Sept. 2, 1952 H. K. MARCELL 2,608,795

WHISTLING TOY

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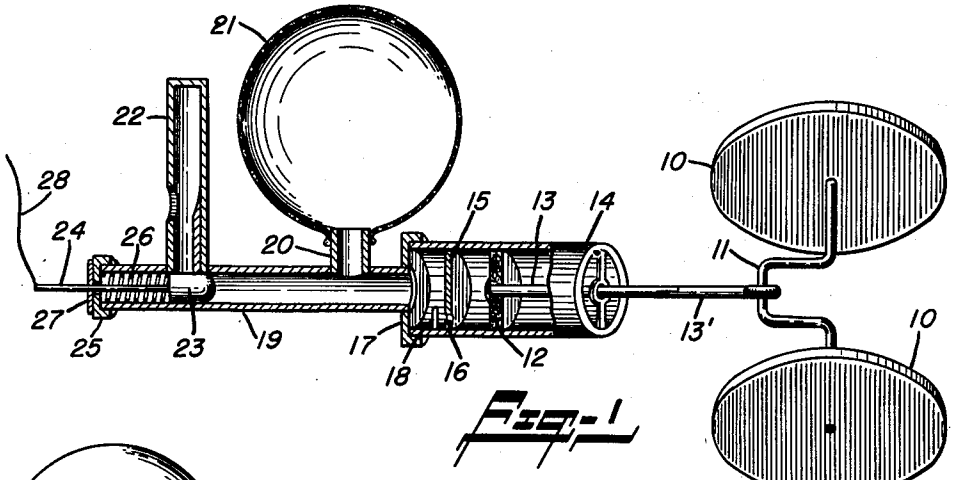


Fig-1



Fig-2

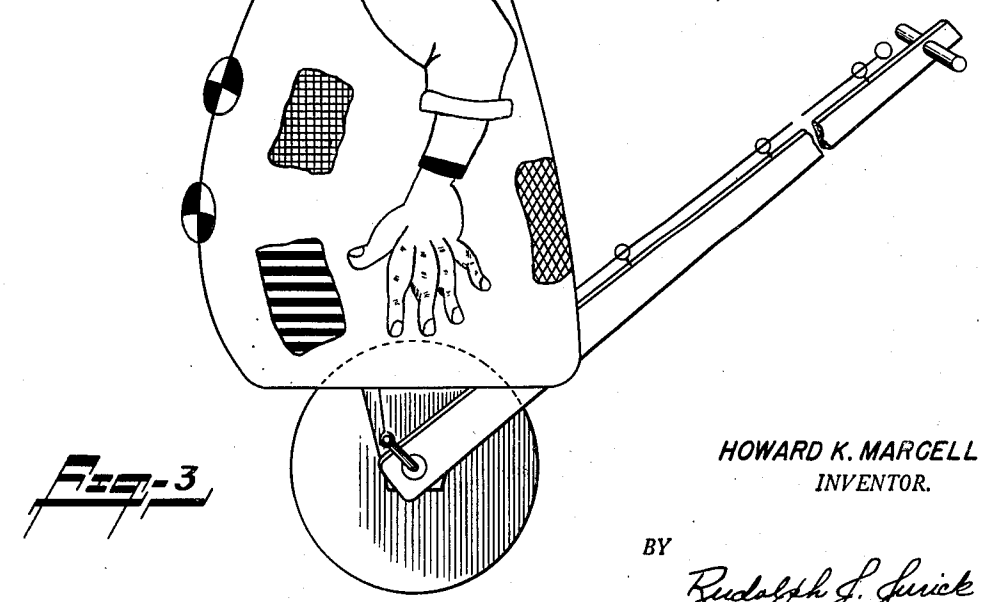


Fig-3

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WHISTLING TOY

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2 Claims. (Cl. 46—99)

1

This invention relates to pull toys of the whistling type and more particularly to a novel toy comprising a pneumatic pump that is actuated when the toy is wheeled over a surface, a whistle, a compressed air reservoir and means operative by the user for selective actuation of the whistle.

