

J. W. HYATT.
 BOWLING BALL WITH COMPOSITION COATING AND GRIPPING SOCKETS.
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1,111,022.

Patented Sept. 22, 1914.

Fig. 1.

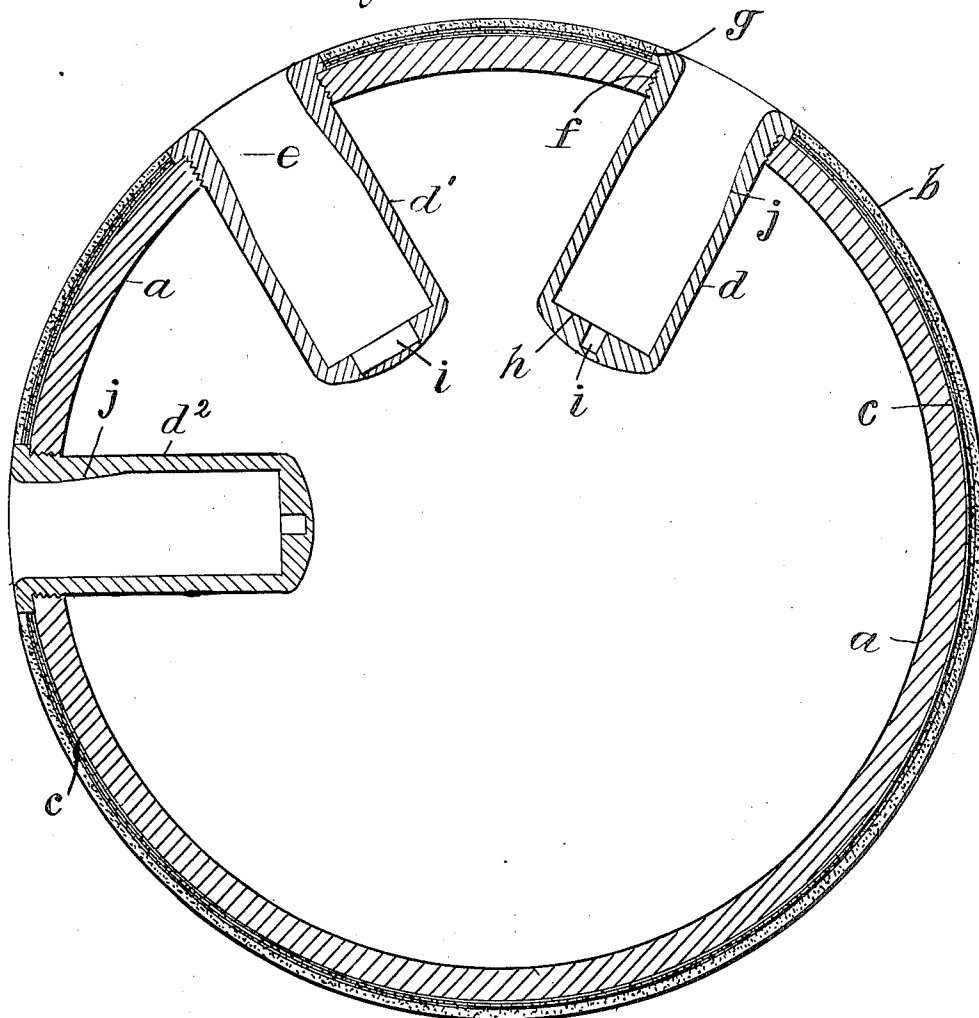
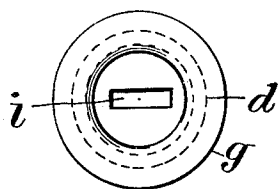
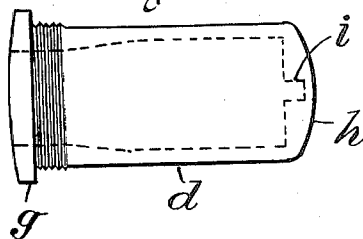


Fig. 2.



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Fig. 3.



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UNITED STATES PATENT OFFICE.

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BOWLING-BALL WITH COMPOSITION COATING AND GRIPPING-SOCKETS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN W. HYATT, a citizen of the United States, residing at 724 Ridge street, Newark, county of Essex and State of New Jersey, have invented certain new and useful Improvements in Bowling-Balls with Composition Coating and Gripping-Sockets, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

The object of this invention is to furnish a bowling ball of improved construction as a substitute for the balls of wood and solid composition heretofore made, the construction being such that the ball always remains spherical. The construction employs a metallic body with a layer of fibrous material cemented firmly thereon and an exterior coating of relatively non yielding homogeneous composition molded thereon and having a hardness and texture adapted to turn in a lathe.

