

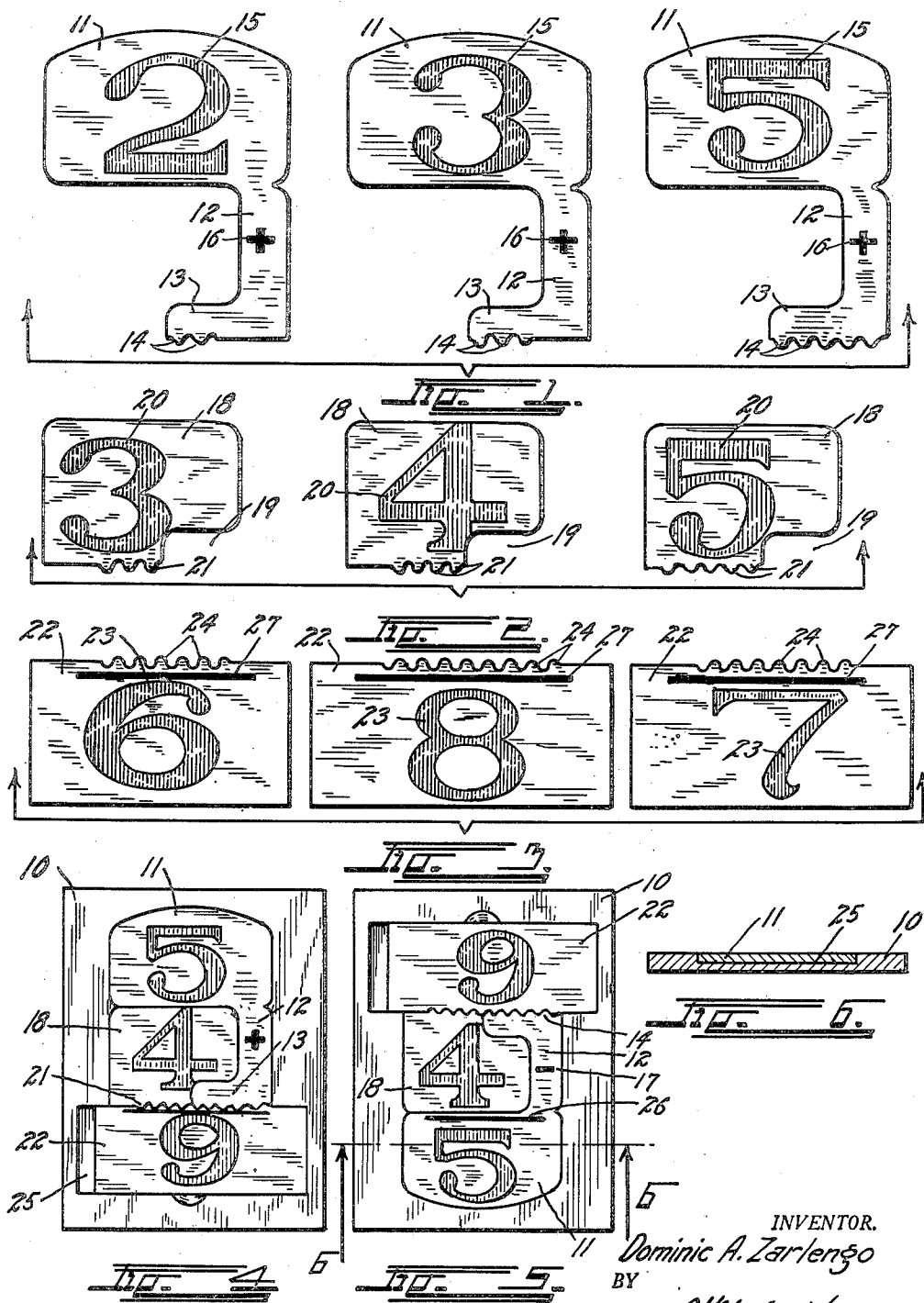
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MATHEMATICAL GAME

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MATHEMATICAL GAME

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This invention relates to a game, more particularly to an educational game for teaching mathematical addition and subtraction to children.

The principal object of the invention is to provide a game of this character with which a variety of problems in addition and subtraction may be presented, to which the user endeavors to select the correct answers, and which will designate mechanically whether the selected answer is correct.

