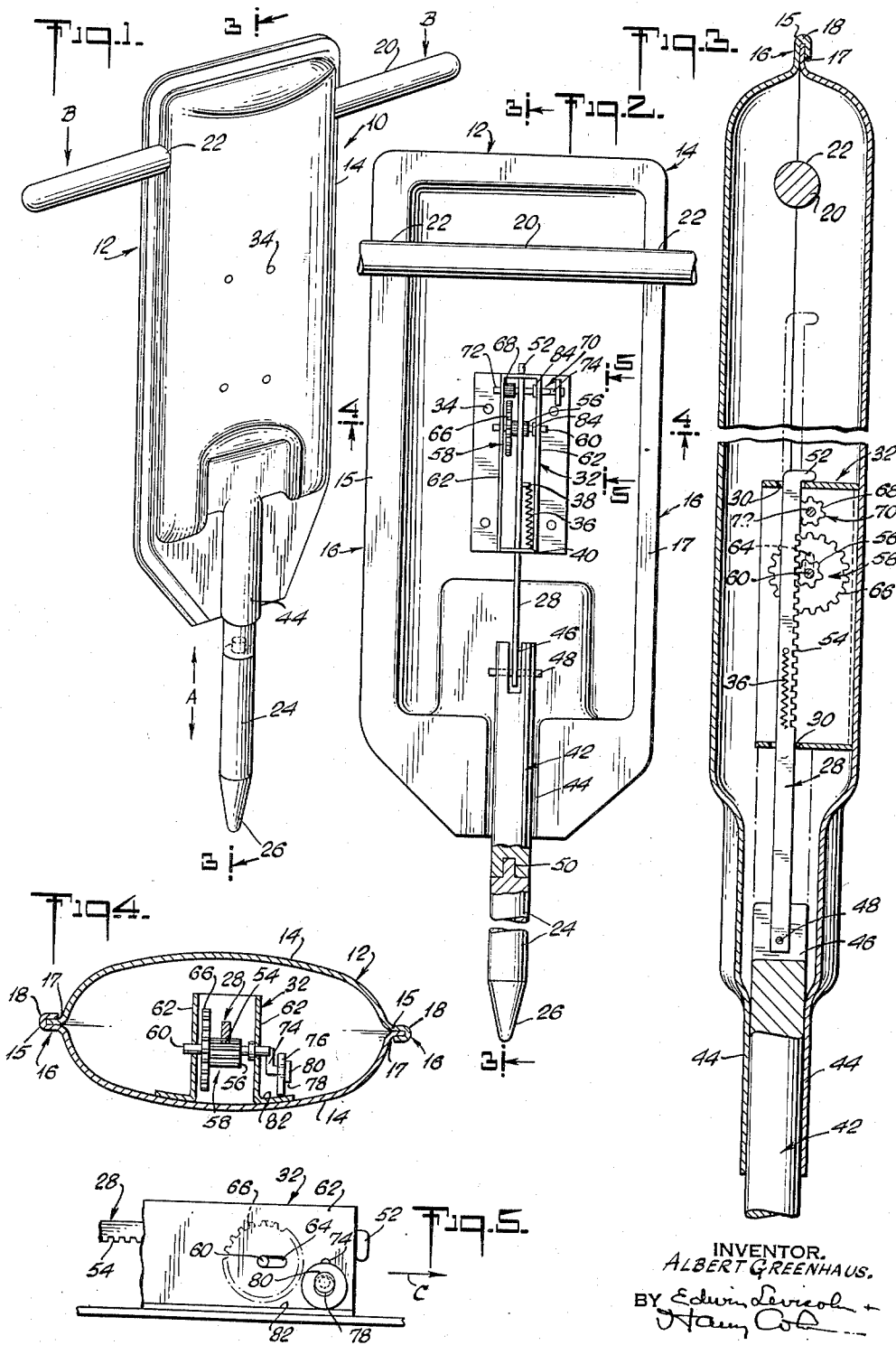


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NOISEMAKING TOY TOOL
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NOISEMAKING TOY TOOL

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This invention relates to a toy tool and in particular to a toy drill or pneumatic hammer.

