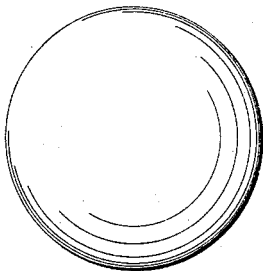


*J. W. Hyatt, Jr.,  
Billiard Ball.*

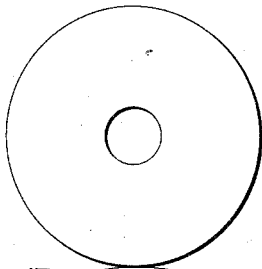
*N<sup>o</sup> 50359.*

*Patented Oct. 10, 1865.*

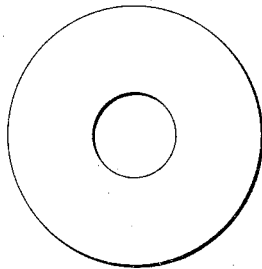
*Fig; 1.*



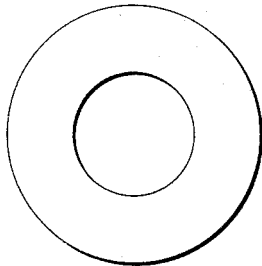
*Fig; 2.*



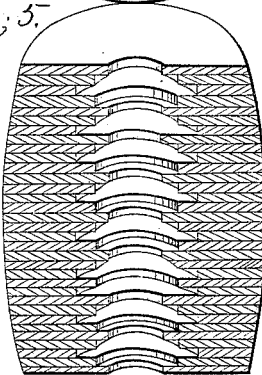
*Fig; 3.*



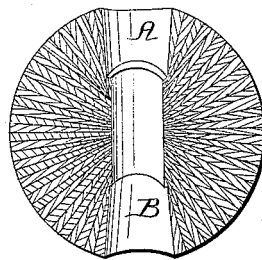
*Fig; 4.*



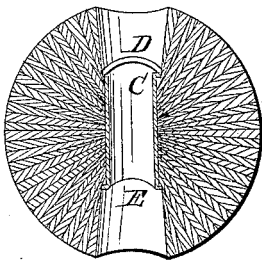
*Fig; 5.*



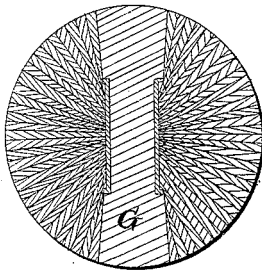
*Fig; 6.*



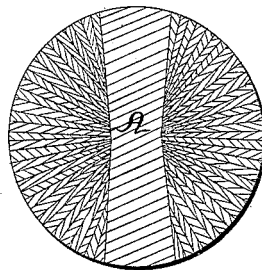
*Fig; 7.*



*Fig; 8.*



*Fig; 9.*



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# UNITED STATES PATENT OFFICE.

JOHN W. HYATT, JR., OF ALBANY, NEW YORK.

## BILLIARD-BALLS.

Specification forming part of Letters Patent No. 50,359, dated October 10, 1865; antedated September 27, 1865.

*To all whom it may concern:*

Be it known that I, J. W. HYATT, Jr., of Albany, in the county of Albany and State of New York, have invented a certain new and useful Method of Constructing Balls for Billiards and other Purposes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings and letters of reference thereon, all of which form a part of this specification.

The drawings will be explained in the following construction of my invention.

The nature of my invention consists in an improved method of constructing balls of composition for billiards or other purposes.

To enable those skilled in the art to construct balls according to my improved method, I shall now describe its process of manufacture.

I take shellac dissolved in alcohol and mix with it a sufficient quantity of ivory-dust, or bone-dust, or other ingredients, so as to form a paste which can be spread. For white balls I take bleached shellac and mix some white lead or other white paint with the ivory or bone-dust; and for colored balls I mix vermilion or other colored paint with the above-described composition. For colored balls the shellac may be dark.

To construct the balls I proceed as follows: Having provided the above composition, I spread it upon sheets of muslin or linen cloth, Figure 1. Through the centers of said sheets I cut or punch holes of different sizes, as shown in Figs. 2, 3, and 4. The sheets thus perforated I place on top of each other, commencing with the sheets that have the smallest perforations. Then I place sheets with larger perforations on the top and bottom, and so I keep on piling them together with increased larger perforations, occasionally placing a sheet with a small hole between them, as shown in Fig. 5, until a sufficient quantity is put together to form a ball. The sheets may be cut of different diameters, as shown in Fig. 5, so as, when pressed in a spherical form, all the layers will be of proper diameter to reach to the surface on either side of the ball without doubling over, thus using the material with little waste. This pile of perforated sheets I compress, giving to it the strongest pressure in the center, and while being in the press I submit it to heat until the composition has melted and has com-

bined the sheets into one mass, which, when cool and relieved from the press, will have a hollow opening on two opposite ends, A B, Fig. 6, and presenting outside the edges only of the layers of which it is formed. To prevent the balls splitting, I insert a rivet, which may be a tube of brass or other metal, in the central or small opening of the described compressed mass, C, Fig. 7, and spread the ends of said tube so as to rivet the composition tightly together, D E, Fig. 7. The remaining two open ends, D E, Fig. 7, I fill with compressed plugs made of the same material in such manner that the grain or layers of them shall stand edgewise, F G, Fig. 8, and press them tightly into said holes or openings, and submit it again to heat, so that these plugs will combine with the other into one mass. This may then be turned to the proper size and polished.

Fig. 9 shows how the balls may be constructed without the rivet. The material is pressed, as in Fig. 6. A plug, A, is inserted in the opening made with the layers running as described in Fig. 8, F G, of a proper length to reach through the ball. The whole is then again put in press and submitted to heat, when it will assume a form substantially as sectionally shown in Fig. 9. There are several different adhesive solid substances which will answer well instead of shellac, and which may be used according to the quality of ball required.

The composition may be varied, and put on in such quantity so that the weight of the ball will correspond exactly with a ball of the same size made of ivory; and as all the layers present themselves edgewise on the surface of the ball, there is no liability to split or even crack.

Having thus fully described my invention, what I claim therein as new, and desire to have secured to me by Letters Patent of the United States, is—

1. Constructing balls of layers of fibrous and adhesive solid material in such a manner that the surface of said balls shall only present the edges of said layers, for the purpose as herein described.

2. Riveting the balls inside, as described, or in an equivalent manner, for the purpose specified.

JOHN W. HYATT, JR.

Witnesses:

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