July 9, 1940. R. F. HINKLEY, SR 2,207,404

BOWLING BALL GRIP GAUGE

Filed June 26, 1939 2 Sheets-Sheet 1

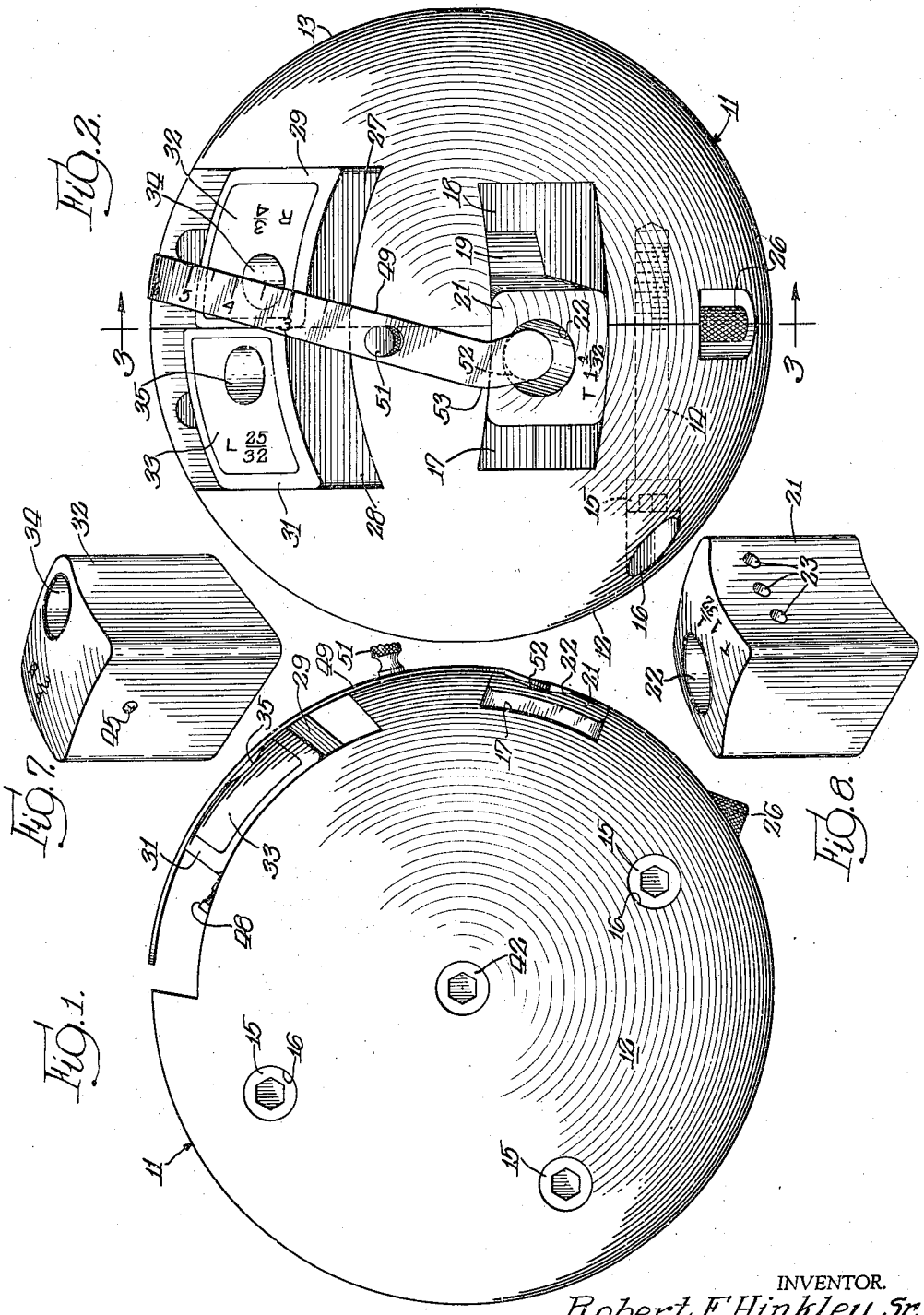


FIG. 2.

FIG. 7.

FIG. 8.

FIG. 1.