I am aware of certain wheel type or pull toys provided with a small pneumatic pump operative as the toy is wheeled along the ground and thereby providing compressed air for the actuation of a whistle. In general, existing toys of this type are so arranged that the whistle is actuated for a brief period each time the wheels make a complete revolution. To eliminate the constant blowing of the whistle with each revolution of the wheels, it has been proposed to provide a by-pass arrangement for the air such that the child can control actuation of the whistle by pulling upon a string extending along the handle of the toy. However, even the latter arrangement does not disassociate the blowing of the whistle from the revolutions of the wheels, that is, if the string is not pulled the toy may be wheeled along the ground without attendant blowing the whistle; however, when the string is pulled the whistle blows once each time the wheels revolve.

My invention overcomes the objections pertaining to toys of this class by providing an expansible reservoir for the storage of compressed air generated by the pneumatic pump. Movement of the toy along the ground increases the volume and pressure of the air in the expansible reservoir and this air is employed to actuate the whistle when and as desired and whether or not the toy is in motion. Once having accumulated a supply of air within the reservoir the whistle may be actuated continuously for a relatively long period or repeatedly for a series of shorter periods.

Additionally, I employ a conventional, colored balloon for the air reservoir. The balloon may readily be attached to a suitable stem and the inflation of a colored balloon as the toy is moved along the ground adds to the novelty and appeal of the toy as a whole.

An object of this invention is the provision of a pull toy of the whistling type provided with an air reservoir in the form of a balloon.

An object of this invention is the provision of a pull toy comprising one or more wheels, a pneumatic pump operative upon rotation of the wheels, a whistle, an expansible air reservoir for accumulating air generated by the pump and manually operative means adapted to permit escape of the air from the reservoir through the whistle.

An object of this invention is the provision of a whistling pull toy provided with an expansible air reservoir and manually operative means

2

effective to actuate the whistle whereby the whistle may be sounded at will for varying periods of time.

An object of this invention is the provision of a whistling pull toy provided with an air reservoir whereby upon accumulation of air in the reservoir the whistle may be actuated during periods when the toy is not in motion.

An object of this invention is the provision of a toy comprising a base, a body and a handle section, a pneumatic pump carried by the base, a wheel adapted to operate the pump, a whistle, an expansible reservoir inflatable by the air generated by the pump, a valve normally closing the air passageway to the whistle and means for manually operating the valve whereby the whistle may be actuated at will.

These and other objects and advantages will become apparent from the following description when taken with the accompanying drawings which illustrate the operative or functional elements of the invention. The drawings are for purposes of illustration and are not to be construed as defining the scope or limits of the invention, reference being had for this purpose to the appended claims.

In the drawings wherein like numerals identify like parts in the several views:

Figure 1 is a fragmentary view with certain parts shown in cross-section and showing a functional embodiment of the invention for purposes of description;

Figure 2 is a fragmentary cross-sectional view of the whistle and associated valve; and

Figure 3 shows the invention embodied in a representative type of toy.

Referring now to Figure 1 a pair of wheels 10 are secured to a crank axle 11 in such manner that rotation of the wheels causes rotation of the axle. A piston 12, made of leather, rubber or the like is attached to the end of a piston rod 13 and is slidable within the tube 14. The other end of the piston rod 13 is pivotally joined to a link 13' which is in turn looped over the crank as shown. It will be apparent that when the wheels 10 rotate, as when the toy is pulled or pushed over the floor, the rotary motion of the wheels is translated into a reciprocating motion of the piston 12.

A plate 15 having an opening 16 therein is fixed within the tube 14 as by solder or cement. Freely disposed between the plate 15 and the end cap 17 is a thin plate or diaphragm 18 which operates as a one way valve as will be explained in more detail, below.

Attached to the end cap 17 is a tubular rod 19 having a stem 20 extending therefrom as shown. An expansible air reservoir preferably in the form of a colored balloon 21 is removably secured to the stem 20.

A whistle 22 is also attached to the rod 19 and the passage of air through the whistle is controlled by a slide valve 23 having an extension 24 extending through a central opening in the end cap 25. Normally the slide valve 23 closes the opening to the whistle under the action of the compressible spring 26, the inward motion of the slide valve being limited by the washer 27 securely affixed to the valve extension 24. Manual operation of the slide valve is accomplished by pulling on the string 28 secured to the extension 24, as shown in Figure 2.

