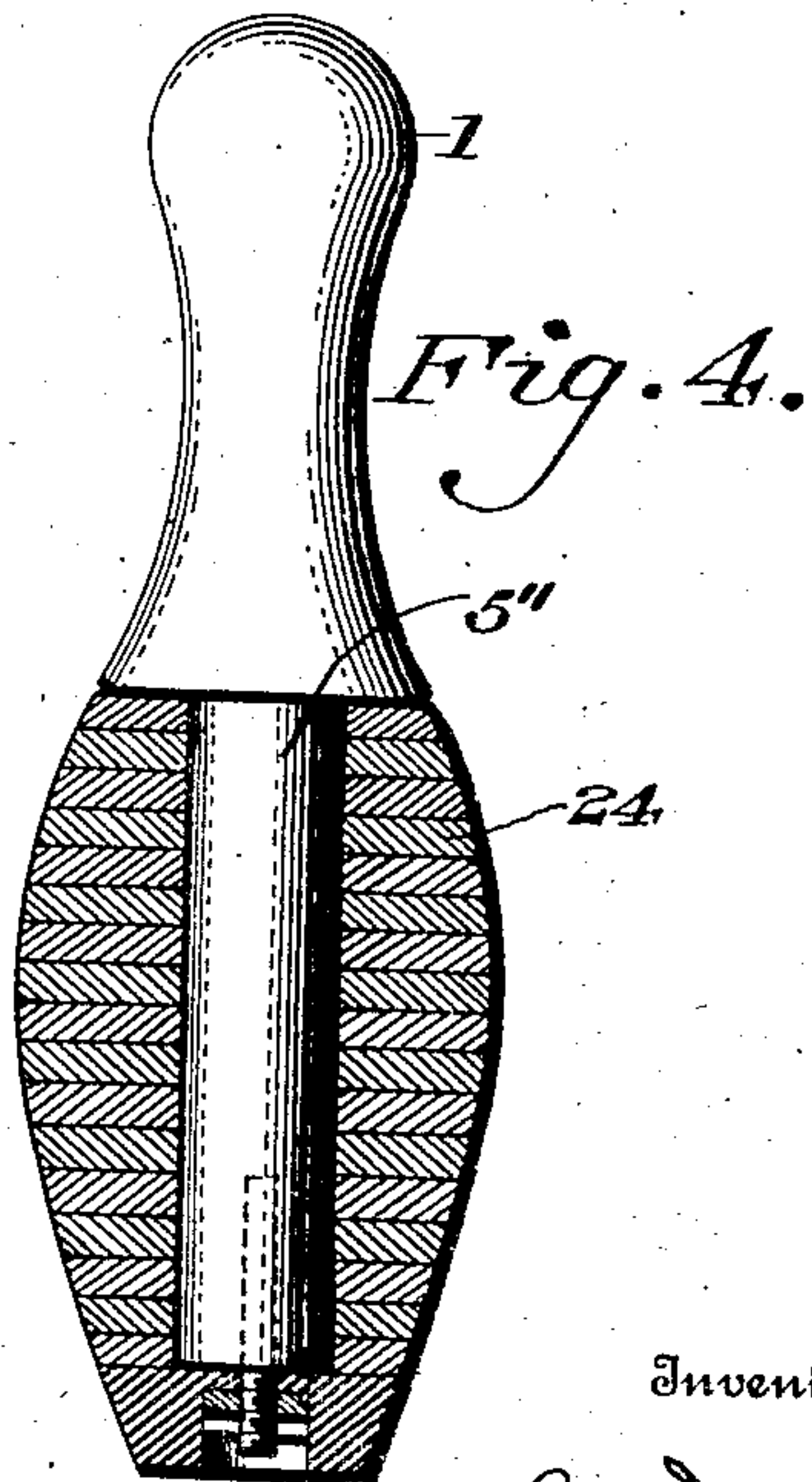
