H. F. SEIDEL & C. W. VOSKAMP.

TENPIN.

APPLICATION FILED SEPT. 16, 1914.

1,131,090.

Patented Mar. 9, 1915.

Fig. 1.

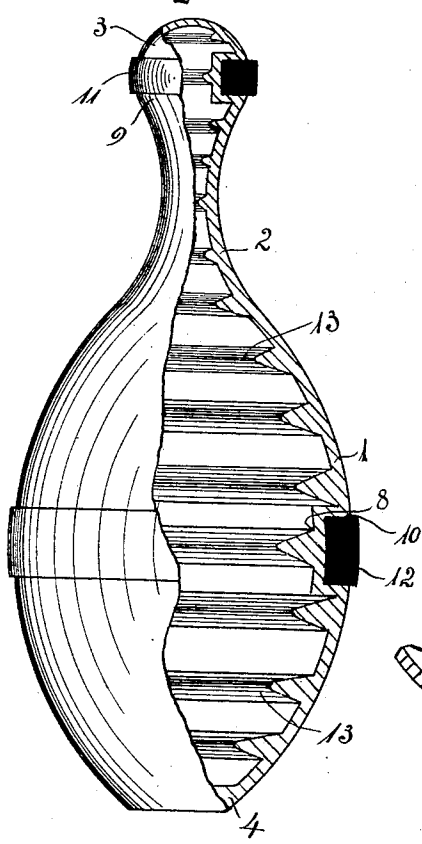


Fig. 6.

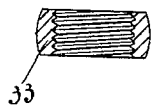


Fig. 8.

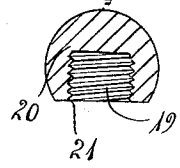


Fig. 7.

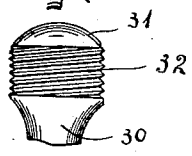


Fig. 9.

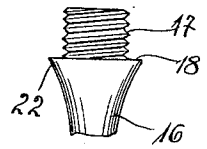


Fig. 2.

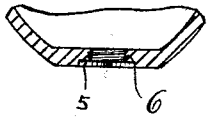


Fig. 4.

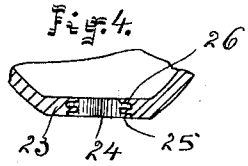
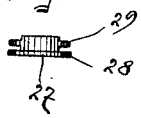


Fig. 3.

Fig. 5



WITNESSES:

A. Kempler.

Max W. Ludwig

INVENTORS

H. F. Seidel.

C. W. Voskamp.

BY

Henry C. Evert ATTORNEY

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

HARRY F. SEIDEL AND CHARLES W. VOSKAMP, OF PITTSBURGH, PENNSYLVANIA.

TENPIN.

1,131,090. Specification of Letters Patent. Patented Mar. 9, 1915.

Application filed September 16, 1914. Serial No. 862,121.

To all whom it may concern:

Be it known that we, HARRY F. SEIDEL and CHARLES W. VOSKAMP, citizens of the United States of America, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Tenpins, Serial No. 862,121, filed September 16, 1914, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to ten pins of the hollow type, and has for its object to provide a pin of such class, in a manner as hereinafter set forth, with interiorly arranged means for reinforcing the body of a pin whereby the denting of the pin by the balls is reduced to a minimum.

In setting up a hollow ten pin of the regulation size, the body of the pin is formed of very thin material, such as metal, fiber, celluloid, hard rubber, or other material and when constructed of thin material it is often the objection that the body becomes very easily dented when struck by the ball, but when the body is constructed of thick material, the pin then is too heavy. To overcome the necessity of constructing the pin of this type, provision is made to construct the body of thin material and to have the inner face of the body provided with space, annular, spiral, or lengthwise ribs of the same material as that of which the body is formed, so that the denting of the body by the bowling balls and by contact with the alley is reduced to a minimum.

A further object of the invention is to provide a hollow ten pin, having its body, as well as its head, provided with inset portions, said inset portions forming peripheral grooves in which is arranged a cushioning band formed of rubber, fiber, or other suitable material, the bands being in a position where the pin is generally struck by the ball and alley and by arranging the bands in a manner as stated the life of the pin is materially increased.

Further objects of the invention are to provide a metallic ten pin which is simple in its construction and arrangement, strong, unusually durable, efficient in its use, readily set up and comparatively inexpensive.

With the foregoing and other objects in view the invention consists of a novel construction, combination and arrangement of parts as hereinafter more specifically described and illustrated in the accompanying drawing wherein is shown an embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which come within the scope of the claims hereunto appended.

