Jan. 15, 1929. 1,698,780

W. E. DARROW

PUZZLE BOARD

Filed March 5, 1928

Fig. 1

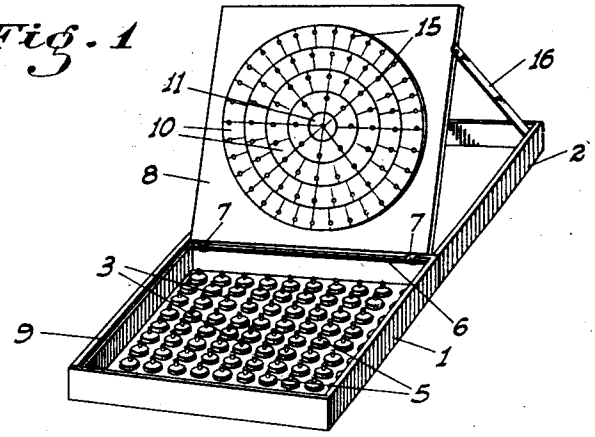


Fig. 5

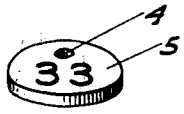


Fig. 2

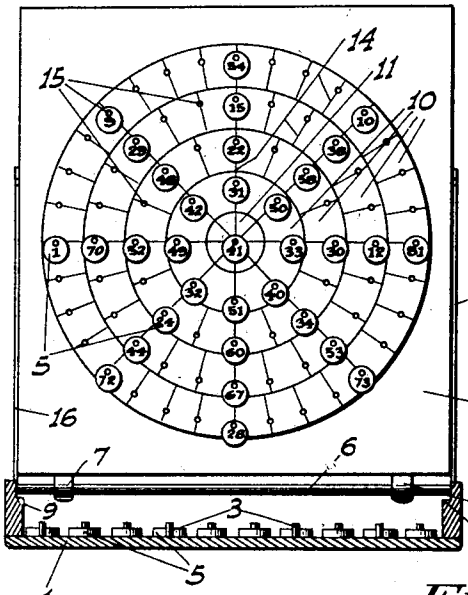


Fig. 3

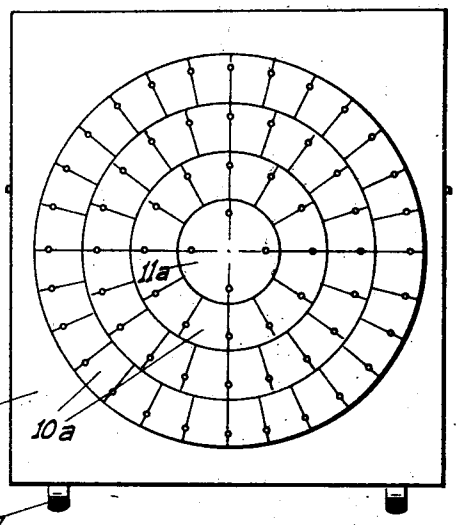
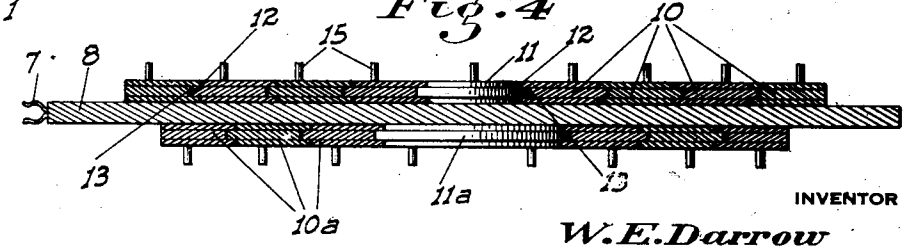


Fig. 4



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UNITED STATES PATENT OFFICE.

WILTON E. DARROW, OF STOCKTON, CALIFORNIA.

PUZZLE BOARD.

Application filed March 5, 1928. Serial No. 259,013.

This invention relates to apparatus to be used in connection with the solving of the number puzzle of what is commonly known as the magic square type; and represents modifications of the structure shown in my co-pending application for patent, Serial No. 248,381, filed January 21, 1928.

The principal object of the present invention is to provide a layout and supporting board for the numbered disks or blocks, arranged in the form of a number of relatively movable and concentric rings so that they occupy predetermined positions relative to each other, the same addition of the numbers on the blocks mounted on the board may be obtained as when the blocks are laid out in actual square form, assuming of course that said blocks have been properly positioned on the board—an operation which is of course the puzzle to be performed.

Further objects of the invention are to arrange the board so that it may be used in solving puzzles of either odd or even square form; and to provide a combined supporting means for the board so that it may be maintained in a desired position and a receptacle for the blocks when not in use.

A further object of the invention is to produce a simple and inexpensive device and yet one which will be exceedingly effective for the purpose for which it is designed.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings similar characters of reference indicate corresponding parts in the several views:

Fig. 1 is a perspective elevation of my structure showing the board in position for operation.