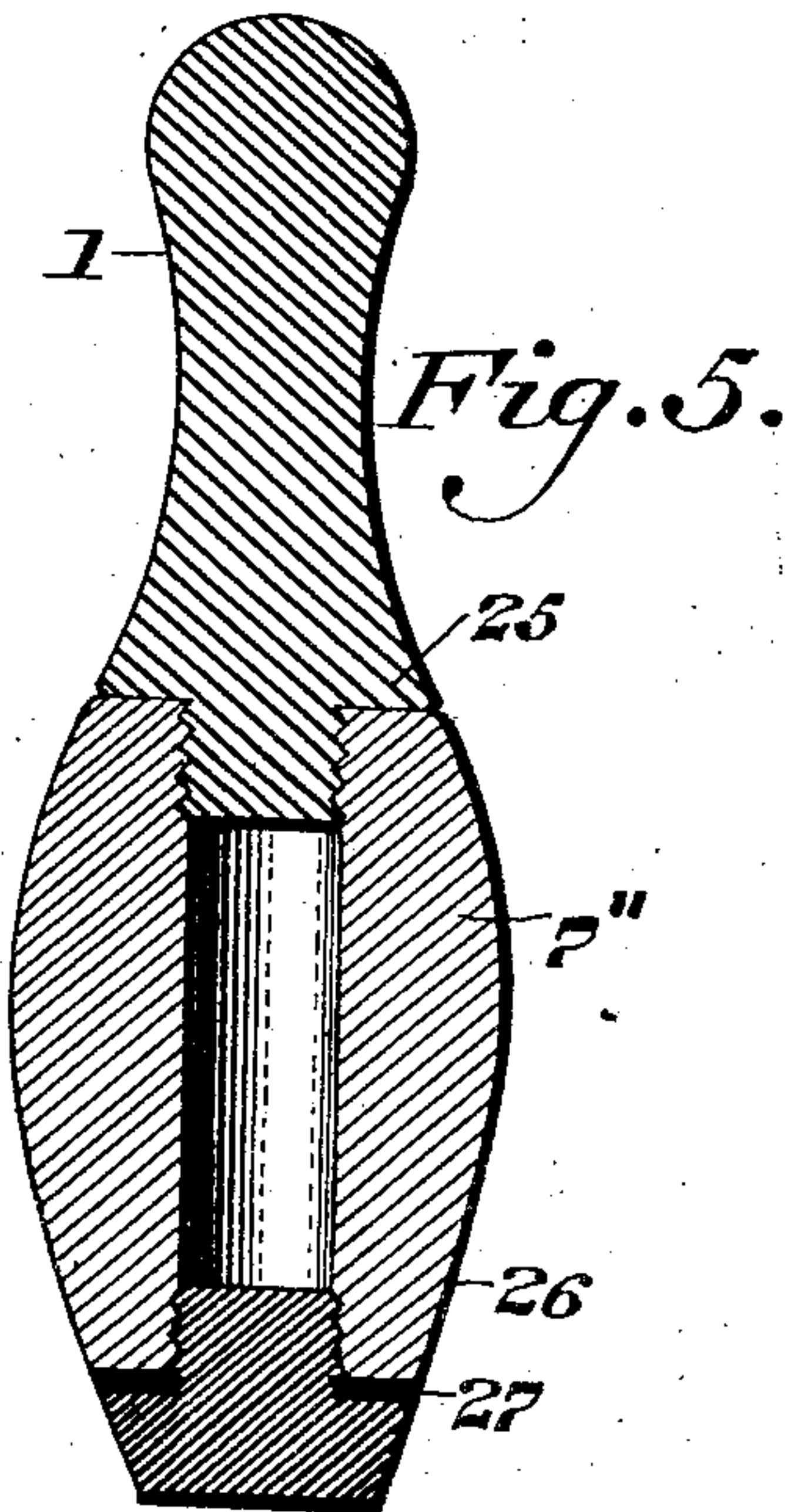
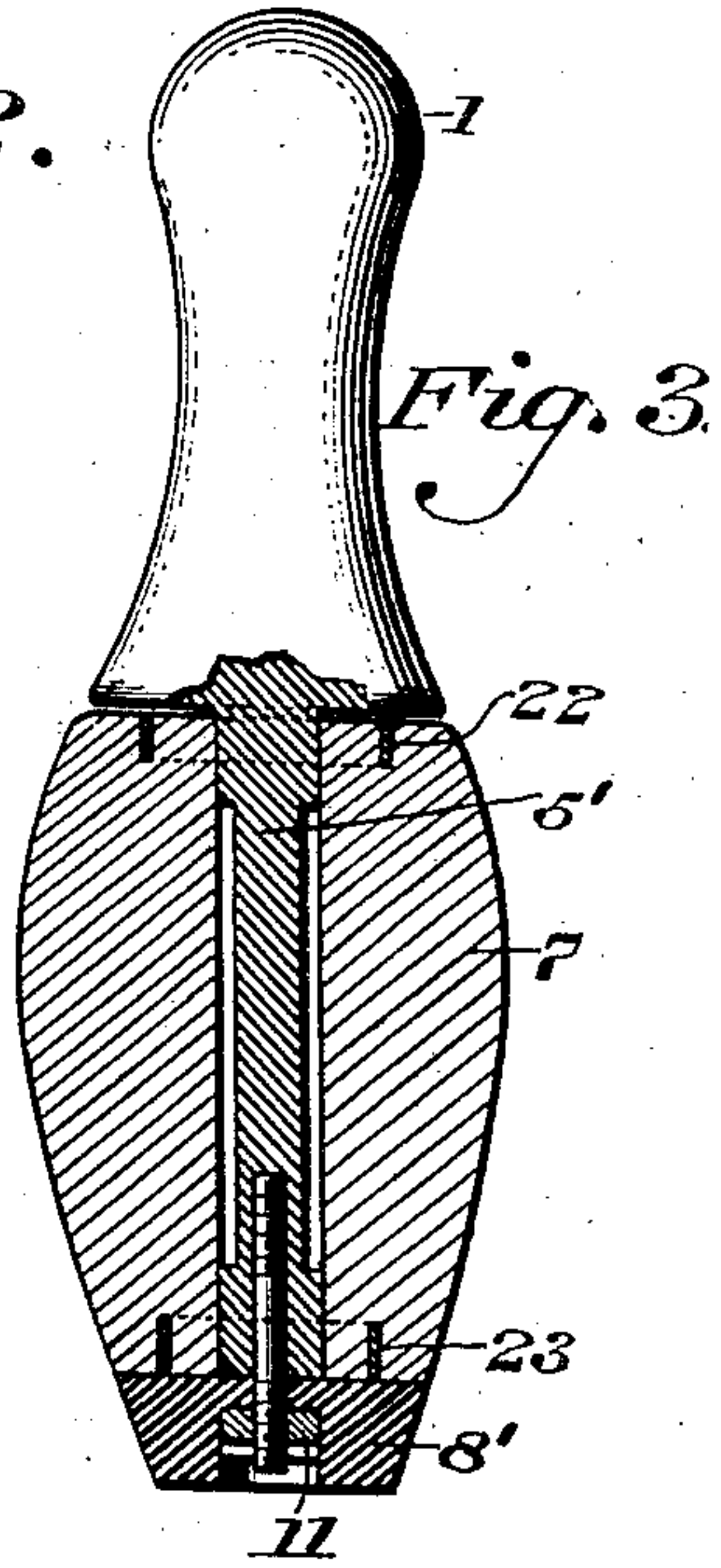