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BOWLING BALL GRIP GAUGE

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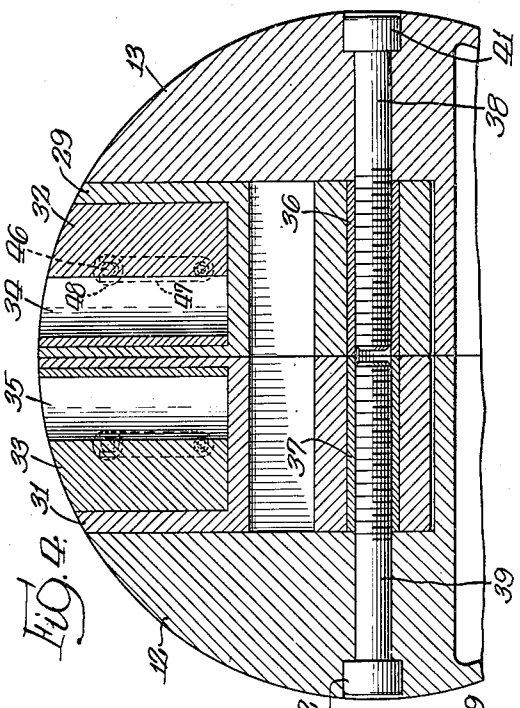


FIG. 4.

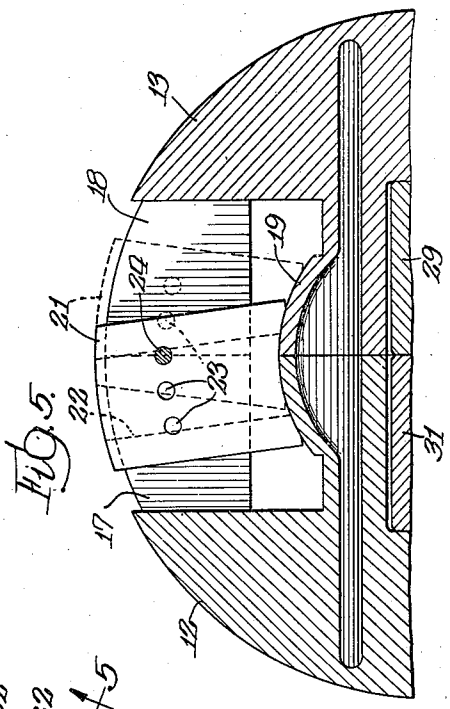


FIG. 5.

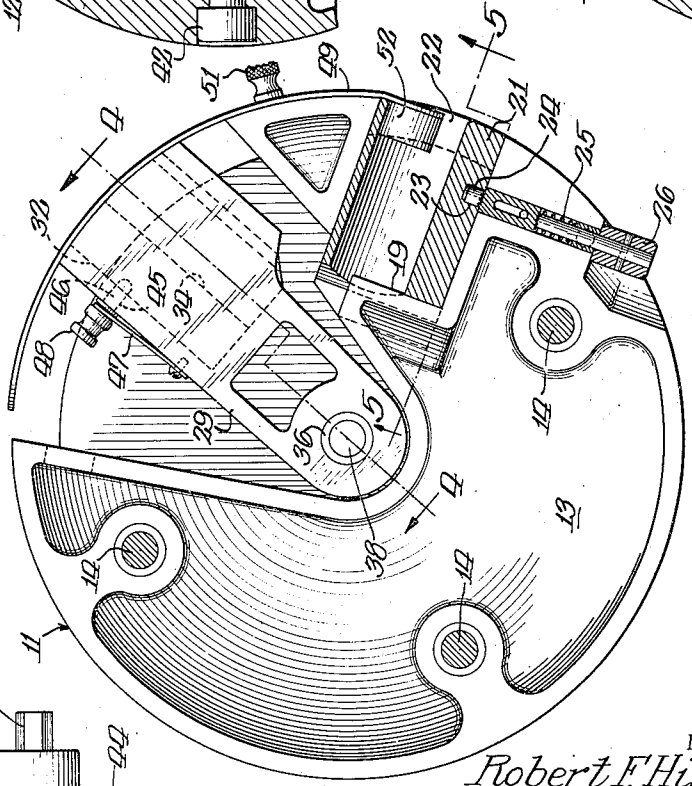


FIG. 3.

