No. 794,488. PATENTED JULY 11, 1905.

W. BURKE.

SOCKET JOINT.

APPLICATION FILED NOV. 7, 1904.

FIG. 1.

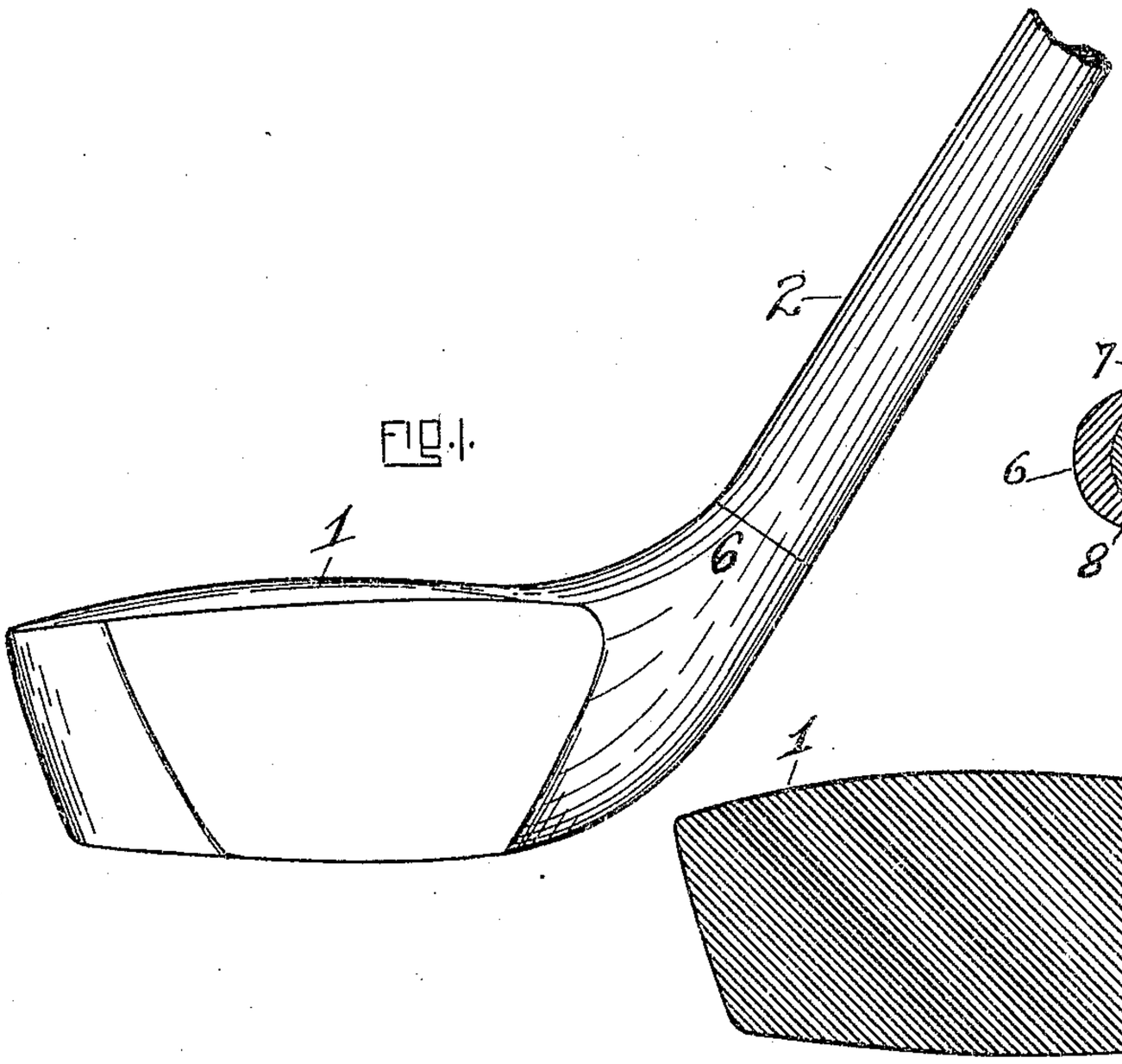


FIG. 3.