The nature of the invention will be most readily understood by reference to the annexed drawing, in which—

Figure 1 is a transverse central section of the ball taken through the grip-sockets; Fig. 2 shows the outer end of one of the grip-sockets; and Fig. 3 a side-view of one of the grip-sockets.

The ball is shown with a hollow metallic body formed of a spherical shell *a* of suitable thickness to afford the required weight in the ball, and such metallic body is coated with a homogeneous composition *b* which may be molded thereon, and hardened to a density and texture adapted to be turned in a lathe to a perfectly spherical form, and which is strongly adherent to the metal body so that it is sustained and thoroughly supported under blows and concussions, and is not liable to fracture or indentation in ordinary use.

A special means is preferably employed to make the composition adhere to the metal body, so as to afford it a relatively elastic base. This is effected by cementing superposed sheets *c* of fibrous material (as thin open woven fabric) upon the surface of the body, a cement being used which will cause the sheets of fabric to adhere strongly to one another and to the metal. The cement used is preferably of the same substance as the composition layer which forms the outer surface of the ball, and the composition is

molded in a plastic state upon the surface of the fibrous material so as to adhere strongly thereto. As such composition coating forms a continuous shell, its own tenacity holds it in close contact with the fibrous material, while the cement serves to intimately unite the composition to the underlying fibers. The fibrous material in like manner forms a continuous shell upon the metallic body and is held in close contact therewith by its own tenacity, and serves most effectively as a medium for securing the composition coating to the metal.

If a solution of the same substance as the composition be used for the cement, it is obviously less dense when united with the fibers of the woven fabric, than in the outer composition coating, and the fibers are therefore capable of slightly yielding under blows and concussions, and therefore form a relatively elastic support for the outer coating. This is a very material advantage, as a thin coating, say an eighth of an inch in thickness, resting directly upon a hard metallic surface, would be more likely to injury by concussion than if supported upon a somewhat elastic or yielding base, and such a base is afforded by the fibrous material. The fibrous material thus performs two important functions, in uniting the composition to the iron body, and in furnishing a somewhat yielding base for the composition.

A bowling ball above a certain size always requires means to grip it by the fingers for throwing it in the bowling alley, and the means shown herein is especially adapted for a ball having a metallic shell and a composition coating, and consists of tubular thimbles or grip-sockets *d*, *d'*, furnished near their outer ends with a thread *e* to screw into a threaded hole *f* in the metallic shell, and having a collar *g* to bear against the outer side of the shell, and of suitable thickness to stand flush with the surface of the external coating. To screw the grip-sockets readily into the threaded holes of the shell, each socket is formed with a bottom-plate *h* having a recess *i* therein to receive a wrench for screwing the socket into the hole *f*.

The recess shown is of oblong shape and thus adapted to receive the end of a screw-driver inserted through the outer mouth of the grip-socket, but may be made of any required shape. The grip-sockets are expanded inwardly, as indicated at *j* in Fig.

1, to afford the fingers a more secure grip upon the ball when throwing the same.

Two sockets d , d' of different size are shown upon the upper side of the ball in Fig. 1, one being adapted especially to receive the thumb of the bowler, and a socket d^2 at the left side of the ball and having the expanding slope formed only upon the upper side of such socket, that is adjacent to the socket d' , which is made larger than the sockets d and d^2 to receive the thumb of the bowler. The socket d' is adapted for occasional use with either the socket d or d^2 .

The collar g which rests upon the shell a is proportioned to make the outer end of the grip-socket flush with the coating b upon the metallic shell, and thus serves the double function of arresting the grip-socket when screwed into the shell, and of making it flush with the exterior of the ball.

Having thus set forth the nature of the invention what is claimed herein is:

1. A bowling ball having a metallic body with a layer of relatively elastic fibrous material cemented thereto, and a continuous layer of relatively non-elastic composition adherent to the fibrous layer, and having a density and texture adapted to be turned to a spherical shape in a lathe.

2. A bowling ball having a hollow metallic body with a plurality of sheets of fibrous material overlapping one another upon its

surface and secured to one another and to the said surface by adhesive cement, and a continuous layer of relatively non-elastic homogeneous composition adherent to the fibrous layer, and of density adapted to be turned in a lathe.

3. A bowling ball having a hollow metallic body with a continuous layer of homogeneous and relatively non-elastic composition coating adherent thereto, sockets threaded in holes in the shell of the hollow body and having each a collar exterior to the thread and contacting with such shell and flush with the surface of the composition coating.

4. A bowling ball having a hollow metallic body with threaded apertures to receive grip-sockets, and a continuous layer of relatively non-elastic homogeneous composition coating adherent thereto, and grip sockets with thread to fit the threaded holes and having each a collar penetrating through the composition coating to the metallic shell and flush externally with the said coating, substantially as herein set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOHN W. HYATT.

Witnesses:

L. LEE,

THOMAS S. CRANE.