One object of the present invention is the provision of a simplified toy device which simulates the action of a tool penetrating into work acted on thereby.

Another object is the provision in said toy device of a noisemaker which is responsive to the operation of the simulated tool for producing sounds which simulate the noise of a reciprocating percussion tool.

A further object is to provide a toy tool of the foregoing character, which is simple and substantial in construction, which can be manufactured economically, and which will be safe for use by a child.

The above and other objects, features and advantages of the present invention will be more fully understood from the following description considered in connection with the accompanying illustrative drawings.

In the drawings:

Fig. 1 is a perspective view of a toy tool device pursuant to the present invention;

Fig. 2 is a vertical side view, on an enlarged scale, of the toy tool device, one of the housing parts being removed for illustrative purposes;

Fig. 3 is a sectional view, on an enlarged scale, taken on the line 3-3 of Fig. 2;

Fig. 4 is a sectional view taken on the line 4-4 of Fig. 2; and

Fig. 5 is a fragmentary detail, on a larger scale, as seen from the line 5-5 in Fig. 2.

The toy tool device 10, illustrated herein as a toy drill, comprises a housing or casing 12 formed of the similar complementary casing parts 14 which are preferably formed of sheet metal or other suitable material. The parts 14 are each provided with the peripheral flanges 16 which are secured together in any suitable manner for assembling the housing 12. As here shown, said securement is accomplished by making one of the flange portions 15 wider than its abutting flange portion 17 and bending the former over the latter as indicated at 18. A handle 20 extends through the housing 12, being secured between the casing parts 14 in recesses 22 formed therein. A toy tool, which is here shown as a simulated surface-penetrating tool or chisel 24, is reciprocated relative to the casing 12 in the direction of the arrows A in Fig. 1, when the outer end 26 of the tool is placed against a work-simulating abutment such, for example, as the floor or the ground or other suitable support and pressure is exerted on the handle 20 in the direction of the arrows B in Fig. 1.

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In order to reciprocate the tool 24, there is provided a longitudinal member 28, preferably formed of metal or other suitable material which is mounted for longitudinal movement in opposed guideways 30 (Fig. 3) provided in the housing member 32 which is secured within the casing 12, as by the rivets 34. A tension spring 36 is fastened at one end thereof to the member 28, as indicated at 38, and at its other end to the housing member 32, as indicated at 40. A rod or simulated tool holder 42, preferably formed of wood or other suitable material, is disposed in the tubular guide portion 44 formed at the lower ends of the casing parts 14 for guided movement longitudinally of the casing 12. In order to effect such movement, the upper end of the rod is secured to the lower end of member 28, in any suitable manner. As here shown, the upper end of the rod is slotted as at 46 and the lower end of rod 28 extends into said slot and is secured therein by a pin 48 which passes through the rod 42 and the member 28. At its lower end, the rod 42 is provided with a socket 50 into which the inner end of the simulated tool 24 is removably received and secured in any suitable manner, as by friction or by a transverse pin (not shown). It will be apparent that socket 50 is adapted to receive simulated tools, different from the simulated chisel or drill 24, so that the toy device of the present invention may be supplied with a plurality of different types of simulated tools. Said tool 24 is preferably formed of wood to eliminate the use of metal and thereby tends to avoid a possible source of injury to a small child, it being noted that the rod 42 is also preferably formed of wood so that the entire part of the device which extends outwardly from the casing 12 provides this safety feature.

From the foregoing, it will be apparent that when the end 26 of the tool 24 is pressed against the floor or on the ground, or on other work-simulating abutment, and pressure is exerted on the handle 20 in the direction of the arrows B, the tool 24 is moved inwardly of the casing 12, against the force of spring 36, to simulate the penetration of the tool into work acted on thereby, and when the pressure on the handle 20 is relieved, the spring 36 is effective to move the tool 24 in the opposite direction. It will be noted that member 28 is provided with a lateral stop or detent 52 at the upper end thereof which engages the housing member 32 for limiting the movement of the tool 24 outwardly of the casing 12, as illustrated in Fig. 3, the maximum inward movement of the member 28 relative to the cas-

ing 12 being indicated in broken line in said figure.

