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TOY CONSTRUCTION

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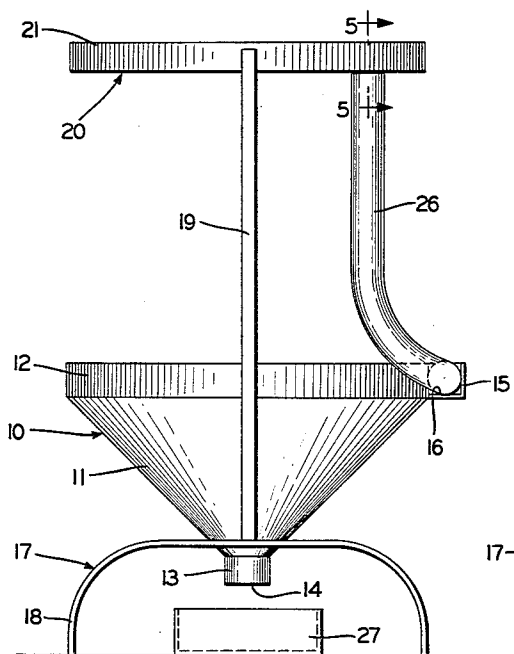


Fig. 1

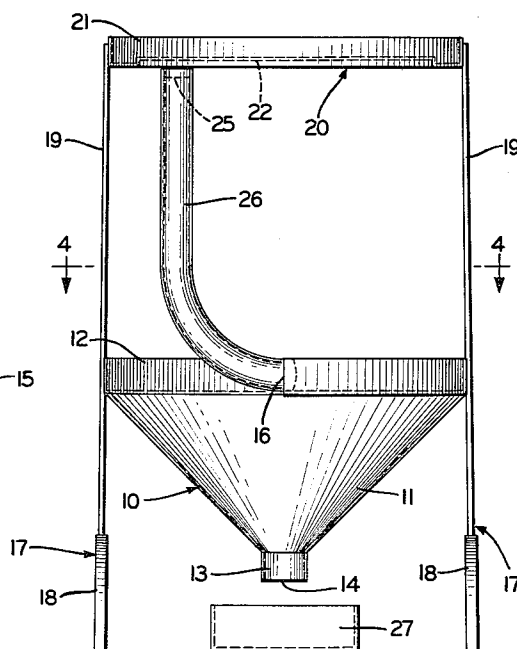


Fig. 3

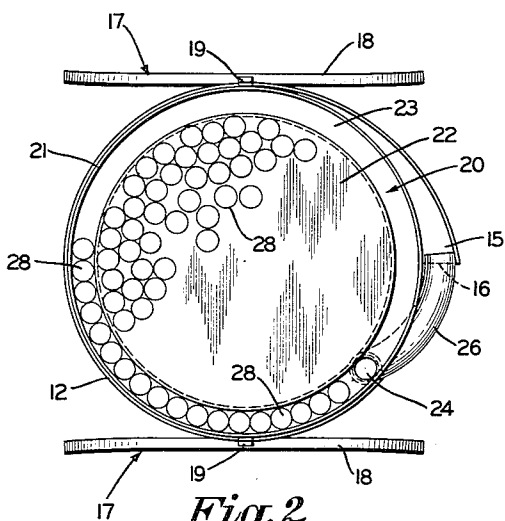


Fig. 2

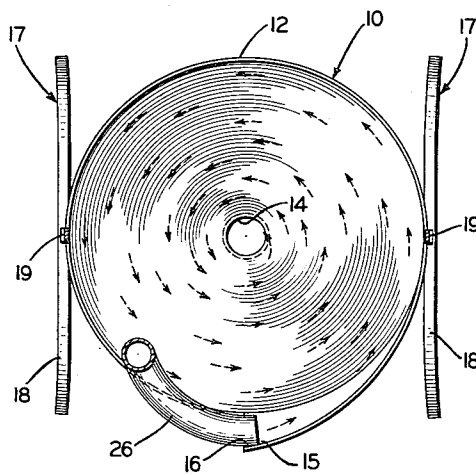


Fig. 4

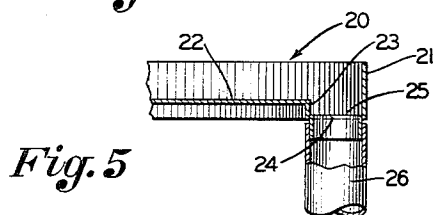


Fig. 5

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TOY CONSTRUCTION

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1 Claim. (Cl. 46—43)

