July 14, 1925. 1,546,024

H. J. REICHENBACH

PUZZLE

Filed Dec. 5, 1924 2 Sheets-Sheet 1

Fig. 1

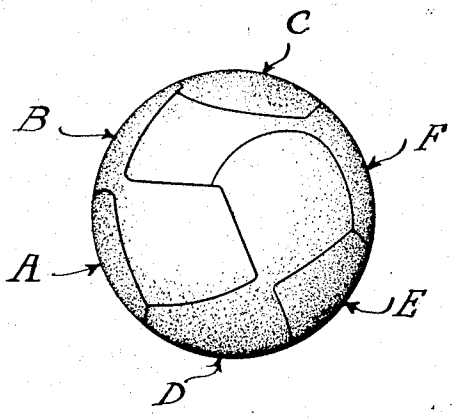
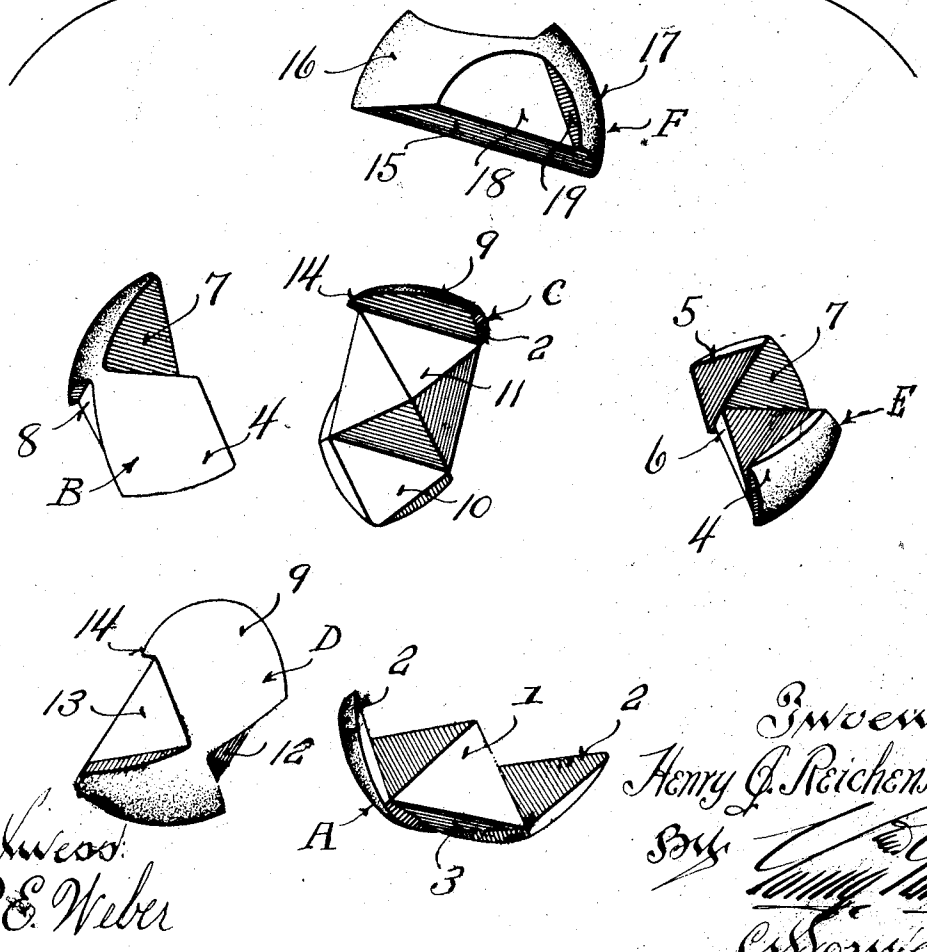


Fig. 2



Witness:
P. E. Weber

Inventor:
Henry J. Reichenbach
By
Attorneys.

