(No Model.)

G. W. ALTEMUS, Jr.

PUZZLE BOX.

No. 430,261. Patented June 17, 1890.

FIG. 1.

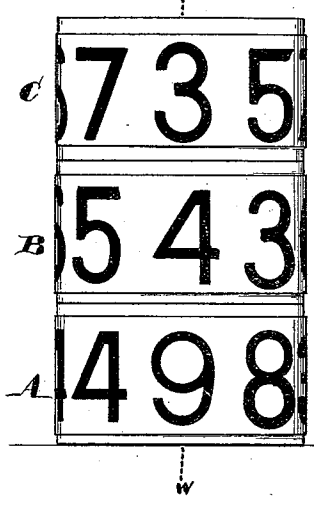


FIG. 3.

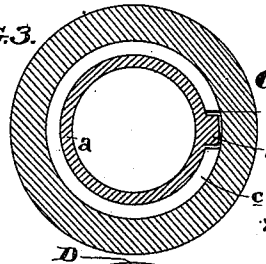


FIG. 4.

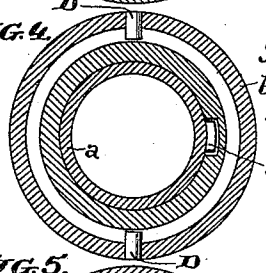


FIG. 5.

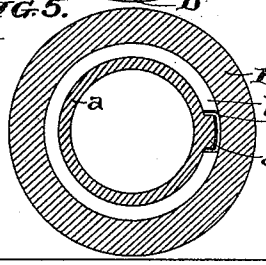


FIG. 2.

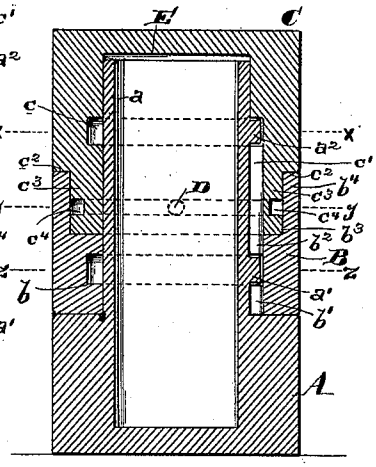


FIG. 7.

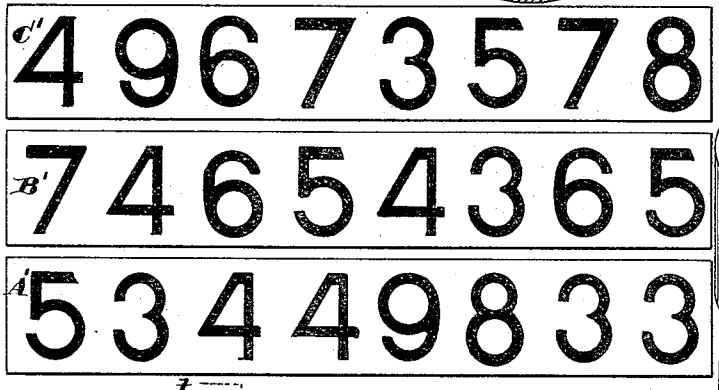


FIG. 6.

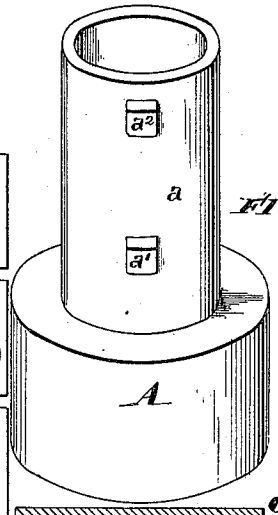


FIG. 9.

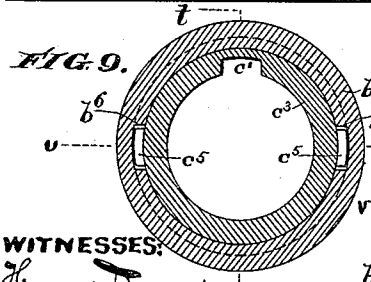


FIG. 8.

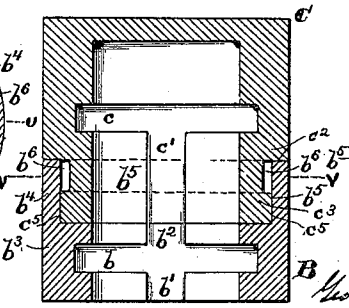
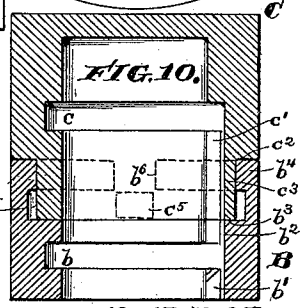


FIG. 10.



WITNESSES:

Henry Drury

Joshua Wallack, Jr.

INVENTOR:

George W. Altemus Jr
by his atty.
Francis T. Chambers

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

GEORGE W. ALTEMUS, JR., OF CAMDEN, NEW JERSEY.

PUZZLE-BOX.

SPECIFICATION forming part of Letters Patent No. 430,261, dated June 17, 1890.

Application filed December 2, 1889. Serial No. 332,210. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. ALTEMUS, Jr., of the city and county of Camden, State of New Jersey, have invented a new and useful Puzzle-Box, of which the following is a true and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to the construction of a box in such a way that it can only be opened when its various parts occupy a determined relation to each other, the device being thus adapted for the ordinary purposes for which boxes are made, or for use as money-boxes for children, and serving also as an interesting and amusing puzzle.

