No. 770,841. PATENTED SEPT. 27, 1904.

J. F. BARKER.

EDUCATIONAL CONCENTRATOR.

APPLICATION FILED JUNE 8, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. I

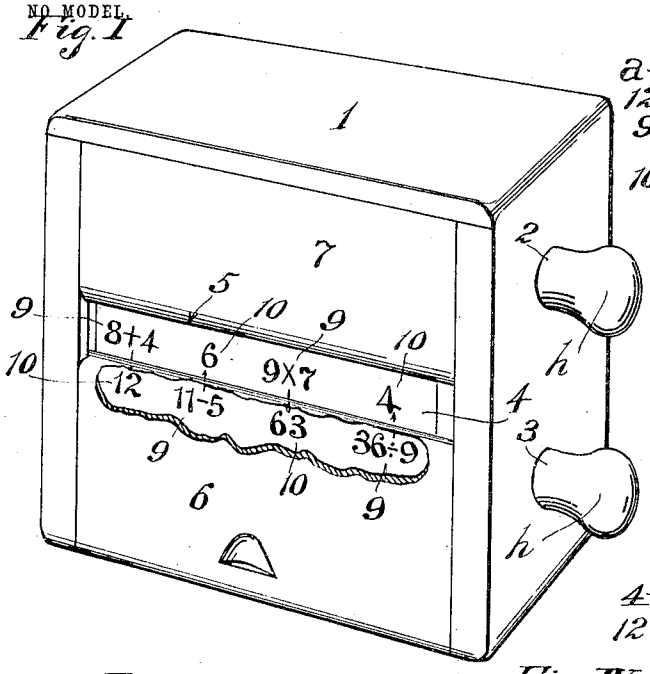


Fig. III

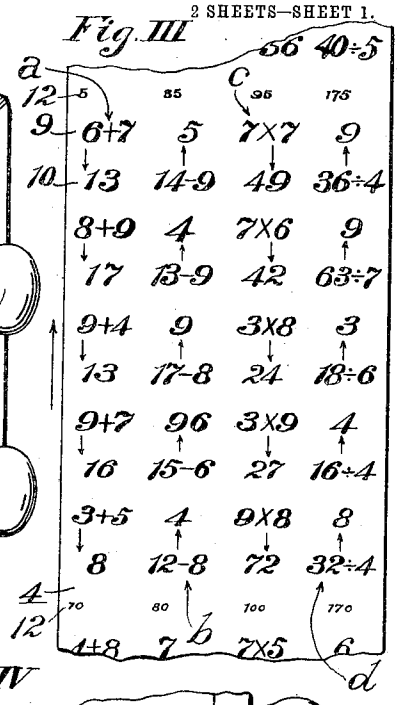


Fig. II

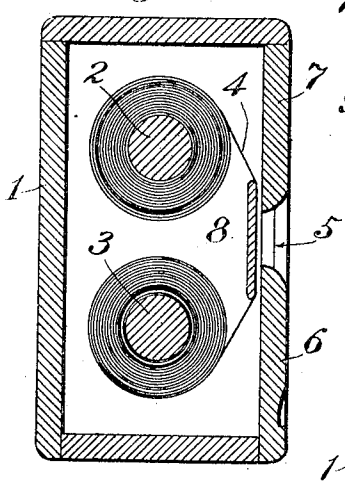


Fig. IV

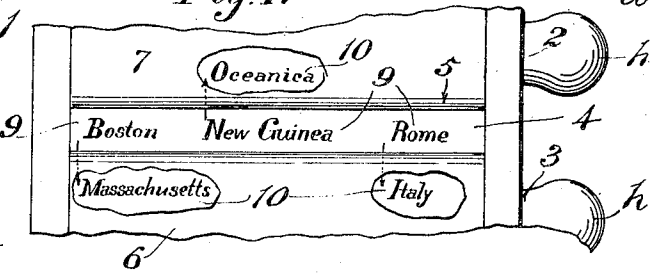


Fig. V

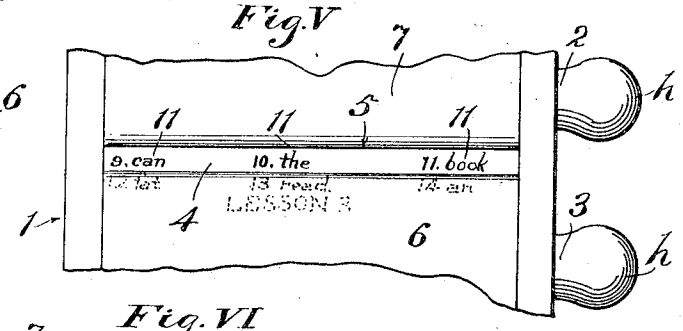
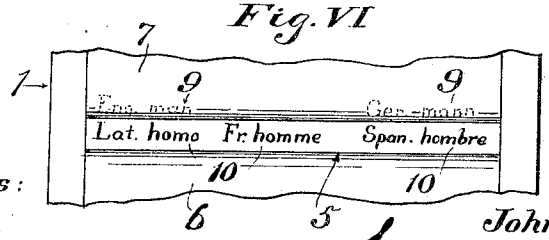


Fig. VI



Witnesses:
C. C. Keelly
F. Townsend.

Inventor:
John F. Barker
by Townsend Bros.
his attys.

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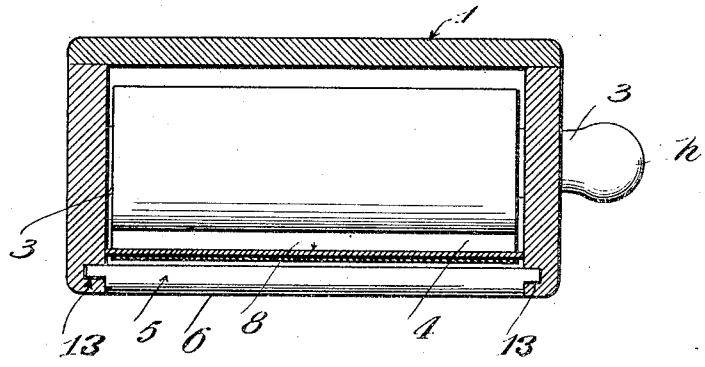
J. F. BARKER.

EDUCATIONAL CONCENTRATOR.

APPLICATION FILED JUNE 8, 1903.

NO MODEL. 2 SHEETS—SHEET 2.

Fig. III



Witnesses
Edmund A. Strauss.
A. P. Knight

Inventor
John F. Barker
by Townsend Bros.
attys.

No. 770,841. Patented September 27, 1904.

UNITED STATES PATENT OFFICE.

JOHN F. BARKER, OF LOS ANGELES, CALIFORNIA, ASSIGNOR OF ONE-HALF TO MARY L. FRENCH, OF LOS ANGELES, CALIFORNIA.

EDUCATIONAL CONCENTRATOR.

SPECIFICATION forming part of Letters Patent No. 770,841, dated September 27, 1904.

Application filed June 8, 1903. Serial No. 160,493. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. BARKER, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Educational Concentrator, of which the following is a specification.

This invention relates to means for fixing in the minds of pupils and students items of information which are to be memorized.

More specifically, this invention relates to educational devices furnished with a box-manual having a sight-slot in one wall, a strip behind the slot and movable relative thereto and furnished with items of information spaced apart on the strip in definite relation to the width of the slot, and means for moving the strip, the width of the slot being such relative to the respective spaces devoted to the items of information respectively that the pupil's attention will be excluded from any items except that upon which it is desired to concentrate the mind.

A further principle of the class of devices to which this invention relates is the arrangement of relative items—as question and answer, for example—in proximity to each other and to concealing means which allow one of the related members or items to be exposed to view while the other item or member is concealed, the arrangement being such that the one item may in turn be concealed while the other item is exposed, and vice versa. By this arrangement of question and answer, so that the answer may be concealed while the attention may be concentrated upon the question, the memory may be exercised without confusion to recall the answer after the same has once been discovered.

The invention includes an improved means for adjusting the width of the reading-slot and a novel arrangement of the matter inscribed on the moving strip, whereby an improved effect is secured, as will appear from the following description and accompanying drawings.

I have applied the invention to practical use in primary schools for teaching arithmetic, reading, and geography; but it will be seen from the following description that the principle may be extended over any subject which may be learned by repetition or an act of the memory. For example, the device may be found specially advantageous in teaching different languages, a single appliance being applicable at one time for the acquisition of a number of languages—as, for instance, English, German, Latin, French, and Spanish—whereby a vocabulary of words in the different languages may be readily acquired. Declensions, rules of syntax, and other details which are to be memorized may be readily fixed in the mind by use of this appliance.

The invention is also very effective for teaching beginners in reading.