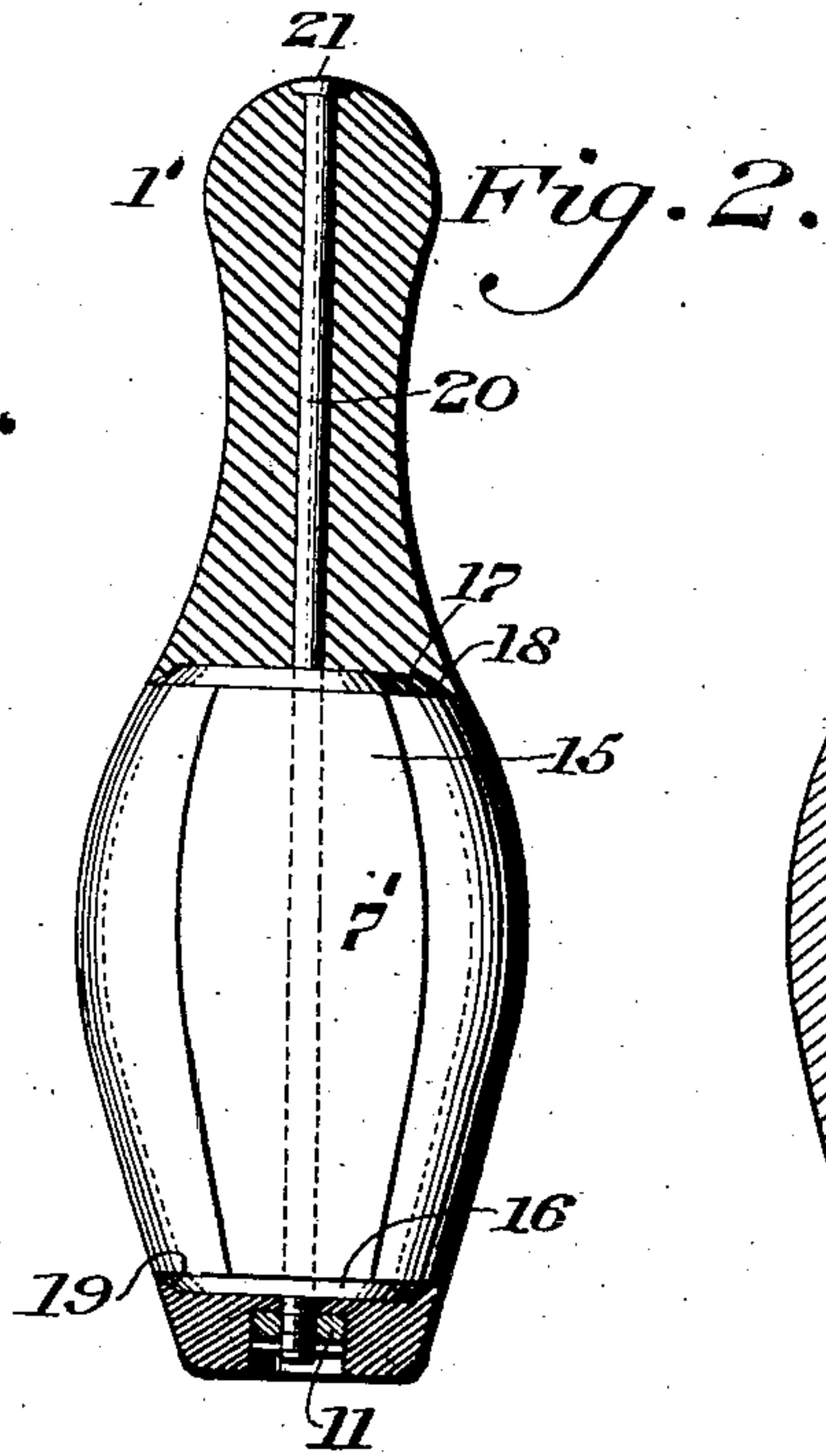
