

Aug. 23, 1960

F. C. DETTMAN

2,950,112

BOWLING PIN

Filed June 26, 1959

2 Sheets-Sheet 1

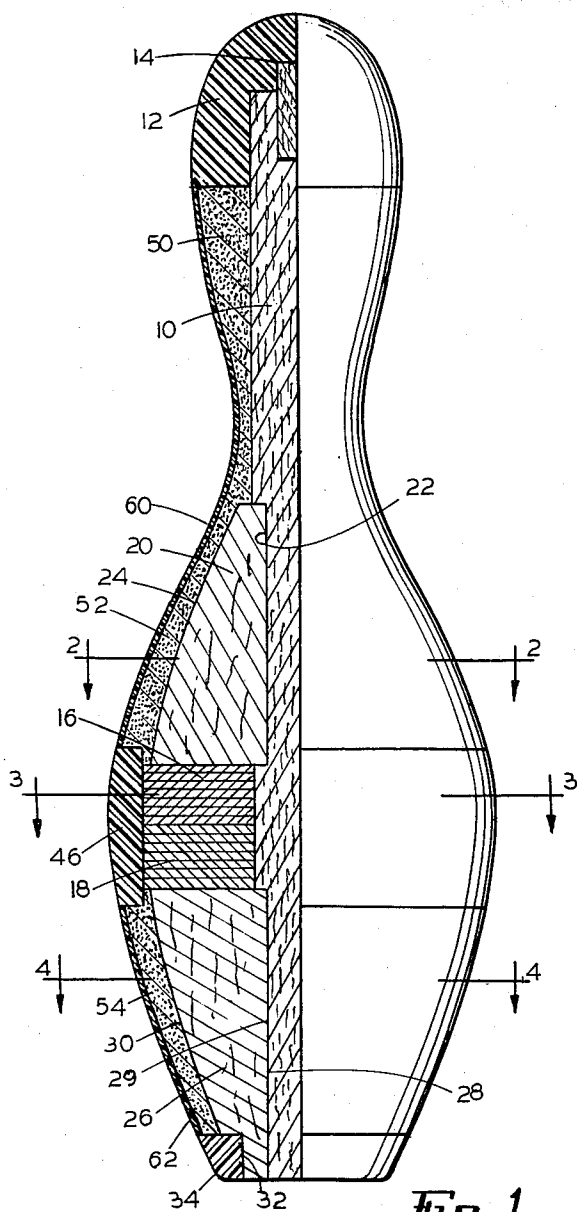


Fig. 1

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2 Sheets-Sheet 2

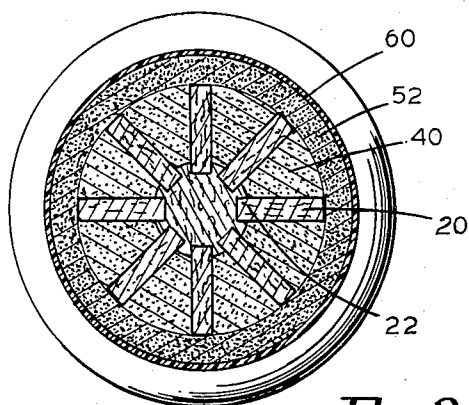


Fig. 2

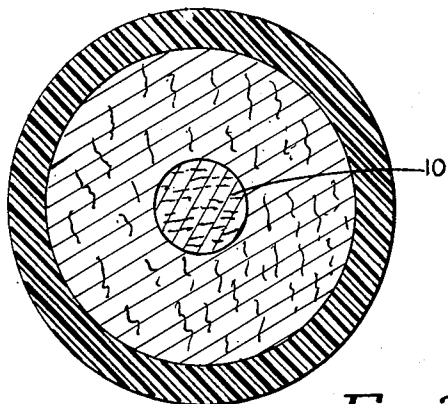


Fig. 3

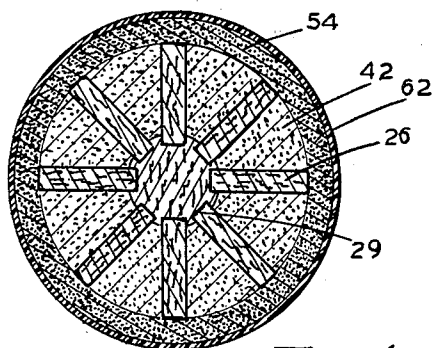


Fig. 4

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2,950,112

BOWLING PIN

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Filed June 26, 1959, Ser. No. 823,123

3 Claims. (Cl. 273—82)

This invention relates to bowling pins and more particularly to a composite pin and lightweight core construction therefor.

Bowling pins have commonly been made of maple and have been dependent in respect to the individual weight of each pin upon the density of the maple stock employed, and no exact control over the weight has been possible, particularly in the direction of maintaining a weight equal to, or even less than, pins formed of maple having the least density.

The present invention is directed to a pin capable of having uniform weight characteristics and employing a core construction not subject to impact formed of light strong materials, surrounded by heavier materials exhibiting impact strength in the regions where the pin is subject to impact. By such a construction the weight of the pin may be maintained to a predetermined standard, and yet exhibit the necessary impact strength, and have qualities comparable to a standard maple pin.

The above and other novel features of the invention will appear more fully hereinafter from the following detailed description when taken in conjunction with the accompanying drawings. It is expressly understood that the drawings are employed for purposes of illustration only and are not designed as a definition of the limits of the invention, reference being had for this purpose to the appended claims.