In the practical use to which I have applied this invention I have found it possible within a period of four months, with a class of ten children of average apprehension and of six and seven years of age, to teach arithmetic and reading with better results than those attained by ordinary school methods.

In carrying out my invention a number of different arrangements and kinds of information-strips may be used and the same interchangeably used, as desired.

The accompanying drawings illustrate my invention in some of the forms in which I have put the same into practical use.

Figure I is a perspective view of the device furnished with a number-strip. Fragments of the case are broken away to expose parts of the strip which otherwise would be hidden. Fig. II is a section of the same across the rollers. Fig. III is a fragmental view of the number-strip. Fig. IV is a fragmental view of a form of the appliance adapted for teaching geography. Fig. V is a like view of the appliance adapted for teaching reading. Fig. VI is a fragmental view of the invention furnished with a strip for teaching languages. Fig. VII is a horizontal section in the plane of the sight-aperture in the case.

1 is a box-manual case of convenient size for use in the hands of a child or other person.

2 3 are rollers in the case, terminating out-

side the case and there forming handles *h*, by which they may be turned.

4 designates an information-strip fastened to and wound upon the rollers 2 3, so that by turning one or the other handle the strip may be wound from one to the other roller to expose the information contained thereon through a slot 5 in the case 1. In the form shown in Figs. I and III the information-strip 4 is applied to the teaching of addition, subtraction, multiplication, and division tables. The information-strips shown in Figs. IV and V are respectively applied to geography and reading. In the form shown in Fig. VI the information-strip is applied to teaching a vocabulary of words in English, German, Latin, French, and Spanish.

The exhibit-slot 5 is adjustable as to width, so as to expose two, three, or more lines at a time, accurate adjustability being secured by a slide 6, which forms a portion of one side of the case 1 and reciprocates in the same direction as the exposed portion of the strip moves. 7 is a slide forming another portion of the side of the case. Slides 6 and 7 move in slots 13 in the sides of the case. Said slides 6 and 7 may both be removed from the front of the case by sliding them downward. Access may then be had to the rollers 2 and 3 and the strip 4 for the purpose of reversing said strip, so that matter on the other side thereof may be exposed to view, or said strip may be removed and a different strip made fast to the rollers. By moving the slide 6 as above described the device is adapted to pupils of different degrees of advancement. It is desirable with the younger pupils when the device is used to teach reading that only one line be exposed at a time, so that the child may not become confused, but may follow the single printed line without difficulty; but with more advanced pupils it is more convenient to expose several lines at a time. The slide 6 may also be moved to adjust the width of the sight-opening to the various sizes of type it is desirable to use in connection with the different detachable information-strips.

8 is a bridge for supporting the information-strip 4 in front of the slot. Said bridge affords a firm backing for strip 4, so that children will not puncture said strip with pencils or other instruments which they may insert into the sight-opening in pointing to the matter to be read therethrough. In practice the information-strip to be used is preferably fastened firmly at its opposite ends to the rollers by paste, care being taken that the strip is so firmly fastened that the child will not release it or tear it off by turning the roller too far.

The information-strips are respectfully provided with question characters 9 and answer characters 10, arranged, where it is possible, in pairs. In the drawings the members of each pair are connected by an arrow, and the several arrows are given a direction corresponding to the direction in which the strip will move for exhibiting the members of pairs in proper sequence. In the number-strip illustrated in Fig. III four columns of numbers are shown, the first column, *a*, being devoted to addition, the second column, *b*, to subtraction, the third column, *c*, to multiplication, and the fourth column, *d*, to division. The alternate columns are reversely arranged, so that in the first column the information-strip 4 must travel upwardly, as indicated by the larger arrow in Fig. III, to exhibit the question character 9 and the answer character 10 in proper sequence. The object in having the information in the alternate columns reversely arranged is to make it possible to read through two or more consecutive columns without the loss of time and wear of the device caused by moving the strip in the reverse direction merely for the purpose of bringing it back to its initial position. This is of especial advantage to the pupil in making the long reviews to which the device is especially adapted. The same arrangement of the question character 9 and answer character 10 is preserved in the form shown in Fig. IV. In the form shown in Fig. V words 11 are arranged in lines to be exhibited through the slot 5, which can be increased or diminished in width, as desired, to exhibit a greater or less number of lines at one time. In practice the appliance may be used either by a pupil alone or by two pupils, one acting as monitor, while the other recites. It is not found necessary in order to hold the interest that the pupils be thus paired; but the results secured by pairing the pupils is found to be most satisfactory.

