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1,459,937

H. C. TEIPEL

COMBINED PUZZLE AND EDUCATIONAL DEVICE

Filed May 5, 1921

Fig. 1.

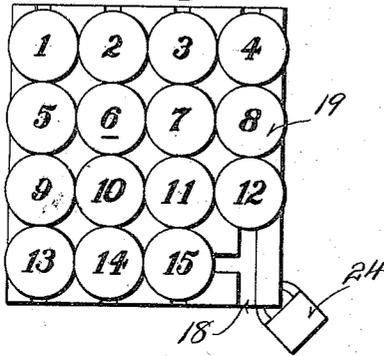


Fig. 2.

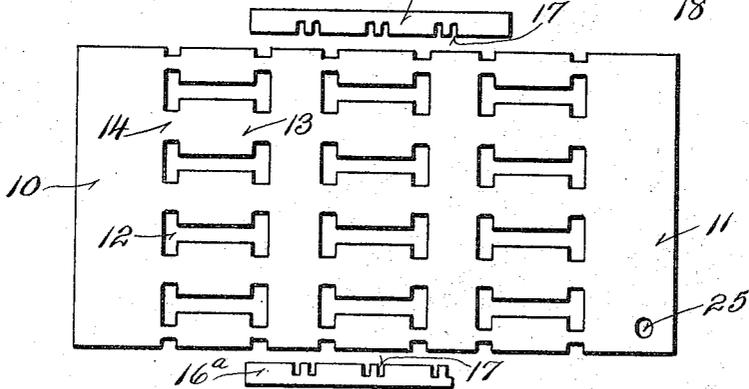
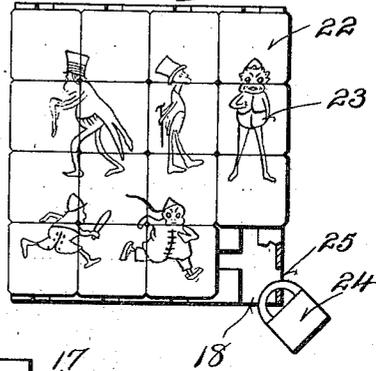


Fig. 4.

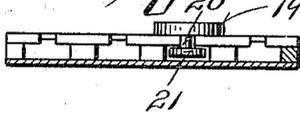


Fig. 5.

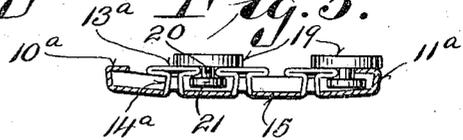
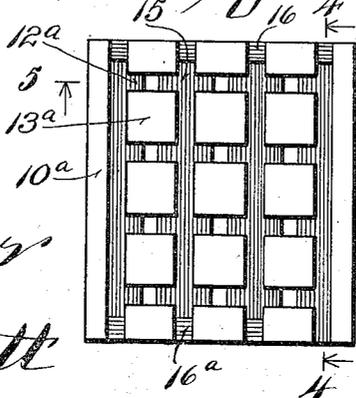


Fig. 6.



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# UNITED STATES PATENT OFFICE.

HENRY C. TEIPEL, OF HARTFORD, WISCONSIN.

COMBINED PUZZLE AND EDUCATIONAL DEVICE.

Application filed May 5, 1921. Serial No. 467,200.

*To all whom it may concern:*

Be it known that I, HENRY C. TEIPEL, a citizen of the United States, and resident of Hartford, in the county of Washington and State of Wisconsin, have invented certain new and useful Improvements in Combined Puzzle and Educational Devices; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to a device which is in the nature of a puzzle, but I contemplate also the use of the principle embodied therein in educational work, especially for the lower grades.

The device which forms the subject of my invention is a development along the general line of what is known as the "fifteen" puzzle. In this puzzle, as originally proposed, fifteen square blocks were arranged in a square box or frame, and the blocks could be slid longitudinally or transversely since there was one vacant space in the box. The problem was to shift the blocks in this manner until a predetermined order of arrangement was attained.