In the drawings wherein like reference characters denote corresponding parts throughout the several views:—Figure 1 is a sectional elevation of a hollow ten pin in accordance with this invention. Fig. 2 is a sectional detail of the bottom of the body portion. Fig. 3 is an elevation of a cap for closing the bottom. Fig. 4 is a sectional detail of a modified form of bottom. Fig. 5 is an elevation of a plug for closing the bottom shown in Fig. 4. Fig. 6 is a sectional view of a modified form of head cap. Fig. 7 is a modified form of neck and head, employed in connection with form of cap shown in Fig. 6. Fig. 8 is a cross sectional view of still another modified form of head. Fig. 9 is an elevation, broken away, of a modified form of neck.

Referring to the drawings in detail 1 denotes a pin body, 2 the neck, 3 the head and 4 the bottom. The body 1, neck 2, and head 3 are formed in one piece and are hollow, the material employed is preferably aluminum, but any other suitable material may be employed.

The bottom 1 has a pocket 5, which communicates with a vertically disposed opening 6 and said pocket 5, as well as said opening 6, is closed by a plug 7, which is substantially T-shaped in longitudinal section. The plug 7 is preferably constructed of fiber, but any other suitable material may be employed.

The head 3, as well as the body 1, is formed with an inset portion of a form as illustrated at 8 and which provides a circumferential groove 9 in the head and a circumferential groove 10 in the body. The groove 9 has seated therein a band 11 and the groove 10 has seated therein a band 12. The bands 11, 12, project outwardly, respectively from the head 3 and body 1 and each of said bands is formed of rubber, fiber or other suitable material which has a cushioning characteristic. The band 12 is positioned where the pin is likely to be struck by a ball and the band 11 strikes the alley and under such circumstances as the bands receive the force of the blows it is obvious that the durability of the pin is increased.

When setting up a metallic ten pin of the regulation size, the body 1, neck 2 and head 3 are very thin and liable to be easily dented by the impact of the ball. If the body 1, neck 2 and head 3 are constructed of rather thick material the pin would be too heavy. To enable the employment of a very thin body 1, neck 2, and head 3, so that they will not be easily dented by the impact of the ball, annular reinforcing ribs are formed integral with the inner face of the body 1, neck 2 and head 3 and as indicated at 13, and are triangular shaped in cross section as well as being arranged in close proximity to each other. The ribs 13 are formed of the same material as the material of the body 1, neck 2 and head 3.

In the modified form shown in Figs. 8, 9, the neck, which is indicated at 16, has a hollow extension 17, of less diameter than the diameter of the neck, thereby providing a shoulder 18. The extension 17 is peripherally threaded and the threads of said stem are adapted to be engaged by the interiorly arranged threads 19, of a spherical shaped head 20, which is constructed of fiber, rubber, or other suitable material. The head 20 has a flattened portion 21 which seats against the shoulder 18. The neck 16 is somewhat enlarged as at 22 and the periphery of said enlarged portion is flush with the flattened portion of the head 20.

In the modified form shown in Figs. 4, 5, the bottom is indicated at 23 and is formed of a centrally disposed opening 24, having the wall thereof cut away to provide a shoulder 25, and also cut away to form a groove 26 adapted for the reception of a plug 27 which has a head 28 and a flange 29. The plug 27 is adapted to close the opening 24 and when in such position the flange 29 extends into the groove 26 and the head 28 seats against the shoulder 25. The plug 27 is formed of rubber, fiber or any other suitable material.

In the form shown in Figs. 6, and 7, the neck which is indicated at 30 terminates in a head 31, having peripheral threads 33 which are engaged by an interiorly threaded cap 33, the latter being in the form of a band.

It is obvious that the ribs 13 can be disposed spirally with respect to the inner face of the body portion of a pin, or that they can extend lengthwise with respect to said body portion.

What we claim is:—

1. A ten pin comprising a unitary hollow structure including a body, neck, and head, and reinforcing ribs formed integral with the inner face of said body, neck and head.

2. A ten pin comprising a unitary hollow structure including a body, neck, and head, triangular reinforcing ribs formed integral with the inner face of said body, neck and head, said ribs being triangular in cross section.

3. A ten pin comprising a hollow body terminating in a hollow neck, spaced reinforcing ribs formed integral with the inner faces of said neck and body, and a head detachably mounted on said neck.

4. A ten pin formed of a unitary hollow element including a body, neck and head, and annular spaced reinforcing ribs formed integral with the inner faces of said head, neck and body, said head and said body having an inset portion forming a circumferential groove, and bands mounted in said grooves and being of different material than that of the head and body.

5. A ten pin comprising a hollow metallic element including a body, neck, and head, and reinforcing ribs integral with the inner faces of said body, neck and head, and bands seated in said body and head, said bands formed of different material from the material of the body and head.

6. A ten pin comprising a hollow element formed of thin metal, and reinforcing ribs integral with the inner faces of said element, said body having a bottom formed with an opening and a plug for closing said opening, said plug formed of different material from that of the body.

In testimony whereof we affix our signatures in the presence of two witnesses.

HARRY F. SEIDEL.
CHARLES W. VOSKAMP.

Witnesses:
MAX H. SROLOVITZ,
MARIE H. ZBIERA.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."