

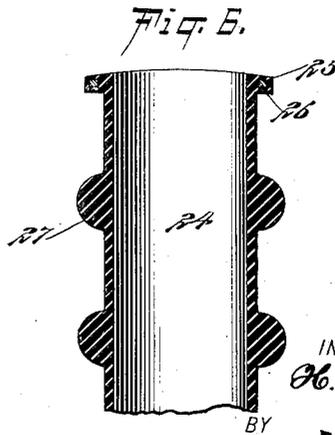
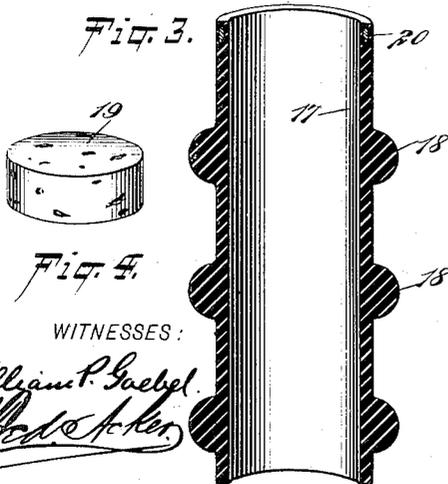
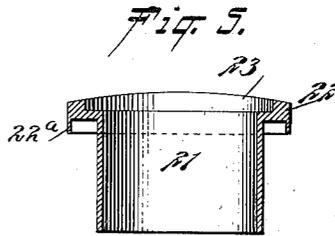
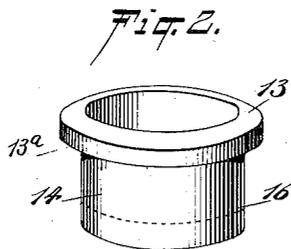
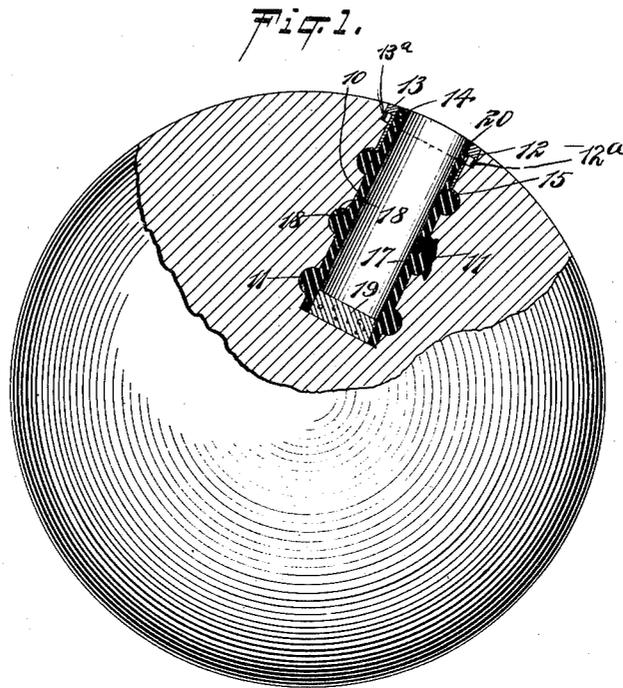
No. 626,584.

Patented June 6, 1899.

H. G. WILMERLING.
TENPIN BALL.

(Application filed Aug. 25, 1898.)

(No Model.)



WITNESSES:

William P. Laebel
Ad. Aker

INVENTOR
H. G. Wilmerling

BY
Mumf
ATTORNEYS.

UNITED STATES PATENT OFFICE.

HENRY G. WILMERLING, OF NEW YORK, N. Y.

TENPIN-BALL.

SPECIFICATION forming part of Letters Patent No. 626,584, dated June 6, 1899.

Application filed August 25, 1898. Serial No. 689,469. (No model.)

To all whom it may concern:

Be it known that I, HENRY G. WILMERLING, of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Tenpin-Ball, of which the following is a full, clear, and exact description.

The object of the invention is to so form the finger and thumb openings of tenpin-balls that the balls will not check or break at said openings, no matter how hard the balls may be brought in contact upon a return-rail.

Another object of the invention is to provide an elastic cushion within the finger and thumb openings and means for securing the cushions in place.

A further object of the invention is to provide a means whereby the above-named objects may be attained in a simple and economic manner.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a partial side elevation and partial sectional view of a tenpin-ball, illustrating in longitudinal section the application of the improvement to one of the finger-openings.

