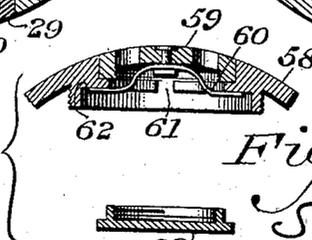
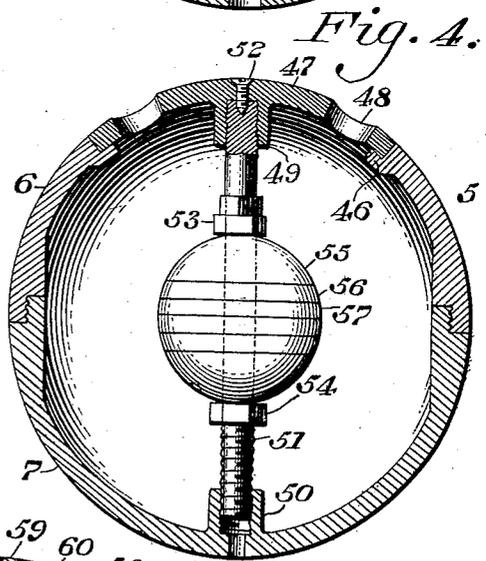
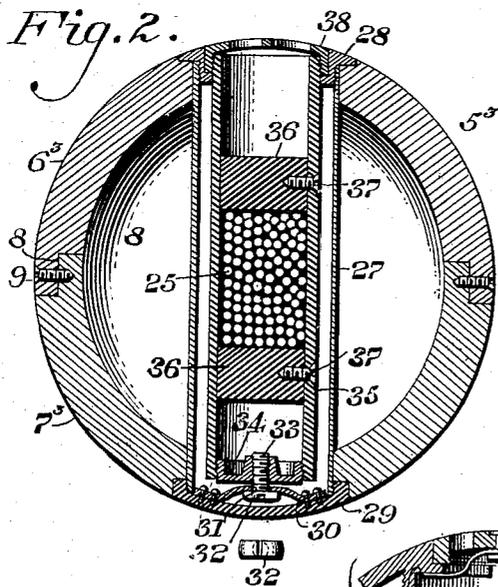
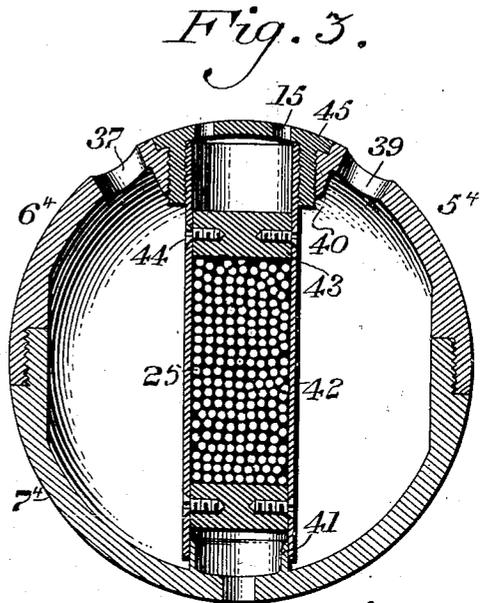
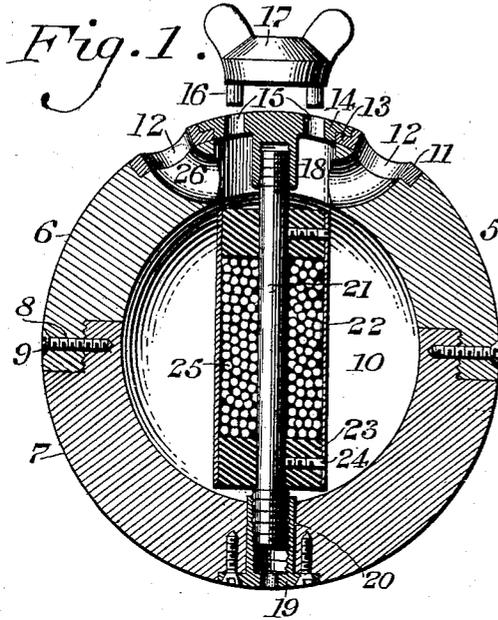


No. 863,126.

