E. T. YOUNG.

ARITHMETICAL EDUCATION APPARATUS.

APPLICATION FILED APR. 14, 1917.

1,248,238. Patented Nov. 27, 1917.

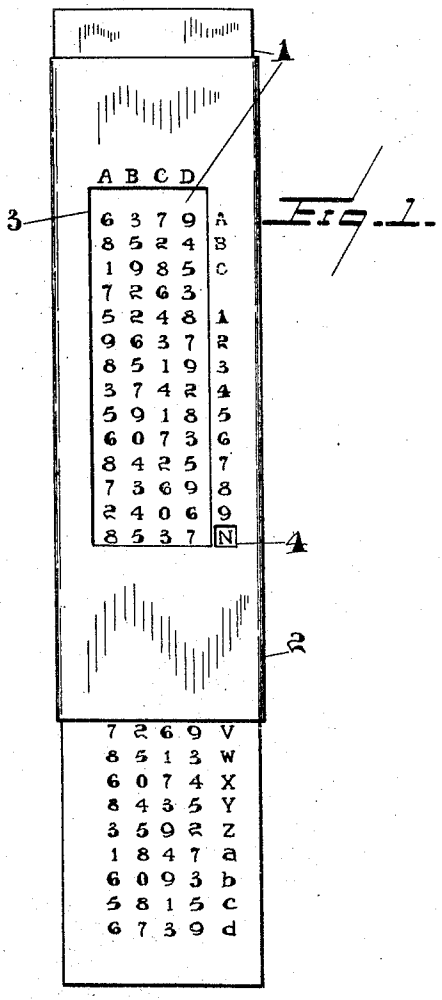


Fig. 1.

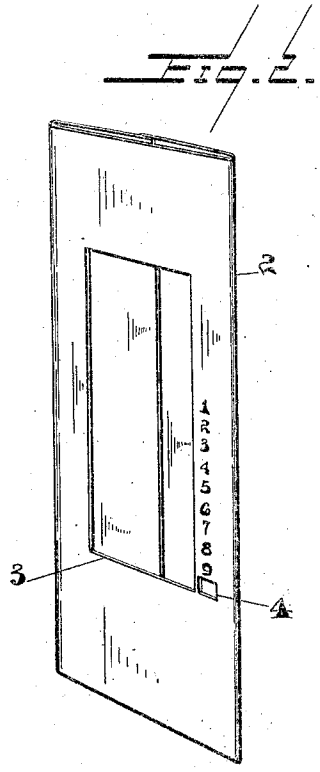


Fig. 2.

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ARITHMETICAL EDUCATION APPARATUS.

1,248,238. Specification of Letters Patent. **Patented Nov. 27, 1917.**

Application filed April 14, 1917. Serial No. 161,997.

To all whom it may concern:

Be it known that I, EDMUND T. YOUNG, of the city of Toronto, in the county of York and Province of Ontario, Canada, a subject of the King of Great Britain, have made certain new and useful Improvements in Arithmetical Education Apparatus, of which the following is a specification.

This invention relates to apparatus for drilling pupils in sums in the four simple arithmetical rules, and my object is to devise means which may be distributed to each pupil and set by them, as instructed by the teacher, to give sums of any desired difficulty according to the capacity or attainments of the pupil.

I attain my object by providing a slip on which is printed a plurality of horizontal rows of figures, arranged also in vertical columns, each horizontal row having a key symbol at one end thereof and by employing with said slip a guide having an opening in its face adapted to expose a predetermined number of horizontal rows, and also an opening adapted to expose one key symbol at a time.

On the face of the guide there appears a vertical row of key symbols which may be used to indicate which of the horizontal rows exposed are to be used by the pupil in the exercise the teacher desires to set.

The invention is illustrated in the accompanying drawings in which—

Figure 1 is a front elevation of the complete device; and

Fig. 2 a perspective view of the guide.

In the drawings like numerals of reference indicate corresponding parts in the different figures.

1 is a strip of paper, card, celluloid or other suitable thin and preferably flexible material. On this slip are printed a plurality of horizontal rows of figures arranged also in vertical columns. Any number of rows of figures may be provided, preferably thirty or more.

At the end of each horizontal row of figures, preferably the right hand end, is printed a key symbol. Preferably the letters of the alphabet are employed, and if more than twenty six rows of figures are used, for the first twenty six capital letters may be used as the key symbols and subsequently small letters as shown.