The manner in which the pupil will use the device when studying alone is as follows: He may hold the manual in one hand and turn the handle on the end of the roller 2 with the other hand to bring to view the question character 9, leaving hidden the answer character 10. In this particular instance (shown in Fig. I) the question is "8 plus 4," the answer being "12." When the question "8 plus 4" is exposed, the child is required to think the hidden answer. When the answer is thus determined, he may give the handle at 2 another turn, thus exposing the answer "12" to discover whether the thought-out answer was correct or not. This process may be continued until all of the questions and answers in the first column have been determined, and then by turning the handle at 3 the next column may be gone over in the same way, the strip moving down instead of up until all of the questions and answers of column *b* have been gone over. Then the pupil may repeat the operation, or he may perform

the same operation with relation to columns *c* and *d*. By this means the attention of the pupil is concentrated to such an extent that the memorizing of the tables is accomplished with great rapidity and ease.

It is desirable in supplying a school with manuals for teaching numbers that the numbers of the different information-strips be differently arranged, so that the pupil cannot repeat by rote, but will be compelled to simply hold in mind the particular relation of the particular numbers 9 and 10 of the problem.

In using the manual for teaching reading the appliance shown in Fig. V may have a slide adjusted to bring to view a predetermined number of words, and preferably the pupils are paired, the monitor being somewhat more advanced than the reciting pupil. The best results are apt to be attained by pairing pupils who are only slightly different in their attainments. For instance, the monitor may have acquired only those new words which are found in the lesson immediately following that which the reciting pupil is learning. In this way a high degree of emulation may be aroused by each pupil endeavoring to attain the position of monitor over the other.

The method of using the manual for learning different languages may be understood from Fig. VI, in which an English and German word of the same meaning are arranged in one line to be exposed through the slot at one time, while the Latin, French, and Spanish words of the same meaning are arranged in another line to serve as the answer to the question involved in the first line—that is to say, the English and German words may be put together as having a closer resemblance to each other than they have to the Latin, French, or Spanish terms of the same meaning, while the derivations of the French and Spanish words from the Latin is brought forcibly to mind by their apposition. The English and German words are thus paired with the Latin, French, and Spanish words.

The strips are interchangeable, and a number of strips may be supplied for each box and separately applied thereto, as required, one being substituted for the other. The slide may be moved to increase and decrease the width of the slot, as required, to expose larger or smaller letters or a greater or less number of lines, as may be deemed desirable. The consecutive pairs of questions and answers are preferably arranged in groups, as indicated in Fig. III, where 12 designates ordinals separating the pairs of questions and answers into groups of five each, so that the pupil can readily determine the length of a lesson and also the progress made.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. A box having a slot in one wall, a strip in the box having an exposed portion movable across said slot transversely thereto, characters representing questions and answers extending transversely across the strip and arranged in a column extending longitudinally of said strip, said column reading in one direction, and characters representing questions and answers arranged in a column reading in the reverse direction on said strip.

2. A box having a slot in one wall, a strip in the box movable across said slot transversely thereto, characters representing questions and answers extending transversely across the strip and arranged in columns extending longitudinally of said strip and reading in one direction, and characters representing questions and answers arranged in columns alternating with the first-named columns and reading in the reverse direction.

3. A box-manual provided with a reading-slot and a strip adapted to be inscribed with printed matter extending transversely thereacross and visible through said slot and arranged in columns longitudinally of the strip, said reading-slot extending parallel with the printed matter, and a slide movable transversely to and forming one side of said reading-slot.

4. A box-manual provided with a reading-slot and a pair of parallel rollers adapted to be manually operated, a flexible information-strip provided with printed matter, said strip adapted to be secured to said rollers in position to be exposed through said reading-slot adjacent thereto and being movable beneath said reading-slot transversely thereof, and a slide forming one side edge of said reading-slot and movable in the same direction as the exposed portion of the information-strip to vary the width of the side opening.

5. A box-manual provided with a reading-slot and a pair of parallel rollers adapted to be manually operated, a flexible information-strip fastened to said rollers in position to expose information matter through said slot, and a pair of slides forming the opposite sides of said reading-slot and both adapted to slide out at one side of the box to afford free access to said rollers and the strip mounted thereon.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, at Los Angeles, in the county of Los Angeles and State of California, this 29th day of May, 1903.

JOHN F. BARKER.

Witnesses:

JAMES R. TOWNSEND,

JULIA TOWNSEND.