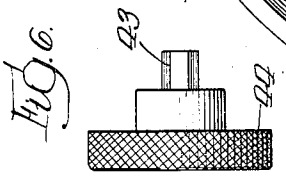


FIG. 6.

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2,207,404

BOWLING BALL GRIP GAUGE

Robert F. Hinkley, Sr., Pasadena, Calif.

Application June 26, 1939, Serial No. 281,124

8 Claims. (Cl. 33—174)

This invention relates to bowling ball gauges by which a perspective purchaser of a bowling ball may determine with accuracy the exact size and relative positions of the thumb and finger holes which are best suited for his particular hand, thereby enabling the selected sizes and spacings of the holes to be duplicated in the ball which he purchases. The purchaser thereby is enabled to buy a ball individually fitted to his hand instead of acquiring one in which the holes are of standard dimensions and conventionally arranged, and in most instances are totally unsuited to the individual.

This invention constitutes an improvement upon the disclosure of my pending application Serial No. 249,813, filed January 7, 1939. In my prior application, the thumb hole block was disclosed as being in fixed position, while the finger hole blocks were adjustable relatively to the thumb block. The thumb block was located on a median line extending between the finger blocks and parallel with their direction of adjustment. This is the conventional position of the thumb hole with respect to the finger holes, and most bowling balls in use today have this conventional arrangement of thumb and finger holes. Theoretically, however, this arrangement is proper for only those limited number of bowlers who insert the first and second fingers in the finger holes. The large majority of bowlers use the second and third fingers, and since the thumb is not located on a median line between the second and third fingers, the conventional hole arrangement is unnatural and improper.

My present invention, therefore, contemplates the provision of a gauge which will permit a proper and natural arrangement of the thumb and finger holes for each individual bowler, and with this end in view, it provides not only for an adjustment of the finger blocks toward and from the thumb block, but also a transverse adjustment of the thumb block relatively to the finger blocks so that the thumb hole may be positioned laterally with respect to the median line between the finger holes. This feature not only permits the thumb hole to be positioned on a line with one of the finger holes as it should be instead of on a median line between them, but also enables it to be positioned on either side of the median line to suit the requirements of both right handed and left handed bowlers.

Another feature of my invention resides in the provision of a body in which the adjustable thumb and finger blocks are mounted which will correspond in size, shape and weight with a standard bowling ball so that when the individual being measured holds the gauge in his hand and swings it, he will experience a sensation of swinging a standard bowling ball, thereby enabling him to sense the feel of the grip and to obtain a ball perfectly fitted to his hand both as to the size of the thumb and each finger hole and as to the proper relative positions of the three holes.

Another purpose of my invention is to provide a bowling ball grip gauge in which the thumb and finger blocks are readily and easily detachable so that they may be quickly replaced with the selected blocks having the desired size holes for each individual customer.

A further object is the provision of means for quickly and securely locking the finger and thumb hole blocks in adjusted position to enable the accurate measurement of the spacing.

Another feature is the provision of a gauge or measuring device by which the spacing of the holes of each of the finger blocks from the hole of the thumb block may be readily ascertained.

Other objects and many of the inherent advantages of this invention should be readily appreciated as the same becomes better understood by reference to the following description when considered in connection with the accompanying drawings.

Referring to the drawings:

Fig. 1 is a side elevation of a grip gauge embodying my invention;

Fig. 2 is an elevation looking toward the left at Fig. 1;

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

Fig. 4 is a fragmentary sectional view on the line 4—4 of Fig. 3;

Fig. 5 is a fragmentary sectional view on the line 5—5 of Fig. 3;

Fig. 6 is a detail view of the tightening wrench;

Fig. 7 is a perspective view of one of the finger blocks; and

Fig. 8 is a perspective view of one of the thumb blocks.

Referring to the drawings more in detail, reference character 11 indicates generally the body of my novel gauge which comprises two semi-spherical sections 12 and 13, respectively, preferably molded from a suitable thermo-plastic or metallic composition so that when assembled in conjunction with the thumb block, the finger blocks, and the finger block holders, the assembly will closely approximate the weight of a standard bowling ball. The two hemispherical sections are secured together by stud bolts 14, the socketed

heads 15 of which are countersunk in the body in holes or sockets 16, as shown in Fig. 2.