Fig. 2 is a face view of the board on one side shown in connection with the receptacle in action, and with a certain number of blocks or discs mounted on the board in partial solution of the puzzle.

Fig. 3 is a face view of the opposite side of the board.

Fig. 4 is a sectional elevation of the board.

Fig. 5 is a perspective elevation of a block or disk used in the puzzle.

Referring now more particularly to the characters of reference on the drawings, the numerals 1 and 2 denote the bottom and lid members respectively of a rectangular box, which members are hinged along one edge for opening and closing movement. Projecting upwardly from the bottom of the box is a plurality of pins 3, to detachably engage holes 4 provided in circular discs 5, all of which are differently numbered from 1 up. The holes are offset from the centers of the discs, and above the numbers thereon, for the purpose to be seen later. The discs are mounted on the pins 3 in numerical sequence when not in use so that they may be easily located when wanted.

Extending across the box 1 at the hinged end thereof is a rod 6. This rod is adapted to be detachably engaged by spring clips 7 depending from the lower end of a flat rigid board 8, which is practically the same dimensions as the box end, is adapted to fold down inside the box and then rest on a ledge 9. Mounted on one face of the disc is a number of concentrically arranged and closely alined flat rings 10, surrounding a central fixed disc 11, the outer surface of all said rings and disc being in the same plane. The rings and disc are all permanently and turnably connected to each other by peripheral projections 12 on one of their edge engaging grooves 13 on the other edges as shown in Fig. 4. The disc and rings are all provided with a number of radial lines 14 of varying circumferential spacing, so arranged that only lines intersecting the central disc at 90° and 45° will line up with each other at any one time across all the rings, as shown in Fig. 2. Pins 15 project outwardly from the rings at all the lines 14, the central disc, however, having only one such pin. These pins removably support the number discs 5, and it will be seen that owing to the offset position of the pin holes the discs will always hang with their numbers in properly readable positions, regardless of any turning movement of the rings relative to such discs, and assuming of course that the board is vertically disposed.

If the numbered discs are correctly placed on all the pins, the turning of the various rings so that all the radial lines are lined up with each other at one time or another across the rings, the sum total of the numbers of the discs mounted on the different composite cross lines will be the same, and the result obtained will be the same as when the discs are laid out in actual square form as in the previous device.

The board is maintained in a substantially vertical position when being used by means of brace arms 16 pivoted at one end onto the

lid and detachably engaging the side edges of the board adjacent the top thereof as shown in Fig. 1. The number of pins on the rings and disc is the same as that in the box, so that all the number discs are used in the complete solution of the puzzle.

The ring arrangement shown in Figs. 1 and 2 is for odd-number squares (3, 5, 7 and 9). On the reverse side of the board the rings 10^a and the central disc 11^a are arranged and lined so that even number squares (4, 6, and 8) may be used in the solution of the puzzle. In this arrangement the central disc supports four of the numbered discs instead of one. By reason of the detachable clip mounting of the board in the box, the board may be easily reversed when desired so that either face may be used for puzzle solving operations as may be desired by the player, while at the same time always maintaining the board in direct association with the box in which the spare number discs are kept.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

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

1. In a puzzle device, a box comprising bottom and lid members hinged together, a board, means for reversibly connecting the board to the box so that said board may be positioned with either side facing in the same direction relative to the box, numbered discs, and means on the board for detachably supporting the discs in a predetermined arrangement.

2. In a puzzle device, a plurality of rings, means connecting said rings together in a relatively turnable and concentric relation and in a common plane, numbered discs, and means on said rings for detachably supporting said discs in predetermined arrangement on the different rings.

3. In a puzzle device, a plurality of rings, means connecting said rings together in relatively turnable and concentric relation and in a common plane, numbered discs, having holes therein, and pins projecting outwardly from the rings to detachably support the discs.

4. In a puzzle device, a plurality of rings, means connecting said rings together in relatively turnable and concentric relation and in a common plane, numbered discs, having holes therein, and pins projecting outwardly from the different rings at varying circumferentially spaced intervals to detachably support the discs thereon; only certain ones of said pins lining up in straight diametral relation across the rings at any one time.

5. In a puzzle device, a plurality of rings, means connecting said rings together in relatively turnable and concentric relation and in a common plane, radial lines on said rings arranged when the rings are turned to a certain position to lie in continuous diametral alinement across the rings in sets 45° apart other intermediate radial lines on the different rings disposed in varying circumferentially spaced relation on the different rings, numbered discs, and means between the rings and discs for detachably supporting the latter on the rings adjacent the various individual radial lines thereon.

6. In a puzzle device, a plurality of rings, means connecting said rings together in relatively turnable and concentric relation to each other, and numbered discs for placement on the rings in a predetermined arrangement.

In testimony whereof I affix my signature.

WILTON E. DARROW.