

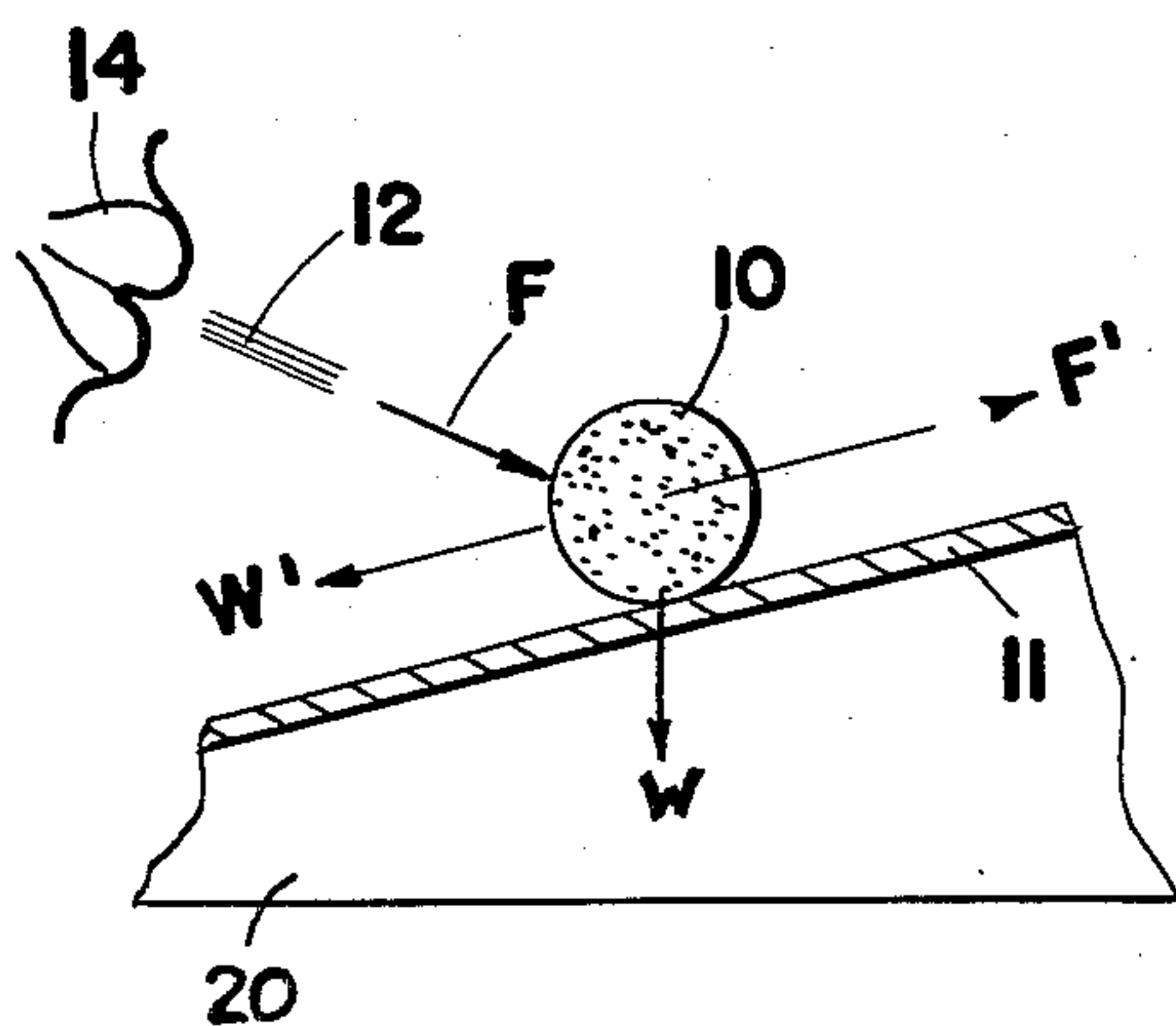
Sept. 2, 1958

J. H. LEMELSON

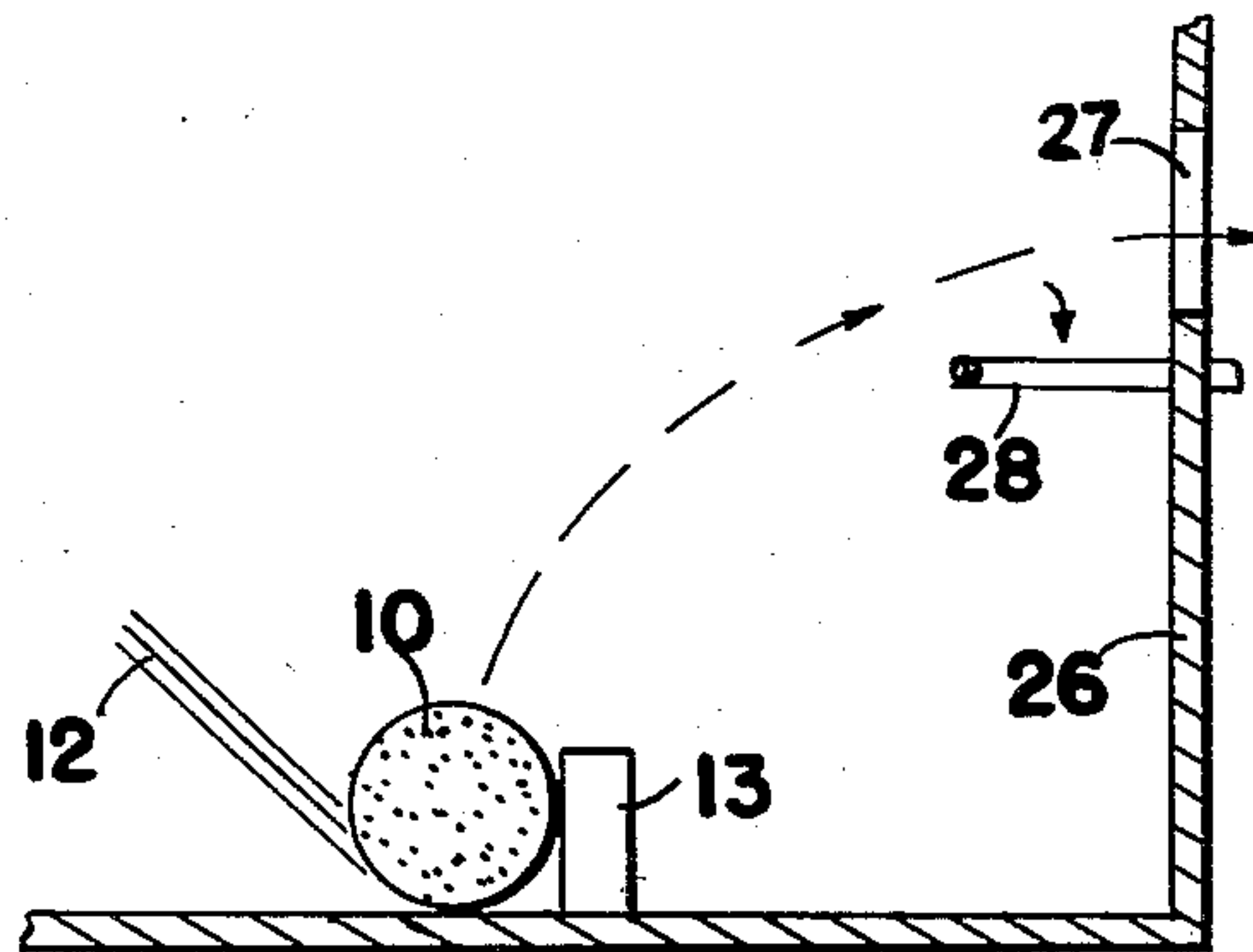
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BALL MANIPULATION GAME