While I do not wish to limit myself to any number of vertical columns, four are preferably employed, this being sufficient for most purposes.

This slip is employed in connection with a guide 2 preferably formed of a sheet of paper, card, celluloid or other thin material folded as shown and having its overlapping edges suitably secured together. In the front of this guide an opening 3 is provided of sufficient extent to expose all the columns of figures, and of sufficient length to expose preferably about fifteen horizontal rows. At one side of the main opening a smaller opening 4 is provided through which any one of the key symbols may be exposed. The strip also bears on its face adjacent one side of the opening 3 a vertical row of symbols which may be used to indicate how many of the horizontal rows of figures exposed are to be used by the pupil in the exercise the teacher desires to set. Preferably the numerals 1 to 9 are employed as shown, the last numeral being adjacent the opening 4. There may also be applied to the face of the strip, adjacent the opening 3, transverse rows of symbols indicating the separate vertical columns.

If numerals be used for the vertical row of symbols letters of the alphabet may be employed for the horizontal row of symbols.

While the device may be used for setting sums in any of the four simple arithmetical rules, its utility will be evident from a description of a method of employing it for setting sums in addition.

Each pupil is supplied with one of the devices, the teacher will then announce that he is setting a sum in addition and gives the pupil a certain key symbol, say *n* for example, whereupon the pupil slides the strip 1 until the numeral *n* is exposed through the opening 4 as shown. If this is all the instructions received from the teacher the pupil then proceeds to add the horizontal rows exposed through the opening 3.

If it is desired to set a shorter sum than that formed by the total number of rows exposed through the opening 3, the teacher will also mention one of the key symbols displayed on the face of the guide 2. For example, the key symbol 5 is mentioned. The pupil will then place the edge of a book or piece of paper over the device leaving exposed only the horizontal rows of figures down to and including the row opposite

which appears the key symbol 5. His duty then is to add the rows which are exposed.

If less than the total number of vertical columns are to be added up one of the horizontal rows of key symbols displayed on the guide will be mentioned, the pupil will then cover over the device leaving exposed only the vertical columns up to and including that opposite which the given key symbol appears.

It is evident that by mentioning different key symbols on the strip and on the guide that an almost indefinite number of sums can be set, thus avoiding a large amount of labor on the blackboard for the teacher.

Sums in subtraction, multiplication and division may also readily be set by the use of this device.

What I claim as my invention is:

1. A slip having printed thereon a plurality of horizontal rows of figures arranged also in vertical columns, each horizontal row having a key symbol at one end thereof in combination with a guide in which said slip is movable having an opening in its face adapted to expose a predetermined number of horizontal rows of figures, and also an opening adapted to expose one of the key symbols.

2. A slip having printed thereon a plurality of horizontal rows of figures arranged also in vertical columns, each horizontal row having a key symbol at one end thereof in combination with a guide in which said slip is movable having an opening in its face adapted to expose a predetermined number of horizontal rows of figures, and also an opening adapted to expose one of the key symbols, and bearing on its face adjacent the first mentioned opening a row of symbols which may be used to indicate parts of the total figures exposed which are to be used by the pupil in the exercise the teacher desires to set.

3. A slip having printed thereon a plurality of horizontal rows of figures arranged also in vertical columns, each horizontal row having a key symbol at one end thereof in combination with a guide in which said slip is movable having an opening in its face adapted to expose a predetermined number of horizontal rows of figures, and also an opening adapted to expose one of the key symbols, and bearing on its face adjacent the first mentioned opening a vertical row of symbols which may be used to indicate which of the horizontal rows exposed are to be used by the pupil in the exercise the teacher desires to set.

4. A slip having printed thereon a plurality of horizontal rows of figures arranged also in vertical columns, each horizontal row having a key symbol at one end thereof in combination with a guide in which said slip is movable having an opening in its face adapted to expose a predetermined number of horizontal rows of figures, and also an opening adapted to expose one of the key symbols, and bearing on its face adjacent the first mentioned opening a vertical row of symbols which may be used to indicate which of the horizontal rows exposed are to be used by the pupil in the exercise the teacher desires to set, and also bearing on its face a horizontal row of symbols which may be used to indicate which of the vertical columns exposed are to be used.

Signed at Toronto this 9th day of April, A. D. 1917.

EDMUND T. YOUNG.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."