

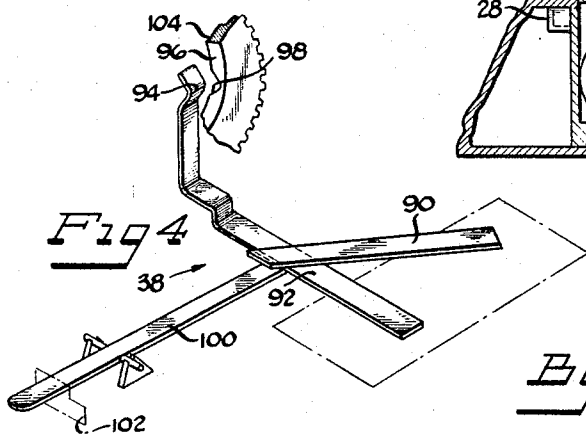
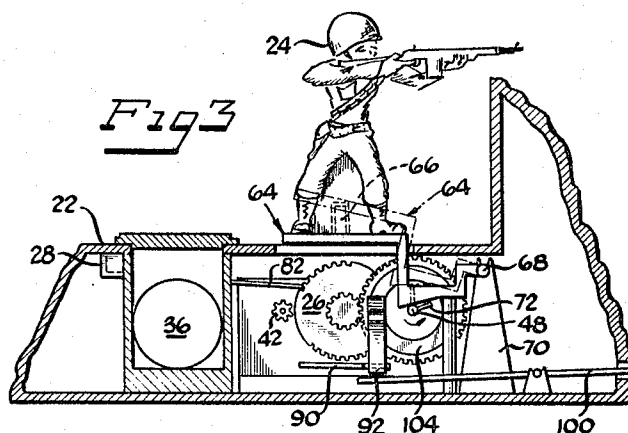
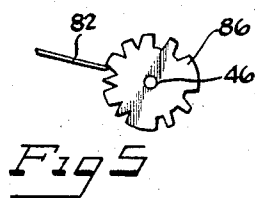
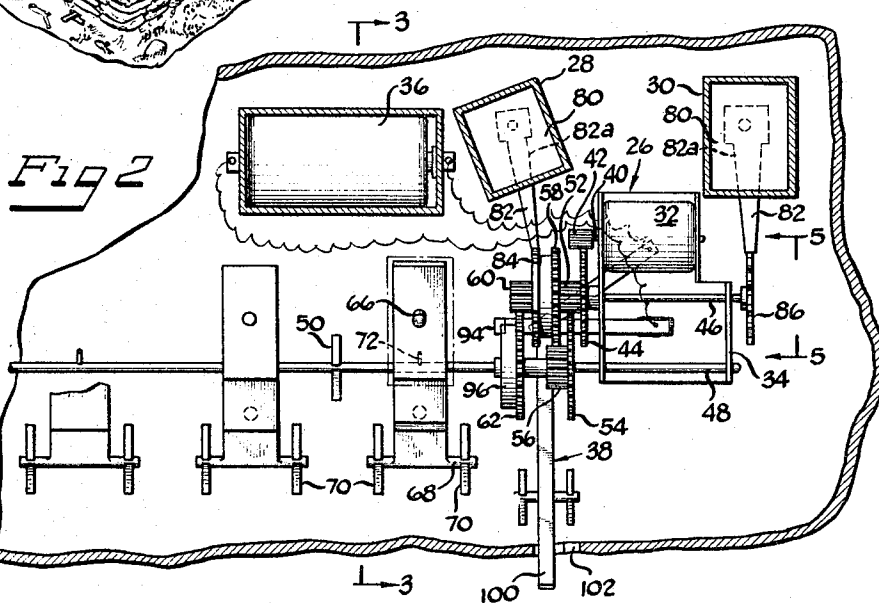
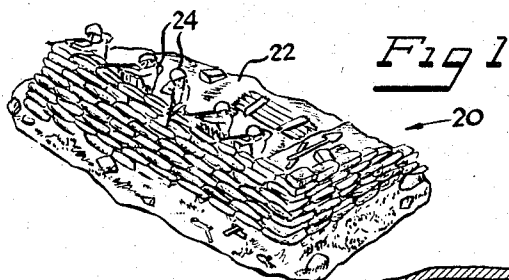
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MOTOR OPERATED SOUNDING TOY

Filed March 10, 1965



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MOTOR OPERATED SOUNDING TOY

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1 Claim. (Cl. 46-232)

ABSTRACT OF THE DISCLOSURE

A series of motor operated toys simulating scenes of warfare and including action and sound. In one embodiment a plurality of toy soldiers are mounted in a row behind a fortification, and the operation of the motor effects intermittent motion of the individual figures to the accompaniment of sounds simulating gun fire. Another embodiment includes a pair of machine gunners in a partially destroyed building, and the operation of the motor effects movement of the guns and a "rapid fire" sound. Still another embodiment includes a "sniper" in a tree, and the operation of the motor causes oscillating movement of the figure and intermittent "gun fire" sounds. The last illustrated embodiment includes a pair of toy cannons which are motor operated to effect axial movement of the gun tubes and an accompanying sound of firing.

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.