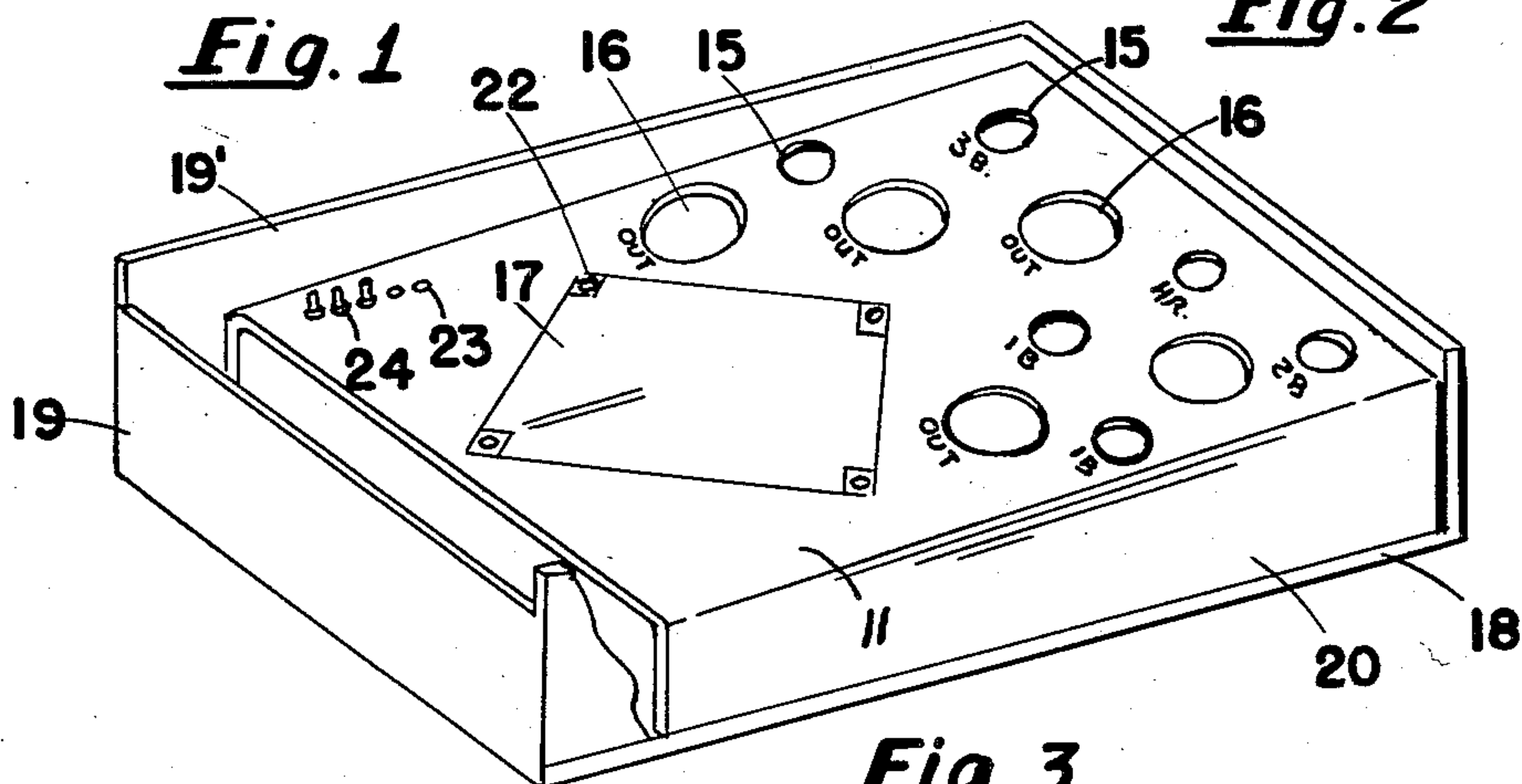
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