J. W. HYATT.

COMPRESSED WOODEN ARTICLE.

APPLICATION FILED DEC. 9, 1911.

1,068,775.

Patented July 29, 1913.

Fig. 1.

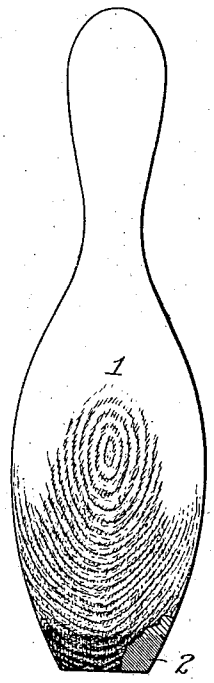


Fig. 3.

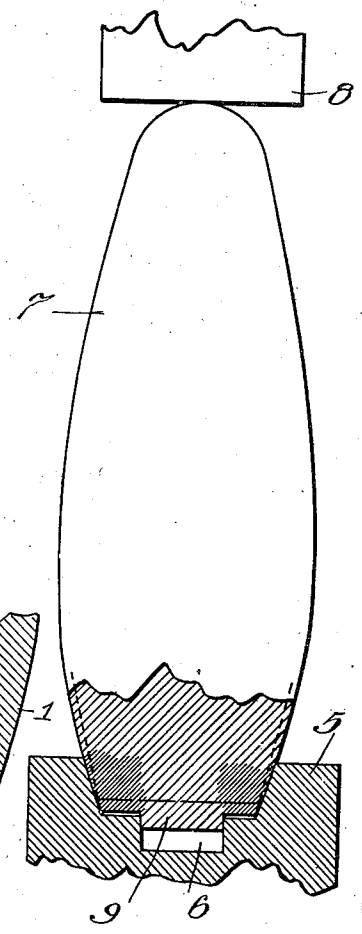
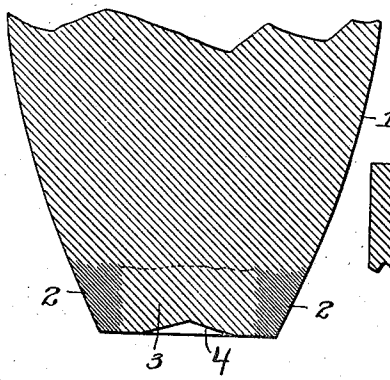


Fig. 2.



Witnesses:

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Inventor:

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by his Attys:

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UNITED STATES PATENT OFFICE.

JOHN W. HYATT, OF NEWARK, NEW JERSEY, ASSIGNOR TO THE BRUNSWICK-BALKE-COLLENDER COMPANY OF NEW YORK, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

COMPRESSED WOODEN ARTICLE.

1,068,775. Specification of Letters Patent. Patented July 29, 1913.

Application filed December 9, 1911. Serial No. 664,739.

To all whom it may concern:

Be it known that I, JOHN W. HYATT, a citizen of the United States, residing at Newark, county of Essex, and State of New Jersey, have invented certain new and useful Improvements in Compressed Wooden Articles, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to certain improvements in compressed wooden articles.

In U. S. Patent No. 987,368, granted to J. W. Hyatt, March 21, 1911, there is disclosed a method of producing compressed wooden articles, the method consisting generally in subjecting a block of wood to pressure both transversely of the fibers and longitudinally of the fibers. The patent further discloses the production of completed wooden articles by finishing the wooden block to form the articles after the compression operation has been completed. The specific steps disclosed for carrying the method referred to into effect result in the production of a wooden block the fibers of which are compressed, as stated, throughout the entire block, the article thus produced being characterized by a special toughness, hardness and resiliency. In certain wooden articles it is unnecessary and undesirable that the entire article be subjected to pressure for the reason that it would be increased considerably in weight thereby, and for the further reason that the use to which the article is put does not require that it be compressed throughout.

The present invention has for its object to produce an improved compressed wooden article, the compression being confined to a limited section or sections of the articles.

A further object of the invention is to produce an improved wooden game implement having a compressed exterior zone, the fibers of the wood within the zone being left in their natural or uncompressed condition.

The article which forms the subject-matter of the invention will be hereinafter more fully described and its particular characteristics pointed out.

In the drawings: Figure 1 represents in side elevation, and partly in section, a game pin embodying the invention. Fig. 2 is a longitudinal section of the lower part of the pin shown in Fig. 1, on an enlarged scale. Fig. 3 is a diagrammatic side elevation, partly in section, illustrating generally an apparatus which may be employed for producing the game implement referred to.

