

No. 766,444.

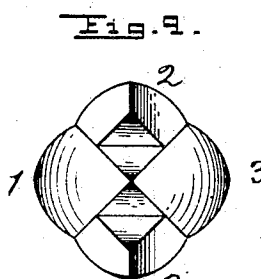
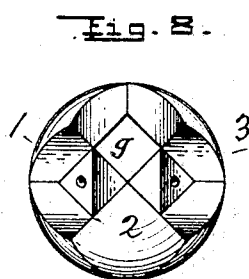
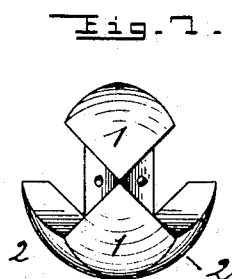
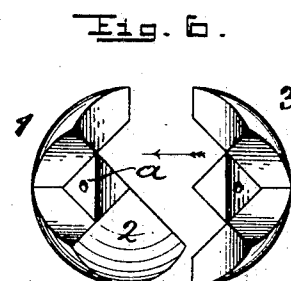
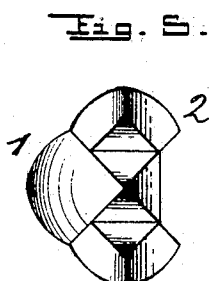
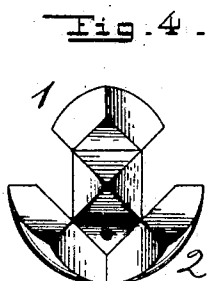
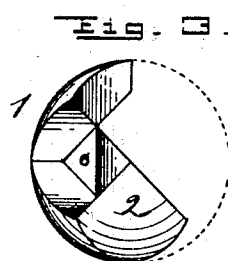
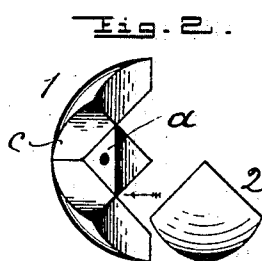
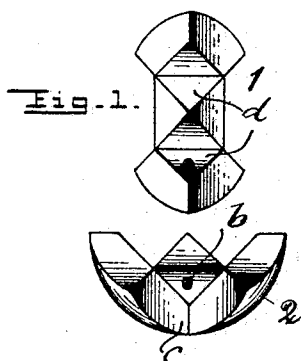
PATENTED AUG. 2, 1904.

W. E. HOY.
PUZZLE BALL.

APPLICATION FILED OCT. 18, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses
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Gertie M. Muller.

Inventor
William E. Hoy
by James F. Ramsey
his Atty.

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2 SHEETS—SHEET 2.

Fig. 10.

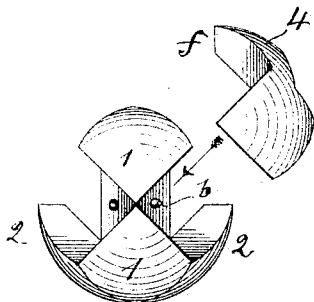


Fig. 11.

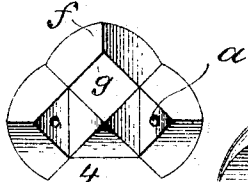


Fig. 12.

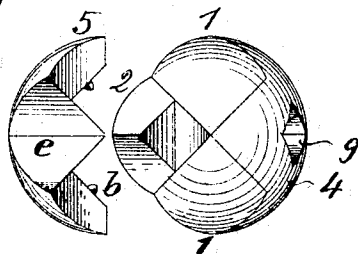


Fig. 13.

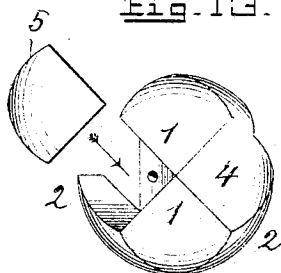


Fig. 14.

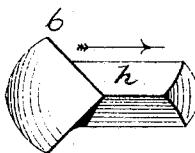


Fig. 15.

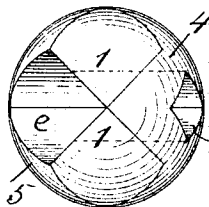


Fig. 16.

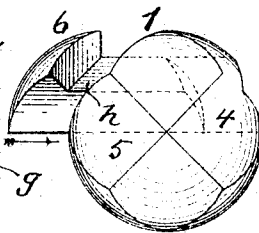
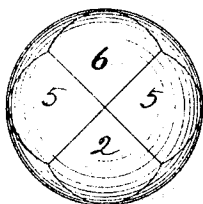


Fig. 17.



Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM E. HOY, OF CINCINNATI, OHIO.

PUZZLE-BALL.

SPECIFICATION forming part of Letters Patent No. 766,444, dated August 2, 1904.

Application filed October 16, 1902. Serial No. 127,447. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. HOY, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and the State of Ohio, have invented certain new and useful Improvements in Puzzles, of which the following is a specification.

My invention relates to improvements in composite puzzle-balls.

The object of my invention is to construct a puzzle-ball of separate parts in such a way that when the parts are properly assembled they will be held together without any fastening means except the parts themselves.