An important feature of the present invention is the provision of a noisemaking device which simulates the sound of a reciprocating percussion tool, for example the sound of a pneumatic hammer or rock-drilling tool, when the tool 24 moves inwardly of the casing 12 upon the application of pressure to the handle 20. In order to provide said noise, the member 28 is provided with a rack 54 preferably integral therewith, which meshes with the pinion 56 of a pinion gear 58 which is secured to a shaft 60 journaled in the housing member 32. More specifically, as illustrated in Fig. 5, the opposing side walls 62 of the housing member 32 are provided with the elongated slots 64 in which the shaft 60 is journaled. The shaft 60 is normally positioned in said slots 64, as illustrated in Fig. 5. However, it will be apparent that when pressure is exerted on the handle 20 and the tool 24 is forced against a solid surface, the inward movement of the member 28 will initially move the shaft 60 in the direction of arrow C in said figure to engage the opposite end of the slot. As a result of said movement, the gear portion 66 is moved longitudinally of housing member 32, from the position thereof shown in Fig. 5, to mesh with a gear 68 of a percussion noisemaker device 70. It will be noted, as illustrated in Figs. 2 and 3, that in the inoperative condition of the toy device 10, the gear 68 is spaced from said gear 66 of the noisemaker device 70. Said gear 68 is secured on a shaft 72 which is also journaled for rotation in the side walls 62 of the housing member 32. Said shaft 72 is provided with a crank portion 74 on which there is loosely mounted a striker or noise-producing member 76. It will be noted, as illustrated in Figs. 4 and 5, that the striker is provided with an opening 78 of greater diameter than that of the crank 74, the latter being provided with a nut or similar member 80 to retain the striker thereon. Therefore, it will be apparent that when the member 28 is moved inwardly of the casing 12, the gear 66 will be moved into engagement with the gear 68 for rotating the crank 74 whereby to rotate the striker 76. Due to the enlarged opening of said striker, it will be apparent that the latter, in addition, will move toward and away from the surface 82 of the adjacent portion of casing member 32 to strike said surface repeatedly at greater or smaller intervals during the rotation of shaft 72, thus producing a sound simulating the action of a reciprocating percussion tool. It will be noted that the shafts 60 and 72 are each provided with a collar 84 abutting a wall 62 for retaining the latter against displacement transversely of the casing member 32.

From the above, it will be apparent that the noise-producing device 70 is operated in unison with the movement of the tool 24 in a direction inwardly of the casing 12 so that both the operation of the tool and the operation of the noisemaking device are accomplished by exerting pressure on the handle 20 in the direction of the arrows B while the outer end 26 of the tool is also in a position simulating that of a drill in the normal operation of the latter, that is, against the surface which is to be "penetrated" or struck by the tool. However, it will be apparent that as soon as the pressure upon the handle 20 is relieved, the spring 36 will be effective to move the member 28 in a direction outwardly of the casing 12 so that the shaft 60 will be carried along the

slots 64 to move the gear 66 out of engagement with the noisemaker gear 68, and that this is accomplished immediately upon the relief of said pressure. Therefore, it will be apparent that the noisemaker is operative only during the simulated drilling or penetrating action and thereby increases the overall operational similarity of the toy device 10 to an actual drill, pneumatic hammer, or other reciprocating percussion tool.

While I have shown and described the preferred embodiment of my invention, it will be understood that various changes may be made in the present invention without departing from the underlying idea or principles of the invention within the scope of the appended claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent, is:

1. A toy tool device comprising a casing, a member mounted therein for reciprocation longitudinally thereof, a simulated surface-penetrating tool extending from one end of said casing and operable upon said member for moving the latter inwardly of said casing when the outer end of said tool abuts a support and said casing is urged toward said support, percussion means operable in response to said inward movement of said member for simulating the noise of a reciprocating percussion tool in the normal operation of the latter, and means for discontinuing the operation of said percussion means in response to outward movement of said member.