PATENTED AUG. 13, 1907.

S. G. WILSON.
BOWLING BALL.

APPLICATION FILED FEB. 3, 1904.



Witnesses
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Fig. 5.
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UNITED STATES PATENT OFFICE.

STEPHEN G. WILSON, OF PHILADELPHIA, PENNSYLVANIA.

BOWLING-BALL.

No. 863,126.

Specification of Letters Patent.

Patented Aug. 13, 1907.

Application filed February 3, 1904. Serial No. 191,790.

To all whom it may concern:

Be it known that I, STEPHEN G. WILSON, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Bowling-Balls, of which the following is a specification.

My invention relates to balls such as are used in bowling and similar games.

It consists of means detachably insertible in said balls whereby their weight may be varied without disturbing their center of gravity.

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

Figures 1, 2, 3 and 4 represent in vertical section, modifications of balls in accordance with my invention. Fig. 5, also in vertical section, represents a portion of such a ball showing a further modification.

Similar numerals of reference indicate corresponding parts in the figures.

In Fig. 1 of the drawings I have shown one of the balls 5 made in two segments, 6 and 7, screwed together at 8 and provided with set screw 9 to prevent their unscrewing. Each ball has a globular cavity 10 and is provided at its upper end with a plate 11 in which are finger and thumb holes 12. The plate 11 has a shoulder 13 adapted to receive a cooperating cap 14. The cap 14 is shown as provided with holes 15 adapted to receive the lugs 16 of a wrench 17. The cap 14 has an inwardly projecting interiorly threaded lug 18. In the portion 7 of the ball and diametrically opposite the lug 14 is secured a plate 19 having an interiorly threaded lug 20. Between the lugs 18 and 20 extends a rod 21 threaded at each end to engage in the lugs. On the rod 21 is a tube 22 each end of which is closed by a disk 23, which may be of wood or the like and which is held in place by a set screw 24 bearing against the rod 21. The tube 22 is filled with a mass of shot 25 or similar small heavy articles. Connecting with the apertures 12 in the plate 11 are corresponding grip apertures 26 in the segment 6 in which the finger and thumb of the player may be inserted.

To assemble the parts described the tube 22 with the disks 23 and mass of shot therein is slipped over the rod 21 and the disks 23 secured to confine the shot closely between them and with due regard to the center of gravity of the ball 5, in which they are to be inserted. The upper end of the rod 21 is then firmly secured in the lug 18 of the cap 14. The portions 6 and 7 of the ball being then secured together and held in place by the set screws 9, the free end of the rod 21 is screwed into the lug 20 of the plate 19. The hand hole plate 11 having been put in position the cap 14 is screwed home by means of the wrench 17 so that the parts are firmly united. It is evident that by varying the mass of shot in the tube 22, either in manufacture before the hole for screw 24 is bored in tube 22 or after-

ward by the provision of a number of such holes 24 arranged in any suitable manner as spirally, the weight of the ball may be adjusted to any desired extent. This enables balls of a standard size to be used and to have their weight proportioned to the strength or desire of the player by varying the weight of this inner member. A plurality of tubes 22, with plates 11 secured thereto, may be kept on hand for substitution within the shell of the ball for the particular tube which is normally used therein, thus varying the total weight of the ball without changing its size.

In Fig. 2 of the drawings I have shown the ball consisting as before of two hollow wooden segments, 6³ and 7³, secured together at 8 by set screws 9. In this construction I provide a sleeve 27 engaging with a plate 28 at its upper end and at its lower end with a plate 29. Within the plate 29 is secured a yoke 30 in which is a slot 31 adapted to pass the flat or milled head of a screw 33. The screw 33 is inserted in a plug 34 which forms the bottom of the tube 35, the upper end of the tube being engaged by a cap 38. Within the tube 35 are disks 36 adjustable in the same manner as disks 23 held in place by screws 37 and serving to confine a mass of shot 25 as before.

The device is assembled by first putting the halves of the ball together, slipping into place the plates 28 and 29 and securing them together by means of the threaded sleeve 27. The tube 35 is then firmly screwed into the cap 38, the stud 33 being in like manner firmly secured in the plug 34. The last named parts are then dropped into the ball 5 the flattened head 32 of the stud or screw 33 passing through the slot 31 in the yoke 30. The tube is then given a quarter turn which engages the head of the screw beneath the yoke.

