

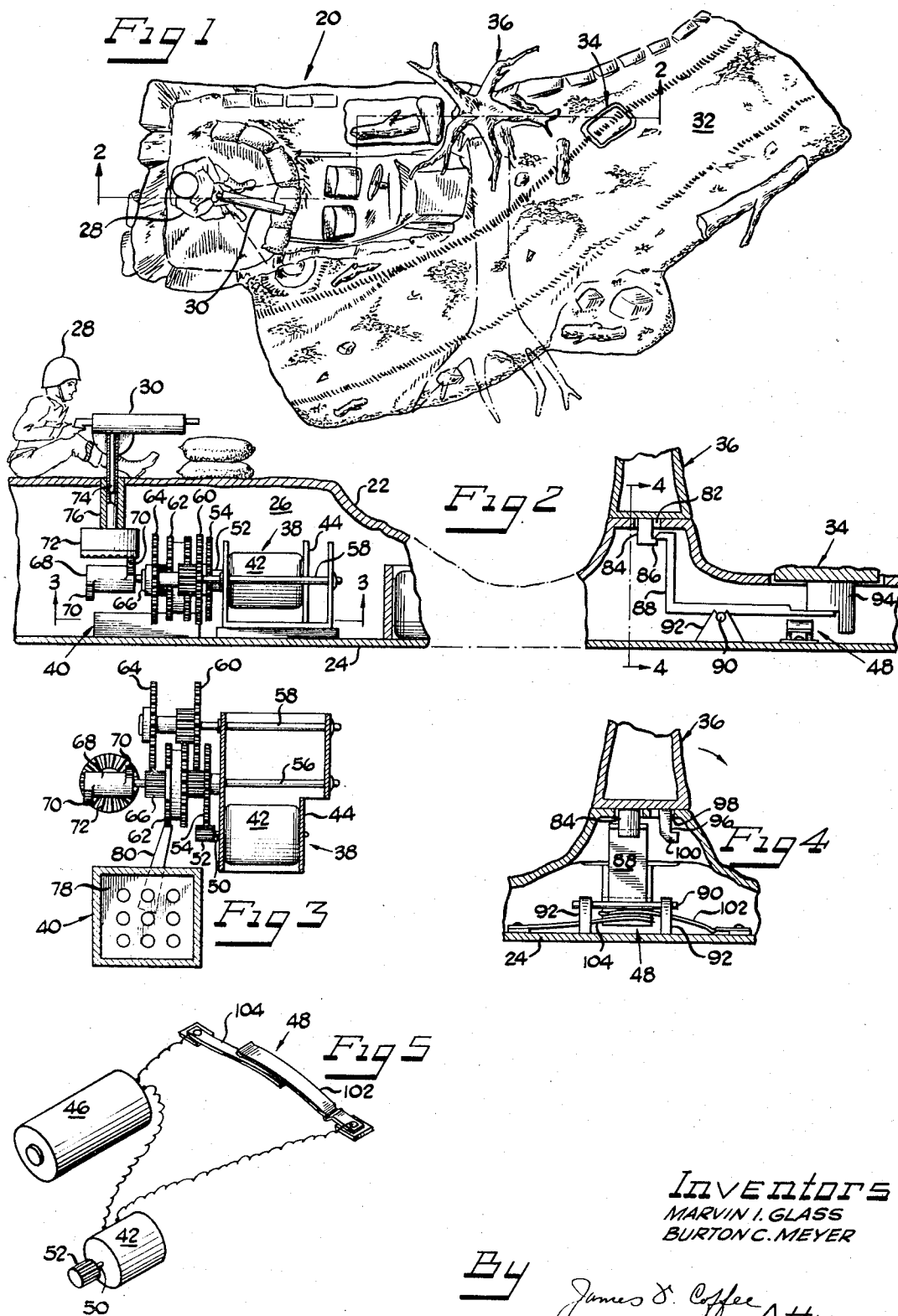
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MOTOR OPERATED SIMULATED SOLDIER AND GUN TOY

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MOTOR OPERATED SIMULATED SOLDIER AND GUN TOY

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ABSTRACT OF THE DISCLOSURE

A motor operated toy including a simulated soldier and gun mounted on a base for oscillating swinging movement in response to operation of drive means disposed within the interior of the base. The base further supports a simulated tree which is releasably held in an upright position and which is connected with a movable surface section of the base so that movement of the latter causes the tree to fall. Also enclosed within the base is a sound making device operable within said drive means to effect a simulated gun firing noise.

The present invention relates generally to action toys and is particularly directed to motor operated toys including landscapes depicting battle scenes and having relatively movable elements and an accompanying sound making device. This application is a continuation in part of our application Serial No. 438,490, filed March 10, 1965.

