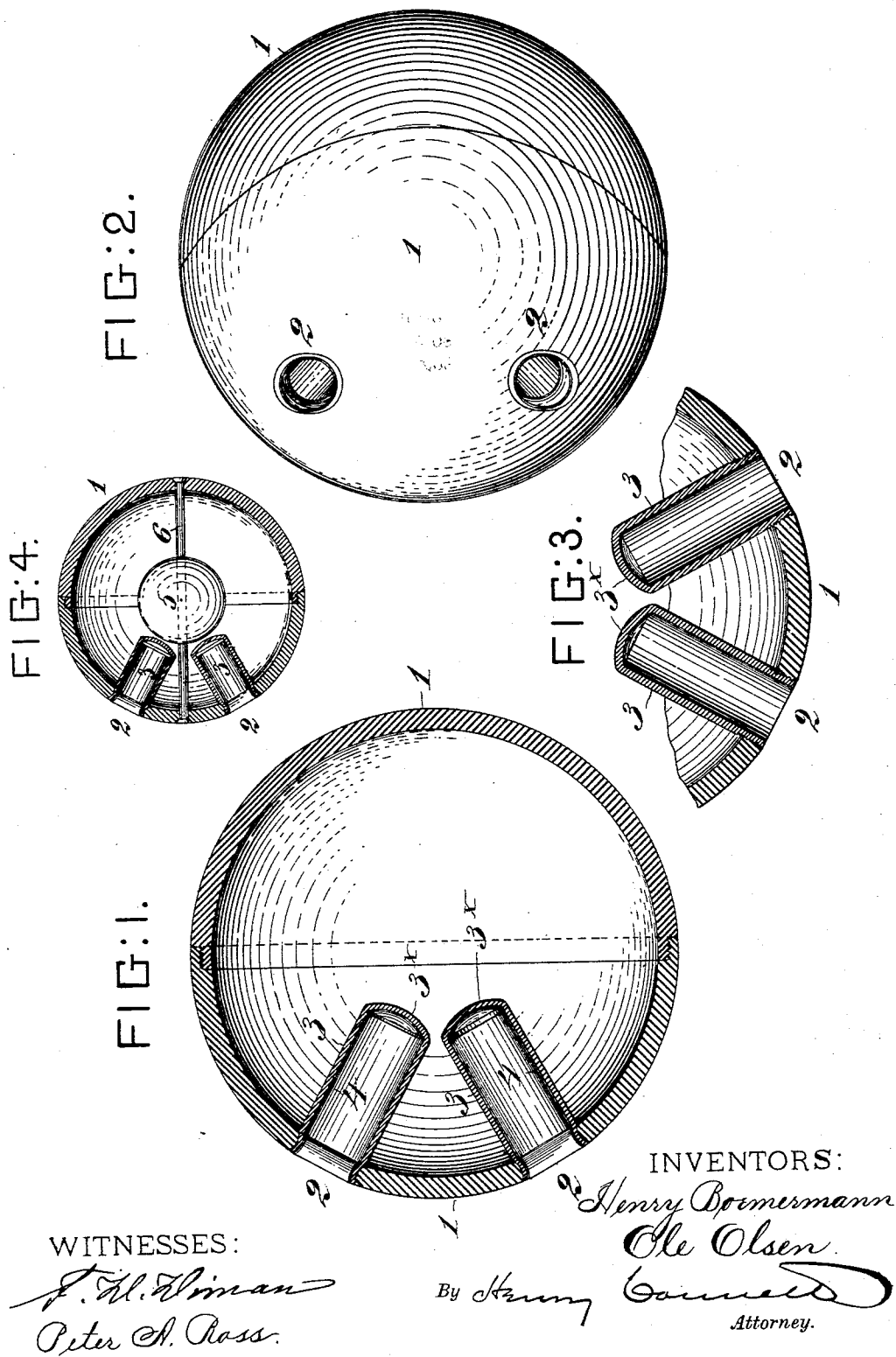


(No Model.)

H. BOEMERMANN & O. OLSEN.
TENPIN BALL.

No. 580,207.

Patented Apr. 6, 1897.



UNITED STATES PATENT OFFICE.

HENRY BOEMERMANN AND OLE OLSEN, OF BROOKLYN, NEW YORK.

TENPIN-BALL.

SPECIFICATION forming part of Letters Patent No. 580,207, dated April 6, 1897.

