Aug. 9, 1949. H. D. BOYNTON 2,478,232

WOOL OR WOOL NOIL BALL

Filed April 26, 1946

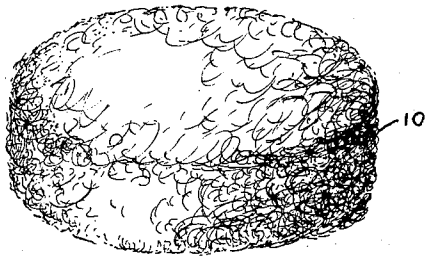

Fig. 1.

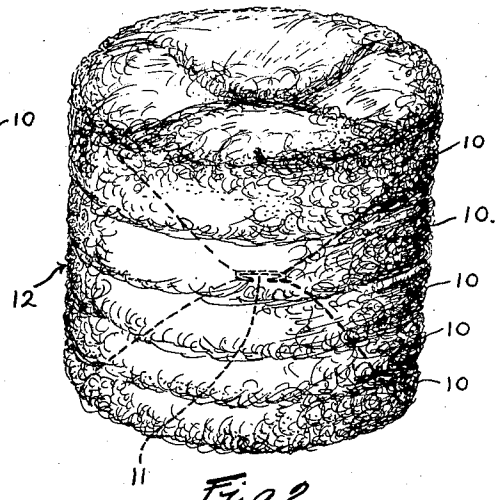

Fig. 2.

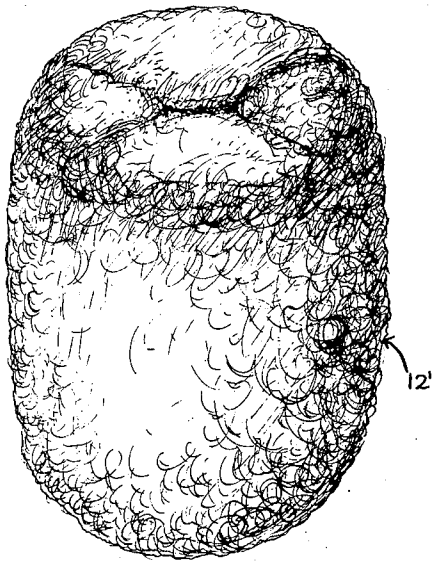

Fig. 3

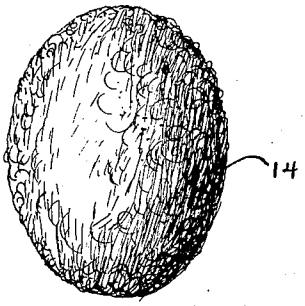

Fig. 4

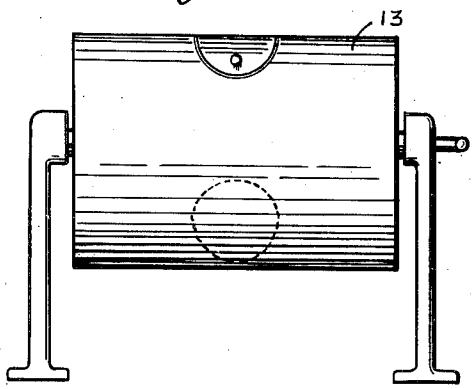

Fig. 5.

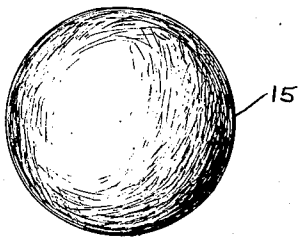

Fig. 6.

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WOOL OR WOOL NOIL BALL

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2 Claims. (Cl. 28—72.3)

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This invention relates to new and useful improvements in wool or wool noil balls. The invention particularly relates to the method of producing such a ball. As an object of the invention is the provision for producing a wool ball in a manner such that when the ball is completely formed its shape will be substantially perfect, free from surface cracks, holes, or indentations, a ball which appears when handled to be hollow and yet is in solid form. The steps employed in this method assure the production of such a ball by various steps which result in rapid production at economical cost.

The ball formed by my improved method is adaptable for sundry uses, it being desirable that a wool ball be as near perfect in form as is possible. To achieve this object, after the ball has been kneaded by hand, it is placed first in a slowly revolving drum for shaping purposes and then in a more rapidly revolving drum to felt the ball down to the desired size.

Another object is the provision for producing a wool ball, the outside portion of which has a greater density than the inside, thereby producing a ball which is substantially solid throughout but has the effect of a ball which is hollow and one having substantially resilient characteristics.

Another and equally important object of the invention is the formation of a wool ball by a method which is carried into effect with the minimum expense, thereby permitting wool balls to be produced at an economical cost.

Other objects will appear hereinafter.