Another object is to provide a game of this character in which separate blocks or pieces will be used in setting up the problem, and these pieces will outline a receiving opening for a third answer piece in such a way that only the correct answer piece can be inserted in the receiving opening.

A still further object is to so construct the device that the various elements of the problem and its answer will be arranged in their correct relation to a similar written problem, so the child will associate the game problems with conventional written problems.

Other objects and advantages reside in the detail construction of the invention, which is designed for simplicity, economy, and efficiency. These will become more apparent from the following description.

In the following detailed description of the invention, reference is had to the accompanying drawing which forms a part hereof. Like numerals refer to like parts in all views of the drawing and throughout the description.

In the drawing:

Fig. 1 illustrates three typical examples of one form of problem piece used in the improved game;

Fig. 2 illustrates three typical examples of a second form of problem piece used in the improved game;

Fig. 3 illustrates three typical answer pieces as used therein;

Fig. 4 is a face view of a frame for receiving and assembling the problem and answer pieces of Figs. 1, 2, and 3 when demonstrating problems in addition;

Fig. 5 illustrates the same frame arranged to demonstrate problems in subtraction; and

Fig. 6 is a cross-section through the frame of Fig. 5, taken on the line 6—6, Fig. 5.

The improved game employs two different types of problem pieces and a single type of answer piece, all cut or formed from stiff sheet material such as heavy cardboard or the like. The pieces are designed to be placed in a flat frame 10 having a recess 25 formed therein, of a depth equaling the thickness of the pieces. The frame may be formed from two thicknesses of cardboard, one forming the cut-out for the recesses 25, and the other forming a backing thereon. It could,

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however, be molded from plastic or other suitable material.

One form of answer piece is shown in Fig. 1, designated by the numeral 11. Each piece carries a numeral 15, and the pieces are numbered in sequence from one to nine, or less if preferred. An L-shaped leg 12 depends from one extremity of each piece 11, terminating in a foot portion 13 provided with a plurality of protuberances or tongues 14. The pieces 11 carry the same numerals on both their front and rear faces, the numerals on the rear face being inverted from the numerals on the front face, as shown in Figs. 4 and 5.

The front faces carry a "plus" sign 16 to designate this face is to be used for problems in addition, and the rear faces carry a "minus" sign 17 to designate that this face is to be used for problems of subtraction.

The number of tongues 14 on each piece corresponds to the numerical value of the numeral on that piece, that is, the piece carrying the numeral "2" will have two of the tongues 14, and the remaining pieces will have tongues corresponding in number to the value of the numeral thereon.

The second form of problem piece is illustrated in Fig. 2, comprising a second flat, problem piece 18 cut away at one corner, as indicated at 19, to receive the foot portion 13 of one of the first problem pieces. Each piece 18 carries a numeral as shown at 20 and each is provided along its lower edge with a plurality of tongues 21 corresponding to and aligning with the tongues 14 of the pieces 11. As in the case of the first pieces, the number of tongues 21 on the second problem pieces 18 corresponds to the value of the numeral on that piece. The pieces 18 carry the same numerals on their rear faces as on their front faces in inverted relation, similarly to the pieces 11. The front face is used for problems in addition as shown in Fig. 4 and the rear face for problems in subtraction as shown in Fig. 5.

The problem pieces of Figs. 1 and 2 are used in connection with answer pieces 22, typical ones of which are shown in Fig. 3. Each of the answer blocks 22 carries a numeral such as shown at 23 which provides an answer for a given problem. The numerals 23 are repeated on both faces of the pieces 22 in inverted relation. The answer blocks also carry tongues along one edge thereof as indicated at 24, the number of tongues on each block corresponding to the value of the numeral 23 thereon.

For problems in addition, the blocks are arranged as shown in Fig. 4, that is, one of the pieces 11 will be placed in the upper portion of the recess 25, and one of the pieces 18 will be positioned therebelow fitting the leg 12 and foot 13 of the former. Let us assume that the game

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is to be used for addition and that the piece 11 carrying the numeral "5" and one of the pieces 18 carrying the numeral "4" have been selected and placed in the frame 10 as shown in Fig. 4. This presents the problem $5+4=?$. Since the foot of the piece 11 carrying the numeral "5" contains five of the tongues 14, and the piece 18 carrying the numeral "4" carries four of the tongues 21, we will have a total of nine tongues aligned along the bottom edge of the two pieces 11 and 18.