The nature of my invention will be best understood after a description of the drawings, in which it is illustrated, and the novel features which I desire to cover are hereinafter clearly pointed out in the claims.

In the drawings, Figure 1 is an elevation of my improved puzzle-box, the different parts of which are provided with circular rows of figures which must be arranged in a certain order, in order to bring the box in position to open. The different parts are represented as being in a position to open. Fig. 2 is a central section through the box on the line *w w* of Fig. 1; Figs. 3, 4, and 5, cross-sections on the lines *x x*, *y y*, and *z z*, respectively, of Fig. 2; Fig. 6, a perspective view of the box proper; Fig. 7, a diagram showing an arrangement of figures to be pasted on the different parts of the box and which I have found convenient in practice. Fig. 8 is a section on the line *v v* of Fig. 9, showing a modified construction. Fig. 9 is a cross-section on the line *v v* of Fig. 8, and Fig. 10 a vertical section on the line *t t* of Fig. 9.

A is the box proper, which, as shown, is provided with a cylindrical extension *a*, from which projecting lugs a' a^2 extend, said lugs being arranged in the same vertical line.

B is a ring adapted to fit over the cylindrical projection *a* and provided with a longitudinal slot b' b^2, which enables it to pass the lugs a' a^2, and an annular slot *b*, which receives the lug a' and permits the ring to turn on projection *a*. In my preferred construction the upper part of the ring B is recessed, as is shown at b^2, and provided with the annular upwardly-extending flange b^4.

C is the lid proper of the box. It is provided with a downwardly-extending groove c' to permit it closing down on top of the ring B and to permit the lug a^2 passing upward into the annular groove *c*, with which it is also provided, said groove being arranged to permit the lid to turn on the projection *a* and to interlock with the lug a^2. The lid C is recessed, as shown at c^2, and provided with a downwardly-extending flange c^3, which fits between the cylindrical projection *a* and the flange b^4 of the ring B.

c^4 is an annular slot formed in projection c^3, and D D are pins inserted through flange B^4 into slot C^4, so as to lock the lid and ring together, while permitting them to turn freely upon each other.

E indicates in dotted lines a slot formed in the top of lid C to serve for the introduction of small coins.

The parts are put together by first uniting the lid and ring, as shown in Fig. 2, and securing them together by means of the pins D. They are then turned to a position in which the slots b', b^2, and c' are in line and are then placed upon the box, the lugs a' a^2 passing through the aligned grooves in the ring and lid. Once in position, if either the lid C or ring B be turned, it is impossible to take the lid off, and the box will remain fast until the grooves in the lid and ring are again aligned and again made to register with the lugs a' a^2 of the projection *a* of box A. It is of course evident that an exactly-equivalent construction would result by transposing the interacting slots, grooves, and projections, and my claims are intended to cover such an equivalent construction, as well as that specifically referred to in them.

A′ B′ C′, Fig. 7, represent strips, with figures printed upon them and intended to be secured upon the different parts of the puzzle-box, as shown in Fig. 1. The arrangement shown is one in which each column of figures will add up to the same total when the parts of the box are arranged so that it can be opened. Of course any other arrangement of symbols can be used instead of figures shown.

In Figs. 8, 9, and 10 I have shown a modi

fied construction of the lid C and ring B. An annular slot b^5 is formed at the base of the projection b^4, with entrance-slots b^6 b^6 leading into it, while upon the projecting flange c^3 lugs c^5 are formed, which pass down through slots b^6 into the annular groove b^5. In this way the ring B and lid C are interlocked, though not so securely as in my preferred construction.

I have also constructed my puzzle-boxes by providing interlocking devices such as are described to unite the lid and the annular projection a of the box and providing a ring B, which will turn freely on the projection a, but not interlock with it or with the lid, such boxes being cheaper to manufacture, and constituting an interesting toy when properly provided with symbols on the outside.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A puzzle-box A, having a cylindrical projection a, in combination with a lid C, arranged to fit over and extend down upon the projection a, and a ring B, formed to fit and turn on the projection a between the base of box A and the lid, said lid and ring being each formed to rotate upon and interlock with the projection a and with each other, substantially as described.

2. A puzzle-box A, having a cylindrical projection a, provided with lugs a' a^2, arranged in line with each other, in combination with a lid C, having an interior annular slot c to receive lug a^2, and with a downwardly-extending entrance-groove c', extending from said slot, and a ring B, having a slot b to receive lug a', and having entrance-grooves b' b^2, extending from it on both sides, all substantially as and for the purpose specified.

3. A puzzle-box A, having a cylindrical projection a, provided with lugs a' a^2, arranged in line with each other, in combination with a lid C, having an interior annular slot c to receive lug a^2, and with a downwardly-extending entrance-groove c', extending from said slot, and a ring B, having a slot b to receive lug a', and having entrance-grooves b' b^2, extending from it on both sides, said lid and ring being arranged to interlock with each other.

4. A puzzle-box A, having a cylindrical projection a, provided with lugs a' a^2, arranged in line with each other, in combination with a lid C, having an interior annular groove c to receive lug a^2 and downwardly-extending entrance-slot c' and an exterior annular groove c^4, a ring B, having an annular slot b to receive lug a', and with entrance-grooves b' b^2 extending from it, and a pin or pins D, arranged to secure lid C to ring B, as described.

GEORGE W. ALTEMUS, JR.

Witnesses:
LISLE STOKES,
JOSHUA MATLACK, Jr.