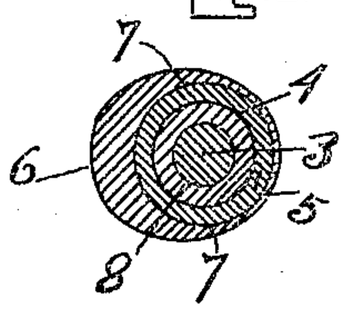
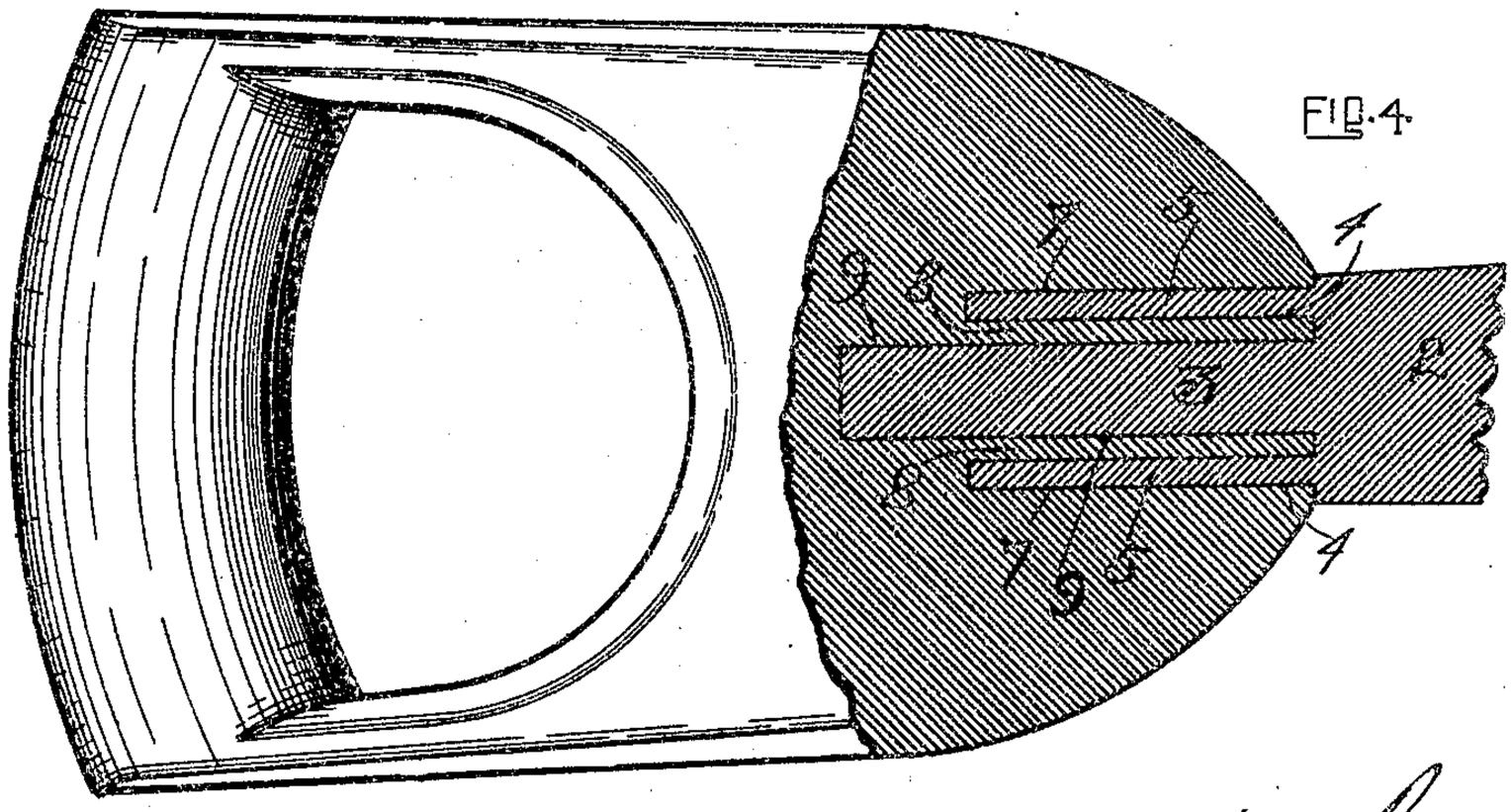


FIG. 2.

FIG. 4.



WITNESSES

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No. 794,488. Patented July 11, 1905.

UNITED STATES PATENT OFFICE.

WILLIAM BURKE, OF DAYTON, OHIO.

SOCKET-JOINT.

SPECIFICATION forming part of Letters Patent No. 794,488, dated July 11, 1905.

Application filed November 7, 1904. Serial No. 231,753.

To all whom it may concern:

Be it known that I, WILLIAM BURKE, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Socket-Joints; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention consists of an invisible double-lock socket for connecting two pieces of wood—for example, a grip portion of a handle with the stem, staff, or base portion. For the purposes of illustration I have shown my invention utilized as a means for joining the shaft or handle portion of a golf-club with the head or neck and also as a means for joining the grip or handle portion with the stem or shank portion of a shovel; but it will be understood that the socket may be utilized in connecting or joining the handles of a variety of articles. Wherever it is used, the joint is invisible and the glue which is used in uniting the male and female members of the joint is protected from the weather, as the glued parts of the joint are entirely concealed. In its application to a golf-club the shaft may be brought from two to four inches closer to the point of impact than is ordinarily the case. This produces a club capable of far better action and much stronger and neater in appearance. The glue-joint is entirely hidden, as before stated, and is not exposed to moisture. The grain of the wood is so lapped and relapped for gluing that the parts connected are greatly strengthened. In the common construction of shovel-handles the grip or hand piece and the stem portion are turned from a single piece of wood. This is objectionable for two main reasons. First, there is a great loss of material in turning or cutting away the wood to obtain the required size of the stem, there being material for four or five stems in a piece of wood having a suitable width or dimension for turning a grip, and, secondly, shovel-handles are known to the trade by different grades, the first grade being that in which the grip or handle portion proper and the stem are devoid of any imperfections in the nature or growth of the wood. It often happens that a perfect grip and an imperfect stem are turned from one and the same piece of material, and vice versa, and thus a second or third grade handle is the result. The different grades of handles bring different prices. The third grade, in which the stem and grip both have imperfections, brings a less price than does a handle in which the stem alone or the grip alone has imperfections, and a handle in which neither the stem or grip have imperfections brings a higher price and is considered a first grade.

