Aug. 28, 1934. H. C. GUSTAFSON 1,971,948

RENEWABLE BASE FOR BOWLING PINS

Filed Dec. 5, 1932

Fig. 1

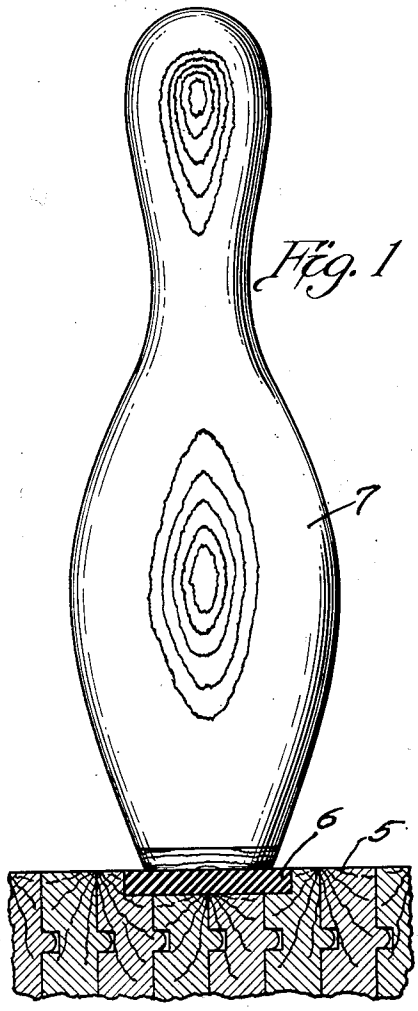


Fig. 2

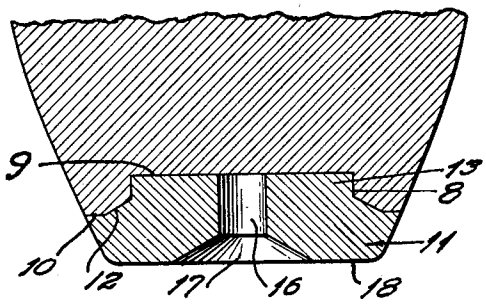


Fig. 3

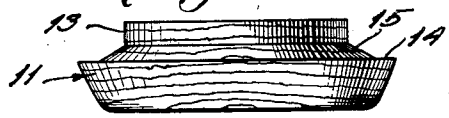


Fig. 4

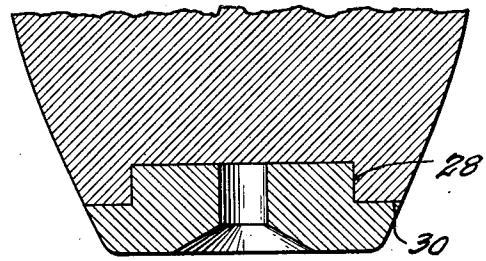
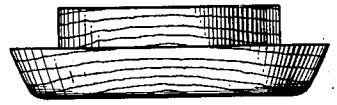


Fig. 5



INVENTOR.
Hjalmer C. Gustafson
BY
I. S. Carpenter
ATTORNEY.

Patented Aug. 28, 1934 1,971,948

UNITED STATES PATENT OFFICE

1,971,948

RENEWABLE BASE FOR BOWLING PINS

Hjalmer C. Gustafson, Denver, Colo., assignor of one-half to William F. Pigg and Charles H. Pigg, Denver, Colo.

Application December 5, 1932, Serial No. 645,690

3 Claims. (Cl. 273—82)

My invention relates to improvements in bowling pins and has as its object the provision of renewable means for protecting the lower end of the pin, as well as the bodies of adjacent pins, from damage and wear, thus increasing the life of the pin.

Another object of my invention is to provide a base formed of a material similar, or equivalent, to that of the pin, and connected thereto in such a manner as not to destroy the natural characteristics of the standard pin.

Ordinarily, the bottom supporting end of a pin tapers inwardly providing a comparatively small annular area upon which the pin rests. In use, such pins are subject to severe shocks tending to chip, split or wear the supporting area, thus destroying the true equilibrium of the pin, causing it to fall from the slightest touch or jar. All of which, more or less, affects the player's score. Furthermore, when the base of the pin has become worn or damaged to such a degree as to present an uneven surface, it frequently happens that the playing floor and "pin spots" become worn to such an extent as to prevent the proper sliding movement of the pin when struck by the ball.

Heretofore, numerous types of renewable and detachable bases have been provided for pins of this type, but generally, such bases are formed of metal or compositions and connected to the pin with mechanical means which adds weight to the pins, all of which tends to destroy the true natural characteristics of the pin.

Therefore, to overcome these objections I have provided a renewable base secured to the pin in such a manner that when worn or damaged it can be easily removed and another fitted in its place. Such a base being formed of a material similar, or corresponding, to that of the pin, and cut or formed so as to permit the grain or fibers to extend in a plane substantially parallel to the face of the alley floor, thus presenting a smooth surface to the floor, preventing damage thereto and improper movement of the pin.

