ABSTRACT: A spoked wheel having cogs extending from the inside of the rim and having a pendulum pivotally mounted upon the hub of the wheel with a thin rod or spring connected thereto and extending toward the rim for striking the cogs as the wheel rolls, a bell on one of the sides of the pendulum against which the spring strikes after making contact with one of the cogs, and a handle for rolling the wheel.
TOY NOISE MAKER

This invention relates to a toy wheel capable of making different types of noises as it is rolled by the player.

A primary object of this invention is to provide a wheel which makes more than one type of noise when being rolled.

Another object of this invention is to provide a handle which is capable of rolling the wheel either by pushing the wheel on the outside rim or inserting the handle in the hub of the wheel and rolling it.

A further object of this invention is to develop a player’s coordination for initially putting the wheel into motion, and keeping it in motion thereafter.

A still further object of the invention is to provide means for attaching different types of noise makers to the wheel, the noise being produced only when the wheel is turning.

The above and other objects of this invention will become apparent to those skilled in the art after a consideration of the following detailed description of the preferred embodiments of this invention taken together with the accompanying drawings in which:

FIG. 1 is a cutaway view of the wheel;
FIG. 2 is a sectional view taken on line 2—2 of FIG. 1;
FIG. 3 is a plan view of the handle;
FIG. 4 is a plan view of another embodiment of the handle;
FIG. 5 is a sectional view taken on line 5—5 of FIG. 4;
FIG. 6 is a cross-sectional view of the pendulum and rim of the wheel;
FIG. 7 is a plan view of the spring mounted in the pendulum;
FIG. 8 is another embodiment of the pendulum;
FIG. 9 is a cross-sectional view of the pendulum showing the plan view of a thin flexible rod; and
FIG. 10 is a cross-sectional view of the rim and elevational view of another embodiment of the pendulum.

Referring in detail to the drawings, a wheel 20 is illustrated in FIG. 1 having a hub 22, three spokes 24 on each end of hub 22 connected to a circular flange 26 extending from each side of wheel 20, and a plurality of cogs 28 extending from the inside diameter of the rim 30 of wheel 20, cogs 28 being hidden from view by flange 26. Pivotedly mounted on hub 22 between spokes 24 is a pendulum 32 having arms 34 and 36. A loop spring 38 is secured to pendulum 32 at the point where arms 34 and 36 meet. Attached to arm 36 is a bell 40. Spring 38 has a striking element 42 for sounding bell 40 as the bottom end of spring 38 makes contact with and trips over each cog 28. The spring tension causes element 42 to strike bell 40 after the spring 38 springs back toward bell 40 upon discontinuing contact with each cog 28 which moves past the end of spring 38 as wheel 20 rolls due to the fact that pendulum 32 always maintains spring 38 pointed toward the ground while wheel 20 and hub 22 rotate about the pivot point of pendulum 32.

Wheel 20 may be rolled in a variety of ways. FIGS. 1 and 3 show a handle 50 with a cylindrical head attached to the end thereof and transverse thereto. Wheel 20 may be rolled by simply pushing it along with head 52 as illustrated in FIG. 1. Wheel 20 may also be rolled by inserting one side of head 52 into the cylindrical opening 54 within hub 22 as illustrated in FIG. 2. Rolling wheel 20 may also be initiated by placing wheel 20 within the groove 56 of a handle 58 shown in FIGS. 4 and 5 and allowing wheel 20 to roll off groove 56 onto a flat plane.

FIG. 6 shows a pendulum 60 having arms 62 and 64 and a loop spring 66 secured to pendulum 60 in the area where arms 62 and 64 are joined in a manner so that spring 66 lies parallel with and in close proximity to the surface 68 at the bottom portion of arm 64. Spring 66 will strike surface 68 making a noise each time cog 28 trips spring 66 as wheel 20 is rolling.

FIG. 8 shows a pendulum 70 having arms 72 and 74 and a flat, thin, and flexible extension 76 secured to the area of pendulum 70 where arms 72 and 74 join in a manner so that the longitudinal axis of extension 76 is transverse with the ground upon which wheel 20 is rolling. A noise is made each time extension 76 trips over a cog 78 and strikes the next succeeding cog as wheel 20 rolls. FIG. 10 is a variation of FIG. 8 wherein the tripping element 80 is secured between shorter arms 82 and 84 of pendulum 86 and makes a noise each time extension 80 trips over a cog and strikes the next succeeding cog as wheel 20 rolls.

