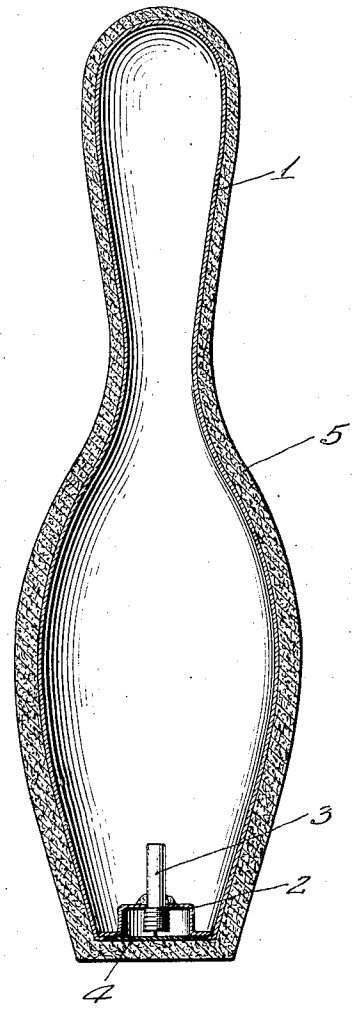
Dec. 16, 1924. 1,519,835

E. HEDENSKOOG

BOWLING PIN

Filed April 7, 1922




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# UNITED STATES PATENT OFFICE.

ERNEST HEDENSKOOG, OF MUSKEGON, MICHIGAN.

## BOWLING PIN.

Application filed April 7, 1922. Serial No. 550,404.

*To all whom it may concern:*

Be it known that I, ERNEST HEDENSKOOG, a citizen of the United States, residing in Muskegon, in the county of Muskegon and State of Michigan, have invented a new and useful Improvement in Bowling Pins, of which the following is a specification.

This invention relates in general to bowling pins and the like, and has more particular reference to composition bowling pins and bowling pins made of material heavier than wood. In the past considerable difficulty has been experienced in the manufacture of a bowling pin of a composition sufficiently hard and of the proper quality to withstand prolonged service upon bowling alleys because the weight of available materials has been heavier than wood with the result that the center of the pin must be hollow in order that the pin may conform with the rules regarding the specifications of articles of this character. Prior to my invention it has been found impossible to prevent collapse or quick damage to the pin where this hollow interior has been provided.

My present invention has for its principal object the provision of a durable pin of hollow interior and conforming to all the requirements of bowling pins and which will permit the use of material of any weight without the alteration of the total weight of the finished article. In this connection my invention contemplates the reinforcement of the hollow center of the pin by air highly compressed so that while the desired elasticity is provided, adequate reinforcement will be given against collapse and against such deformation under the blow of the ball as will cause quick deterioration.

Another object of the invention is the provision of a bowling pin of this character which may be cheaply manufactured.

Numerous other objects and advantages of the invention will be apparent as it is better understood from the following description, which, taken in connection with the accompanying drawings, discloses a preferred embodiment thereof.

On the drawing,

The single figure represents a section through a bowling pin embodying my invention.

For the purpose of illustrating my invention I have shown on the drawing a bowling pin comprised of an internal shell 1 of the general shape of the ordinary bowling pin and of slightly less size. At the bottom an inwardly extending boss 2 is provided with a valve 3 of any usual or preferred construction, being shown in the present instance as of the type and character of that of an automobile tire valve. The shell is first constructed and the valve and boss put in place, and the air forced in at any pressure to get the desired compression. Thereafter a plate 4 is welded across to close the opening into the boss. The composition, indicated at 5, is then molded about the pin and extending across the bottom further seals the internal compressed air chamber.

The internal shell 1 and the composition coating 5 together constitute a stiff body of the shape of the bowling pin and this body presents a surface for impact with the ball accurately approximating the surface presented by the ordinary bowling pin. The bowling pin, when ready for use with its charge of air, has the weight and all other characteristics of the wooden pin and the use of pins embodying my present invention is without affect upon the playing conditions. There is, of course, a slight yielding in the wooden pin when struck by the bowling ball and this same degree of yielding is provided in the pins embodying my invention. The materials, and particularly the material of the coating 5, in the absence of the compressed reinforcing charge of air, would collapse, or fracture, under the impact of the ball and the charge of air acts to reinforce the pin to a degree preventing bending, or collapse, of the material beyond its elastic limits.

It is thought that the invention and many of its attendant advantages will be understood from the foregoing description, and it will be apparent that various changes may be made in the form, construction and arrangement of the parts without departing from the spirit and scope of the invention or sacrificing all of its material advantages, the form hereinbefore described being a preferred embodiment thereof.

I claim:

1. A bowling pin, comprising a hollow body, of stiff, resilient material and containing a reinforcing charge of gas highly compressed.

2. A bowling pin, comprising a hollow body formed of a moldable material and containing a reinforcing ply, said body con-

taining a charge of highly compressed gas for reinforcing the same.

3. A bowling pin, comprising a hollow body formed of a stiff, inelastic member and a resilient coating therefor and containing a charge of highly compressed gas for reinforcing the same.

4. A bowling pin, comprising a hollow body of hard material and containing a charge of gas compressed to a degree to reinforce the body against deformation under the blow of a bowling ball to within the elastic limits of the material of the body.

5. A bowling pin, comprising a hollow body of relatively high elastic limits, said body containing a charge of gas compressed to a degree to reinforce the body against blows tending to deform the body beyond its elastic limits.

6. A bowling pin, comprising a hollow body having a reinforcing shell and an outer body weight determining coating, said hollow body having a charge of gas highly compressed for reinforcing the same.

ERNEST HEDENSKOOG.