Bowling pins of standard shape and size are formed from fibrous material, preferably wood, the fibers of which run longitudinally of the pin. This provides a pin having very little longitudinal resiliency but relatively great transversal resiliency, all of which is deemed proper. Nevertheless, when the bottom edge of one pin strikes the body portion of another pin, considerable damage is incurred by both. Therefore, to eliminate as much as possible the damaging of the body portion of the pin, I provide a base formed of material similar or equivalent to that of the pin and cut to permit the grain to extend at right angles or transversely to that of the pin, thus forming a cushion upon the pin bottom. Furthermore, by reason of the grain extending in this direction, a smooth contact area is provided for engagement with the alley floor.

In the accompanying drawing, in which similar reference characters indicate similar parts in each of the views:

Figure 1 is a view in elevation of a pin constructed in accordance with my invention.

Figure 2 is a vertical sectional view of the pin bottom with the base secured thereto.

Figure 3 is a view in elevation of the base removed from the pin, showing in general, the direction of the material grain or fibers.

Figure 4 is a section similar to that shown in Figure 2, illustrating a modification in the structure of the base, and

Figure 5 is a view in elevation of the base used in conjunction with the showing made in Figure 4, indicating the direction of the grain or fibers of the material.

Referring to the accompanying drawing in detail, the numeral 5 designates the playing floor of a bowling alley, the same being formed of interlocking strips of flooring, generally hard wood, secured in position by suitable retaining means. As shown in Figure 1, it will be observed that the strips of flooring are placed upon their longitudinal edges with the grain of each strip running at right angles to the floor's upper surface, forming a relatively hard playing surface and one that can be frequently redressed. Generally, one end of the alley floor has fitted therein a plurality of spaced inserts 6, formed of hard rubber or the like, upon which pins 7 rest.

The pin 7 is of standard construction and size being formed of fibrous material, preferably wood, the fibers of which extend longitudinally of the pin. With such a pin it will be observed that its base is formed of vertically disposed fibers forming hard and soft spots, which in time, from wear and shocks, form irregular surfaces making it difficult to set the pin and to obtain the proper action in play. To eliminate these objections, the lower face of the pin has fixedly secured thereto the improved base comprising the present invention.

As disclosed in Figure 2, the bottom portion of the pin 7 is provided with an annular socket 8, terminating inwardly into a flat horizontal surface 9. The bottom of the pin, surrounding the confines of the socket 8, is disposed in a horizon-

tal plane, presenting a flat surface 10 to which a renewable base 11 is secured.

The bottom of the pin is further provided with a beveled portion 12, at the junction of the bottom face 10 with the wall of the socket 8, permitting the easy application of the base to the pin.

The base 11 is formed of a material similar to that of the pin and cut from the material in such a manner that its fibers extend in a plane substantially parallel to its faces with the concave sides facing downwardly. Such a base provides a smooth surface for engagement with the alley floor and a yieldable cushion for the pin bottom.

As shown in the drawing, the base 11 comprises a ring-like body having an upstanding boss 13, the diameter and height of which closely conforms to the inside diameter and depth of the annular socket 8, formed in the pin. The base 11 has an upper face 14 and a beveled portion 15, between the face 14 and boss 13, corresponding to the like portion 12 formed in the pin. The outer diameter of the base 11 is approximately that of the lower end of the pin and has its peripheral face slightly tapered to form a continuation of the pin body. The base has a central opening 16, tapered as indicated at 17, to govern the area of the flat horizontal face 18, upon which the pin rests.

The base 11 may be secured to the pin by coating the boss 13 and face 14 with glue or other cementitious material and then inserting the boss in the annular socket 8, pressing the same inwardly until the face 14 contacts firmly the bottom surface 10 of the pin.

By this construction it will be seen, that while the pin includes two elements they are connected in such a manner as not to destroy the natural characteristics of a one piece pin. The fact that the base has its grain extending at right angles or transversely to that of the pin forms a cushion that will not dent or cut the bodies of adjacent pins, and at the same time saving the bottom of the pin itself.

The modification shown in Figures 4 and 5 differs from the showing made in Figure 2 merely in the fact that the wall of the socket 28 extends directly to the bottom face 30 of the pin, eliminating the bevel portions upon the pin bottom and base.

From the foregoing it is thought that the construction, operation and many advantages of the herein described invention will be apparent to those skilled in the art without further description, and it will be understood that various changes in the size, shape, proportion and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

What I claim as my invention, is:

1. A bowling pin formed of fibrous material the fibers of which extend in substantially parallel planes longitudinally of the pin, and a base plate secured to the pin formed of like material the fibers of which extend in substantially parallel planes transversely of the pin.

2. A bowling pin formed of wood the grain of which extends longitudinally of the pin, and a base plate secured to the pin, formed of wood the grain of which extends transversely of the pin.

3. A bowling pin formed of wood the grain of which extends longitudinally of the pin, a wooden base plate secured to the pin, the grain of which extends transversely of the pin, and the concave side of the base plate grain facing downwardly.

HJALMER C. GUSTAFSON.