My invention relates generally to toy construction, and more specifically to toy construction for directing marbles and the like in a predetermined unique path of travel for the amusement of children. Even more specifically, my invention relates to a top construction for directing marbles and the like into a spiral path of travel of preferably progressively decreasing diameter.

Many prior constructions of toys making use of marbles and the like have been provided but most of these prior toys have required some form of spring force to propel the marbles into a predetermined path. The present invention, however, requires only the gravitational forces to initiate the movement of the marbles and retain the marbles moving in a particular unique path of travel as determined by the particular construction of the toy.

It is, therefore, a general object of the present invention to provide a toy construction which directs marbles and the like into a predetermined unique path of travel solely by the use of gravity.

It is a primary object of the present invention to provide a toy construction which directs marbles and the like into a unique spinning or spiral motion preferably decreasing progressively in diameter as the marbles move to the lower portion of the toy.

It is a further object of the present invention to provide a toy construction preferably having a particular form of feeding means for feeding the marbles one at a time into the device for producing the motion hereinbefore set forth.

Finally, it is an object of the present invention to provide a toy construction satisfying all of the foregoing objects, yet which may be economically manufactured and assembled and may be marketed for a minimum cost.

These and other objects are accomplished by the parts, constructions, arrangements, combinations and subcombinations comprising the present invention, the nature of which is set forth in the following general statement, a preferred embodiment of which—illustrative of the best mode in which applicant has contemplated applying the principles—is set forth in the following description and illustrated in the accompanying drawings, and which is particularly and distinctly pointed out and set forth in the appended claim forming a part hereof.

In general terms, the improved toy construction comprising the present invention for use with marbles and the like may be stated as including a hollow, preferably generally funnel-shaped member, preferably having an exit opening formed therein at the lowermost portion thereof. This funnel-shaped member is preferably supported with marble feeding means spaced thereabove and track means operably connected to the feeding means and funnel-shaped member. Further, the track means is formed for receiving marbles or the like fed to said track means by the feeding means and for directing said marbles by

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gravity generally circumferentially into an upper portion of the funnel-shaped member.

The feeding means may be in the form of a platform having a grooved track formed therein for receiving the marbles and directing them toward an upper end of the track means, which may be through a hole formed in the feeding means platform aligned with said track means upper end. Further, the track means may be in the form of a cylindrical tube having a lower end positioned for introducing the marbles by gravity into an upper portion of the funnel-shaped member generally circumferentially of said funnel-shaped member, to produce a progressively downwardly spiral motion of the marbles within the funnel-shaped member to the funnel-shaped member lower portion and ultimately through said exit opening in said funnel-shaped member lower portion. Finally, any part or all of the toy may be formed of clear plastic, either translucent or transparent, and this is particularly advantageous for the feeding means, track means and funnel-shaped member so that the progress of the marbles may be observed from the side of the toy.

Thus, marbles may be fed into the track means by the feeding means and are introduced by the track means circumferentially into the funnel-shaped member. Further, the marbles will then spin around the circumference of the funnel-shaped member moving progressively downwardly by gravity to the exit at the exit opening in the lower portion of the funnel-shaped member.