2. A toy tool device comprising a casing open at one end thereof, a member mounted therein in registry with said opening for reciprocation longitudinally thereof, a simulated surface-penetrating tool movably mounted relative to said opening and extending from said one end of said casing and operable upon said member for moving the latter inwardly of said casing when the outer end of said tool abuts a support and said casing is urged toward said support, percussion means provided in said casing for simulating the noise of a reciprocating percussion tool in the normal operation of the latter, and means operable in response to said inward movement of said member for operating said percussion means, said operating means being gear means normally spaced from said noise-making means and movable into operative engagement with the latter upon said inward movement of said member, and means for disengaging said gear means from said percussion means upon initiation of the outward movement of said member.

3. A toy tool device comprising an elongated casing open at one end thereof, a member mounted therein in registry with said opening for reciprocation longitudinally thereof, a simulated surface-penetrating tool movably mounted in said opening and extending from said one end of said casing and operable upon said member for moving the latter inwardly of said casing when the outer end of said tool abuts a support and said casing is urged toward said support, percussion means provided in said casing for simulating the noise of a reciprocating percussion tool in the normal operation of the latter, and means operable in response to said inward movement of said member for operating said percussion means, said operating means comprising a rack operable by said member and a pinion gear mounted for movement relative to said casing, said percussion means having an operating gear normally disengaged from said pinion gear, said rack being engaged with said pinion gear and operable to move the latter into engagement with said oper-

ating gear upon said inward movement of said member, whereby to operate said percussion means.

4. A toy tool device comprising a casing open at one end thereof, a member mounted therein in registry with said opening for reciprocation longitudinally thereof, a simulated surface-penetrating tool movably mounted in said opening and extending from said one end of said casing and operable upon said member for moving the latter inwardly of said casing when the outer end of said tool abuts a support and said casing is urged toward said support, percussion means provided in said casing for simulating the noise of a reciprocating percussion tool in the normal operation of the latter, and means operable in response to said inward movement of said member for operating said percussion means, said operating means comprising a rack operable by said member and a pinion gear mounted for movement relative to said casing, said percussion means having an operating gear normally disengaged from said pinion gear, said rack being engaged with said pinion gear and operable to move the latter into engagement with said operating gear upon said inward movement of said member whereby to operate said noisemaking means, and means for retracting said rack upon outward movement of said member whereby to disengage said gears.

5. A toy tool device comprising a casing open at one end thereof, a member mounted therein in registry with said opening for reciprocation longitudinally thereof, a simulated surface-penetrating tool movably mounted in said opening extending from said one end of said casing and operable upon said member for moving the latter inwardly of said casing when the outer end of said tool abuts a support and said casing is urged toward said support, percussion means carried internally of the casing for simulating the noise of a reciprocating percussion tool in the normal operation of the latter, and means operable in response to said inward movement of said member for operating said percussion means, said operating means comprising a rack operable by said member and a pinion gear mounted for movement relative to said casing, said percussion means having an operating gear normally disengaged from said pinion gear, said rack being engaged with said pinion gear and operable to move the latter into engagement with said operating gear upon said inward movement of said member whereby to operate said noisemaking means, and spring means for retracting said rack upon outward movement of said member, whereby to disengage said gears.

6. A toy tool device comprising a casing open at one end thereof, a member mounted therein in registry with said opening for reciprocation longitudinally thereof, a simulated tool movably mounted in said opening and extending from said one end of said casing and operable upon said member for moving the latter inwardly of said casing when the outer end of said tool abuts a support and said casing is urged toward said support, percussion means carried internally of the casing for simulating the noise of a reciprocating percussion tool in the normal operation of the latter, and means operable in response to said inward movement of said member for operating said percussion means, said operating means comprising a rack operable by said member and a pinion gear mounted for movement relative to said casing, said percussion means having an

operating gear normally disengaged from said pinion gear, said rack being engaged with said pinion gear and operable to move the latter into engagement with said operating gear upon said inward movement of said member, whereby to operate said percussion means, said rack being provided on said member.