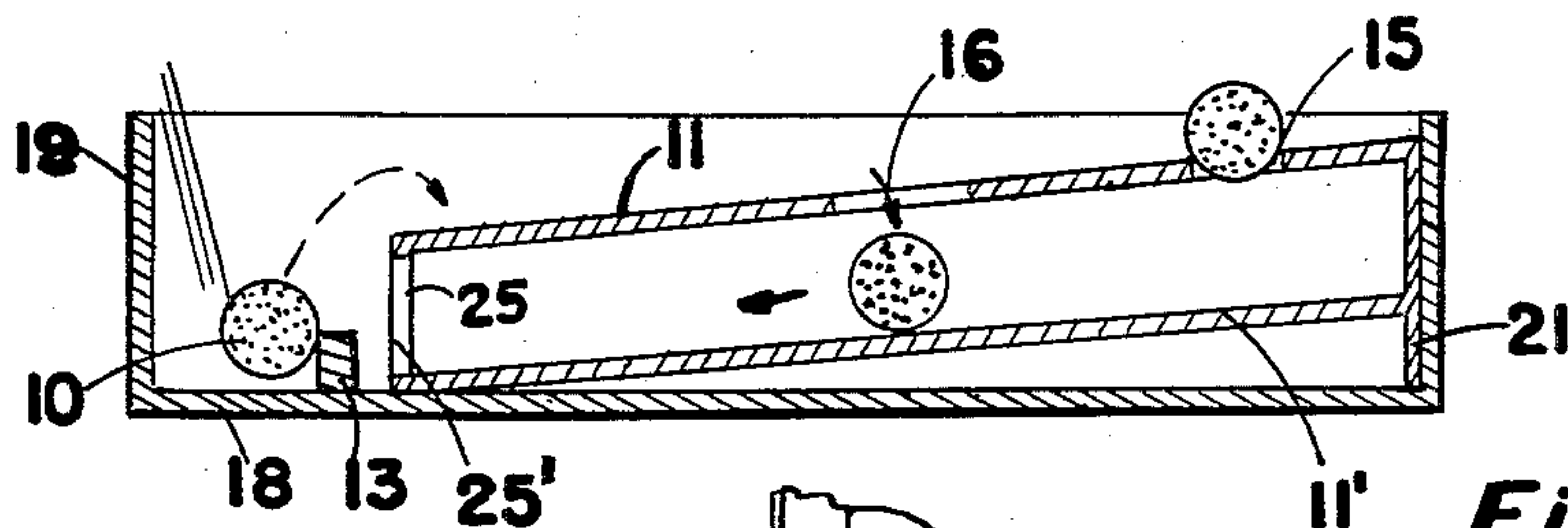
**Fig. 1**



