Aug. 12, 1930. C. L. GILLIS 1,772,804

CURLING STONE

Filed May 10, 1928 2 Sheets-Sheet 1

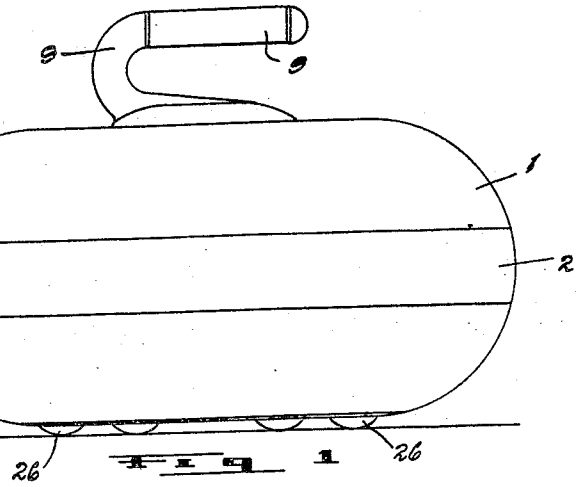


Fig. 1

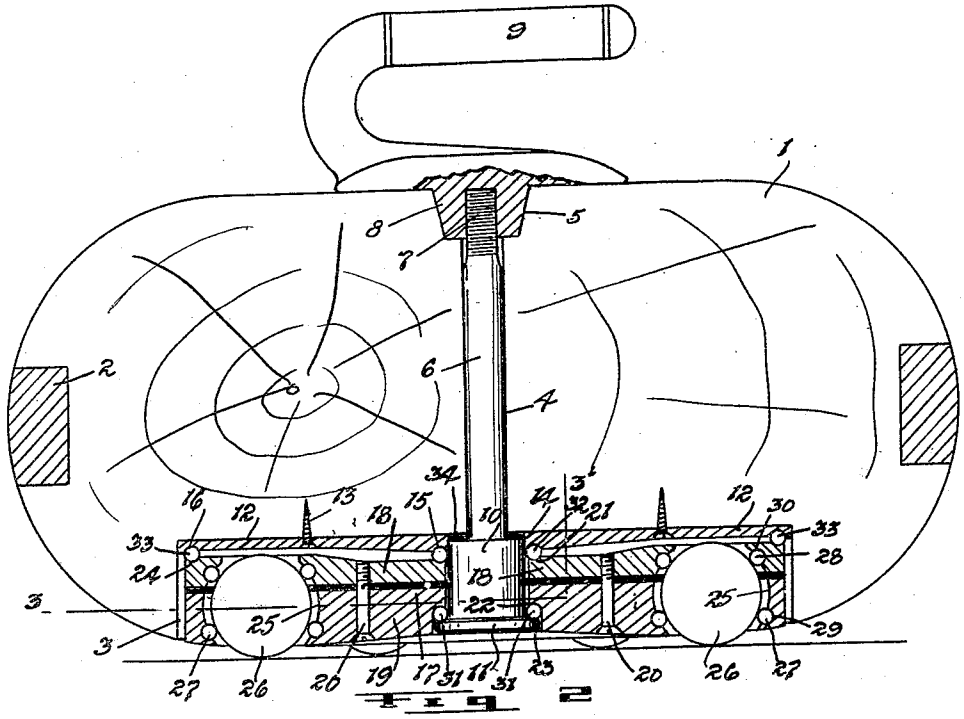


Fig. 2

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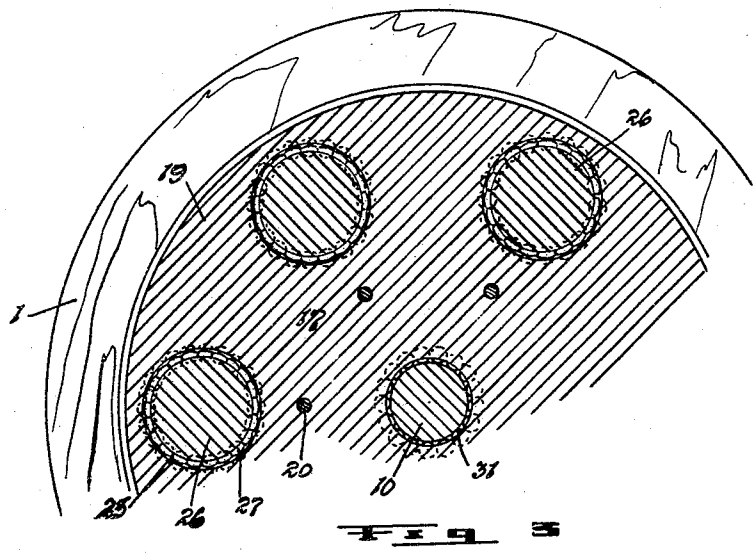


Fig 3

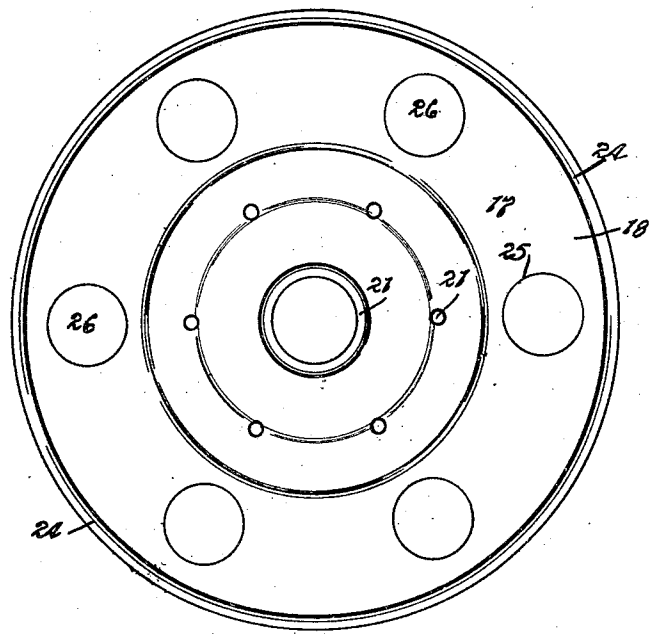


Fig 4

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UNITED STATES PATENT OFFICE

CHARLES L. GILLIS, OF WINNIPEG, MANITOBA, CANADA

CURLING STONE

Application filed May 10, 1928, Serial No. 276,767, and in Canada March 9, 1928.

The invention relates to improvements in curling stones and an object of the invention is to provide a curling stone for use on surfaces other than ice, such as on wood or other plane surfaced floors and which will permit of the game of curling being carried on in all seasons much to the enjoyment of the followers of the game.

A further object is to construct the stone so that the various curling shots can be made to advantage and further to construct the stone in a simple, durable and inexpensive manner and such that adjustment can be readily made in the bearings when desired.

With the above more important objects in view, the invention consists essentially in the arrangement and construction of parts hereinafter more particularly described, reference being had to the accompanying drawing, in which:—

Fig. 1 is a side view of the curling stone.

Fig. 2 is an enlarged detailed vertical sectional view centrally through the same, the handle being shown in side elevation.

Fig. 3 is a horizontal sectional view at 3—3′ Figure 2.

Fig. 4 is a plan view of the annular bearing ring.

In the drawing like characters of reference indicate corresponding parts in the several figures.

The body 1 of the curling stone can be made from any desired material. If it be made from a light material such as wood or papier-mâché, I consider it desirable to provide the body with a circumscribing band 2 of metal which will give the stone the desired weight as will readily be understood. The shape of the body simulates the shape of the customary curling stone.

The under side of the body 1 is provided with a cylindrical recess 3 and a vertical hole 4 passes centrally through the body from the recess and terminates in a centrally located pocket 5 at the top of the body. A bolt 6 passes through the hole and has the upper end contracted and screw threaded as indicated at 7 to receive the interiorly screw threaded extension 8 carried by the customary shaped handle 9. The lower end of the bolt terminates in a cylindrical head 10 provided at the lower end with an outstanding flange 11.