By way of example, an embodiment of the toy construction of the present invention is illustrated in the accompanying drawings forming a part hereof, wherein like numerals indicate similar parts throughout the several views, and in which:

FIG. 1 is a fragmentary side elevation of the toy construction showing a container positioned at the funnel-shaped member exit opening for receiving marbles or the like therefrom;

FIG. 2, a top plan view of the toy construction of FIG. 1;

FIG. 3, a front elevation of the toy construction of FIG. 1;

FIG. 4, a horizontal sectional view, part in elevation, looking downwardly at the funnel-shaped member in the direction of the arrows 4—4 in FIG. 3; and

FIG. 5, an enlarged fragmentary sectional view, part in elevation, looking in the direction of the arrows 5—5 in FIG. 1.

As shown in the drawings, the improved toy construction of the present invention includes a funnel-shaped member 10 which may be in substantially the form of a conventional funnel, being hollow and having the generally conical sides 11, forming the smooth conical inner surface as shown, the upper generally cylindrical rim or top portion 12, and the lower generally cylindrical exit portion 13. The lower exit portion 13 preferably forms an exit opening 14 and the upper or rim portion 12 is likewise preferably open.

The upper rim portion 12 is preferably provided with a radially extended or enlarged entrance portion 15 which opens in a circumferential direction providing the entrance opening 16 and this entrance portion blends smoothly arcuately and circumferentially into the remainder of the rim portion 12, as best seen in FIGS. 1

and 4. Finally, the funnel-shaped member 10 may be formed of one piece and of metal or any other suitable material, but for purposes hereinafter described, it is preferred to form member 10 of one of the so-called "clear" plastics, either translucent or substantially transparent.

The funnel-shaped member 10 is preferably supported spaced above a floor or other plane surface by the supporting legs, generally indicated at 17, which legs include the horizontally extending and vertically downwardly curved foot portions 18, as shown, which provide lateral stability to the entire assembly. From these foot portions, the generally vertically extending support arm portions 19 extend upwardly. The funnel-shaped member 10 is preferably secured to the arm portions 19 of the supporting legs 17 at diametrically opposite points on the funnel-shaped member upper rim 12, spacing the exit portion 13 and exit opening 14 above the floor or plane surface, as shown.

The feeding means of the toy construction of the present invention is shown as a dished or upwardly opening platform member, generally indicated at 20, which platform member is preferably secured to the upper extremities of the supporting leg arm portions 19 and extending generally horizontally. Platform member 20 is provided with a rim portion 21 rising generally vertically from the edges thereof and extending completely around the circumference.

Further, the bottom portion 22 of platform member 20 is formed raised slightly, spaced radially inwardly a predetermined distance from the rim portion 21, providing a single row feed or guide groove 23 for a single row of marbles, as illustrated best in FIG. 2, completely around the circumference of platform member 20 and preferably adjacent the rim portion 21. Finally, a feed opening 24 is formed through the platform member bottom portion 22 within the feed groove 23, as best seen in FIGS. 2 and 5, and the bottom portion 22 may be formed downwardly around this feed opening 24 to form a connecting portion 25, if desired, and as shown in FIG. 5.

Track means, in the form of the tubular track member 26, is preferably secured surrounding the platform member connecting portion 25, with this track member communicating with the platform member feed opening 24 and feed groove 23. Track member 26 extends generally vertically downwardly and then progressively arcuately into a generally horizontal plane, where this track member is connected into the entrance portion 15 and entrance opening 16 of the funnel-shaped member 10.

Thus, the tubular track member 26 communicates with the platform member groove 23 through the feed opening 24 and also communicates with the entrance opening 16 in the upper rim portion 12 of the funnel-shaped member 10. Furthermore, at the point of connection of the tubular track member 26 into the entrance opening 16 of the funnel-shaped member 10, this track member extends and is directed generally circumferentially around the inside of the funnel-shaped member.

As in the case of the funnel-shaped member 10, both the platform member 20 and tubular track member 26 may be formed of a usual clear plastic, either translucent or transparent. Also a usual form of container 27 may be positioned below and aligned with the exit opening 14 of the funnel-shaped member 10 for a purpose to be hereinafter described.