July 14, 1925. 1,546,024

H. J. REICHENBACH

PUZZLE

Filed Dec. 5, 1924 2 Sheets-Sheet 2

Fig. 3

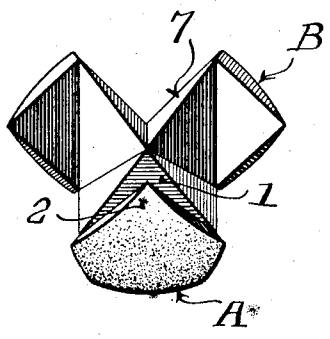


Fig. 4

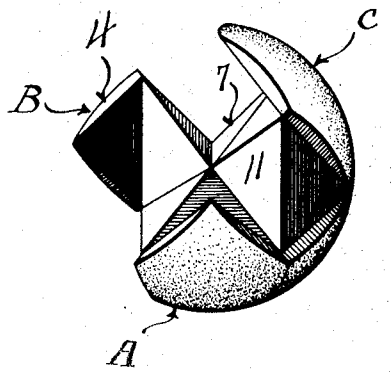


Fig. 5

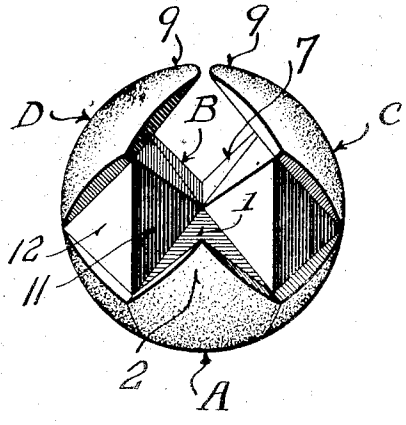
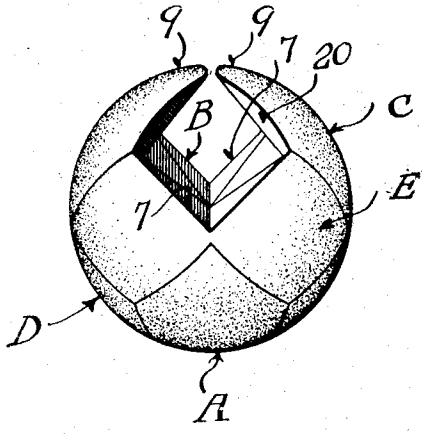


Fig. 6



Witnesses:
R. E. Weber

Inventor:
Henry J. Reichenbach
By
Attorneys

Patented July 14, 1925. 1,546,024

UNITED STATES PATENT OFFICE.

HENRY J. REICHENBACH, OF MILWAUKEE, WISCONSIN.

PUZZLE.

Application filed December 5, 1924. Serial No. 754,221.

To all whom it may concern:

Be it known that I, HENRY J. REICHENBACH, a citizen of the United States, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Puzzles; and I do hereby declare that the following is a full, clear, and exact description thereof.

This invention relates to puzzles.

Objects of this invention are to provide a puzzle which sustains the interest and is relatively difficult to solve without, however, tiring the operator by a multitude of parts, but is so constructed that although composed of relatively few parts it, nevertheless, attains its object in an effective and interesting manner.

Further objects are to provide a puzzle which may take any desired shape and is composed of interfitting members so arranged that they require a consideration of three dimensions as distinguished from a puzzle, all of whose parts are adapted to lie in a single plane.

Further objects are to provide a puzzle which is neat and attractive in appearance, which may be manufactured at a relatively small cost, and which, when assembled, presents a finished appearance.

An embodiment of the invention is shown in the accompanying drawings, in which:—

Figure 1 shows a puzzle completely assembled.

Figure 2 is a perspective view of the several parts showing them spaced apart but occupying substantially their relative position.

Figures 3 to 6 show successive stages in the completion of the puzzle.

The puzzle is shown, as illustrated in Figure 1, as of ball shape although it is to be understood that it may take any desired shape, such for instance as polygonal, if desired, without departing from the spirit of the invention.

It is to be noted further in describing and showing this puzzle that parts will be referred to as upper, lower, and side members, although it is to be distinctly understood that these terms are only relative and are employed in order to facilitate the description. The same understanding of the terms employed in the claims is to be taken into account in constructing the claims.

The puzzle is composed of six members, namely, a lower member A, a side member B, vertical members C and D, a second side member E and a top or key member F. The bottom member A, as may be seen from Figure 2, is symmetrical with regard to both sides and both ends. It is provided with a pyramid 1 projecting upwardly from its center, and is provided with triangular side portions 2 and with triangular cutout lower portions 3, one of which shows in Figure 2.

The side members B and E are substantially alike and each comprise triangular end portions 4 and 5 and with an approximately pyramid central portion 6. This central portion 6, it is to be noted, is provided with a V-shaped channel or cutout 7. Further, these side members B and E are each provided with lower outer triangular cutouts 8.

The vertical members D and E are substantially the same except that they are left and right members, as shown in Figure 2. They each comprise upper and lower approximately triangular projecting portions 9 and 10 and a central pyramid portion 11. They are also provided with triangular cutouts 12 and 13 on opposite sides thereof, as shown for instance in the left hand member D. The triangular members 9 and 10 are substantially alike except for the fact that the upper triangular members 9 are provided with laterally projecting lips or ears 14.

