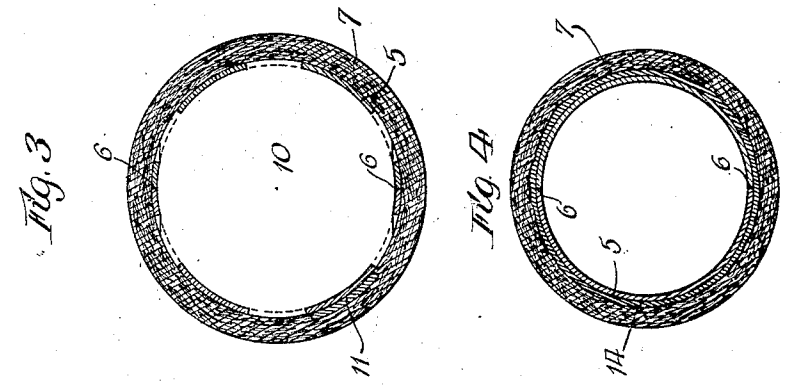
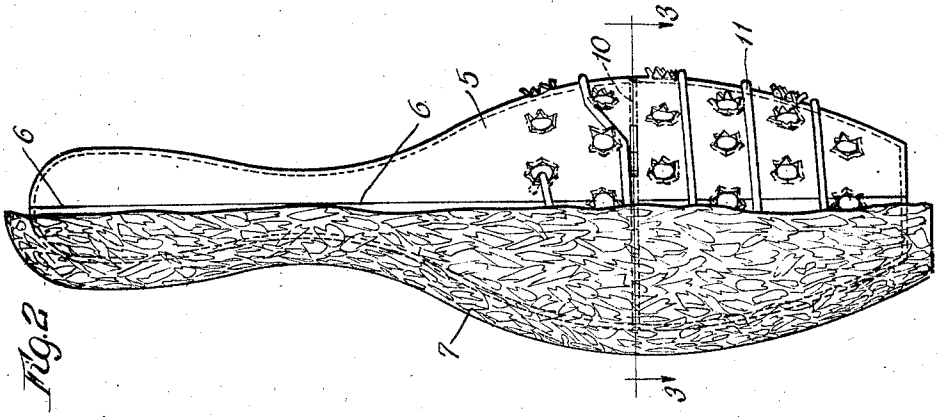
May 5, 1925. 1,536,606

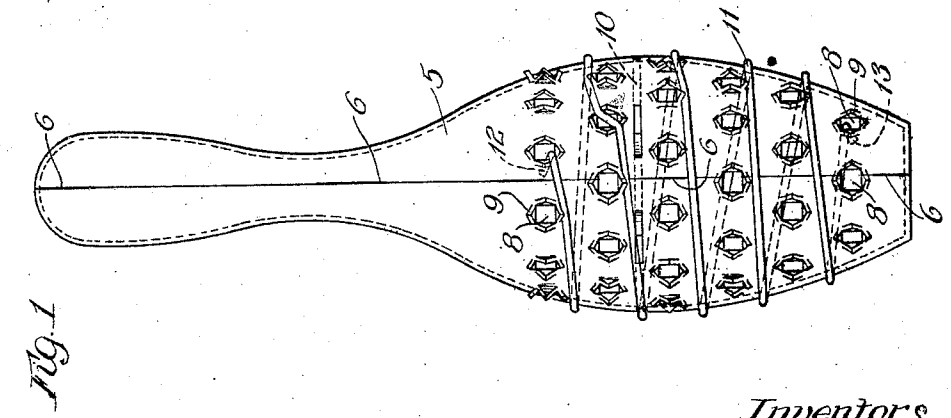
J. W. BISHOP ET AL

BOWLING PIN

Filed June 5, 1922







Inventors
Joseph W. Bishop and
Jesse O. Matteson
By: Wm O Belt Atty.

Patented May 5, 1925. 1,536,606

UNITED STATES PATENT OFFICE.

JOSEPH W. BISHOP AND JESSE O. MATTESON, OF MUSKEGON, MICHIGAN, ASSIGNORS TO THE BRUNSWICK-BALKE-COLLENDER COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF DELAWARE.

BOWLING PIN.

Application filed June 5, 1922. Serial No. 565,966.

To all whom it may concern:

Be it known that we, JOSEPH W. BISHOP and JESSE O. MATTESON, citizens of the United States, residing at Muskegon, in the county of Muskegon and State of Michigan, have invented certain new and useful Improvements in Bowling Pins, of which the following is a specification.

This invention relates to bowling pins and has for its object to increase the strength and durability of bowling pins of that class which comprise a hollow metal core enclosed within a composition covering.

The invention also has for its object to provide means for reinforcing and strengthening the covering to make it more durable and to hold the parts thereof together in case of fracture.