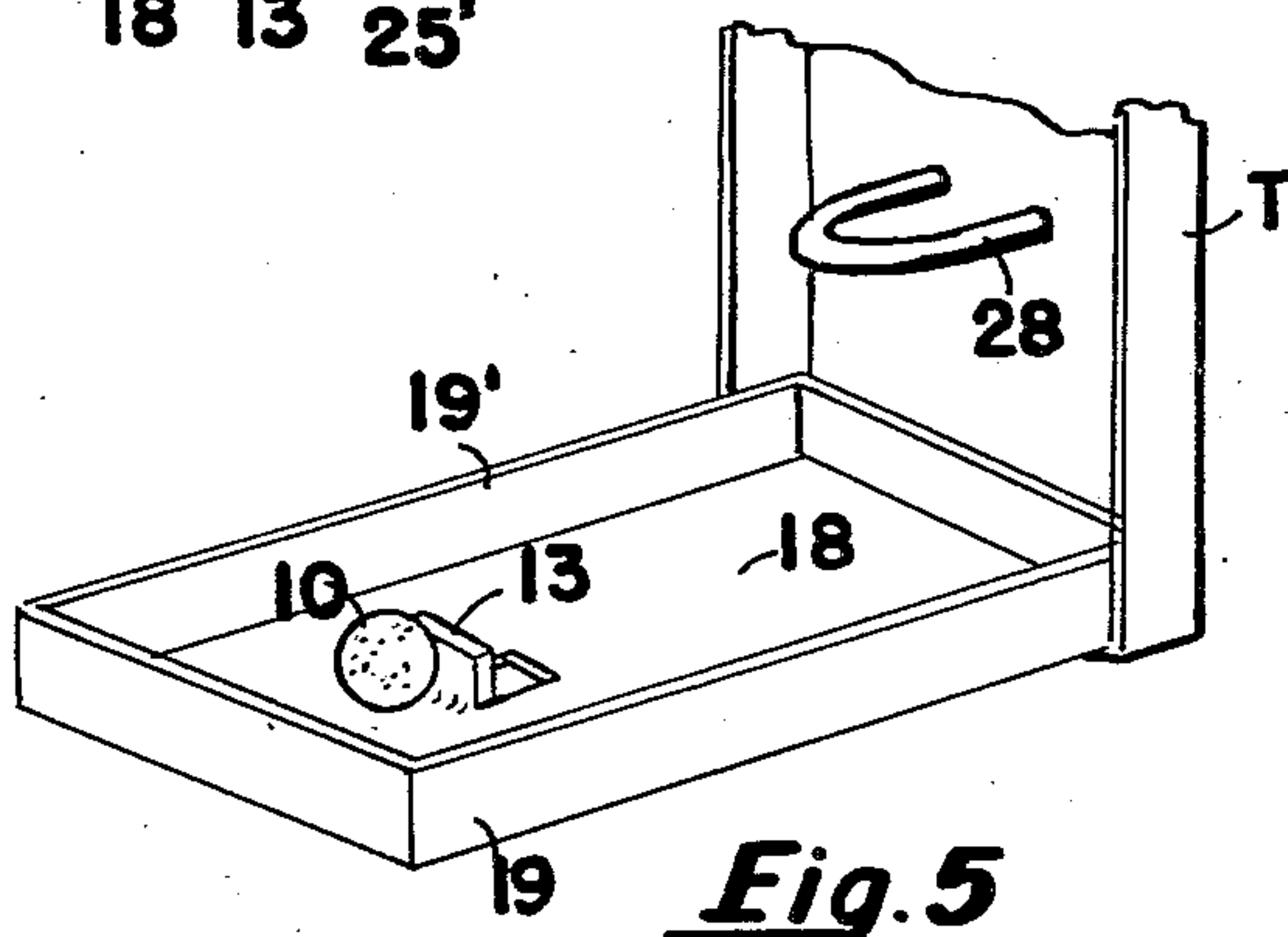
**Fig. 2**



**Fig. 3**



**Fig. 4**



**Fig. 5**

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## BALL MANIPULATION GAME

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Application September 7, 1954, Serial No. 454,319

1 Claim. (Cl. 273—95)

This invention relates to games of skill and in particular games of skill utilizing the pressure of the human breath to manipulate a small plastic ball or sphere. Specifically, the invention relates to games of skill whereby a ball, light enough to be moved by a slight pressure of the human breath is manipulated about a surface inclined to the horizontal against the force of gravity tending to roll the ball down the plane by variations in the intensity and attitude of a stream of air caused by blowing thereon. I also present a variation on the afore-described games of skill whereby a ball is propelled through the air from a rest position on a surface against a target or scoring board.

It is a prime object of this invention to provide new and improved games of skill having action.

It is a second object to provide new games of skill requiring a minimum of parts which may be produced very cheaply.

It is a third object of this invention to provide new and improved games of skill utilizing a ball which may be played without physical contact with said ball or without use of the human hands.

It is a fourth object to provide a new type of game utilizing a light ball or sphere which is manipulated up and down an inclined plane by pressure of the human breath and moved laterally thereon by slight movement of the human lips.

It is a fifth object to provide a new amusement game which requires a new skill which is easily developed by children and adults alike, by invalids or persons not able to use their hands or incapable of the physical effort of conventional games of skill.