The upper or key member F is substantially wedge shaped on its lower side, as indicated at 15 in Figure 2, and is provided with a relatively small end 16 and a relatively larger end 17. The member is further provided with flat faces 18 on opposite upper sides which terminate in shoulders 19 at the point where they reach the relatively larger end 17.

In assembling the puzzle, the lower member A is first positioned, as shown in Figure 3, and the member B seated within one end of the member A between one of the flaps 2 and the pyramid portion 1. The flaps 2, it will be noted, fit within the triangular cutout 8 (see Figure 2) of the member B, while the V-shaped notch 7 of the member B is left uppermost.

Thereafter, the right hand vertical member C is positioned, as shown in Figure 4, with its flap 10 fitting within one of the cutouts 3 of the member A, one of such cutouts being shown in Figure 2 for the mem-

ber A. The lower side of the pyramid 11 of the member C seats upon one of the faces of the pyramid 1 of the member A.

Thereafter, the vertical member D is positioned, as shown in Figure 5, with the tongue of the member B fitting within one of the triangular cutouts, for example, the cutouts 13 and with its pyramid portion, such as shown at 11 for the member C, seated upon one of the faces of the pyramid 1 of the member A.

The next step is attained by placing the side member E in position, as shown in Figure 6, with the lower portion of its pyramid 6 (see Figure 2) seated against the remaining face of the pyramid 1 of the member A and with the notch 7 uppermost.

It will be seen that a substantially rectangular passageway is now left between the projecting flaps 9 of the vertical members C and D and the remaining portion of the device. Further, it will be noted that the flaps 9 of the members C and D are provided with shoulders 20. The key member or top member F is now slipped into place, the smaller end 16 being first inserted in the rectangular opening. Thereafter, the key is pushed home and the shoulders 19 of the key contact with the shoulders 20 of the members C and D.

The puzzle is now complete and forms a perfect sphere although, as stated above, the puzzle may take other shapes, for instance polygonal, if desired. At all events a complete, regularly formed solid is produced, which has no gaps and appears as solidly formed of permanently intermeshing parts.

It will be seen from this description and the showing in the drawings that an extremely interesting puzzle has been provided which is relatively difficult to solve, and which, when solved, presents the appearance of an impossible construction.

It will further be seen that although the puzzle is difficult, it is, nevertheless, composed of a small number of parts. From this it is apparent that interest is maintained and the operator is not needlessly wearied by handling a large multitude of separate parts.

Although the invention has been described in considerable detail, it is to be understood that the invention may be variously embodied and is, therefore, to be limited only as claimed.

I claim:

1. A puzzle composed of a plurality of parts which, when assembled, form a regular solid with interlocked mutually retained parts, said puzzle comprising a lower member having cutouts at opposite sides thereof and on its bottom, a pair of side members adapted to fit within the cutouts at the sides of the bottom, a pair of vertical members adapted to fit said bottom members and said side members and having portions fitting within the lower cutouts of said bottom members, said vertical members having cutouts which together form a passageway, and a key member adapted to be slid longitudinally into said passageway and contacting with said vertical members from one side of the device to the other completely across two adjacent faces only of said key.

2. A puzzle formed of interlocked, mutually retained parts and comprising a bottom member having triangular ends and a pyramid center, a pair of side members adapted to fit the side portion of the bottom member and to contact with the side faces of the pyramid of said bottom member, said side members having channels cut in their upper sides, a pair of vertical members having pyramid centers adapted to contact with the pyramid of said bottom member and with correspondingly formed surfaces of said side members, said vertical members having overhanging flaps forming with said channels of the side members, a passageway, and a key having a relatively small end and a relatively large end, said key being adapted for sliding longitudinally into said passageway with its smaller end leading said side and vertical members each contacting with only two sides of said key.

3. A puzzle formed of interlocked mutually retained parts and comprising a bottom member having triangular ends and a pyramid center, a pair of side members adapted to fit the side portion of the bottom member and to contact with the side faces of the pyramid of said bottom member, said side members having channels cut in their upper sides, a pair of vertical members having pyramid centers adapted to contact with the pyramid of said bottom member and with correspondingly formed surfaces of said side member, said vertical members having overhanging flaps forming with said channels of the side members a passageway, said vertical members each having a corresponding laterally extending flange and each of said flanges overhanging the same side member and a key having a relatively small end and a relatively large end, said key being adapted for sliding longitudinally into said passageway with its smaller end leading, the exposed portions of each of said members forming the outer surfaces of a regular solid, each of the contacting surfaces of said members being unbroken throughout its extent.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee, in the county of Milwaukee and State of Wisconsin.

HENRY J. REICHENBACH.