It should be noted that a flat thin piece of material 90 is secured to pendulum 60 parallel to and between spring 66 and surface 68 and made out of wood, plastic, or any other material which would produce more sound when struck by spring 66 than surface 68 would be shown in FIG. 6. There is also a small extension 92 attached to arm 36 of FIG. 1 in order to serve as a stop for spring 38 when wheel 20 is rolled in the opposite direction. It is also noted that wheel 20 may be so constructed so that different types of noise-making pendulums may be attached to hub 22. This may be done, for instance, by having spoke 24 on one end of hub 22 movably mounted to hub 22 and flange 26. It should also be understood by those skilled in the art that while the preferred embodiments of this invention have been illustrated and described, modifications and changes may be resorted to without departing from the spirit and scope of the invention. For example, the spring element extending from the pendulum may be made of any type of suitable material, the pendulum may take on any type of shape and weight, and any number of cogs may be used in any spaced pattern desired so that there could even be a musical melody or other type of aesthetic sound produced varying with the speed that the wheel is being rolled.

It is lastly mentioned that when wheel 20 is rolled in the opposite direction, pendulum 32 or 60 will stay motionless with wheel 20 giving a trickly accelerated-decelerated type of roll due to out-of-balance caused by pendulum weight.

1. A toy noise maker, comprising a wheel having a hub and a plurality of spokes on each end of said hub connected to the rim of the wheel, a cog extending outward from the inside surface of said rim, a flange extending from each side of the rim toward the hub for hiding from view said cog and making connection with the ends of said spokes, a pendulum pivotally mounted about said hub between said plurality of spokes on each end of said hub, said pendulum having two arms extending therebeneath the end points of which are located below the height of said flanges but above and spaced from said cog, a resilient element secured to the pendulum in the area where said arms join and extending downward in such a manner that said resilient element is always pointed to the ground upon which the wheel is being rolled, said resilient element extending to a point below the height of said cog but spaced from and not touching the inside of said rim from which said cog extends, a push stick having a longitudinal handle and a head attached to the end thereof and transverse thereto for rolling the wheel and causing said resilient element to trip over said cog thereby making a noise.

2. The noise maker of claim 1, wherein said hub has a cylindrical opening therein for receiving one side of said head in order to simply and effectively roll the wheel at a uniform speed, accelerate the wheel, and roll the wheel at various speeds in the alternative.

3. The toy noise maker of claim 1, wherein said handle has a longitudinal groove therein for receiving the outside surface of the wheel and allowing the wheel to roll off of said groove for initiating the rolling thereof.

4. The toy noise maker of claim 1, wherein said resilient means extends transverse with the ground upon which the wheel rolls prior to initiating movement of the wheel and including a plurality of cogs extending from the inside surface of said rim, said resilient element making noise as it is tripped by one of said plurality of cogs and immediately strikes a succeeding cog of said plurality of cogs.

5. The noise maker of claim 4, wherein said plurality of cogs are variously spaced causing different intervals of time between said striking of said succeeding cogs upon said resilient element being tripped for producing an aesthetic noise pattern.
6. The noise maker of claim 1, including a bell attached to one of said arms and a striking element attached to said resilient element at a distance from the center of said hub equal to the distance from the center of said hub that said bell is mounted, the distance being determined by the center points of said striking element and said bell, said resilient element sounding said bell with said striking element upon being tripped over said cog.

7. The toy noise maker of claim 1, wherein one of said arms has a flat side portion near the end thereof and wherein said resilient element is positioned in a manner so that the longitudinal axis thereof is parallel to said surface and in close proximity thereto for striking the surface after being tripped by said cog upon movement of the wheel.

8. The noise maker of claim 7, including a thin flat extension secured to the area of said pendulum where said arms join and which lies in a plane between and parallel to said surface, said extension comprising material for producing more sound upon being struck by said resilient element than produced by said surface alone.