It is a sixth object to provide new games of skill simulating such games utilizing a ball as baseball, football, golf, etc.

It is a seventh object to provide a new game of skill which is exciting and amusing and requires a minimum amount of physical effort.

It is an eighth object to provide a new game of skill whereby a spherical target-seeking object may be propelled through the air toward a target from a rest position on a surface merely by use of the human breath.

It is a ninth object to present a simple and very low cost game of skill utilizing a rolling ball, the playing surface of which may be part of a two piece box.

It is a tenth object of this invention to provide new action games of skill using a ball which may be presented in a two piece cardboard box whereby the bottom of said box comprises in part the playing surface, thereby permitting the game to be produced at minimum cost and presenting a simple game which may be played merely by removing the top of the box.

Other objects of this invention will become apparent from the following description and claim.

In the drawings:

Fig. 1 is a partial vertical section of the basic playing and game surface components of the invention showing the forces involved in manipulating the playing ball.

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Fig. 2 is a partially vertical section of a modified game.

Fig. 3 is an isometric view of a playing board simulating a baseball playing field.

Fig. 4 is a vertical section of a modified playing board utilizing the components of the invention.

Fig. 5 is an isometric view of a modified playing board of the invention which comprises essentially the top and bottom of a two piece box.

The games of this invention utilize a small, light sphere made out of a light plastic material and preferably about  $\frac{1}{2}$  inch to  $\frac{3}{4}$  inch in diameter and light enough to be easily moved about a surface, or forced into the air by a light stream of air from the human breath. Such a ball is preferably made out of a very low density expanded cellular plastic material. One such material is expanded polystyrene or "styrofoam" as it is known commercially. "Styrofoam" has a density of between  $1\frac{1}{2}$  to 2 pounds per cubic foot and is an excellent material to use for the purposes of this invention because of its extreme lightness. Foamed or expanded plastics of slightly higher densities may also be used but they require greater breath or air pressure to manipulate. I have discovered that the density of cork, for example, is such that a ball, equivalent in size to one of "styrofoam" (say  $\frac{1}{2}$  inch to  $\frac{3}{4}$  inch in diameter) is more difficult to move and manipulate by the human breath, and hence requires a greater velocity of the breath, also limiting the possible duration of the game and reducing its flexibility for the average child.

I provide a number of new and unique games utilizing an inclined surface and such a ball, whereby said ball may be controlled in motion thereon by the force of the human breath acting against gravity. I have discovered that such a ball may be manipulated to roll on a surface which is inclined from about  $5^\circ$  to about  $35^\circ$  to the horizontal, the optimum angle being in the order of 5 degrees to 15 degrees.

Fig. 1 shows said ball 10 resting on an inclined surface 11 under the action of its own weight  $W$  with a net resultant force  $W'$  parallel to the plane tending to make the ball roll thereon, and a force  $F$  caused by the dynamic pressure of the breath as a stream 12 reacting against  $W'$ . If 12 is such that its resultant force  $F'$  is opposite, in line with and equal to  $W'$ , then the ball 10 will be in equilibrium on the surface 11 and will not move. By varying the direction of 12 (a feat which may be accomplished by movement of the human head or simpler yet, the human cheeks or lips 14) so that  $F'$ , the resultant of  $F$  horizontal to plane 11, becomes skewed to  $W'$ , the ball may be made to travel to either side. By varying the intensity of air stream 12 the ball may be made to travel up the plane, or be permitted to roll thereon if  $F$  is terminated or reduced. Thus, after acquiring a little skill by practice, the average person, including young children and adults alike, may manipulate the ball 10 about the playing surface at will by varying the force of a stream of air from the breath and the direction of its application and pitting said air stream force against the force of gravity tending to move the ball down the inclined plane.