The invention consists in the novel combination and arrangement of parts to be hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings showing the preferred form of construction, and in which:

Fig. 1 is a perspective view of a disc cut from a wool bat form and of a predetermined diameter;

Fig. 2 is a perspective view of a plurality of discs similar to that shown in Fig. 1, arranged in superimposed position with respect to each other and connected together at their medial portions by an ordinary staple;

Fig. 3 is a perspective view of the assembly shown in Fig. 2 after the same has been treated within a slowly revolving drum;

Fig. 4 is a perspective view of the ball after it is hand-kneaded and ready for treatment in a slowly revolving drum;

Fig. 5 is a diagrammatical illustration of a revolving drum used for the formation of the wool ball;

Fig. 6 is a perspective view of the finished ball.

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In carrying my improved method into effect and in the manufacture of my improved wool noil ball, a plurality of discs are cut from a wool bat in sheet form. This wool sheet is of a predetermined thickness, and the discs 10 are cut of a predetermined diameter or of such diameter as is required for the size of a ball having a desired diameter. A plurality of these discs 10 are arranged in stacked, superimposed position with respect to each other and are connected together at their medial portion by an ordinary paper staple 11 (Fig. 2). The number of these discs employed is dependent upon the size of the ball desired. This assembly indicated at 12 is now placed in a slowly revolving drum, such as indicated at 13, which is allowed to run for a predetermined length of time for matting the wool fiber of the assembly together, thus resulting in the form indicated at 12', shown in Fig. 3. At the terminal of this operation (the length of time depending upon the time necessary to mat the discs together in the form as shown in Fig. 3), the assembly 12' is taken from the revolving drum and saturated with a liquid, such for example as a soap solution, for cohesively matting the wool fibers together upon being kneaded by hand, during which latter operation the assembly is reduced to the desired size and at the same time substantially most of the liquid is squeezed therefrom. This kneading continues until the assembly is reduced to a desirable size as shown at 14 in Fig. 4. This kneading of the mass is done substantially similar to that of forming or making a snowball by the use of the hand.

After this operation has taken place, then the ball-like mass 14, as shown in Fig. 4, is ready for shaping. This is accomplished by placing the ball-like mass 14 in a slowly revolving drum, allowing the mass to revolve therein until it has been shaped as nearly round as possible and all evidence of separate portions thereof removed. It is desirable that the outside surface of the ball be felted so that it will have a greater density than the interior of the ball. This is accomplished by now placing the ball as shown in Fig. 4, into the drum 13 and revolving the same at a substantially fast speed. As the ball revolves within the drum 13, its outside surface will bear against the inside surfaces of the drum, with the result that the wool fibers will be substantially matted on the outside surface of the ball, result-

ing in the formation of a felt on the outside surface of the ball.

When the ball is complete as shown at 15 in Fig. 6, it will be free of any lines of severance, cracks, holes, or indentations, and will be substantially round. It will have the appearance of a solid ball with unbroken surfaces, and, when held in the hand, it will have the feel of a solid ball with a hollow center. It will be substantially resilient for the purposes for which it is intended.

From the foregoing description, it is apparent that the method employed for producing a wool noil ball is simple, economical, and one which has as its final result a substantially perfectly formed ball having the necessary felt on the outside area of a greater density than that of the inside area and of a resiliency highly desirable for the intended use to which the ball is subjected.

In Fig. 5 I have illustrated diagrammatically a revolving drum. No attempt is here made to describe the construction of such a drum, as the drum per se does not enter into any part of my invention. Any device in which there is a revolving drum, is adaptable for the purpose hereinbefore set forth.

The main object of my invention is to provide a wool noil ball from a plurality of discs cut from a bat form and secured together and then subsequently reduced and rounded to the desired ball shape. This object is accomplished by the hereinbefore described method.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to protect by Letters Patent is:

1. The method of making a wool noil ball from a plurality of discs of equal diameter and size consisting of securing the discs together, placing the secured discs in a slowly revolving drum for matting the wool fibers together, saturating the shaped mass with a soap solution, kneading the saturated mass by hand and extracting therefrom most of the soap solution, placing the kneaded mass in a slowly revolving drum to shape the mass in the form of a ball, and then placing the ball in a fast revolving drum to form a felt on the outside of the ball.

2. The method of making a wool noil ball from a plurality of discs of equal diameter and size consisting of securing the discs together, placing the secured discs in a slowly revolving drum for matting the wool fibers together, saturating the shaped mass with a liquid, kneading the saturated mass by hand and extracting therefrom most of the liquid, placing the kneaded mass in a slowly revolving drum to shape the mass in the form of a ball, and then placing the ball in a fast revolving drum to form a felt on the outside of the ball.

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