To the under side of the body within the cylindrical recess, I locate an upper bearing plate 12 which is fastened to the body by suitably located screws 13, the said plate being centrally recessed as indicated at 14 to receive the head. The bearing plate is provided adjoining the head with a continuous circular ball raceway 15 and adjoining the outer edge with a second continuous circular ball raceway 16. Beneath the upper bearing plate, I locate an annular bearing ring indicated generally by the reference numeral 17 and which embodies two horizontally disposed annular plates 18 and 19 fastened together by suitably located screws 20. These plates also receive the head 10 and the upper plate is supplied on the upper face and adjoining the head with a continuous ball raceway 21 and the lower plate is also supplied adjoining the head with a continuous ball raceway 22 which lies to the inner side of and opposes a further continuous ball raceway 23 formed on the flange 11. The upper plate 18 is supplied with a ball raceway 24 on its upper face in a location directly opposite the ball raceway 16.

The bearing ring 17 is provided at suitable intervals with a plurality of spherically shaped cavities 25 and in each cavity, I locate a comparatively large ball bearing 26, the balls being all of the same size and it being observed that the balls are exposed through the lower open ends of the cavities. Each ball is engaged by a lower set of ball bearings 27 and an upper set of ball bearings 28, these sets of ball bearings operating in circular raceways 29 and 30 provided in the plates 18 and 19.

By forming the annular bearing ring 17 from two plates 18 and 19, it is an easy matter to insert the several sets of bearings 27 and 28 and also the large balls 26 and after the several balls have been placed in position, they will be retained by fastening the plates together with the screws 20.

Relatively small ball bearings 31, 32 and 33 are placed in the raceways 22 23, 15 21, and

16 24 respectively. It will be observed that the head 10 is shouldered against the body 1 and in this location I insert a number of thin washers 34. By withdrawing or inserting washers, one can adjust the ball bearings and when the proper adjustment has been found, it is only necessary to tightly screw up the handle to hold the parts in place.

According to the above arrangement, it will be observed that the balls 26 are free to travel in any direction in which the curling stone may be thrown or directed and that the player can give the body of the stone a rotary movement in one direction or the other to effect an inturn or an outturn as is desired. In other words, the balls 26 can travel over the floor whilst the body 1 is spinning in one direction or the other. If a straight shot is desired, the player will not rotate the body by turning the handle as he delivers the same onto the floor.

Whilst I have entered into a detailed description of the arrangement of the bearings, it will be readily understood I do not desire to be limited to the precise construction shown as such could be readily modified without departing from the spirit of the invention as set forth in the appended claims.

Whilst I have used the words "curling stone" in the foregoing description and appended claims, I do not mean by such name to infer that the device necessarily is made from stone but simply use the words as a title under which the device will be readily recognized.

What I claim as my invention is:—

1. A curling stone comprising a weighted body having the under side thereof recessed, an upper bearing plate permanently secured to the body within the recess, a bolt passing vertically and centrally through the body, a handle secured to the upper end of the bolt, an annular bearing ring located within the recess and rotatably mounted on the bolt, said ring being provided at spaced intervals with spherical cavities, compartively large balls located in the cavities and having their lower ends exposed and extending beyond the ring, sets of ball bearings carried by the ring and engaging the balls in the cavities and sets of ball bearings interposed between the ring and the upper bearing plate.

2. A curling stone comprising a weighted body having the under side thereof recessed, an upper bearing plate permanently secured to the body within the recess, a bolt passing vertically and centrally through the body and into the recess and having a flanged lower end, a handle screw threaded on the upper end of the bolt and engaging the body, an annular bearing ring located within the recess and rotatably mounted on the lower end of the bolt between the plate and the flange, said ring being provided at spaced intervals with spherical cavities, comparatively large balls located in the cavities and having their lower ends exposed and extending beyond the ring, sets of ball bearings carried by the ring and engaging the balls in the cavities, and sets of ball bearings interposed between the ring and the upper bearing plate.

Signed at Winnipeg this 24th day of April, 1928.

CHARLES L. GILLIS.