A game which is relatively low in cost to produce, has considerable action, requires an easily developed skill, yet very little physical effort and is unique in that it may be played by one person, yet does not require the use of the human hands, is thus attained. By providing scoring media such as holes in the playing surface 11, some of which are larger in diameter than the ball 10, the game may be scored by guiding or manipulating said ball, with air, past certain of said holes and into a desired hole to attain the score marked or printed thereopposite. Holes



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15 smaller in diameter than the ball 10 will permit the ball to nest on the surface and may also be used for scoring purposes. The game may be scored in one of several ways; (a) by manipulating the ball 10 in the manner described from an at-rest or starting position on the board or surface 11, past a series of traps or obstacles which may be designated cut-outs through which the ball may fall, if not correctly manipulated, and to another cut-out through which it is desired to drop or pass the ball to score; (b) by manipulating one or more of said balls up the inclined plane against gravity past one or more traps or cut-outs through which the ball may fall to one or more cut-outs which are smaller in diameter than the ball and into which it is desired to have the ball nest; (c) by manipulating the ball, as described, about a given printed or otherwise indicated path on the surface of the inclined plane past a series of traps or cut-outs which the ball may fall or pass through, to an indicated destination on the playing surface; (d) by causing the ball to be propelled above the playing surface (in the manner to be described in the description of Fig. 2) at a hole therein or towards a target or other obstacle; (e) by combinations of the above (a) to (d).

Fig. 2 is a side view of an embodiment of this invention whereby the light-weight plastic ball 10 is propelled at a target, which may be the surface of inclined plane 11, by the impact blow of a stream of air 12 directed thereagainst, while said ball is being restricted in motion in the direction of the resultant force of said air stream thereon. I provide an obstruction in the form of surface projection 13 in front of a target (in Fig. 2) comprising vertical panel 26. The ball 10 is placed opposite said target so that the obstruction 13 prevents it from normally rolling thereto. By directing a sharp puff of air against the base of the ball 10 it may be made to ride up and over the edge of the obstruction 13 and describe a path through the air which is a considerable amount higher than the obstruction 13. Two types of targets are illustrated. One merely comprises a hole 27 in the surface of the back board 26 and the other comprises a U-loop of wire 28 which may be used to simulate a basket such as that used in a basketball game.

Fig. 3 is a partially sectioned isometric view of a miniature baseball game utilizing components and arrangements of Figs. 1 and 2. I provide a walled container which may be half of a two piece box and which has a bottom 18 and vertical side walls 19 and 19' extending peripherally about said bottom. An insert or false bottom is assembled with said container and comprises a playing surface 11 with vertically extending support members 20 formed integrally therewith or bent therefrom. Said side members 20 support said surface 11 at an angle to the bottom 18 of the container when assembled therewith so that the base edges of the supports 20 are resting on the upper surface of 18 as shown. The upper or playing surface 11 may be decorated to simulate a variety of different games. In Fig. 3 the surface is decorated and scores indicated thereon to simulate a baseball game. Accordingly, I show a baseball diamond 17 and the outfield illustrated thereon. The game is played by guiding a ball 10 up said incline either into desired holes to fall therethrough and score, or more preferable, as presented in Fig. 3 to so guide said ball 10 up said plane 11 past a series of obstacles comprising holes 16 which are greater in diameter than the ball 10 and through which said ball may drop if not correctly controlled, to other holes 15 which are smaller in diameter than the ball and in which said ball may rest, thereby scoring in accordance with the surface marking or score opposite the hole.

Penalties would be holes marked as outs, foul balls, etc. Scores would be attained as hits, home runs, etc. It is noted that scoring may be also attained by dropping the ball through a hole so marked. The higher score, such as a home run, may be attained by providing such

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a score for the attainment of the most difficult to reach objective, for example, a stop or hole 15 on the board which is almost surrounded by holes or traps 16, through which the ball may fall, save for a narrow path thereto. Another possible game presentation for example, may be had whereby said ball must be directed about said playing surface, up and down and laterally thereon by the technique of directing an air stream thereagainst as afore-described in a path, which is illustrated on the surface thereof, from a starting position to a finish position past a series of obstacle holes 16 through which said ball may fall if not correctly directed. Said game, may, for example, be presented as a treasure hunt, a roadway travelling game, etc. The numeral 24 refers to small rods or scoring pegs, mounted in holes 23 at the side of the board for scoring purposes and may be used to indicate bases attained by placing in holes 22 adjacent each base.

