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(54) A magnetic ice-hockey game

(57) A box 2 with a transparent cover
2a contains a magnetic puck 7
running on silica gel balls 6. A stick 3
with a magnet 9 is used to guide the

puck into a goal 5. The box 2 contains
obstacles namely, a magnet 11, a
metal piece 12 and a rubber piece 13.
The balls are held on the plastics base
by static electricity or can be replaced
by balls on both surfaces of the puck.

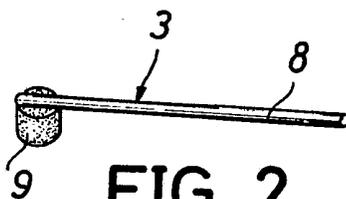


FIG. 2

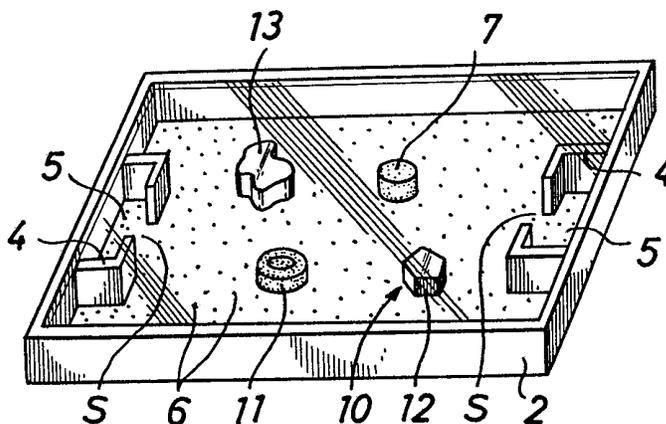


FIG. 4

FIG. 1

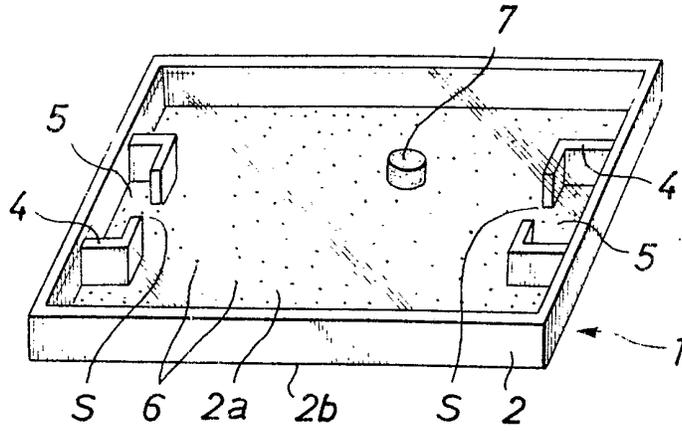


FIG. 2

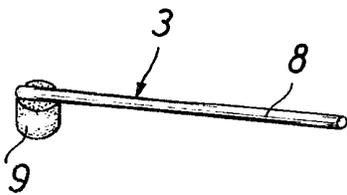


FIG. 3

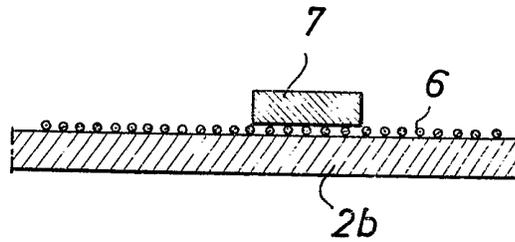
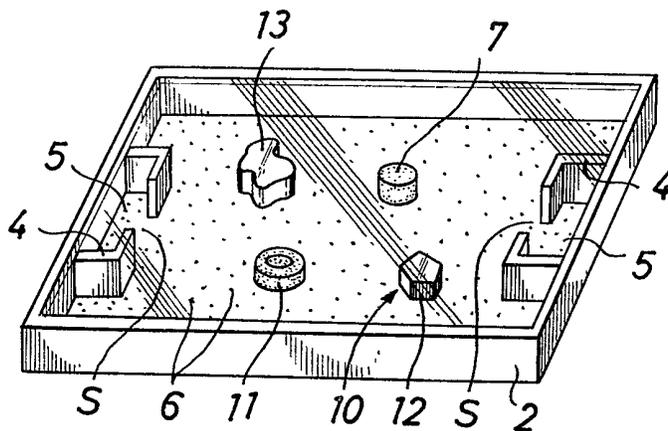