Fig. 2 is a perspective view of the bushing shown in Fig. 1 detached and drawn upon an enlarged scale. Fig. 3 is a vertical section through a cushion adapted to enter one of the finger-openings. Fig. 4 is a perspective view of a locking-block for the said cushion. Fig. 5 is a vertical section through a modified form of the bushing, and Fig. 6 is a longitudinal section through a cushion adapted for use in connection with the bushing shown in Fig. 5.

The tenpin or bowling ball is provided with the usual two openings 10, one for the thumb and the other for a finger of the same hand; but only one of the said openings is shown, since the arrangement and construction of the ball at each opening are identical. The opening 10 is provided with any desired number of annular recesses 11, and at the mouth of each opening 10 a depression or countersink

12 is made. The countersink is adapted to receive a flange 13, formed at the upper end of a bushing 14, which bushing is preferably made of metal, but may be made of any hard substance. The body portion of the bushing extends downward in the opening 10 designed to receive it, and the lower end of the body of the bushing is forced outward, so as to enter the upper or outermost annular recess 11, as shown at 15 in Fig. 1, the line upon which the bushing is bent outward being indicated by the reference-numeral 16 in Fig. 2. The bushing is further provided with a pendent rim 13^a at the flange 13, which rim is made to enter an annular groove 12^a at the margin of the countersink 12. A tubular cushion 17, preferably made of rubber, but which may be made of sections of cork, is introduced into each of the openings 10 in the ball. Each cushion extends from the bottom or from a point between the top and bottom of the opening to which it is attached out flush with the outer face of the bushing provided for said opening, and each of the cushions is provided with exterior annular ribs 18, said ribs being adapted to enter the annular recesses 11 in the opening 10, to which the cushion may be applied, as is shown particularly in Fig. 1, and in order that a cushion shall remain firmly in position in the opening in which it belongs a block 19, corresponding in contour to the inner contour of the cushion, may be forced into said cushion at its lower portion, as shown in Fig. 1, the said block when used serving to expand the cushion and assist the exterior ribs 18 in preventing the displacement of the same.

In order that the upper end portion of the cushion shall not bulge inward during service, a ring 20 may be introduced into the upper portion of the cushion, which ring when employed is preferably of spring metal and serves to hold the upper portion of the cushion against the inner face of the bushing 14.

In Fig. 5 I have illustrated a modified form of bushing, said bushing being designated as 21, and in this form of bushing a flange 22 at the top, corresponding to the flange 13 in Fig. 2, is provided with a countersink or an annular recess 23, the flange being also provided with a pendent member 22^a, corresponding to

the pendent member 13^a of the flange 13. The cushion 24, adapted for use with the bushing 21, is provided at its upper end with a flange 25, into which a spring-ring 26 is preferably introduced, the flange 25 being adapted to enter and to snugly fit in the countersink 23 of the aforesaid bushing 21, while the pendent member 22^a of the flange will enter a marginal groove in the aforesaid countersink 12. The cushion 24 (shown in Fig. 6) is provided with exterior annular ribs 27, corresponding to the ribs 18 illustrated in the form of cushion shown in Fig. 3.

It will be understood that the cushions may be cemented to the walls of the openings 10 in the ball, if desired, and the said openings may be given a tapering shape, being preferably widest at the bottom.

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

1. In a tenpin or bowling ball, metallic bushings fitted into the finger-openings of the ball, each bushing being provided with a flange at its outer end countersunk in the outer surface of the ball, each finger-opening being also provided with annular recesses, a tubular cushion fitted in each finger-opening, having exterior annular ribs adapted to enter the annular recesses in said finger-openings, and a spring material located within the upper portion of each cushion, the spring material being adapted to hold the cushions in contact

with the inner faces of the bushings, for the purpose specified.

2. In a tenpin or bowling ball, metallic bushings fitted into the finger-openings of the ball, each bushing being provided with a flange at its outer end countersunk in the outer surface of the ball, each finger-opening being also provided with annular recesses, a tubular cushion fitted in each finger-opening, having exterior annular ribs adapted to enter the annular recesses in said finger-opening, a spring material located within the upper portion of each cushion, the spring material being adapted to hold the cushions in contact with the inner faces of the bushings, and a retaining-block located near the bottom of each finger-opening within the tubular cushion provided for said opening, the said blocks being adapted to force the lower portions of the cushions outwardly, for the purpose set forth.

3. A tenpin-ball having a socket produced therein, a tubular cushion fitted in the socket, an annulus of spring material sunk in the outer portion of the cushion, and a bushing fitted in the outer portion of the socket between the walls thereof and the cushion and having an outwardly-turned flange countersunk in the ball at the outer end of the socket.

HENRY G. WILMERLING.

Witnesses:

J. FRED. ACKER,
JNO. M. RITTER.