

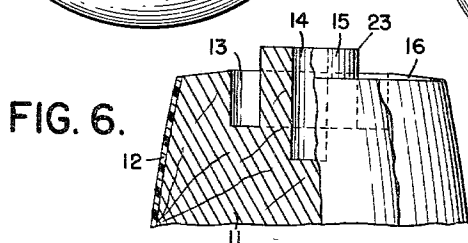
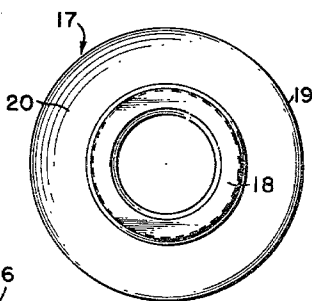
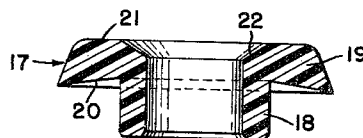
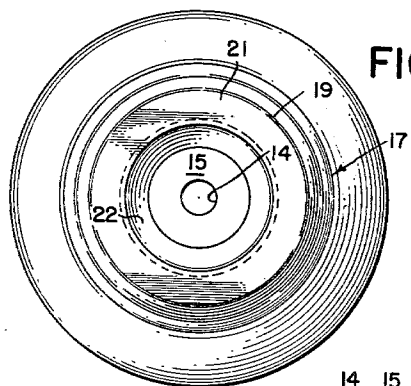
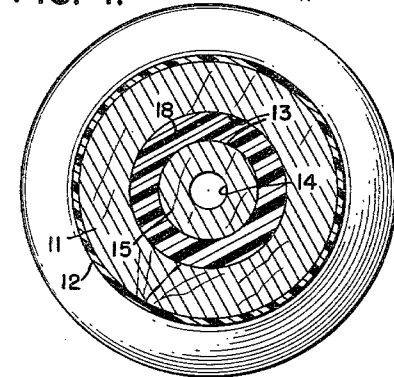
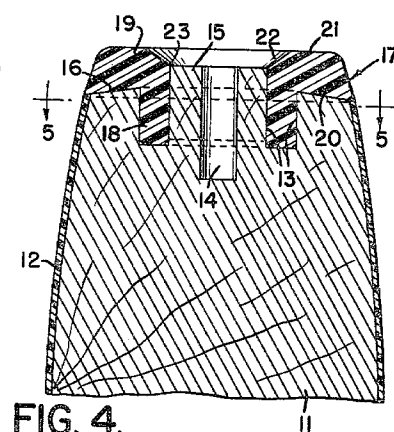
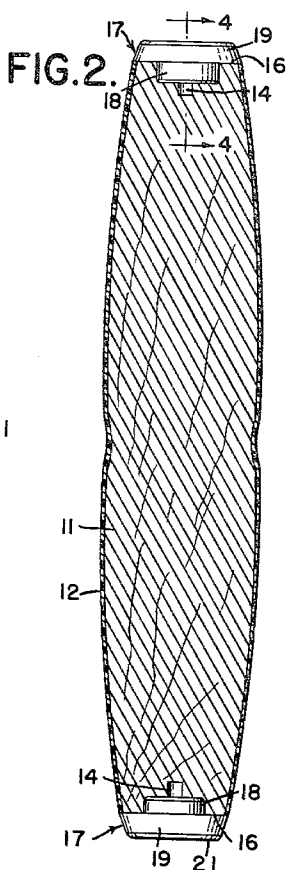
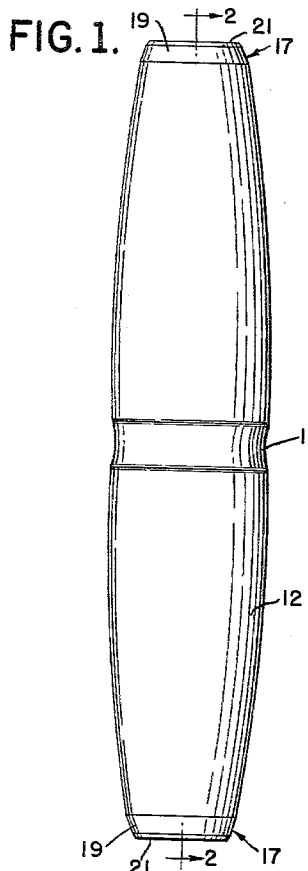
July 6, 1965

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3,193,291

REUSEABLE CAPS FOR CANDLEPINS

Filed June 13, 1962



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3,193,291

REUSEABLE CAPS FOR CANDLEPINS

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Filed June 13, 1962, Ser. No. 202,144

1 Claim. (Cl. 273—82)

This invention relates to bowling and it is more particularly concerned with caps used to protect the ends of bowling pins, especially the type of bowling pins generally referred to as candlepins.

