

W. WOODS
TEN PIN BALLS.

No. 189,674.

Patented April 17, 1877.

Fig. 1

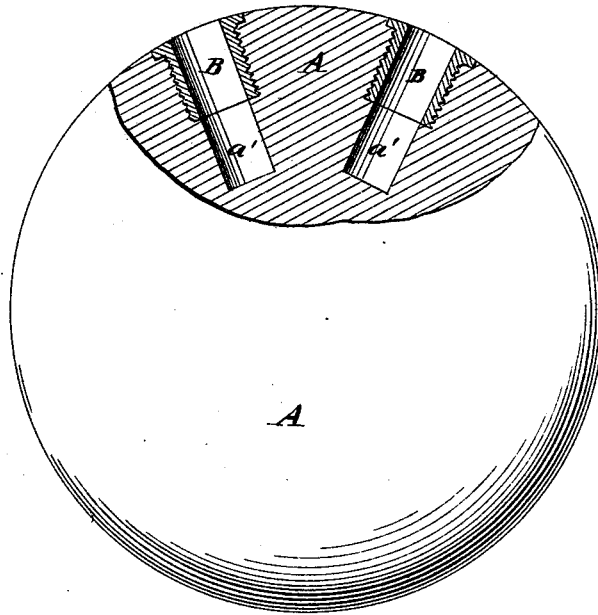


Fig. 2

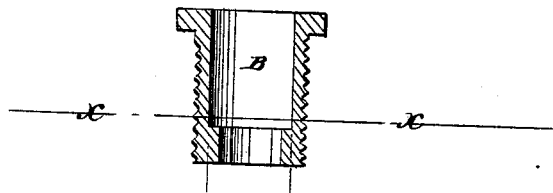
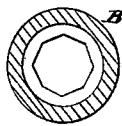


Fig. 3



WITNESSES:

A. W. Almqvist
J. H. Scarborough

INVENTOR:

W. Woods

BY

Munroe
ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM WOODS, OF BROOKLYN, E. D., NEW YORK.

IMPROVEMENT IN TEN-PIN BALLS.

Specification forming part of Letters Patent No. **189,674**, dated April 17, 1877; application filed October 14, 1876.

To all whom it may concern:

Be it known that I, WILLIAM WOODS, of Brooklyn, E. D., in the county of Kings and State of New York, have invented a new and useful Improvement in Ten-Pin Balls, of which the following is a specification:

Figure 1 is a side view of one of my improved balls, partly in section, to show the construction. Fig. 2 is a longitudinal section of one of my improved bushes before being inserted in the ball, illustrating its construction. Fig. 3 is a cross-section of the same, taken through the line *x x*, Fig. 2.

Similar letters of reference indicate corresponding parts.

The object of this invention is to improve the construction of ten-pin balls, to prevent the balls from being chipped off or splintered around the finger-holes, and to accurately balance the balls, so that they will roll perfectly true.

The invention consists in ten-pin balls having metallic bushes inserted in their finger-holes, as hereinafter fully described.

A represents a ten-pin ball, in which are bored two radial holes, *a'*, at a suitable distance apart, to receive the thumb and middle finger of the hand of the player.

With this construction, when the balls are being used they are liable to be chipped off

or splintered around the edges of the holes *a'* by striking against the pins and against other balls while being rolled back along the return-gutter. To prevent this, and at the same time true the ball, which is thrown out of balance by boring the holes *a'*, I screw metallic bushes B into the said holes *a'*. The bushes B are made with a screw-thread upon their outer surface, and an outwardly-projecting flange around their outer end, which fits into a countersink in the surface of the ball. The bushes B are made with an inwardly-projecting flange around their inner ends, the edge of which is notched to make the opening through them of octagonal or other polygonal form, to enable the bush to be turned into place. When the bush B has been secured in place, a drill of the proper size is inserted in the said bush, and the said inner flange is drilled out, leaving its inner surface smooth.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

Ten-pin balls having metallic bushes inserted in their finger-holes, substantially as herein shown and described.

WILLIAM WOODS.

Witnesses:

JAMES T. GRAHAM,
CHAS. SEDGWICK.