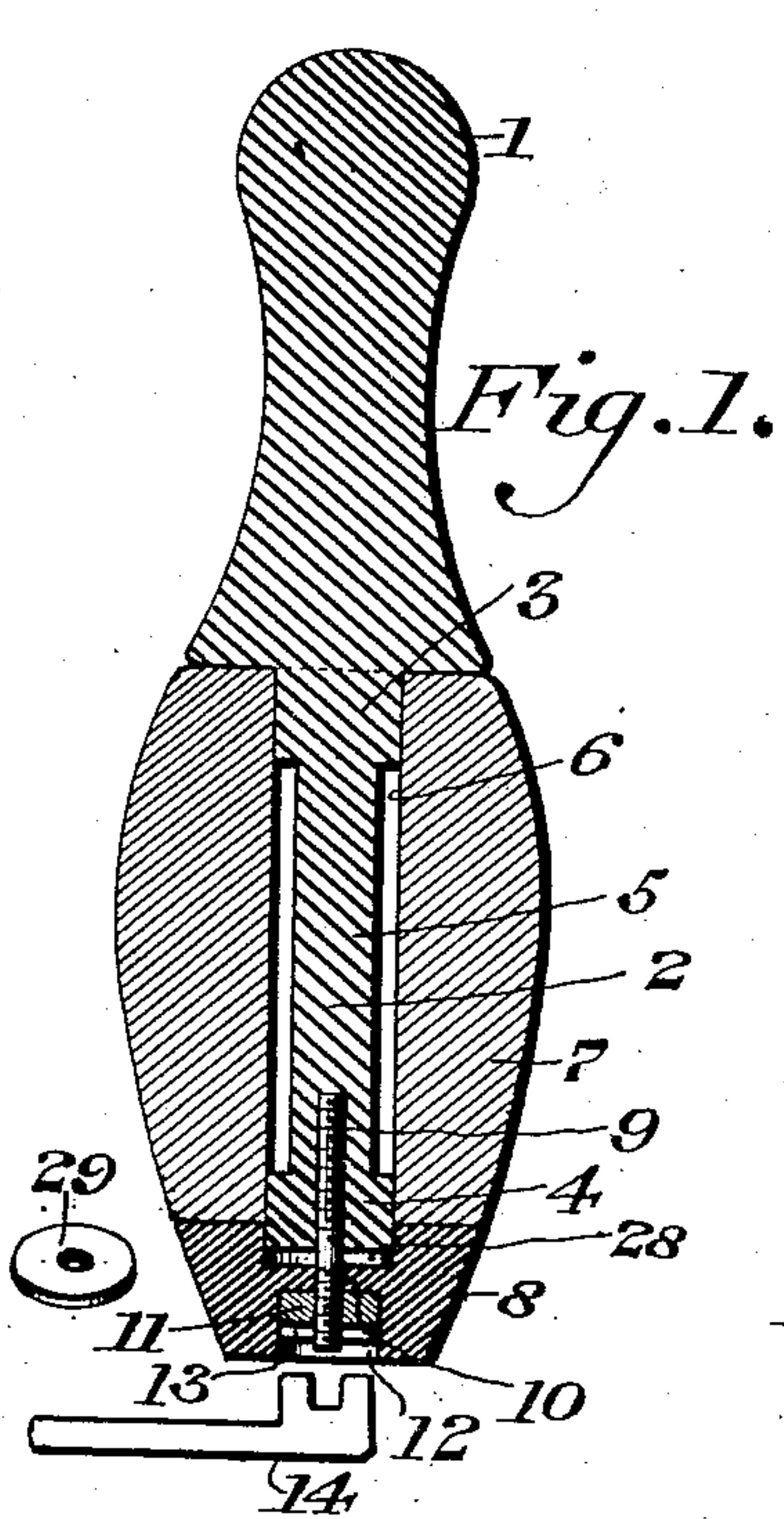