Application filed January 20, 1896. Serial No. 576,245. (No model.)

To all whom it may concern:

Be it known that we, HENRY BOEMERMANN and OLE OLSEN, citizens of the United States, residing in Brooklyn, Kings county, New York, have invented certain new and useful Improvements in Tenpin-Balls, of which the following is a specification.

Our invention relates to balls used in playing the game of tenpins or bowls. Heretofore, so far as we are aware, these balls have always been spheres turned from hard wood, as lignum-vitæ, and provided with holes to receive the finger and thumb, called "finger-holes." Such balls have several disadvantages which we seek to overcome by our invention: First, they wear out rapidly from constant chafing and hammering, thus becoming rough and losing their perfect spherical form; second, they are liable to shrink and crack from the dry heat of rooms; third, they are solid and necessarily increase in weight in direct proportion to their size, while it is often desirable to vary the sizes of the balls without varying their weight proportionately, and, fourth, owing to the gradual increase in the price of the wood from which such balls are turned the latter are becoming more and more costly.

Our invention overcomes these difficulties. In carrying out the invention we make two hollow hemispheres, of metal or other suitable hard material, and secure these hemispheres firmly together, face to face, so as to produce a perfect hollow sphere of the proper diameter and of the proper thickness to give the desired weight to the ball. This ball we provide with suitable finger-holes for the same purpose as those in the wooden balls.

In the accompanying drawings we have illustrated an embodiment of our invention in its preferred form.

Figure 1 is a transverse mid-section of the ball. Fig. 2 is a side elevation of the ball. Fig. 3 is a fragmentary view, showing a mode of securing the finger-hole sockets which is different from that seen in Fig. 1. Fig. 4 shows on a smaller scale a ball constructed according to our invention and weighted.

The ball is made up of two hollow hemispheres 1 1. These we prefer to strike up from steel of the proper thickness to give the desired weight to the ball. The margins of

the hemispheres are trued up and rabbeted, so as to overlap, and these are then secured together firmly by brazing, soldering, screwing, or the like. In Fig. 1 the parts are shown as screwed together.

The finger-holes 2 2 are formed in one of the hemispheres. In Fig. 1 the construction represents two holes punched or bored in the metal of the ball, and sockets 3 3, stamped up from sheet metal and secured in the respective holes by expanding according to a method commonly employed for fixing boiler-tubes. These tubular sockets incline or converge, being preferably arranged with their axes radial to the sphere, or nearly so. In order to form a less smooth and more agreeable surface to the fingers than that afforded by metal of the tubular sockets, these latter may be lined with leather 4 or some similar material, cemented to the metal, or the tubular sockets may be made from brass or other suitable metal and have a thin film of rubber placed on its surface and vulcanized *in situ*. The covering 4 of Fig. 1 may be considered as of rubber, leather, or any similar soft material.

Fig. 3 represents the tubular sockets as screwed into the wall of the hollow ball from the inside. This must of course be done before the hemispheres are secured together.

The tubular sockets 3 are represented as closed at their inner ends 3^x, so that the ball cannot be filled or stuffed through the sockets for mischievous purposes.

It will be obvious that the two sections of the ball may be secured together in other ways than those above stated—for example, by passing a rod through it diametrically and riveting it at the ends, or this means may be used in addition to the fastening means already described. In Fig. 4 such a ball is shown, and this view shows also how a hollow ball of thin metal, compressed fiber, &c., may be weighted with a ball or weight 5 of lead or other metal, secured to a rod 6, which traverses the hollow of the tenpin-ball and occupies the center of the latter.

It will be obvious that a ball constructed as above described can be made of any desired dimensions, and that its weight will vary according to the thickness of the metal from which it is made.

Having thus described our invention, we claim—

1. As a new article of manufacture, a spherical, hollow tenpin-ball, composed of two
5 hemispheres of metal having screw-threaded edges and screwed together thereby, a rivet passing axially through said hemispheres, and a weight fixedly secured at the center of said rivet and hollow ball, substantially as
10 described.

2. As a new article of manufacture, a spherical, sectional hollow tenpin-ball, a rivet pass-

ing diametrically therethrough and a weight fixedly secured in the center of said rivet, substantially as described.

In witness whereof we have hereunto signed
our names in the presence of two subscribing
witnesses.

HENRY BOEMERMANN.
OLE OLSEN.

Witnesses:

PETER A. ROSS,
HENRY CONNETT.