said frame positionable in either of a first position simulating one activity of said toy and a second position simulating a second activity of said toy, power means on said frame, a second means carried on said frame for continuous movement to simulate a third activity of said toy, said second means being drivingly connected to said power means to cause continuous movement thereof, third means on said frame for supporting said toy on a supporting surface and for moving said toy along the supporting surface, said third means being drivingly connectable to said power means, and means selectively positionable in any of four positions and being operable, when in a first position to effect positioning of said first means in said first position and to prevent operation of said power means thereby preventing movement of said second means and preventing movement of said toy along the supporting surface, when in a second position to effect positioning of said first means in said second position and to prevent operation of said power means thereby preventing movement of said

second means and preventing movement of said toy along the supporting surface, when in a third position to effect positioning of said first means in said second position, to permit operation of said power means so as to cause continuous movement of said second means, and to retain said third means disconnected from said power means to prevent movement of said toy along the supporting surface, and when in a fourth position to effect positioning of said first means in said second position, to permit operation of said power means, and to connect said third means to said power means so as to cause movement of said toy along the supporting surface.

3. An animated toy simulating a cow, said toy comprising a frame simulating a body, power means on said frame, head-simulating means carried on said frame, said head-simulating means being connected to said power means for moving said head-simulating means continuously from side to side incident to operation of said power means, wheel means on said frame for supporting said toy on a supporting surface and for moving said toy along the supporting surface, said wheel means being drivingly connectable to said power means, eye-simulating means on said head-simulating means, said eye-simulating means being positionable in either of a first open position and a second closed position, and control means selectively positionable in any of four positions and being operable, when in a first position to effect positioning of said eye-simulating means in said closed position and to prevent operation of said power means thereby preventing movement of said head-simulating means and preventing movement of said toy along the supporting surface, when in a second position to effect positioning of said eye-simulating means in said open position and to prevent operation of said power means thereby preventing movement of said head-simulating means and preventing movement of said toy along the supporting surface, when in a third position to effect positioning of said eye-simulating means in said open position, to permit operation of said power means so as to cause continuous side to side movement of said head-simulating means, and to retain said wheel means disconnected from said power means to prevent movement of said toy along the supporting surface, and when in a fourth position to effect positioning of said eye-simulating means in said open position, to permit operation of said power means so as to cause continuous side to side movement of said head-simulating means, and to connect said wheel means to said power means so as to cause movement of said toy along the supporting surface.

4. An animated toy comprising a frame, first means on said frame positionable in either of a first position simulating one activity of said toy and a second position simulating a second activity of said toy, power means on said frame, a second means carried on said frame and connected to said power means for continuous movement to simulate a third activity of said toy, wheel means on said frame for supporting said toy on a supporting surface and for propelling said toy when drivingly connected to said power means, means on said frame for releasably connecting said wheel means to said power means, means on said frame driven by said power means and engageable with said connecting means for periodically altering the direction of movement of said toy along the supporting surface, and means operable selectively to effect positioning of said first means in either of said first and second positions, to control operation of said power means, and to dispose said connecting means so as to drivingly connect said wheel means to said power means.

5. An animated toy comprising a frame, first means on said frame positionable in either of a first position simulating one activity of said toy and a second position simulating a second activity of said toy, power means on said frame, second means carried on said frame for continuous movement to simulate a third activity of said toy, said second means being drivingly connected to said power means to cause continuous movement thereof, third means carried on said frame for producing a sound effect, said third means being drivingly connected to said power means for periodic operation thereof, wheel means on said frame for supporting said toy on a supporting surface and for moving said toy along the supporting surface, said toy supporting and moving means being drivingly connectable to said power means, means on said frame for engaging said power means so as to releasably connect said wheel means to said power means, means on said frame driven by said power means and engageable with said connecting means for periodically reversing the direction of movement of said toy along the supporting surface, and control means selectively positionable in any of four positions and being operable, when in a first position to effect positioning of said first means in said first position and to prevent operation of said power means thereby preventing movement of said second means, operation of said third means, and movement of said toy along the supporting surface, when in a second position to effect positioning of said first means in said second position and to prevent operation of said power means thereby preventing movement of said second means, operation of said third means, and movement of said toy along the supporting surface, when in a third position to effect positioning of said first means in said second position, to permit operation of said power means so as to cause continuous movement of said second means and operation of said third means, and to dispose said connecting means out of engagement with said power means to prevent movement of said toy along the supporting surface, and when in a fourth position to effect positioning of said first means in said second position, to permit operation of said power means so as to cause continuous movement of said second means and operation of said third means and to dispose said connecting means in engagement with said power means so as to cause movement of said toy along the supporting surface.