And a further object of the invention is to provide a cushion between the covering and the core which may yield sufficiently to assist in resisting the blows of the ball and the shocks occasioned when the pin falls in the pit of a bowling alley.

In the accompanying drawings illustrating a selected embodiment of the invention

Fig. 1 is an elevation of the core;

Fig. 2 is an elevation of a pin with the covering broken away to disclose a part of the core;

Fig. 3 is a transverse sectional view on the line 3—3 of Fig. 2;

Fig. 4 is a transverse sectional view showing a cushion interposed between the covering and the core.

Referring to the drawings the core 5 may be cast but it is preferably stamped or pressed out of sheet metal in a plurality of members which are secured together by welds 6 or other suitable means to form a core of suitable size for receiving the composition covering 7 to produce a pin of regulation size, shape and weight. The composition may vary but we prefer to employ a hard rubber compound having small pieces of wood in the form of little sticks or splinters thoroughly incorporated therewith, as indicated in Fig. 2. This composition is vulcanized on the core and in order to insure that it will be secured rigidly and firmly to the core we prefer to provide the core with openings 8 and outward projections 9 at the edges of the openings to be embedded in the covering and thereby, with portions of the covering composition which enter the holes, securely anchoring the covering to the core.

We also prefer to reinforce and strengthen the core at that part which is subjected to the greatest blows from the impact of the ball by securing a transverse brace 10 in a suitable manner within the core about midway between the top and bottom of the belly of the pin.

We have found that the composition heretofore referred to will stand up remarkably well under the rough usage and the severe blows to which bowling pins are subjected but it is also possible that the composition may fracture in actual use and under conditions which render it impossible to dispense with the use of the pin. To prevent the covering from falling away from the core, in event of fracture, and to enable the pin to be continued in use for a while at least, we provide a reinforcement for the covering around the belly of the pin where it is subjected to the severest blows. This reinforcement may be in the form of a wire 11 which can be conveniently arranged for embedment in the covering by anchoring one end, as 12, in an opening in the core and then winding the core spirally around the belly and anchoring its other end 13 in another opening. We have not found it necessary to exercise particular care in winding the wire but we deem it desirable to have it taut instead of loose, at least sufficiently to preserve its general spiral shape. The composition covering is applied to the core and vulcanized thereon and consequently embeds not only the projections 9 but also the reinforcing wire therein so that in event that the covering is fractured under the impact of an especially severe blow the fractured parts of the covering will be held together by the reinforce and strengthening wire so that the pin may be continued in service for a while. This reinforcement also will prevent fractured parts of the covering from flying about and possibly causing injury or doing damage.

We may also apply a light covering of soft rubber 14 on the core before applying the covering 7, if desired. This light rubber will provide a yielding cushion for the

outer covering and to some extent it will also tend to hold the parts of the covering together in case of fracture. The light rubber cushion may be used with the holes, the projections and the reinforce or any of these elements.

We are aware that other material than wire may be used for the reinforcement; that the reinforcement may be arranged with relation to the core for embedment in the covering in ways somewhat differently from that shown and described, and that other changes may be made in the practical use of our invention without departing from the spirit or sacrificing the advantages thereof and we reserve the right to make all such changes as fairly fall within the scope of the following claims:

We claim:

1. A bowling pin comprising a core, a composition covering enclosing the core, and a metal reinforce embedded in said covering.

2. A bowling pin comprising a core, a composition covering enclosing the core, and a reinforce surrounding the core and anchored thereto and embedded in the covering.

3. A bowling pin comprising a core, a composition covering enclosing the core, and a reinforce spirally disposed about the core and embedded in the covering.

4. A bowling pin comprising a core, a composition covering enclosing the core, and a wire reinforce spirally disposed about the core and embedded in the covering.

5. A bowling pin comprising a core, a composition covering enclosing the core, and a wire reinforce disposed about the core and embedded in the covering at the belly of the pin.

6. A bowling pin comprising a hollow metal core, a wire reinforce wound about the core and having its ends engaged therewith, and a composition covering embedding the reinforce and enclosing the core.

7. A bowling pin comprising a hollow metal core having openings therein and outward projections, a brace within the core, a reinforce around the core and a composition covering embedding said projections and reinforce and enclosing the core.

8. A bowling pin having a hollow metal core, a light covering of soft rubber on the core, and an outer composition covering of hard rubber compound and small wood sticks or splinters incorporated therewith, said coverings being vulcanized to each other and on the core.

9. A bowling pin comprising a hollow metal core, a reinforce on the core, a soft rubber covering on the core, and a hard rubber covering on said soft rubber covering, said coverings being vulcanized to each other and to the core and reinforce.

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