

(No Model.)

F. J. MANTEL.
COMBINED PUZZLE AND TOY.

No. 546,171.

Patented Sept. 10, 1895.

Fig. 1.

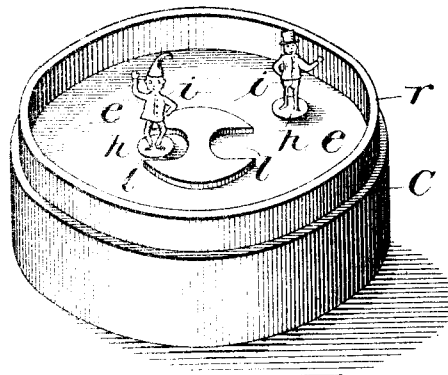


Fig. 2.

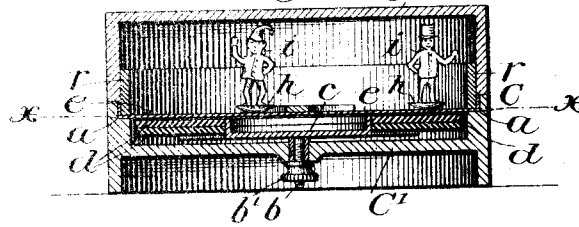
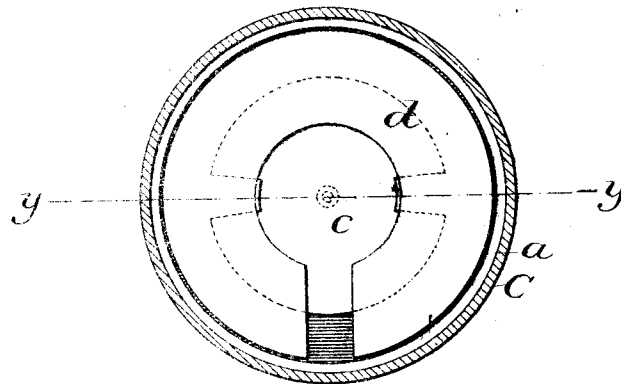


Fig. 3.



Witnesses.
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UNITED STATES PATENT OFFICE.

FLORIAN J. MANTEL, OF SYRACUSE, NEW YORK.

COMBINED PUZZLE AND TOY.

SPECIFICATION forming part of Letters Patent No. 546,171, dated September 10, 1895.

Application filed February 8, 1895. Serial No. 537,697. (No model.)

To all whom it may concern:

Be it known that I, FLORIAN J. MANTEL, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in a Puzzle and Toy Combined, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention is designed to amuse persons and incidentally instruct them to some degree in the effects and utility of magnets; and to that end the invention consists in the novel construction and combination of parts, as hereinafter fully described, and set forth in the claims.

In the annexed drawings, Figure 1 is a perspective view of a combined puzzle and toy embodying my invention. Fig. 2 is a vertical transverse section of the same on line *y y*, and Fig. 3 is a horizontal transverse section on line *X X* in Fig. 2.

Similar letters of reference indicate corresponding parts.

C represents the case containing the combined puzzle and toy. This case may be composed of any suitable material which is not a conductor of magnetism. I preferably form said case annular-shaped, and with a bottom plate *C'* and a rabbet *a* in the upper part of its interior. Upon the shoulder of this rabbet I seat a diaphragm *e*, of either paper or rubber or glass or other suitable material, which diaphragm is secured upon said seat by a ring *r* seated in the rabbet and bearing upon the margin of the diaphragm. This ring projects above the sides of the case, and has applied to the exterior of its projecting portion the cover *f*. In the center of the bottom plate *C'* is pivoted a spindle *b*, the lower protruding end of which has attached to it a knob or suitable handle *b'* for turning it. To the inner end of said spindle is secured a disk *c*, of either zinc or rubber or other suitable non-magnetic material, and to this disk is fastened the magnet *d*, which is carried in proximity to the under side of the diaphragm *e*. Said magnet may be of any suitable shape. I prefer, however, to make it either horse-shoe or segmental shaped, terminating with a short space between the two poles of the magnet, as shown. Upon the diaphragm I place one or more movable armatures *h*, preferably

of the form of annular disks having convex bottoms by which they ride on the diaphragm. The convex bearings of the armatures allow them to freely revolve and move upon the diaphragm, whereas, if the bases of the armatures were flat, such movements would not take place so readily. To these armatures I attach suitable miniature figures *i*, which may represent either "brownies," as shown, or other comical or fanciful human beings or animals, as may be desired. In connection with these figures I prefer to use suitable stalls or pens *l*, secured in suitable positions on top of the diaphragm *e*, and comprising a raised disk with notches opening toward its center from opposite sides or some equivalent construction.

I do not wish to be limited to the aforesaid specific construction and combination of parts, as it is obvious that the same is susceptible of various modifications without departing from the spirit of my invention, the salient features of which are the combination of the plate or diaphragm *e*, a suitable magnet movable in proximity to the under side of said plate and slightly remote therefrom, and an armature mounted movably upon the top of said plate.

In operating the described toy the armatures *h* are to be placed upon the plate or diaphragm *e*, and then the magnet *d* is to be set in motion. This causes the armatures, with their miniature figures, to skip about on the diaphragm, and at the same time pass through various motions, such as whirling and oscillating. If the apparatus is provided with the stalls *l l*, the armatures, with their attached figures, can be made to enter said stalls by skillful manipulation of the case *C* and knob *b'*.

What I claim as my invention is—

1. A toy consisting of a case, a diaphragm of non-magnetic material in said case, a magnet movable in proximity to the under side of said diaphragm, an armature mounted movably upon the top of the diaphragm and having a convex lower face, and a miniature figure secured to said armature and sustained in upright position by gravity of the armature as set forth.

2. A toy consisting of a case, a diaphragm of non-magnetic material in said case, a raised

disk secured upon the diaphragm and having notches in its edges, a magnet movable in proximity to the under side of the diaphragm, armatures provided with convex bearing surfaces and riding thereby upon the diaphragm, and miniature figures attached to said armatures as set forth.

3. A combined puzzle and toy consisting of a case, a diaphragm of non-magnetic material in said case, a magnet pivoted in the center of the case and moving in proximity to the diaphragm, stalls upon the top of the diaphragm having openings in diametrically opposite sides, armatures having convex bearing faces mounted movably upon said diaphragm and miniature figures attached to said armatures as set forth.

4. The combination of the annular case —C— formed with the bottom plate —C'—

and rabbet —a— in the upper part of its interior, the spindle —b— pivoted in the center of said bottom plate and provided with a handle on its lower end, the non-magnetic disk —c— attached to the inner end of said spindle, the segmental magnet —d— attached to said disk, the diaphragm —e— seated upon the shoulder of the rabbet, the ring —r— seated in the rabbet and projecting above the sides of the case, and the cover —f— applied to the projecting portion of said ring, substantially as described and shown.

In testimony whereof I have hereunto signed my name this 29th day of January, 1895.

FLORIAN J. MANTEL. [L. S.]

Witnesses:

JOHN J. LAASS,
C. L. BENDIXON.