The user now selects one of the answer blocks 22 and endeavors to fit it into the socket 25. If the block carrying the numeral "9" is selected, it will have nine tongues, corresponding to the nine tongues of the two problem blocks, so that it will fit snugly into place. No other answer block will fit, however, due to the difference in the total of the tongues 24.

For problems in subtraction the frame 10 is inverted, and the problem and answer blocks are turned over to expose their reverse faces. One of the answer blocks 22, for instance the one bearing the numeral "9," is then placed in the upper portion of the depression 25, and one of the problem blocks 18, for instance the one carrying the numeral "4" is inserted therebelow.

This presents the problem $9-4=?$, and requires the user to select one of the pieces 11 carrying the supposed correct answer. Only the piece 11 carrying the numeral "5" and having five of the tongues 14 will fit into the remaining tongues 24 of the block 22.

The tabs 11 on their reverse, or subtraction side, carry lines 26 which indicate the problem line, below which the answer is to be inserted, and the front faces of the answer blocks 22 carry a similar line 27, below which the answer in an addition problem is to be inserted. These lines give the user a visual picture of the problem being worked.

While a specific form of the improvement has been described and illustrated herein, it is desired to be understood that the same may be varied, within the scope of the appended claims, without departing from the spirit of the invention.

Having thus described the invention, what is claimed and desired secured by Letters Patent is:

1. An educational game device comprising: a first problem piece; a second problem piece, each problem piece carrying a numeral; devices projecting from each piece, the number of devices projecting from each piece corresponding to the numerical value of the numeral thereon; an answer piece; and projections on said answer piece corresponding in number to the total number of projecting devices on both the problem pieces the projections on said answer piece interfitting with all of the devices projecting from both problem pieces.

2. An educational game device comprising: a first problem piece; a second problem piece, each problem piece carrying a numeral; a projecting portion on the first problem piece partially surrounding the second problem piece so that the lower edges of both pieces will align with each other; and an answer piece having an upper edge aligning with the aligned edges of the two problem pieces, said edges being irregular, the irregularities of the edges of the problem pieces corresponding and fitting to the irregularities in the edge of the answer piece, said answer piece carrying a numeral forming the answer to the problem presented by the problem pieces.

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3. An educational game device comprising: a first problem piece; a second problem piece, each problem piece carrying a numeral; a projecting portion on the first problem piece partially surrounding the second problem piece so that the lower edges of both pieces will align with each other; indentations formed in the aligned edges of each problem piece, the number of indentations in each piece corresponding in numerical value to the numeral thereon; and an answer piece having an upper edge aligning with the aligned edges of the problem pieces, said answer piece having indentations in said upper edge, the number of indentations in the latter edge corresponding to the total number of indentations in the aligned edges of the problem pieces.

4. A game device comprising: a relatively flat frame having a shallow depression of uniform depth in its front face; a problem piece fitted into the upper portion of said depression; a downwardly projecting L-shaped foot on said problem piece extending to the middle of said depression; a second problem piece fitted into said depression and into the L-shaped foot on the first problem piece, the bottom of the second problem piece aligning with the bottom of said foot; and an answer piece fitted into the bottom of said socket below said problem pieces, the adjacent edges of the foot, the second problem piece, and the answer piece being irregular and fitting into each other.

5. A game device comprising: a relatively flat frame having a shallow depression of uniform depth in its front face; a problem piece fitted into the upper portion of said depression; a downwardly projecting L-shaped foot on said problem piece extending to the middle of said depression; a second problem piece fitted into said depression and into the L-shaped foot on the first problem piece, the bottom of the second problem piece aligning with the bottom of said foot; an answer piece fitted into the bottom of said socket below said problem pieces, the adjacent edges of the foot, the second problem piece, and the answer piece being irregular and fitting into each other; a numeral on each of said pieces; projections on said foot corresponding in number to the numeral on the first front piece; projections on second problem piece corresponding in number to the numeral on that piece; and co-acting projections on the answer piece fitting the projections on the foot and on the second problem piece, there being a numeral on the answer piece forming an answer to the problem presented by the problem pieces and corresponding in numerical value to the number of projections on the answer piece.

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