The operation of the device will now be described. Rotation of the wheels 10 imparts a reciprocating motion to the piston 12 which together with the tube 14 forms a pneumatic pump. As the piston 12 moves to the left air passes through the aperture 16 in the plate 15 into the tube 19 and the balloon 21; the diaphragm 18 uncovering the aperture 16. As the piston moves to the right the reduction in air pressure within the tube 14, together with the increased air pressure in the tube 19, causes the diaphragm 18 to press firmly against the plate 15 thereby effectively sealing the opening 16 to prevent escape of air from the balloon. Further, such movement of the piston to the right creates an increasing pressure difference on the two sides of piston. Specifically, the pressure in the tube 14, between the disc 15 and the piston, decreases whereas that in the open end of the tube 14 remains at atmospheric pressure. Consequently, air from the atmosphere will enter into the reduced pressure area circumferentially around the leather washer forming the piston, it being noted that the washer is compressed within the tube 14 such that its circumferential edge is turned over in the direction of the disc 15. Upon subsequent movement of the piston to the left an increasing air pressure between the disc 15 and the piston causes the turned-over edge of the washer to press against the inner wall of the tube thereby providing a tight seal during the compression stroke of the pump. Thus, each cycle of operation of the piston increases the volume and pressure of the air within the balloon. Except for minor air leakage related to the precision with which the various parts are made and assembled, the air accumulated within the balloon is available for blowing the whistle. By pulling upon the string 28 the whistle is placed into direct communication with the balloon. If desired, the child may keep the string taut until all the air in the balloon is exhausted thereby producing a prolonged whistle note. Alternatively, by alternately pulling and releasing the string a series of short notes may be sounded. Obviously, the wheeling of the top over the floor accompanied by the simultaneous blowing of the whistle as and when desired affords the child a high degree of amusement.

To enhance the appeal of the toy the balloon may be disposed appropriately with respect to the character of the toy as a whole. As shown in Figure 3 the toy is made in the form of a clown with the balloon attached so as to form the nose. The whistle may be hidden under the body of the figure or may, for example, protrude from the mouth of the clown in the form of a cigarette, cigar, etc. The inflation and deflation of the clown's nose, as the toy is wheeled over the floor with accompanying blowing of the whistle, provides an additional element of interest and amusement.

While Figure 1 illustrates a simplified arrangement of the various components it will now be apparent the combination of a pump, an expansible air reservoir and a whistle are subject to a wide latitude in design. In general, the size and arrangement of the parts will be determined by the design of the body or housing of the toy. Thus, in the clown toy shown in Figure 3, the parts are arranged in a vertical plane and the figure is supported on one or two wheels. In the case of a locomotive the working parts could conveniently be arranged in a horizontal plane and supported on four or more wheels. In the case of the locomotive a white balloon may be attached to the smoke stack whereby inflation and deflation of the balloon would represent smoke, and the whistle may be disposed in any convenient location within the boiler.

In any design the whistle may, if desired, be disposed within the body of the toy as its function is primarily that of producing sound. However, the stem to which the balloon is attached should be readily accessible to facilitate replacement or interchange of balloons of other colors, sizes and shapes, as desired by the user.

Having now described my invention various modifications in the arrangement and co-action of the parts will be apparent to those skilled in the art without departing from the spirit and scope of the invention as set forth in the following claims.

I claim:

1. A toy comprising a body supported by a wheel rotatable over a surface, a handle secured to the body, a reciprocating pump disposed within the body, a crank axle rotatable upon rotation of the wheel, a connecting linkage between the crank-axle and the piston of the pump to cause operation of the pump upon rotation of the wheel, a tubular air chamber axially-aligned with and communicating with the pump, a one way valve between the pump and the said chamber, a stem extending from the air chamber to the exterior of the body, a balloon removably attached to the stem, said balloon serving as a reservoir for the compressed air generated by the pump, a whistle communicating with the said air chamber, a slide valve, a spring normally biasing the slide valve to close the air passageway between the air chamber and the whistle, and a flexible member secured to the slide valve and extending along said handle, said flexible member manually operative to move the slide valve thereby opening the air passageway to the whistle.

2. The invention as recited in claim 1, wherein the body is formed to simulate an animate character.

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