Thus, with the particular embodiment of the toy construction of the present invention, as hereinbefore described, marbles 28, as illustrated in FIG. 2, may be positioned on the platform member 20 and a certain number of these marbles received in the feed groove 23 adjacent the rim portion 21. These marbles, so positioned, may then be urged one by one through the feed opening 24 of the platform member 20 and will be directed downwardly through the tubular track member 26 into the fun-

nel-shaped member 10 through the entrance opening 16 of this funnel-shaped member. In view of the particular connection and shape of the tubular track member 26 into the entrance opening 16 of the funnel-shaped member 10, these marbles will be directed circumferentially around the inside of the funnel-shaped member.

Due to the force gained from moving by gravity from the platform member 20 to the funnel-shaped member 10 through the tubular track member 26, these marbles 28 will spin swiftly circumferentially around the inside of the funnel-shaped member. Furthermore, the marbles will move in a progressively downwardly spiral path around the circumference of the funnel-shaped member in view of the particular contour of member 10 combined with the gravitational forces. Ultimately, again due to gravity and the contour of the funnel-shaped member 10, the marbles 28 will reach the exit opening 14 of this funnel-shaped member and drop downwardly into the container 27.

One of the purposes of forming the funnel-shaped member 10, platform member 20, and track member 26 of plastic is for sound muffling purposes, since by forming these members of plastic rather than metal, the noise created by the movement of the marbles 28 will be greatly decreased. Secondly and more important, if these members are formed of a clear plastic, whether translucent or transparent, the progress of the marbles 28 around the platform member 20 downward through the track member 26 and spinning downwardly through the funnel-shaped member 10 can be observed from the side of the toy.

Although the preferred embodiment of the toy construction comprising the present invention is shown in the drawings, it should be understood that many changes could be made without departing from the broad principles of the past invention. For instance, it is not absolutely necessary to provide the feed groove 23 of platform member 20 and it is not absolutely necessary to provide a closed tubular track member 26 as long as this track member will direct the marbles 28 in a proper desired direction. Furthermore, it would not be absolutely necessary to provide the exit opening 14 in the funnel-shaped member 10, since the marbles 28 could collect at the lower portion of this funnel-shaped member.

In the foregoing description, certain terms have been used for brevity, clearness and understanding, but no unnecessary limitations are to be implied therefrom, because such words are used for descriptive purposes herein and are intended to be broadly construed.

Moreover, the embodiment of the improved construction illustrated and described herein is by no way of example and the scope of the present invention is not limited to the exact details of construction shown.

Having now described the invention, the construction, operation and use of the preferred embodiment thereof, and the advantageous new and useful results obtained thereby, the new and useful construction and reasonable mechanical equivalents thereof obvious to those skilled in the art are set forth in the appended claim.

I claim:

Toy construction for use with marbles and the like including a hollow generally funnel-shaped member having an inner surface defining a continuous conical plane, a generally horizontally extending platform feeding member supported spaced above the funnel-shaped member and having a single width groove formed between the outer periphery of the platform feeding member and an elevated platform portion in a central portion of said platform feeding member, an opening formed vertically through the platform feeding member within said groove, a generally cylindrical tubular track member operably connected with an upper end communicating with the feeding member opening and extending generally vertically downwardly from the feeding member and then arcuately

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into a generally horizontally extending lower end, the track member lower end extending into an upper portion of the funnel-shaped member generally circumferentially of said funnel-shaped member upper portion and opening onto said funnel-shaped member inner surface, and the upper portion of the funnel-shaped member into which the track member lower end extends being radially enlarged and blending smoothly arcuately and circumferentially into the funnel-shaped member inner surface; whereby, marbles may be selectively stored on the elevated platform portion of the platform feeding member and may be selectively moved into the groove of the platform feeding member in a single row, from which groove the

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marbles may be fed through the feeding member opening into the tubular track member and will be introduced by the track member circumferentially into the funnel-shaped member to spin circumferentially around said funnel-shaped member and move progressively downwardly by gravity to exit at the exit opening.

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