The primary object 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. A more particular object is to provide a toy as described above wherein the gun simulating means and the accompanying sound is operated for a predetermined time upon initiation of the motor means. Still another object of the invention is to provide the described motor operated toy with a plurality of gun simulating means which are movable in a predetermined sequence with accompanying, appropriate intervals for the operation of the sound mechanism. Other objects and advantages will become apparent from the description of the invention as illustrated in the accompanying drawings wherein:

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

FIGURE 2 is an enlarged fragmentary plan view of the structure in FIGURE 1, with portions broken away and in section;

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

FIGURE 4 is a fragmentary view of the structure seen in FIGURE 2, showing particularly the motor switch;

FIGURE 5 is a view taken along the line 5-5 in FIGURE 2.

With reference to FIGURES 1-5, it will be seen that the invention comprises generally a structure 20 depicting a typical battle scene including a fortification. Supported on the upper wall 22 of the hollow base structure are gun simulating means in the form of a plurality of soldier figures 24, each of which is mounted for movement relative to the base. Included within the hollow interior of the base is a motor drive means 26 for effecting movement of the figures and sound making devices 28 and 30 which are operable by the motor drive means to produce a simulated gun firing noise. As the

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motor drive mechanism is operated, it causes the soldiers 24 to move in a predetermined sequence relative to the base and, at the same time, the sounding devices 28 and 30 are operated to simulate gun fire.

With reference particular to FIGURES 2 and 3, it will be seen that the motor drive mechanism 26 comprises a miniature electric motor 32 supported on a frame 34 and suitably connected with a battery 36 and a switch device 38 for selective operation of the motor. The rotary drive shaft 40 of the motor has fixed thereon a small drive gear 42 disposed in meshing engagement with a gear 44 carried by a lay shaft 46 journaled in the motor supporting frame 34. Also rotatably supported at one end on frame 34 is a main driven shaft 48 which extends essentially the length of the base and is suitably supported in spaced-apart bearings 50 provided on the base. Speed reduction gearing is provided between drive gear 42 and the main shaft 48 through gears 52, 54, 56, 58, 60 and 62, with gears 54, 56 being rotatably mounted on shaft 48 and gear 62 being fixed to the shaft 48 for rotation therewith.

Each of the soldier figures 24 is removably supported on a platform 64, as by means of a vertically extending peg 66 fixed on the platform and received in a bore in the lower portion of the figure. The platform 64 includes a downwardly and forwardly extending portion which is disposed beneath upper wall 22 of the base and includes a transverse pin or shaft 68 which is journaled in aligned openings or notches provided in a pair of brackets 70 fixed to the base and extending upwardly therefrom. The forwardly extending portion of each platform 64 overlies the main shaft 48 and is positioned for engagement by a cam means on the shaft, such as the projecting pegs 72 which are fixed to the main shaft 48. The pegs 72 are preferably fixed at different angular positions around the shaft 48, so that as the shaft is rotated the figures 24 are sequentially moved upwardly and then permitted in turn to drop back to their normal horizontal position, thereby simulating individual firing action of soldiers.

The sound making devices 28 and 30 comprise two sound boxes, each including a diaphragm portion 80 forming the lower wall thereof and having a flexible metal reed or sounding member 82 fixed to the diaphragm. The free ends of the sounding members 82 are positioned, respectively, for engagement with gears 84 and 86 carried by the shaft 46, and an intermediate bent portion 82a of each sounding member is biased against the diaphragm 80 and then projects upwardly away from the diaphragm. Consequently as the flexible members 82 are tensioned and then released through engagement by the teeth of the gears 84 and 86, each of the portions 82a is drawn away from the associated diaphragm 80 and released to strike the diaphragm. The teeth of the gears are constructed and arranged to thus move the flexible members 82 in a rather rapid, but irregular sequence (see FIGURE 5), which coordinated with the sequence of vertical movement of the soldiers. Consequently, as each figure is raised relative to the supporting base there is the sound of accompanying fire.

The electrical circuit for the motor drive mechanism 26 includes the switch means 38 which provides for operation of such mechanism for a predetermined time, although an ordinary "off and on" switch might be used. More particularly, the motor and battery circuit includes a pair of spring metal switch blades 90 and 92 which are connected respectively with the battery and the motor and are normally disposed in spaced relation. Blade 92 has an upwardly projecting free end portion with an angularly bent tip 94 biased against the face of a cam 96 fixed to the main shaft 48. The cam 96 includes a detent or drop-off section 98 in position to receive the bent tip 94. A pivotally mounted switch lever 100 is disposed in the

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base with one end projecting outwardly through a stepped opening 102 and the other end underlies the spring metal blade 92. As the free end of the lever is moved downwardly to the "on" position, the blade 92 is moved upwardly into engagement with blade 90 to close the circuit and start the motor 32. At the same time, the bent tip 94 is moved out of the detent 98 as the cam 96 rotates with the drive mechanism, and the tip 94 then rests on the flat cam surface 104 during the rotation of the cam. When the detent 98 again is opposite the bent tip 94, the latter drops into the detent to thereby separate the switch blades 90, 92 and stop the motor.

What is claimed is:

1. A motor operated toy comprising a base structure having a hollow interior and simulating a fortification, a plurality of soldiers mounted on top of said base for movement relative thereto through means including a pivotally mounted platform supporting each soldier, a motor drive means carried within the interior of said base and including a rotatable shaft, a plurality of cam means fixed to said shaft in position to engage each of said plat-

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forms and cause the latter to move vertically, said cam means being arranged on said shaft so that said soldiers are moved at different times with respect to one another, a plurality of sound making devices within said base each including a diaphragm and a flexible member having a portion in position to strike against said diaphragm, said drive means including a plurality of gears in position to strike the free end of said flexible members, whereby said sound making devices are actuated at different times and generally corresponding with the vertical movement of said soldiers.

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