The object of my invention is generally to construct a frame in an improved manner to contain fifteen blocks, buttons or the like, one vacant space being left to allow shifting of the buttons to change the order or relation thereof.

A more specific object of the invention is to construct an inexpensive device of this kind in which the buttons are secured against removal from the frame, thereby preventing any cheating on the part of the person working the puzzle. The buttons may have printed on their surface figures, letters, or other indicia which may form an attractive way of presenting simple problems in number work or spelling for the kindergarten or primary work in school.

In describing my invention reference will be had to the accompanying drawings, in which:

Figure 1 is a plan view of one form in which my invention may be presented.

Figure 2 is a plan view of a modified form of my invention.

Figure 3 is a plan view of the blanks from which the preferred form of holder is made, said figure showing the main blank and the end blanks.

Figure 4 is a vertical transverse sectional view through the device on the line 4—4 of Figure 6.

Figure 5 is a longitudinal vertical section on the line 5—5 of Figure 6, and

Figure 6 is a plan view of the completed holder.

The holder for containing the buttons or blocks is in its preferred form made from a sheet metal blank shown in Figure 3. The ends 10 and 11 of the blank are folded, as shown at 10<sup>a</sup> and 11<sup>a</sup>, in Figure 5. The body of the blank has a series of slots 12 cut therein, and between the slots 12 are formed the rectangular portions 13 which are connected to the remainder of the blank by the web portions 14. The portions of the blank which contain the slots, are folded transversely so as to form T-shaped portions in which the portion 13 forms the top of the T as shown at 13<sup>a</sup> in Figure 5, and the web portion 14 forms the stem of the T as shown at 14<sup>a</sup> in Figure 5. When the blank is folded in this manner, transverse channels 15 are formed therein, the upper portions of the channels being restricted by the flanges formed by the surfaces 13<sup>a</sup>. The slots 12 thus form channels which connect the channels 15, as shown at 12<sup>a</sup> in Figure 6. After the blank has been folded in this manner, the ends of the channels 15 are closed by the side pieces 16 and 16<sup>a</sup>, the notches 17 formed in these side pieces fitting over the web portions 14<sup>a</sup>.

The side piece 16<sup>a</sup> is shorter than the other side piece, so that when the device is assembled, one of the slots as shown at 18, extends to the periphery of the device. This permits the ready insertion of the buttons 19, which are each provided with any suitable indicia, such, for example, as the numbers shown in Figure 1. These may be shifted around by the pupil to form different sums to be added, or if presented in the form of a puzzle, may be shifted around so as to run consecutively from 1 to 15, as shown in Figure 1.

In Figure 2 I have shown another form in which the puzzle may be presented, in which instead of the buttons 19, I provide a series of square buttons 22 on which are printed various pictorial representations 23. As shown herein each picture extends over the surface of a number of different blocks, and the problem presented to the solver is to shift the buttons so as to complete the pictures. In order to prevent cheating, or to prevent anyone from arranging the buttons by any means except the one intended, I provide a lock 24, which may be inserted in

the hole 25 after the buttons have been inserted in the holder. This makes it impossible to remove the buttons from the holder in order to change the arrangement thereof, unless one has the key to the lock.

While I have illustrated the preferred forms in which my invention may be embodied, it will be understood that other modifications may be made within the scope of the invention, as claimed. It will also be understood that the invention may be used in many different ways for the presentation of puzzles, or for educational purposes, all of which are within the scope of the invention.

I claim:

1. A device of the character described, comprising a strip of metal folded on itself so as to form transverse channels and T-shaped portions between the channels, longitudinal slots being cut to connect the trans-

verse channels and side strips secured to the sides of the first named strip after it has been folded so as to form closures for the transverse channels.

2. A device of the character described comprising a plurality of communicating longitudinal and transverse slots, buttons slidably secured in said slots and having heads which collectively form a continuous flat surface, and pictorial representations on the heads of the buttons, each of said pictorial representations extending over the surface of a plurality of buttons so that it is necessary to arrange the buttons in a certain predetermined relation in order to complete the pictures.

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

HENRY C. TEIPEL.