The body sections are provided with opposed recesses 17 and 18 adapted when assembled to provide a socket having a convex bottom 19 concentric with the perimeter of the body. This socket is adapted to receive a thumb block 21 having a curved bottom conforming to the curvature of the socket bottom 19 and provided with a thumb hole 22. The size of the thumb hole is indicated on the outer surface of the block and in the present instance is $1\frac{1}{2}$ inches in diameter. The block is also provided on one face with a plurality of, in the present instance, three locking sockets 23 adapted to receive the inner end of a locking pin 24 normally urged into locking position by a coil spring 25 and adapted to be retracted to release the block for replacement by a pull knob 26. The plurality of locking sockets 23 enable the block to be locked in any one of three adjusted positions. Obviously, the number of adjusted positions obtainable may be increased by increasing the number of sockets 23 and in whatever position of adjustment the thumb block is placed, its outer surface will always lie substantially flush with the outer surface of the body.

The body section 13 is also provided with a sector shaped recess 27 extending inwardly beyond the center of the body, and section 14 is likewise provided with a similar recess 28. These recesses are for the accommodation of finger block holders 29 and 31, respectively, which are shaped as indicated in Figs. 2, 3 and 4, and provide open ended sockets for the reception of correspondingly shaped finger blocks 32 and 33 provided with finger holes 34 and 35, respectively. The finger holes may be of any desired selected size, the one illustrated at the left in Fig. 2 being $\frac{5}{8}$ inch in diameter, and the one at the right being $\frac{3}{4}$ inch in diameter.

The finger block holders 29 and 31 are provided axially of the body with internally threaded sleeves 36 and 37, respectively (Fig. 4) into which are threaded through the body the pivot and clamping bolts 38 and 39, respectively, having socketed heads 41 and 42 countersunk in the body and adapted to be operated by the correspondingly shaped wrench portion 43 (Fig. 6) of a wrench having a knurled knob or handle 44. This wrench also fits the heads 15 of the clamping bolts 14.

Each of the finger blocks is provided with a locking socket 45 adapted to receive a locking pin 46 projecting through a hole in the wall of the block holder and yieldingly urged into locking position by a leaf spring 47 and readily releasable upon actuation of the pull knob 48. The block holders are locked in adjusted position by tightening up the pivot and lock bolts 38 and 39 upon which the holders are pivoted and by which they are clamped against the side walls of the recesses in which the holders are located.

In the use of my invention, the prospective purchaser selects from a series of thumb blocks having thumb holes of graduated sizes that block, the hole of which best fits his thumb. This block is then placed in the thumb block recess and locked by means of the pin 24 in the desired position. For a right handed bowler, the block will customarily be positioned as indicated in Fig. 2 at the left side of the median line between the finger holes. Two finger blocks are then selected which best fit the fingers of the prospect, and these blocks are positioned in the holders. The pivot and clamping bolts having been loosened, the individual may now insert his thumb and fingers in the respective holes, and the finger block holders being loosely pivoted will move backward or forward to accommodate the finger holes to the span of the individual's hands.

When thus positioned, the bolts 38 and 39 are tightened up clamping the holders and finger blocks carried thereby in adjusted position, whereupon the individual may lift the ball, swing it, and otherwise manipulate it to ascertain whether the grip is comfortable or whether further adjustment should be made. When a satisfactory and comfortable position of the finger holes has been attained, the size, location, and spacing of the thumb and finger holes may be duplicated in a bowling ball by simply measuring and recording the size and location of the holes, which record is then sent to the shop where the holes in the ball are bored.

For the purpose of measuring the spacing of the individual finger holes from the thumb holes, I have provided a curved rule or gauge member 49, preferably formed of metal having a knob 51 by which it may be handled, the gauge being provided with a head 52 adapted to be positioned in the thumb hole and with lineal measurement indications preferably in inches which when the gauge is swung over the respective finger holes will indicate the exact spacing of each of these holes from the thumb hole. For purposes of greater accuracy in measurement, the gauge is slightly offset, as indicated at 53, to enable the edge of the gauge to be disposed in alignment simultaneously with the center of the thumb hole and the center of a finger hole.