7. A toy device in the form of a simulated percussion tool of the reciprocating type, comprising a casing formed in two complementary parts, a transverse hand grip bar held between said parts and having portions projecting laterally beyond the casing externally thereof near one end of said casing, a simulated tool mounted in said casing between said complementary parts at the other end of the casing and guided by end portions of said casing parts for reciprocating movement axially of the casing, and means urging the simulated tool to a projected position to move the simulated tool in one direction to a projected position, said tool being movable in the opposite direction when its operating end is placed against work-simulating abutment and pressure is applied to said projecting hand grip portions in a direction extending longitudinally of the tool toward said abutment whereby the movement of the tool in said opposite direction simulates the penetration of a tool into work acted on thereby.

8. A toy device in the form of a simulated percussion tool of the reciprocating type, comprising a casing formed in two complementary parts, a transverse hand grip bar held between said parts and having portions projecting laterally beyond the casing externally thereof near one end of said casing, a simulated tool mounted in said casing between said complementary parts at the other end of the casing and guided by end portions of said casing parts for reciprocating movement axially of the casing, and means urging the simulated tool to a projected position to move the simulated tool in one direction to a projected position, said tool being movable in the opposite direction when its operating end is placed against work-simulating abutment and pressure is applied to said projecting hand grip portions in a direction extending longitudinally of the tool toward said abutment whereby the movement of the tool in said opposite direction simulates the penetration of a tool into work acted on thereby, and a percussion noisemaker within said casing operatively connected to said simulated tool and actuated thereby in response to said movement thereof for making a noise simulating the noise of a percussion tool, said noisemaker including a crank mounted for rotation and a striker carried thereby, said striker having an opening through which the crank extends, said opening being substantially larger than the diameter of said crank whereby upon rotation of the crank the striker moves toward and away from the adjacent casing surface for striking the latter.

9. A toy device in the form of a simulated percussion tool of the reciprocating type, comprising a casing formed in two complementary parts, a transverse hand grip bar held between said parts and having portions projecting laterally beyond the casing externally thereof near one end of said casing, a simulated tool mounted in said casing between said complementary parts at the other end of the casing and guided by end portions of said casing parts for reciprocating movement axially of the casing, and means urging the simulated tool to a projected position to move the simulated tool in one direction to a projected position, said tool being movable in the

opposite direction when its operating end is placed against work-simulating abutment and pressure is applied to said projecting hand grip portions in a direction extending longitudinally of the tool toward said abutment whereby the movement of the tool in said opposite direction simulates the penetration of a tool into work acted on thereby, one of said casing parts being provided interiorly of the casing with a housing provided with spaced guideways, an operating member extending through said guideways and operatively connected to said tool, and a percussion noisemaker mounted by said housing and operatively connected to said member and actuated thereby in response to said movement of the tool, said noisemaker including a crank mounted for rotation and a striker carried thereby, said striker having an opening through which the crank extends, said opening being substantially larger than the diameter of said crank whereby upon rotation of the crank the striker moves toward and away from the adjacent casing surface for striking the latter.

10. A toy device in the form of a simulated percussion tool of the reciprocating type, comprising a casing formed in two complementary parts, a transverse hand grip bar held between said parts and having portions projecting laterally beyond the casing externally thereof near one end of said casing, a simulated tool mounted in said casing between said complementary parts at the other end of the casing and guided by end portions of said casing parts for reciprocating movement axially of the casing, and means urging the simulated tool to a projected position to move the simulated tool in one direction to a projected position, said tool being movable in the opposite direction when its operating end is placed against work-simulating abutment and pressure

is applied to said projecting hand grip portions in a direction extending longitudinally of the tool toward said abutment whereby the movement of the tool in said opposite direction simulates the penetration of a tool into work acted on thereby, one of said casing parts being provided interiorly of the casing with a housing provided with spaced guideways, an operating member extending through said guideways and operatively connected to said tool, and a percussion noisemaker mounted by said housing and operatively connected to said member and actuated thereby in response to said movement of the tool, said noisemaker including a crank mounted for rotation and a striker carried thereby, said striker having an opening through which the crank extends, said opening being substantially larger than the diameter of said crank whereby upon rotation of the crank the striker moves toward and away from the adjacent casing surface for striking the latter, and a detent provided on said operating member for engagement with said housing to limit movement of the tool to the projected position thereof.

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