FIG. 4



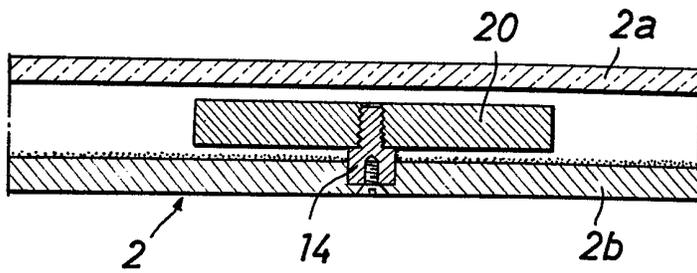


FIG. 5

FIG. 6

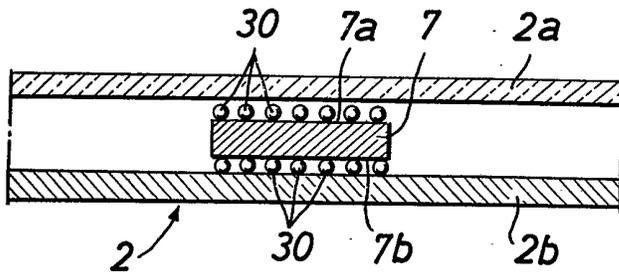
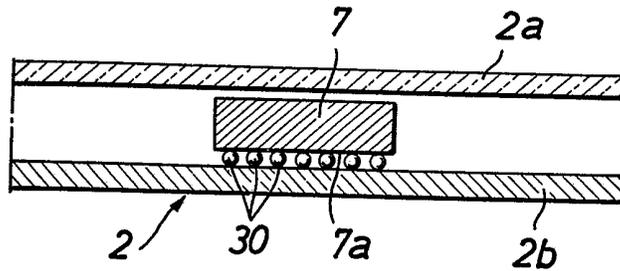


FIG. 7

FIG. 8

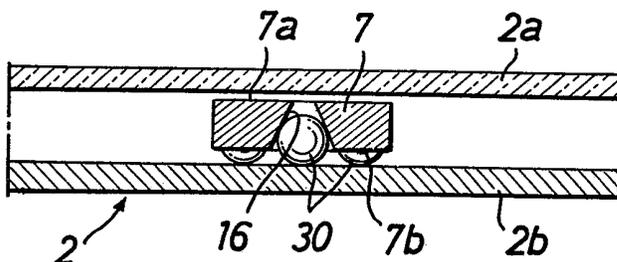
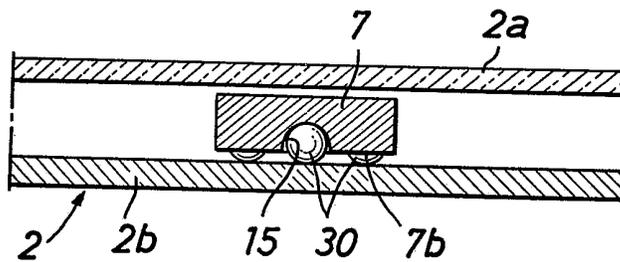


FIG. 9

SPECIFICATION

Apparatus for playing a game

This invention relates to apparatus for playing a game resembling hockey wherein a magnetic member is repelled by the magnetic repulsive force of an operating member.