Fig. 4 is a side cross-sectional view showing a modified game board in the realm of this invention modified to permit the playing ball 10 to return to a position at the base or bottom of the playing surface after dropping through the surface hole without the necessity of tilting the box by hand. This is accomplished by the provision of a planar surface 11' under the playing surface 11 which is supported in a spaced relationship to said playing surface 11 and inclined to the bottom 18 of the walled housing. The planar surface 11' is supported essentially parallel to playing surface 11 on a vertically extending end support strip 21 which rests on the bottom 18 of the box and also supports the playing surface 11 thereof. The lower end of the playing surface 11 is supported off the bottom 18 of the box by an end strip 25 the bottom edge of which rests on the bottom 18 of the box. The numeral 25' refers to a cut-out in said supporting strip which is of sufficient dimensions to permit the ball 10 to pass therethrough so that it rests on the bottom 18 and is accessible for reuse. It is noted that the structure comprising the surfaces 11 and 11' and the end support members 21 and 25 may be made of a single piece of cardboard die cut and bent to shape. A very low cost construction is thus attained by inserting said structure in a cardboard box bottom as shown. Providing a slide-together top to the box and one or more of the balls 10 constitutes a complete game of skill having a considerable degree of action.

Fig. 5 is a partial isometric view of a simple target game utilizing some of the afore-described components and also utilizing the top and bottom of a two-piece nesting cardboard box as the target and the playing surface of the game respectively. The game of Fig. 5 is intended to simulate a basketball game and is assembled by fitting the top and bottom together at right angles as shown. The U-loop 28 representing the rim of the basket is assembled with the top T, as in Fig. 2 by passing through holes in the surface thereof, and is dimensioned peripherally so that the ball 10 may pass therethrough. A basket may also be provided though not shown. The obstruction 13 projects from 18, may be secured thereto or may be formed and bent upward therefrom.

While I have disclosed preferred embodiments of my invention and have indicated various changes, omissions and additions which may be made therein, it will be apparent that other changes, omissions and additions may be made in the invention without departing from the scope and spirit thereof.

I claim:

In an amusement game, an open top container, a hollow housing located in said container, the upper surface of said hollow housing being inclined and having a plurality of openings formed therein to define a playing surface, said openings being sufficiently large to enable a ball of predetermined size to fall therethrough, the lower surface of said hollow housing being inclined and defining a ball return for returning said balls that fall



through said openings to a return position, a ball retainer located in said container adjacent the front edge of said hollow housing, said ball retainer receiving a ball in engaging relation therewith preparatory to play and serving as a barrier to said ball, said ball being propelled over said ball retainer and onto said playing surface by a stream of air generated by a player, said ball being moved over the inclined playing surface of said hollow housing and controlled thereon by the action of air generated by said player, said inclined playing surface partially resisting the upward movement of said ball relative thereto, and said ball being of sufficiently small size and formed of sufficiently low density material to be guided upwardly and laterally on said inclined surface by the air generated by said player.

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782,182  
836,561  
921,366  
1,720,707  
1,783,338  
2,015,508  
2,131,332  
2,222,684  
2,591,016  
2,611,994

549,798

## References Cited in the file of this patent

## UNITED STATES PATENTS

Vickers ----- Feb. 7, 1905  
Bush ----- Nov. 20, 1906  
Conolly ----- May 11, 1909  
Woodward ----- July 16, 1929  
Mann ----- Dec. 2, 1930  
Ashley ----- Sept. 24, 1935  
Rose ----- Sept. 27, 1938  
Rayburn ----- Nov. 26, 1940  
Schoenherr ----- Apr. 1, 1952  
Dailey ----- Sept. 30, 1952

## FOREIGN PATENTS

Germany ----- May 2, 1932