6. Animated wheeled toy comprising a body simulating a cow, a head on said body, a hat on said head, a reservoir in said body for containing objects, a passageway leading from said reservoir to the exterior of said body, means including an operating lever for delivering objects from said reservoir and through said passageway, and means for elevating said hat relative to said head incident to operation of said lever.

7. An animated wheeled toy comprising a body simulating a cow, a head on said body, said head including an eyeball and an eyelid, said eyelid being movable relative to said eyeball between a first position covering said eyeball and a second position exposing said eyeball to view, said eyelid being biased toward said second position, a hat on said head, a reservoir in said body for containing objects, a passageway leading from said reservoir to the exterior of said body, means including an operating lever for delivering objects from said reservoir and through said passageway, and means for moving said eyelid to said first position and for elevating said hat relative to said head incident to operation of said lever.

8. An animated wheeled toy comprising a body simulating a cow, a head on said body, said head including an eyeball and an eyelid, said eyelid being movable relative to said eyeball between a first position covering said eyeball and a second position exposing said eyeball to view, said eyelid being biased toward said second position, a hat on said head, means on said body for providing a sound effect, a reservoir in said body for containing objects, a passageway leading from said reservoir to the exterior of said body, means including an operating lever for delivering objects from said reservoir and through said passageway, and means for moving said eyelid to said first position, for elevating said hat relative to said head, and for operating said sound producing means incident to operation of said lever.

9. An animated toy simulating a cow, said toy com-

prising a frame simulating a body, power means on said frame, wheel means on said frame for supporting said toy on a supporting surface and for moving said toy along a supporting surface, means on said frame for selectively connecting the wheel means to said power means, a link adapted for supporting a head, said link being carried by said frame for oscillation relative thereto and being connected with said power means so as to cause oscillation thereof incident to operation of said power means, head-simulating means carried by said link, said head-simulating means being connected with said link to provide for accompanying side to side movement of said head-simulating means in response to oscillation of said link, while permitting independent rotative positioning of said head relative to said frame, an eye mechanism in said head-simulating means, said eye mechanism including an eyeball and an eyelid movable relative to said eyeball between a first position covering said eyeball and a second position exposing said eyeball to view, said eyelid being biased toward said eyeball-exposing position, control means selectively positionable in any of four positions and being operable, regardless of the orientation of said head-simulating means relative to said frame, when in a first position to effect positioning of said eyelid in said eye-ball covering position and to prevent operation of said power means thereby preventing movement of said head-simulating means and preventing movement of said toy along the supporting surface, when in a second position to permit movement of said eyelid to said eyeball-exposing position and to prevent operation of said power means thereby preventing movement of said head-simulating means and preventing movement of said toy along the supporting surface, when in a third position to permit movement of said eyelid to said eyeball-exposing position, to permit operation of said power means so as to cause continuous side to side movement of said head-simulating means, and to retain said wheel means disconnected from said power means to prevent movement of said toy along the supporting surface, and when in a fourth position to permit movement of said eyelid to said eyeball-exposing position, to permit operation of said power means so as to cause continuous side to side movement of said head-simulating means, and to connect said wheel means to said power means so as to cause movement of said toy along the supporting surface, a hat on said head-simulating means, a reservoir on said frame, means defining a passageway on said frame connecting said reservoir with an exterior portion of the body, means including an operating lever extending exteriorly of said frame for delivering objects from said reservoir and through said passageway, and means connectable with said lever and operable incident to operation of said lever for raising said hat relative to said head-simulating means and for positioning of said eyelid in said eyeball-covering position when said selective control means is in either of said second, third, and fourth positions, regardless of the orientation of said head-simulating means relative to said frame.

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