Various game sets of different constructions have been proposed and are already on the market. Consideration must be given to enable children to enjoy playing the game. It is also an important factor that the game set can easily be operated by children. It is desirable that the game set satisfy this requirement without losing the player's interest in the game.

This invention provides a game set which comprises a magnetic member, balls for making smooth the movement of the magnetic member, a box containing therein the magnetic member and the balls, and operating rods having a magnetic force which repels the magnetic member.

Thus, a game similar to ice hockey can be played, a player using the operating member to repel the magnetic member.

Preferably, obstacles are provided within the box to complicate the movement of the magnetic member, thereby making the game all the more interesting.

The invention will now be described, by way of example, with reference to the accompanying drawings, in which:

Figure 1 is a perspective view of a game set without operating members;

Figure 2 is a perspective view of an operating member forming part of the set;

Figure 3 is a sectional view of the game set showing a magnetic member disposed within a box of the game set;

Figure 4 is a perspective view, similar to Figure 1, of a game set with obstacles;

Figure 5 is a sectional view of one example of the game set showing a rotatable obstacle; and

Figures 6 to 9 are sectional views showing various relationships between the magnetic member and balls.

The game set 1 illustrated comprises a box 2 (Figure 1) and a pair of operating members 3 (Figure 2). The box is flat and sealed with a transparent cover or upper plate 2a. The box 2 has a bottom plate 2b made of a material such as plastics which is capable of electrostatic induction. Scattered on the bottom plate 2b are small balls 6 on which is movably disposed a magnetic member 7 (Figure 3). The balls 6 are preferably small grains of sand (small grains of silica gel) which are light and have uniform diameters and are widely used in hourglasses. This sand is preferred because the diameters of the grains of sand are very small so that they remain adhered to the bottom plate 2b of the box 2 by the static electricity, the moisture, and the roughness of the surface of the bottom plate 2b even when the box 2 is tilted. Thus, by applying a small force, the magnetic member 7 can be slid on the balls 6 as if it were sliding on ice. At this time, the balls 6

are slightly dragged along by the magnetic member 7. However, because of the static electricity, they do not gather at the lower side when the box 2 is tilted. Since the balls are very fine and almost invisible when scattered, they can provide the same sliding effect as ice.

Each operating member 3 comprises a rod 8 and a magnet 9 (whose underside, for example, has the same polarity as the upper side of the magnetic member 7) whose upper side is secured to one end portion of the rod 8. The magnetic member 7 in the box 2 can be moved by the magnetic repulsive force of the operating members 3.

Following is the description of some examples of the games using the game set 1.

A player takes an operating rod 3 in his hand and swiftly place the magnet on the upper plate 2a just above the magnetic member 7 contained in the box 2. Then, the magnetic member 7 is repelled by the magnetic repulsive force in a direction of that portion of the magnetic member 7 which is not overlapped with the magnet 9. If the small balls 6 were not present the magnetic member 7 would be repelled about 5 to 10 cm at most. However, since the magnetic member 7 is placed on the balls 6 scattered on the bottom plate 2b of the box 2, the frictional resistance between the magnetic member 7 and the bottom plate 2b is small and the magnetic member 7 can be displaced a reasonably long distance by a small magnetic force. Thus, the magnetic member 7 will continue to move, striking against the surrounding walls for a reasonably long period of time.

Partition plates 4 are provided on the opposing end walls normal to the longitudinal axis of the box 2 to form goals 5 each with an opening S. Two players are to handle their operating rods 3 to throw the magnetic member 7 into the opponent's goal 5 by making use of the magnetic repulsive force. The game can be played as an ice hockey game, in which the operating members 3 are used as the sticks and the magnetic member 7 as the pack. Modified embodiments are described in the following with reference to Figures 4 and 5.