No. 814,257.

PATENTED MAR. 6, 1906.

S. G. WILSON.
DIVIDED TENPIN.
APPLICATION FILED SEPT. 16, 1904.



Inventor

Witnesses

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DIVIDED TENPIN.

No. 814,257.

Specification of Letters Patent.

Patented March 6, 1906.

Application filed September 16, 1904. Serial No. 224,746.

To all whom it may concern:

Be it known that I, STEPHEN G. WILSON, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Divided Tenpin, of which the following is a specification.

My invention relates to tenpins, and has for its object the extension of the life of parts of the individual pin without sacrificing the alley, the balls, or adjoining pins.

As is well known in the art to which my invention appertains, the damage to the tenpins is due, primarily, not to the action of the ball upon the pin, but to the cutting or striking of the base of one pin upon the body of its neighbor. The pins when struck with any considerable force do not fall over nor drag along the alley, but are turned bodily above the alley, the base springing up and the top strike adjoining pins below and above, respectively, the point where the pins are struck by the balls. Many efforts have been made to overcome the wearing out of the base and sides by covering them with a wear-resisting material. Likewise, efforts have been made to protect them by covering both the base and sides with an elastic substance. All efforts to use wear-resisting material have proved detrimental both to the alley at the point at which the pins ultimately strike it and to the balls, which are injured thereby, and the use of resilient or elastic coverings or coatings has been unsuccessful because of the unnatural effect of the ball upon the pin and because the desirable "click" of the ball against the pin is lacking.

My invention avoids the injurious effects of the wear of the pins without in any manner losing the advantages of the present otherwise satisfactory solid wooden pin.

A further object of my invention is to obtain ready and secure methods of attachment of parts of pins.

My invention further consists of novel features of construction, all as will be hereinafter fully set forth.