By the use of my invisible double-lock socket joint or connection there is not only a very substantial saving in the use of material, but it also enables defective grips to be assembled with defective stems and perfect grips to be assembled with perfect stems, thereby bringing into association similar qualities of wood.

Preceding a detail description of my invention, reference is made to the accompanying drawings, of which—

Figure 1 is an elevation of a golf-club with the shaft partly broken away, the shaft being united to the head by means of my invisible double-lock socket. Fig. 2 is a longitudinal midsectional elevation through the head and the lock-socket. Fig. 3 is a cross-section on the line *x x* of Fig. 2. Fig. 4 is a partial sectional view of the grip and a portion of the stem of a shovel-handle which are joined by my improved double-lock socket.

In a detail description of my invention similar reference characters indicate corresponding parts.

I will first describe my improved double-lock socket in connection with the golf-club, as shown in Figs. 1, 2, and 3. The head 1 of the club is constructed of the most desirable kind of wood or that kind which is found most suitable for the purposes of a golf-club. The shaft 2 is constructed of wood which is most suitable for that portion of the club.

Usually hickory wood is considered the most desirable. Heretofore it has been found necessary to wrap the joint formed by connecting the shaft and head. This wrapping tends very greatly to destroy the requisite amount of resiliency near the point of impact. By making the connection by means of my invention this wrapping is dispensed with and the desired resiliency is obtained close to the point of impact. Each member of the joint may be said to comprise male and female members. For example, the adjacent or lower end of the shaft or handle 2 has a solid round tenon 3, which is surrounded by an inclosed socket 4, and inclosing the socket 4 is an outer wall or tenon 5, which, by reason of the annular socket 4, said tenon 5 is of similar form. The neck 6 has an outer inclosed annular socket 7, which receives the outer wall or tenon 5, and said neck has also an inclosed tubular tenon 8, which enters the socket 4. The said neck also has a central annular socket 9, which receives the tenon 3. The tenon 3 may or may not extend through said socket 9 to the lower surface of the club, as shown; but it is desirable to have said tenon 3 of greater length than the tubular tenons 5 and 7. In the construction of the joint it will be seen that all sides have a uniformity of laps or layers of wood, which give a uniform strength to all parts of the joint.

Referring to Fig. 4, which illustrates the grip and stem portion of a shovel-handle united by my improved double-lock socket, the members of the socket being the same in every essential feature, and in both cases the joint may be formed by the application of waterproof glue. The socket-joint is of a most substantial character, being, as before stated, constructed of a uniformity of laps or layers of wood or composed of four layers or laps on all sides. The joint is practically indestructible. In fact, the lapping of such a number of different grains of wood produces a joint that is practically stronger than a single unjointed piece. It will be understood that the tenons and sockets are formed by turning them in the wood.

Having described my invention, I claim—

1. A socket-joint for uniting shafts or handle portions with base portions, and comprising a part having a tubular tenon surrounded by a socket, and a part having a socket with a solid tenon projected through the center thereof, the tubular tenon entering the socket surrounding the solid tenon, and the solid tenon entering the tubular tenon and forming an invisible double-lock socket, substantially as described.

2. A double-lock socket for uniting handles with base portions, the handle portion having a solid tenon which is surrounded a portion of its length by a socket, said socket being formed by a circular wall, the base portion having an inner and an outer socket separated by an intervening circular wall forming a tubular tenon which enters the socket in the handle portion, the solid tenon in said handle portion entering the inner socket of the base portion, and the end of the handle entering the outer socket in said base portion, as herein shown and described.

3. An invisible double-lock socket for uniting two parts, the same consisting of one part having a solid tenon surrounded by a socket, and another part having a tubular tenon with an inner socket and surrounded by an outer socket.

4. In a double-lock socket for uniting a handle or staff to a base portion, a part having a round socket through the center of which projects a solid round tenon, said tenon being longer than the surrounding socket, and another part having a tubular tenon adapted to receive said solid tenon, and a socket surrounding said tubular tenon.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM BURKE.

Witnesses:

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