Figure 4 shows the box 2 with obstacles 10 provided therein. The materials used as the obstacles 10 are a magnet 11, a metal piece 12, and a rubber piece 13, which give different reactionary movements to the magnetic member 7. With the obstacles 10 arranged in the box 2, the magnetic member 7 is repelled or attracted by the obstacles 10 when it strikes against them, and is forced to change its course by the magnetic force even when it does not touch them, so that nobody can predict in which direction the magnetic member 7 will move; this will make the game all the more interesting.

Figure 5 is a sectional view showing an obstacle 20 rotatably supported on the bottom plate 2b of the box 2. On the bottom plate 2b of the box 2 is erected a support shaft 14 on which the obstacle 20 is rotatably supported at the centre. If rotatable obstacles 20 are located near the entrances of the openings S of the goals 5 and

some other suitable locations, they will make the game still more exciting. In other words, the magnetic member 7 repelled by the operating members strikes against the rotatable obstacles 20 and is forced to change its course, and the magnetic member 7 can also be blocked from easily entering the goal by providing the rotatable obstacle 20 near the goal 5. The obstacle 20 located near the goal 5 may be regarded as a goal keeper. In making the game more interesting, it is useful to mark on the upper surfaces of the obstacles 20 illustrations of the ice hockey players so that the illustrated players look as though they were striking the magnetic member 7.

Figure 6 is a sectional view of a game set using balls 30 of larger diameter than the fine balls 6 used in Figure 1. A plurality of balls 30 of even diameter are bonded to the undersurface 7a of the magnetic member 7 with bonding agent to make smooth the sliding movement of the magnetic member 7 which is supported by point contacts between the balls 30 and the bottom plate 2b of the box. The material used for the balls 30 is preferably material with small frictional coefficient.

Figure 7 is a sectional view of the game set in which the balls 30 used in Figure 6 are secured to both the upper surface 7a and the undersurface 7b of the magnetic member 7. In this way, by providing the balls 30 on both the upper surface 7a and the undersurface 7b of the magnetic member, it is possible to handle the operating member 3 not only from above the upper plate 2a but also from under the bottom plate 2b of the box 2. In this case, if both the upper plate 2a and the bottom plate 2b are made transparent, the operation becomes easier.

Figures 8 and 9 are sectional views of game sets wherein the balls 30 are rotatably arranged in the magnetic member. The balls 30 may either be rotatably received in an arcuate recess 15 cut into the undersurface 7b of the magnetic member 7 as shown in Figure 8, or may be rotatably received in a tapered hole 16 cut through the upper surface

7a from the undersurface 7b of the magnetic member 7, as shown in Figure 9. Since the balls 30 are rotatably received in the magnetic member 7, the magnetic member 7 can smoothly be moved substantially without frictional resistance by the magnetic repulsive force, with the balls 30 rolling, ensuring free movement of the magnetic member 7.

A smoother movement of the magnetic member 7 can be ensured if the gap between the upper plate 2a and the bottom plate 2b of the box 2 is such that the magnetic member 7 cannot be turned upside down.

CLAIMS

1. Apparatus for playing a game comprising a box containing a magnetic member and balls interposed between the box and the magnetic member to facilitate movement of the magnetic member, and an operating member which provides a magnetic force to repel the magnetic member.

2. Apparatus as claimed in claim 1, wherein obstacles are provided in the box.

3. Apparatus as claimed in claim 2, wherein the obstacles are made up of various members of different materials to which the magnetic member reacts differently.

4. Apparatus as claimed in claim 2, wherein the obstacles are rotatably mounted within the box.

5. Apparatus as claimed in any of claims 1 to 4, wherein the balls are secured to at least the upper surface of the undersurface of the magnetic member.

6. Apparatus as claimed in any of claims 1 to 4, wherein the balls are rotatably received in the magnetic member.

7. Apparatus for playing a game, substantially as described with reference to, and as shown in, Figures 1 to 3 of the accompanying drawings.

8. Apparatus as claimed in claim 7, modified substantially as described with reference to, and as shown in, any of Figures 4 to 9 of the accompanying drawings.