The primary objective of the invention is to provide motor operated toys having a base structure simulating a battle scene and containing a motor drive mechanism in conjunction with a gun simulating means which is movable through operation of the motor and accompanied by a gun firing sound. Another objective is to provide a toy as described above, wherein the gun simulating means and the accompanying sound are operated for a predetermined time upon initiation of the motor means. Still another objective of the invention is to provide means whereby the gun simulating element is movable in a predetermined sequence with accompanying, appropriate sounds from the sound mechanism. Other objects and advantages will become apparent from the description of the invention as illustrated in the accompanying drawing wherein:

FIGURE 1 is a perspective view of a preferred embodiment of the invention;

FIGURE 2 is an enlarged sectional view taken along the line 2—2 of FIGURE 1;

FIGURE 3 is a sectional view taken along the line 3—3 in FIGURE 2;

FIGURE 4 is a sectional view taken along the line 4—4 in FIGURE 2, showing particularly the motor switch;

FIGURE 5 is a perspective view of the blade switch for operating the motor.

With reference to FIGURES 1 through 5, it will be seen that the invention comprises generally a base structure 20 depicting a typical battle scene. The structure 20 has a cover section 22 supported on a floor member 24 with a hollow interior section 26 therebetween. The cover 22 is of irregular configuration to simulate terrain. Mounted on the cover 22 of the hollow base is a gun simulating means in the form of a soldier 28 adjacent a gun and mount therefore 30, each of which is movable relative to the base. Also, there is depicted along said cover 22 a roadway indicated generally at 32, in one track of which is a plate 34 which is mounted for vertical movement to simulate a "booby-trap."

A tree simulating means 36 is releasably fixed in an

upright position on said cover 22 adjacent said roadway, and as will be hereafter explained, when the booby-trap plate 34 is depressed, the tree is caused to fall into the position shown in dotted lines in FIGURE 1.

Within the hollow interior 26 of the structure 20 is a motor drive means 38 for effecting movement of the soldier figure and operation of the sound making device 40. The motor drive means is actuated, as will be hereafter explained, when the "booby-trap" plate 34 is depressed, as for example when a toy jeep or other toy vehicle is moved over the roadway 32. When the motor drive mechanism is operated, it causes the soldier figure 28 and the gun and mount therefore 30 to move in a predetermined sequence relative to the base 20 and at the same time the sound maker 40 is operated to simulate gun fire.

With particular reference to FIGURES 2, 3, and 5, it will be seen that the motor drive mechanism 38 comprises a miniature electric motor 42 supported on a frame 44 and suitably connected with a battery 46 and a blade switch device 48 for selective operation of the motor. The rotary drive shaft of the motor 50 has fixed thereon a small drive gear 52 disposed in meshing engagement with a gear 54 carried by main shaft 56, journaled in the motor supporting frame 44. Also, rotatably supported at one end on frame 44 is a driven shaft 58. Speed reduction gearing is provided between drive gear 52 and the main shaft 56 through gears 54, 60, 62, 64 and 66, with gears 54 and 62 being rotatably mounted on shaft 56 and gear 66 fixed to the shaft 56 for rotation therewith.

Also fixed on main shaft 56 is sleeve 68 carrying gear segments 70 on each end. These gear segments 70 are positioned to coast with annular teeth on the underside of drum 72 which is held immediately above sleeve 68 by vertically extending peg 74 which is journaled in sleeve 76. Sleeve 76 is fixed to and extends downwardly from cover 22. The upper portion of peg 74 extends above cover 22 and supports the soldier figure 28 and gun and mount 30, so that vertical movement of the peg 74 will cause the soldier and gun mount to move vertically.

Rotation of the sleeve 68 causes the gear segments 70 to engage alternately the annular teeth on the underside of drum 72. The alternate engagement of gear segments 70 with drum 72 causes the drum to oscillate and also to move up and down in a substantially vertical path. This oscillation and vertical movement are transferred to the depending peg 74 and to soldier figure 28 and gun mount 30.

As best shown in FIGURE 3 the sound making device 40 comprises a box including a diaphragm portion 78 and a flexible metal reed 80 extending from the upper side of said diaphragm member to a position underneath gear 62 so that it is tensioned and then released through engagement with teeth of gear 62. The end of reed 80 opposite the gear-engaging end is fixed to the diaphragm 78, and as the reed is tensioned and then released the portion of the reed above the diaphragm strikes the diaphragm. The noise maker is thus operated when the motor drive main shaft 56 is operated to oscillate and also to raise and lower the soldier FIGURE 28 and gun mount 30. Consequently, as the soldier and gun mount are moved, there is the accompanying sound of gun fire.

