

E. H. SAWYER, JR.  
BOWLING ALLEY PIN.  
APPLICATION FILED MAR. 21, 1911.

1,030,834.

Patented June 25, 1912.

Fig. 1.

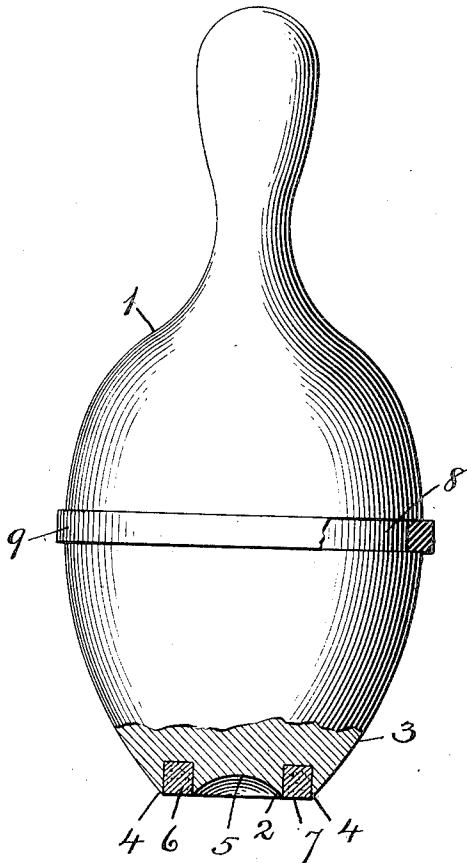


Fig. 2.

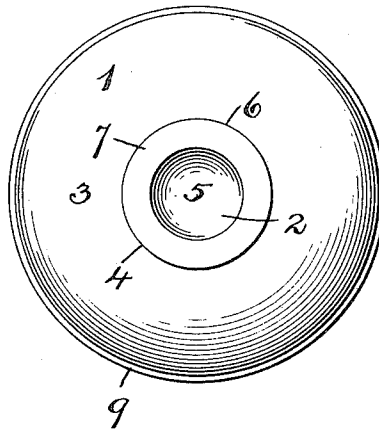
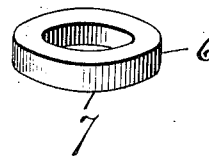


Fig. 3.



Witnesses

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# UNITED STATES PATENT OFFICE.

EDWARD H. SAWYER, JR., OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-FOURTH TO LOUIS E. SMITH AND ONE-FOURTH TO HENRY H. GEIGLEIN, BOTH OF BALTIMORE, MARYLAND.

## BOWLING-ALLEY PIN.

1,030,834.

Specification of Letters Patent.

Patented June 25, 1912.

Application filed March 21, 1911. Serial No. 615,892.

*To all whom it may concern:*

Be it known that I, EDWARD H. SAWYER, Jr., a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Bowling-Alley Pins, of which the following is a specification.

This invention relates to improvements in bowling pins and has particular reference to those pins known as ten pins or duck pins.

The object of the present invention is to improve the construction of the pins so as to reinforce them in a manner that will materially reduce the liability of injury thereto either by contact with each other or by being struck on the bottom by the balls and which will maintain the bottom of the pin in a useful condition for a materially prolonged period.

The invention is illustrated in the accompanying drawing, in which,—

Figure 1, shows a pin partly in side elevation and partly in section and embodying the features of the invention. Fig. 2, is a bottom view of the pin, and Fig. 3, is a perspective view of the detached bottom reinforce.

Referring to the drawing the numeral, 1, designates the pin proper of a shape to suit the purpose for which it was intended. In the present instance the pin shown is a duck pin but this is immaterial.

The main difficulty with pins is that the bottoms thereof very quickly become so battered, split and broken that either they will not stand at all and must be thrown away or they can only be set up by carefully placing them. This condition often results during the use of the pin in a single day and consequently considerable expense is attached to the maintenance of the pins. Attempts have been made to cushion or to reinforce the bottoms of pins by the use of rubber and even by inserting a projecting metal ring in the bottom but in the case of rubber the blow of a ball against the end of a rubber-cushioned pin while the latter is lying down will cause the rubber to split or break, the blow of the ball or of one pin against another driving the rubber cushion against the angular wooden wall that retains it, thus splitting, breaking or cutting the rubber, whereas in the case of projecting metal rings the balls, alleys and

pins themselves will be badly damaged when the projecting metal rings are brought with force into contact with them.