In Fig. 3 of the drawings I have shown a ball 5⁴ composed of metal sections 6⁴ and 7⁴, the upper section being provided with finger or thumb holes 39 and with an interiorly threaded portion 40. The part 7⁴ has at its middle point an interior projection 41. A tube 42 contains a mass of shot 25 held in place by disks 43 adjustable in the same manner as disks 23 by set screws 44. The tube has its lower end slipped over the projection 41, its upper end having screw threaded engagement with a cap 45 provided with holes 15, as before for a wrench 17.

In Fig. 4 of the drawings I have shown the segments 6 and 7 of the ball as made of metal, the upper segment having a shoulder 46 adapted to receive a plate 47 in which are finger and thumb holes 48. The plate 47 and the lower segment 7 have internal lugs 49 and 50, respectively, each adapted to engage an end of the rod 51. The upper end of the rod 51 may be further engaged with the cap 47 and prevented from unscrewing therefrom by means of a set screw 52. On the rod 51 are mounted nuts 53 and 54 between which is a weight shown as of globular form and consists of a plurality of segments 55, 56 and 57, etc. It is evident that

before the parts are assembled the nut 54 may be removed and one or more of the segments 55, 56 or the like be taken from the rod 51 whereby the weight of the ball when assembled may be varied. It is also evident that by proper adjustment of the nuts 53 and 54 the center of gravity of the ball may be constantly maintained at its center of mass.

In Fig. 5 of the drawings I have shown an upper plate 58 in which is a cap 59 provided with a yoke 60 adapted by the rotation of the cap to pass through slots 61 in the plate 58 and to engage under a shoulder 62 therein. Coöperating with this device is a bottom plate 63. The parts are intended to be joined by a tube substantially as shown in Fig. 3 of the drawings which tube is to be filled with shot or the like as before, and is held in place by its engagement between the plates 58 and 63.

I have shown a variety of modes of securing an adjustable weight with its center of gravity corresponding to the center of mass of the ball to indicate that my device may be modified in a variety of forms and that my invention is not limited to a special embodiment.

It is evident that various changes may be made by those skilled in the art which will 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. A ball for bowling or the like having a centrally disposed detachable weight.
2. A ball for bowling or the like having a centrally disposed, detachable member and means for adjusting the weight of the member.
3. A ball for bowling or the like consisting of a plurality of hollow segments, removable means for securing said segments together and a weight detachably secured within said ball.

4. A ball for bowling or the like consisting of a plurality of hollow segments, means for securing said segments together and an adjustable weight detachably secured within said ball. 40

5. A ball for bowling or the like consisting of a plurality of segments one of which is provided with a cap cut away to form coöperating finger and thumb openings and a centrally disposed weight attached to said cap and removable therewith. 45

6. In a ball for bowling and the like, a cap piece, a weight secured thereto and removable means for uniting the cap piece with the body of the ball, said weight in position occupying the center of the ball. 50

7. In an adjustable ball for bowling and the like, a hollow casing formed of a plurality of parts having openings oppositely situated therein, an adjustable central weight and means coöperating with said opposite openings for removably attaching said weight. 55

8. In an adjustable ball for bowling and the like, a member adjustable as to weight comprising a rod, a series of disks capable of being supported thereon, and means upon said rod for securing said disks approximately centrally thereof. 60

9. In a ball for bowling and the like, a hollow casing composed of a plurality of segments, lugs oppositely located in said segments and having openings therein, a rod insertible in the aperture of one of said segments and having screw threaded engagement with an opposite segment, a nut and a stop upon said rod, and a plurality of disks adapted to be secured between said nut and stop. 65

10. In a ball for bowling and the like, a plurality of hollow segments, a rod having engagement with one of said segments and removable engagement with an opposite segment and a plurality of separable weights mounted upon said rod. 70

11. In a ball for bowling and the like, a plurality of hollow segments, a rod having engagement with one segment and removable engagement with an opposite segment, a stop upon said rod, a centrally disposed weight capable of support upon said rod and means for retaining said weight against said stop. 75

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Witnesses:

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