As best shown in FIGURES 2 and 4, the tree simulating member 36 is removably mounted above an opening 82 in the cover 22. A depending leg 84 with a hook portion 86 extends from the bottom of the tree member 36 through the opening 82 to the interior hollow portion of the base. The hook portion 86 is adapted to be engaged by an arm 88 which is pivoted on bar 90 horizontally supported on frame members 92. The end of arm 88 opposite said hook-engaging end extends under-

neath the "bobby-trap" plate 34 and is engaged by a pin 94 extending downwardly from said plate. When the "bobby-trap" plate 34 and pin 94 are moved downwardly, the pin strikes arm 88 causing it to pivot on bar 90 which removes bar 88 from engagement with hook 86. The upper portions of the tree 36 are so weighted that when the hook member 86 is released, the tree topples to the position indicated in dotted lines in FIGURE 1. A pin 96 extending downwardly from the bottom of tree member 36 through an opening 98 in cover 22 has a hooked section 100. This hook 100 catches on the edge of opening 98 as the tree falls and prevents the tree from moving beyond the dotted line position shown in FIGURE 1.

The electrical circuit for the motor drive mechanism 38 includes switch means 48 which is best shown in FIGURES 2, 4, and 5. The switch is operated by the depressing of the "bobby-trap" plate 34 and vertically extending pin 94. The switch comprises two spring metal blades 102 and 104 which are connected respectively with the battery 46 and the motor 42. Each blade is bolted to the floor 24 of the base section and the blades are normally disposed in spaced relation with the blade 102 overlapping blade 104. The blades are positioned underneath the end of arm 88 which is actuated by pin 94. Consequently, when "bobby-trap" plate 34 and pin 94 are depressed, the adjacent end of arm 88 is lowered against blade 102 which moves the two blades into contact, closing the circuit which starts the motor drive mechanism. As long as "bobby-trap" plate remains depressed the motor drive mechanism will operate, and when downward pressure on the "bobby-trap" plate is released, the resilient blade 102 will move back into normal position thus breaking the circuit.

In operation, a child playing with the toy battle scene causes a toy vehicle or soldier to move over the "bobby-trap" plate 34. The depression of plate 34 causes arm 88 to release tree member 36 which falls across the roadway, blocking further progress of vehicles along the roadway. The depression of the "bobby-trap" also closes the switch 48 which causes the motor drive mechanism to rotate the main shaft 56 which through the mechanism described causes the soldier and gun mount to oscillate and move up and down in a vibratory motion. At the same time the noise maker 40 simulates gun fire. When the "bobby-trap" plate 34 is released and returned to its normal position, the switch 48 breaks the circuit and the motor drive mechanism stops. For the next operation of the device the tree is manually placed in position on the cover 22 over the opening 82, with the pin 84 extending through the opening so that hook 86 engages bar 88.

Although shown and described with respect to particular structure, it will be apparent that various modifications might be made without departing from the principles of the invention.

What is claimed is:

1. A motor operated toy comprising a base structure having a hollow interior and simulating landscape, a simulated soldier and simulated gun mounted on said base for oscillating swinging movement together relative to said base through means including a rotatable shaft and cam means fixed to said shaft, a drive means within the interior of said base for rotation of said shaft,

a sound making device within said base including a diaphragm and a flexible member having a portion in position to strike said diaphragm and said drive means including gear means in position to strike the free end of said flexible member to tension said member and release it to strike said diaphragm, a simulated tree member positioned on said base, releasable means for supporting said tree in an upright position, a movable section in said base connected to said tree support means whereby movement of said section will cause the tree support means to be released and the tree to fall.

2. A motor operated toy comprising a base structure having a hollow interior and simulating landscape, a simulated soldier and simulated gun mounted on said base for oscillating swinging movement together relative to said base through means including a generally vertical shaft supporting said gun, a member fixed to the lower end of said shaft for movement therewith and having annularly arranged, downwardly facing teeth thereon, gear drive means including a generally horizontally disposed rotatable element having vertically extending gear segments thereon disposed in spaced apart and generally oppositely facing relation to each other, with the teeth of each gear segment being movable through a path of meshing engagement with the downwardly facing teeth of said member, and power means for driving said gear mechanism to thereby effect rotation of said generally horizontal element to produce oscillation of said gun and soldier through a pre-determined arc of movement as said gear segments engage said downwardly facing teeth.

3. A motor operated toy comprising a base structure having a hollow interior and simulating landscape, a simulated soldier and simulated gun mounted on said base for oscillating swinging movement together relative to said base through means including a generally vertical shaft supporting said gun, a circular member fixed to the lower end of said shaft and having annularly arranged, downwardly facing teeth thereon, gear drive means including a generally horizontally disposed rotatable element having vertically extending gear segments thereon disposed in spaced apart and oppositely facing relation to each other, with the teeth of each gear segment being movable through a path of meshing engagement with the downwardly facing teeth of said member, power means for driving said gear mechanism to thereby effect oscillation of said gun and soldier through a pre-determined arc of movement as said gear segments sequentially engage said downwardly facing teeth, a simulated tree member movably positioned on said base, releasable means for supporting said tree in an upright position, and means for simultaneously actuating said releasable means and said power means to cause the tree to fall and to effect said movement of said gun and soldier.

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