By my invention I avoid the use of rubber or metal or any other projecting substance at the bottom of the pin and yet I reinforce the pins in such a way that damage to them or to the balls, alleys or other pins by contact therewith is reduced to a minimum and the life of the pin is so materially prolonged that I have not yet seen a pin with my reinforce rendered useless by damage at the bottom although they have been subjected to the hardest kind of use for days.

By referring to Fig. 1 it will be noted that the pin has a central concavity, 2, at its bottom and that the lower exterior wall, 3, of the pin curves downwardly and inwardly and terminates in an extreme lower edge, 4, that projects below the center, 5, of said concavity. The pin has an annular channel formed entirely in the under side or bottom of the body. The two vertical walls of this channel are in planes parallel with the vertical axis of the pin; the lower portion of the body has an outer side wall, 3, that curves downwardly and inwardly and the lowermost edge of the side wall merges into the outer wall of the said annular channel, and thereby forms at the bottom and under side of the body a ring-shaped edge, 4, which in vertical cross-section is tapered, as seen in Fig. 1. The width or cross-section of the annular channel between its two vertical walls fills the space from the base line of the arch of the concavity, 2, to the said ring-shaped edge, 4. A strong, tough, inelastic non-metallic ring, 6, fits tightly in and fills the said annular channel. In the present instance this filling has the shape of a ring as shown in Fig. 3, and it is preferably formed of an indurated fiber which is snugly fitted into the annular groove and cemented therein. It is also to be particularly noted that the lower surface, 7, of the ring is flush with the extreme lower edge, 4, of the wall, 3, and that no part of the ring projects below said wall edge.

By means of the construction described the fiber filling, 6, will have a diameter substantially equal to the diameter of the pin at the base so that there will be no projecting angles or exposed edges of wood at the base of the pin to become chipped and broken

and consequently the base retains its flat condition and will last as long as the body of the pin.

In the construction of pin shown I have preferred to provide the body with an annular straight-wall groove, 8, that extends circumferentially about the same in a plane parallel with the filling groove at the base, and said straight-wall groove forms a recess for an annular ring, 9, of suitable material such as rubber. I have found in practice that by forming the groove, 8, with straight walls that the rubber ring when battered or frayed on its outer exposed edges, may be turned inside out and thus present a fresh edge.

My improvement of the base or underside of the bowling pin is independent of the annular ring, 9, that is shown in the drawing as surrounding the larger part of the body of the pin.

I am aware that it has been proposed to attach an elastic band to the bottom or base-end of a wood bowling pin, and that it has also been proposed to provide the bottom or base-end of a wood pin with a metal ring, but for various practical reasons such bowling pins have not been received with favor. I believe however that I am the first to provide a wood bowling pin having at its bottom a circular cavity with the wood side-wall of the pin forming a tapered ring-shaped edge, and with a circular indurated filling fitted into said cavity with the bottom surface of said filling flush with said bottom tapered edge.

Having thus described my invention what I claim and desire to secure by Letters Patent is—

1. A bowling alley pin whose body is provided with an annular channel formed entirely in the under side of the body and said

body having a circumferential side wall that curves downwardly and inwardly and whose lowermost edge merges into the outermost side of said annular channel and forms a ring-shaped edge which in vertical cross-section is tapered, and a ring fitted into said annular channel—the bottom surface of the ring being flush with said lowermost merged edge.

2. A bowling pin having a body with a circumferential side wall that curves downwardly and inwardly, and the said body provided in its bottom with a central arched cavity, and also having in said bottom an annular channel whose cross-section width fills the space from the base line of the arch which forms the said cavity to the lowermost edge of the said circumferential side wall, and an indurated fiber ring filling the annular channel,—the bottom surface of the ring being substantially flush with the lowermost edge of the arched cavity and also flush with the lowermost edge of the circumferential side wall.

3. A bowling pin having a body with a circumferential side wall that curves downwardly and inwardly to the bottom, and the said body provided with a circular cavity formed entirely in the under side of the body and whose outermost edge together with the bottom edge of said circumferential wall forms a tapered ring-shaped edge, and a circular indurated filling fitted into said underside cavity—the bottom surface of said filling being flush with the bottom of said tapered ring-shaped edge.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD H. SAWYER, Jr.

Witnesses:

CHARLES B. MANN, Jr.,  
G. FERD. VOGT.