Candlepins, because of their slender shape, are particularly vulnerable to breakage under the impact forces to which they are subjected in use, the impact forces being especially destructive to the ends of the pins by causing them to split, crack, etc. Accordingly, many attempts have been made to provide protective caps for the ends of these pins that will withstand these destructive forces, but prior devices have failed to provide a satisfactory cap in all respects.

One of the objects of the invention is the provision of such a cap which will not only withstand the destructive forces met in actual use, but which will outlast the life of a large number of pins successively.

Another object of the invention is the provision of a candlepin cap that does not require application by the pin manufacturer, but which can be applied to the pin by the user or bowling establishment operator, removed therefrom when the pin itself wears out, and used again on another bowling pin.

A further object of the invention is the provision of such a cap which can be applied to the pin without the need for any glue, or other permanent attaching means, but which, nevertheless, will remain securely in position throughout the useful life of the pin.

These and still further objects, advantages and features of the invention will appear more fully from the following description considered together with the accompanying drawing.

In the drawing:

FIG. 1 is an elevational view of a candlepin in combination with a cap at either end comprising an embodiment of the invention.

FIG. 2 is a longitudinal sectional view generally along the line 2—2 of FIG. 1.

FIG. 3 is a top plan view of the parts illustrated in FIG. 1.

FIG. 4 is a section of a fragmentary portion along the line 4—4 of FIG. 2 on a larger scale.

FIG. 5 is a cross-sectional view along the line 5—5 of FIG. 4.

FIG. 6 is a view similar to FIG. 4 with the cap removed.

FIG. 7 is a cross-sectional view of a cap according to the invention, apart from the candlepin.

FIG. 8 is a bottom plan view of the cap of FIG. 7 apart from the candlepin.

Referring with more particularity to the drawing in which like numerals designate like parts, the invention is illustrated in connection with a conventional type of bowling pin, known as a candlepin and designated in the drawing by the reference numeral 11. The candlepins are conventionally made of wood and they have a plastic covering or skin 12 along their lateral surfaces.

The ends of the pin are each provided with an annular recess 13 and a central recess 14 which form an annulus 15. The marginal portion 16 between the annular recess 14 and the outer edge or periphery of the pin is recessed and beveled to form a seat for a portion of the cap as will be explained hereinafter.

The cap 17 is in the general shape of a mushroom and is formed of a solid plastic material, preferably nylon or

a conventional vinyl-type plastic having high wear and impact resistant properties. The neck portion 18 is adapted to fit in the annular recess 13 tightly and the flanged portion 19 is adapted to lie against the marginal portion 16. The inner surface 20 of the flange 19 is undercut to a degree complementary to the bevel of the marginal portion 16 so as to lie flat against it.

The opposite surface 21 of the flange is flat and substantially at right angles to the longitudinal axis of the candlepin. The flange 19 has a substantial thickness which offsets the surface 21 outwardly beyond the end of the annulus 15 and the central opening of the cap has a sloping inner beveled edge 22 extending from the surface 21 to the outer edge 23 of the annulus 15, substantially as shown.

In actual use it has been found that the best results are obtained when the cap is made in accordance with certain specific dimensions. Thus, it is preferred that the neck or stem portion 18 have an inside diameter in the range of 0.5 to 1.0 inch, a wall thickness of about 1/4 inch and that the overall height of the cap be about 3/4 of an inch.

The caps are used by merely forcing them in place on the ends of the pins and they remain in place under this pressure until they are forceably removed. They are substantially unbreakable; they are reusable and interchangeable with other pins. They hold securely in place under the impact forces to which such pins are usually subjected in actual use without the need for any glue, fusing or shaping to become an integral part of the pin, or the requirement for any rings, pins or other extra securing devices as in the case of prior types of caps. Accordingly, the caps may be placed on and removed at any time by the bowler or by the operator of the bowling establishment and they do not require installation by the pin manufacturer, as in the case of caps of the prior art.

Having thus described my invention, I claim:

The combination with a bowling candlepin having at each end an annular recess and a marginal beveled portion between the annular recess and the outer edge of the candlepin of a reusable protective cap on each of the said ends, said cap comprising a one-piece preformed mushroom-shaped member of a solid plastic material having a cylindrical stem section removably force-fitted into engagement with said annular recess, said cap also comprising a flange section extending radially outward from the outer end of the stem section and overlying the entire surface of said beveled portion, the force engagement of the stem section with the recess being the sole and exclusive means for holding the cap on the candlepin, the length of the stem, including the thickness of the flange, being substantially greater than the depth of the recess to cause the outer side of the flange to extend beyond the end of the candlepin a correspondingly substantial amount, said outer side of the flange having a surface of substantial area adapted to lie flat against a horizontal surface and thereby support the candlepin on the horizontal surface exclusively of any contact between the candlepin and horizontal surface.

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