Referring to the drawings wherein like reference characters indicate like parts:

Figure 1 is a side elevation view of the pin with one-half in longitudinal section;

Figure 2 is a section taken on the line 2—2 of Figure 1;

Figure 3 is a section taken on the line 3—3 of Figure 1; and

Figure 4 is a section taken on the line 4—4 of Figure 1.

In the drawings the construction of the core of the pin comprises an elongated central cylindrical column 10 of light wood such as white pine. The upper end of the column is provided with a cap 12 of impact resistant plastic such as Tenite, dowelled as at 14, or otherwise secured to the end of the column 10. At the mid section of the body portion of the pin, discs 16 and 18 of heavy plywood, of seven plies, are provided, which discs are rigidly secured around the column member, which latter extends through snug circular apertures in the plywood discs.

Triangular braces, eight in number, as shown are disposed above and below the discs 16 and 18. The upper braces 20 are set in slots 22 in the column member 10, and rigidly abut the disc 16, and are disposed at angles 45° from one another. The exterior edge 24 may have the contour of the external surfaces of the finished pin.

Similar triangular braces 26, eight in number, are disposed below the disc 18, and have their inner edges 28 recessed in grooves 29 in the column member, and in turn abut the under face of the disc 18. The outer edges 30 may likewise follow the exterior contour of the finished pin. The lower ends of the braces 16 are notched

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as at 32 to receive a plastic ring member 34 of impact resistant material such as Tenite, nylon or the like.

The braces 26 and the braces 20 may be disposed in staggered relation, that is, the braces 26 may lie in planes 22½° from the planes of the braces 20. The braces may be varied in number above and below, but preferably an adequate number will be provided to provide absolute rigidity between the column 10, and discs 16 and 18. Such braces may likewise be made of white pine.

Located between the adjacent pairs of braces 20 and 26 are wedge blocks 40 and 42 formed of a composition such as sawdust and glue, and the density of such blocks may be increased from the center to the outside by employing powdered Masonite, or sawdust of light woods such as white pine near the center, and oak sawdust as the exterior is approached, and an inter-mixture of varying proportions in-between.

An impact ring 46 of tough impact resistant plastic such as Tenite is securely mounted over the outer cylindrical surfaces of the plywoods discs, and the intervening areas 50, 52 and 54 are filled out to provide proper pin contour with a composition of relatively heavy sawdust and glue, oak sawdust being adapted to the purpose. A coating of heavy plastic, sprayed or otherwise applied as at 60 and 62 completes the outer finish of the pin, such protective layer lying flush with the end cap 12, the impact band 46 and the bottom ring 34.

The core elements including the column, brace members, plywood discs, filler members are all rigidly bonded together by glue or other adhesive. The pin as thus formed, may be easily controlled as to weight by varying the proportions of light and heavy materials in forming the wedge members, and by variation in diameter of the central column, so that pins of uniform weight and balance can be produced.

Although a single embodiment of the invention has been illustrated and described, it is to be understood that the invention is not limited thereto. As various changes in the construction and arrangement may be made without departing from the spirit of the invention, as will be apparent to those skilled in the art, reference will be had to the appended claims for a definition of the limits of the invention.

What is claimed is:

1. A composite bowling pin comprising an elongated central column of light wood, having central discs of plywood disposed rigidly over and upon the central column in the region of greatest diameter, a plurality of triangular brace members of light wood uniformly angularly spaced about the column and disposed above and below said central discs, said brace members being recessed in slots formed in said column member, the braces below extending to the lower end of said column and being notched and having a foot ring of impact resisting material, disposed in said notches, said ring having an internal diameter greater than said column, an annular band of impact resistant material disposed about said discs, a cap of impact resistant material disposed over the upper end of said column, wedge shaped members formed of wood dust and adhesive disposed between each adjacent pair of brace members, and filling the space therebetween, a layer of wood dust and adhesive overlying the column, brace members above and wedge members, and extending from said tip to said plywood discs and band, a layer of wood dust and adhesive overlying the column, brace members below and wedge members and extending from said bottom ring to said plywood discs and band, and a plastic layer of substantially uniform thickness overlying each of said layers and having an outer surface contour together with the outer surfaces of said tip, band and ring forming the outer surface of the finished pin.

2. A composite bowling pin core construction comprising an elongated central column of light wood, having central discs of plywood disposed rigidly over and upon the central column in the region of greatest diameter, a plurality of triangular brace members of light wood uniformly angularly spaced about the column and disposed above and below said central discs, said brace members being recessed in slots formed in said column member, the lower braces below extending to the lower end of said column and being notched and having a foot ring of impact resisting material disposed in said notches, said ring having an internal diameter greater than said column, an annular band of impact resistant material disposed about said discs and a cap of impact resistant material disposed over the upper end of said columns, said ring, band and cap having outer surface contours forming the outer surface of the finished pin.

3. A composite bowling pin core construction comprising an elongated central column of light wood, having central discs of plywood disposed rigidly over and upon the central column in the region of greatest diameter, a plurality of triangular brace members of light wood uni-

formly angularly spaced about the column and disposed above and below said central discs, said brace members being recessed in slots formed in said column member, the lower braces below extending to the lower end of said column and being notched and having a foot ring of impact resisting material disposed in said notches, said ring having an internal diameter greater than said column, and a cap of impact resistant material disposed over the upper end of said column, said ring and cap having outer surface contours forming the outer surface of the finished pin.

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