Figure 1 is a central vertical section of a pin embodying my invention. Fig. 2 is a side elevation, partly in section, of a modified form of my construction. Fig. 3 is a central vertical section and partial elevation of a pin, showing a further modification of the same. Fig. 4 is a central vertical section and partial elevation of another modified form of my in-

vention. Fig. 5 shows another form of attachment of the parts which may be used in connection with the construction of Fig. 1.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings, 1 designates the top or handle portion of a pin having projecting therefrom a central cylindrical extension 2, whose greatest diameter, as here illustrated, appears equally at 3 and 4, although this relation is evidently not necessary, and which is therebetween reduced in diameter at 5. This reduction also is not necessary, but adds to the resiliency of the ball by providing a hollow annular cylindrical space throughout that portion of the pin which is struck by the ball. This space might be provided by enlarging the channel 6 at this point. This spindle extension fits within a corresponding channel 6 in a central or intermediate section or barrel 7, whose contour, as well as that of the base 8, combine with that of the top piece 1 to produce a pin of the usual or of any desirable shape. It will be evident that the central extension 2 may vary from the cylindrical shape above described and be of any desired cross-section or shape, uniform or non-uniform, provided that the channel 6 in the intermediate portion 7 be of a corresponding or at least not inconsistent shape. Thus a square extension having square or otherwise shaped reduced portion 5' would fit in a channel of either a square or a circular section.

The base 8 is attached in the form shown in Fig. 1 by means of a stud 9, projecting from the cylindrical extension 2, said stud passing through aperture 10 in said base and being secured therein by a nut 11, fitting in recess 12, so as to be flush therewith or to lie within said recess. This nut 11 is provided with spanner-openings 13 13, by which it can be readily released by means of a spanner-wrench 14 in the usual manner. The upper portion of the bottom or base 8 is provided with a recess 28, into which the end of the extension 2 is adapted to be seated, so that the sides of the base embrace the same, thus assisting in holding the parts firmly in position.

29 designates a washer which may be placed in the space between the base 8 and the lower end of the extension 2, so that, if desired, the tightening of the parts will be between the base 8 and the extension 2, releasing the part 7 to permit its revolution.

A salient feature of my invention is that

all the sections of a pin are formed of the same material which is uniform with that previously found most desirable for tenpins and that there is therefore no unusual wear to the alley or balls by the use of my pins, nor is there any variation in the wear of the parts of the pins.

My construction provides a means for removing one or more worn portions as such removal becomes desirable without excessive waste. The value of this may be appreciated when it is stated that the average life of the ordinary tenpin is about seventy hours.

In the construction shown in Fig. 2 I have shown the intermediate section 7' made up of longitudinally-divided sections 5, having chambered top and bottom ends 16 17, which fit within recesses 18 and 19 in the top and bottom sections, respectively. I have here shown the sections held together by rod 20, extending throughout the length of the pin, secured at the top thereof by any suitable head 21 and at the bottom by nut 11. It will be evident that this mode of fastening may be used with the construction of Fig. 1 or that the means of attachment shown in Fig. 1 may be used with the construction of Fig. 2. The longitudinal divisions of the central portion 7' of Fig. 2 may occupy all or, preferably, a part only of the space surrounding the rod 19, allowing a hollow space therearound, if desired.

In the construction shown in Fig. 3 the intermediate section 7' is secured to the top and bottom sections in the same manner as in Fig. 1, except that the spindle 5' is longer than the central portion 7', permitting the latter to turn upon the spindle. Rings 22 23, of any suitable material, prevent splitting of part 7. A plurality of rotatable parts may be used, if desired.

Fig. 4 shows the body of the pin made up of independent annular rings or laminations 24, mounted upon a uniform spindle 5''.

In Fig. 5 both terminal parts are shown screwed into the body by threaded extensions

25 26, an elastic washer 27 being shown at one of these points, whose functions is to increase the bearing-surface between the parts, leveling all inequalities and retaining the parts more effectually.

It will be evident that in all of the forms shown the fastening means may be operated equally well at top or bottom by a mere transposition of parts.

It will be evident that various changes may be made by those skilled in the art which may come within the scope of my invention, and I do not, therefore, desire to be limited in every instance to the exact construction herein shown and described.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a separable tenpin, a neck, a body and a base, all of the same material but transversely divided from one another and a removable connection between the parts.

2. In a divisible tenpin, a plurality of sections of uniform material transversely divided, a projection upon one of said sections registering with an opening in another of said sections and means connected with a third section for removably retaining the projection in said opening.

3. In a tenpin, a base, a top, a part movable relatively to the base, and a removable washer spacing the base and top to permit such movement.

4. In a tenpin, a base, a top, and a rotatable body portion.

5. In a tenpin, a base, a top, a spindle uniting the base and top and an intermediate section loosely mounted upon said spindle.

6. In a tenpin, a base, a top, a spindle between the two, a washer about the spindle and a body portion rotatable upon said spindle.

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Witnesses:

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