Articles constructed in accordance with the invention in its best form, will exhibit a limited section or portion which has been condensed by heavy pressure exerted both transversely and longitudinally of the grain.

The article selected to illustrate a concrete embodiment of the invention is a game pin. The game pin, marked 1 in the drawings, has a compressed zone, indicated at 2, located at the base of the pin. The fibers of the wood in the remainder of the pin including the fibers within the zone, this part being marked 3, remain in their natural or uncompressed condition. The pin, therefore, exhibits a zone at the base thereof which is exceedingly hard and tough. As the wear on a game pin has been found to be largely at its base and as any chipping or uneven wear at the base may render it impossible to properly position the pin and therefore destroy its usefulness, the compressed zone is of great value in increasing the life of the pin, and this increase is effected without unduly increasing the weight of the pin. This compressed zone in wooden articles has the further advantage that the wood within the zone remains in its natural condition, so that it may be readily worked when desired. Where the invention is embodied in a game pin, this enables the usual cavity at the base of the pin, indicated at 4, to be readily formed therein.

A suitable apparatus for forming a game pin in accordance with the invention is illustrated in Fig. 3. In this figure there is illustrated a mold 5 having a tapering recess, as 6. The blank from which the pin is formed is indicated at 7, and 8 diagrammatically illustrates a pressing agent or plunger which will be actuated by suitable mechanism adapted to produce a heavy pressure. The outline of the lower end of the blank before compression is indicated by dotted lines in Fig. 3. As the pressure is exerted the blank is driven into the tapering mold and into the position shown in full lines in Fig. 3, with the result that a compressed zone will be formed at the lower end only of the blank. This zone is coincident circumferentially with the exterior surface of the blank and will extend inward

varying distances according to the amount of taper given the mold, but there will be an uncompressed portion in the interior of the blank and this uncompressed portion will be driven down into the opening 6 so as to form a projection 9 on the lower end of the blank. When the compression is completed, the blank is removed and turned, or otherwise fashioned into the completed pin.

While the formation of a compressed zone presents certain advantages, it is to be understood that the invention may be embodied in articles in which the entire cross-sectional area of the article is compressed throughout a limited portion of the article. Where, however, articles have an entire cross-sectional compressed portion, the compression will be produced by subjecting the articles to heavy condensing pressure both transversely and longitudinally of the grain, according to the method set forth in the Hyatt patent before referred to, the apparatus employed being varied, of course, according to the character of the article it is desired to produce.

While the game pin illustrated is compressed at one end only, it is to be understood that the invention is not limited to game pins or to game pins which are compressed at one end only. For instance, the invention may be and has been embodied in game pins of the kind known as "candle pins" which have a flat surface at both ends and which are adapted to be placed on the alley either end up. In making candle pins both ends should be compressed.

The invention may also be embodied in other articles, such, for instance, as billiard cues. It is customary to make billiard cues of two parts, the handle portion of the cue being made of much heavier wood than the remainder of the cue, the handle being joined to the main portion in any suitable manner. It is further customary to provide the tip of the cue with an ivory collar. A cue compressed in accordance with the invention may have its handle portion heavily compressed to give the necessary weight, and the tip may also be compressed to gain the advantage now attained by the use of the ivory collar, the remainder of the cue being left in its uncompressed condition. It will be understood, of course, that either the handle or the tip end of the cue may be compressed, the other end being left in its natural condition, without departing from the invention.

In constructing wooden articles embodying the invention the best practice is to make a blank or block which is generally shaped to that which the article is to finally have and then to compress the blank, the final shaping being done after the compression.

The invention may be embodied in articles other than those which have been heretofore specifically referred to.

What is claimed is:

1. A wooden article having the fibers of the wood throughout a portion only of the article compressed both transversely and longitudinally, the fibers of the remainder of the article being in their natural uncompressed condition.

2. A wooden game implement the fibers of the wood being compressed both transversely and longitudinally at an end, the fibers in the remainder of the implement remaining in their natural uncompressed condition.

3. A wooden game implement having its fibers compressed to form a tough, hard zone, the fibers within the zone being in their natural uncompressed condition.

4. A wooden game pin the fibers of which are compressed to form a tough hard zone at an end of the pin, the fibers of the remainder of the pin and within the zone being in their natural uncompressed condition.

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

JOHN W. HYATT.

Witnesses:
A. A. TROESCHE,
CHAS. P. MILLER.