It should be apparent from the foregoing that I have provided a bowling ball grip gauge which corresponds in size, shape and weight with a bowling ball, which provides for adjustment of position of both the thumb hole and two finger holes, enables a substantial duplication of the conditions existing in bowling and insures accuracy of fit to the hand both in hole size and spacing. My invention provides also for accurate spacing measurement so as to enable exact duplication in a bowling ball of the spacing indicated by the gauge. The gauge, furthermore, is strong and durable, provides facility for ready exchange of finger and thumb blocks, and affords provision for rigid locking of the parts in adjusted position.

The structural details illustrated and described may obviously be varied within considerable limits without departing from the spirit of my invention as defined in the following claims.

I claim:

1. A bowling ball grip gauge comprising a body corresponding in weight and dimensions to a bowling ball and provided with a plurality of recesses disposed at right angles to each other, a replaceable thumb hole block adjustably mounted in one of said recesses, a plurality of finger block holders adjustably mounted in the other recess, said holders being adjustable toward and from the thumb hole block and the thumb hole block being adjustable transversely to the direction of adjustment of said holders, a replaceable finger hole block carried by each of said holders, means for detachably locking each of said finger hole blocks in its respective holder, and means for independently locking each of said holders in adjusted position.

2. A bowling ball grip gauge comprising a body

representing a bowling ball, a replaceable thumb hole block mounted in said body, a plurality of holders adjustably mounted in said body, means for locking each of said holders in adjusted position, a replaceable finger hole block disposed in each of said holders, and means for detachably locking each of said finger hole blocks in its respective holder.

3. A bowling ball grip gauge comprising a spherical body corresponding in size and weight to a bowling ball, said body being provided with an elongated slot having a curved bottom concentric with the curvature of said body, a replaceable thumb hole block disposed in said recess and adjustable in an arc concentric with the surface of said body, means for detachably locking said block in adjusted position, a plurality of holders adjustably mounted in said body for adjustment toward and from said thumb hole block along arcs concentric with the surface of said body, a replaceable finger hole block positioned in each of said holders, means for detachably locking each finger hole block in its respective holder, and means for independently locking each of said holders in adjusted position.

4. A bowling ball grip gauge comprising a spherical body corresponding in dimensions with a bowling ball, said body consisting of a plurality of semi-spherical sections detachably connected together and provided with outwardly opening recesses, a plurality of holders mounted in one of said recesses for adjustment in an arc concentric with said body, a finger hole block detachably mounted in each of said holders, means for locking said holders in adjusted position and a thumb hole block mounted in another recess for adjustment in an arc concentric with the body but in a direction transverse to the direction of adjustment of said finger hole blocks, and means for detachably locking said thumb hole block in adjusted position.

5. A bowling ball grip gauge corresponding in size and weight to a bowling ball, comprising a body, a finger hole block holder adjustably mounted in said body, a replaceable thumb hole block adjustably mounted in said body, a replaceable finger hole block carried by said block holder, the finger hole block holder being adjustable in a direction perpendicular to the direction of adjustment of said thumb hole block, and means for locking said finger hole block holder in adjusted position.

6. A bowling ball grip gauge comprising a body provided with a plurality of recesses, a replaceable thumb hole block positioned in one of said recesses, a plurality of block holders positioned in the other recess, replaceable finger hole blocks positioned in each of said block holders, said holders being individually adjustable toward and from the thumb block and the thumb block being adjustable transversely to the direction of adjustment of said finger hole block holders, and means for locking said holders and said thumb hole block in adjusted position.

7. A bowling ball grip gauge comprising a body representing a bowling ball and provided with an elongated recess and with a second elongated recess disposed perpendicular to said first recess, a replaceable thumb hole block adjustably mounted in said first recess, a plurality of finger hole block holders adjustably mounted in said other recess, and means for independently locking said thumb hole block and said finger hole block holders in adjusted position.

8. A bowling ball grip gauge comprising a spherical body representing a bowling ball provided with a plurality of elongated recesses, a plurality of finger hole block holders pivotally mounted in one of said recesses, a replaceable finger hole block carried by each of said holders, means for detachably locking each of said blocks in its respective holder, means for independently locking each of said holders in adjusted position, a replaceable thumb hole block mounted in the other of said recesses for adjustment in directions transverse to the direction of adjustment of said finger hole block holders, and means for locking said thumb hole block in adjusted position.

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