My invention consists in providing several blocks each having notches and corresponding projections adapted to fit each other when placed together in the proper order and relationship and in one block having an opening adapted to receive a key forming part of another block, which key binds and holds the entire structure together and prevents separation of the parts until first removed.

My invention also consists in the particular construction, combination, and arrangement of the several parts and also in the separate parts.

In the drawings, which serve to illustrate my invention, Figure 1 shows in front and side views, respectively, the first step in assembling the first two members. Fig. 2 is a side view of the same. Fig. 3 is a similar view with the two parts arranged in proper contact relationship. Fig. 4 is a front view of Fig. 3. Fig. 5 is a top view of Fig. 4. Fig. 6 is a similar view of Fig. 3 and shows an additional member about to be placed in position. Fig. 7 is a view similar to Fig. 6 viewing it from the left side. Fig. 8 is also a view similar to Fig. 6 with the first three members placed in position. Fig. 9 is a top view of Fig. 8. Fig. 10 is a view similar to Fig. 7 and shows another member about to be placed in position. Fig. 11 is a front view of this additional member. Fig. 12 is a top view of the first four assembled members and another member about to be placed in position. Fig. 13 is a side view of Fig. 12. Fig. 14 is a top view of the sliding key which holds the assembled members in position. Fig. 15 is a

top view similar to Fig. 12 with the members in assembled position and ready to receive the sliding key. Fig. 16 is a side view of Fig. 15 and shows the sliding key partly in position. Fig. 17 is a view showing the ball completely assembled.

I preferably construct my puzzle in six parts or members, (numbered, respectively, 1, 2, 3, 4, 5, and 6.) Parts 1, 2, and 3 are each constructed alike in size and shape, except that where one has a socket *a* the other is provided with a pin *b*. Each of these three parts is first cut in the shape of a spherical wedge, with V-shaped notches *c* cut out of the surface side thereof, and two V-shaped notches *d* cut out of the wedge or V shaped part of the spherical wedge. Part 4 is similar in shape to parts 1, 2, and 3, having one surface V-shaped notch *e* and also two notches *d* in the wedge or V shaped portion similar to those of parts 1, 2, and 3, but differs from said parts by having a V-shaped projection *f* upon one side, through which extends a substantially rectangular opening or hole *g* from the outer surface inwardly. Part 5 is formed exactly like parts 1, 2, and 3, except that on one side the notch *e* is larger than the notches *c*, all of the part of the block between the center V-point and the center surface point being cut out, as shown in said Fig. 5. Part 6 forms the key and is constructed with a curved outer surface cut diamond shape and provided with a substantially rectangular stem *h*, its outer end being also curved and diamond shape.

The several parts just described are so constructed that they can only be put together when taken in a certain order and the proper parts placed in engagement with corresponding parts of other members. There is some science, skill, and study required and necessary to enable a person who is not familiar with the puzzle to put it together when the parts are all disconnected. This affords considerable amusement and entertainment, as well as a good test of the constructive faculties of the individual who undertakes to assemble the parts.

In order to more fully explain the puzzle, I will now describe how the parts are assembled

bled. First take part No. 1 and place it in engagement with part No. 2, as shown in Figs. 1, 2, 3, 4, 5. Then take part No. 3 and add it to Nos. 1 and 2, as shown in Figs. 6, 7, 8, and 9. Then take part No. 4 (shown separately in Figs. 10 and 11) and place it in contact with the assembled parts by moving it in the direction of the arrow shown in Fig. 10, so that the parts thus assembled will appear as shown in Fig. 12. Then place part 5 (shown detached in Fig. 12) in connected relation to the other parts by moving it in the direction of the arrow, as shown in Fig. 13, so that the parts as thus assembled will appear as illustrated in Fig. 15. Then place the key shown in Fig. 14 in the opening through the parts already assembled, moving the said key in the direction of the arrow, as shown in Fig. 16, until said key has entirely entered said opening and completed the ball, as shown in Fig. 17.

While I have shown the sockets and pins adapted to register with each other in their respective blocks, the same may be omitted; but their use renders the assembling of the parts all the more difficult.

It is apparent that I can accomplish the same result by varying the construction of the various parts; and I do not, therefore, wish to be understood as limiting myself to the precise construction and arrangement of the several parts herein set forth; but

What I desire to secure by Letters Patent is—

1. A puzzle-ball consisting of separate parts or members, one of said parts being provided with a stem substantially rectangular in cross-section and having one end enlarged and both ends diamond-shaped and curved outwardly, said part being adapted to form a key and engage the other parts or members, all of which comprise the ball and are held together by said key.

2. In a puzzle-ball a part or member forming a spherical wedge and provided on its inner V-shaped side with a plurality of notches and on one side with a V-shaped notch formed in the outer surface of the ball but leaving an angular part remaining between said notches and the central point of said member and having upon its opposite side a V-shaped notch extending from the surface to the center thereof, substantially as shown and described.

3. In a puzzle-ball, a member formed in the shape of a spherical wedge having its central V-shaped parts notched and on one side a V-shaped notch cut out of the surface portion and on the opposite side thereof a V-shaped projection with a rectangular opening extending through from the surface inwardly.

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Witnesses:

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A. D. MUEHLENHARD.