J. W. STUDEBAKER.

PRACTICE EXERCISE CARD IN MATHEMATICS.

APPLICATION FILED MAY 25, 1915.

1,157,599. Patented Oct. 19, 1915.

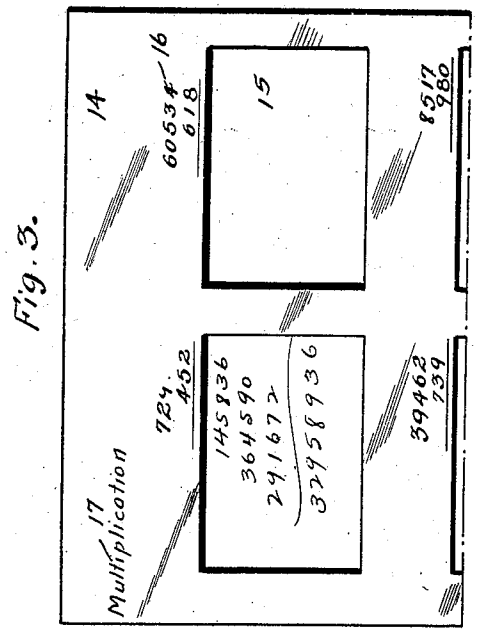


Fig. 3.

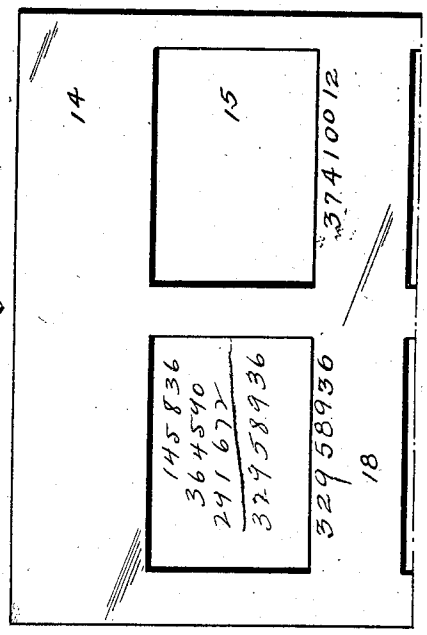


Fig. 4.

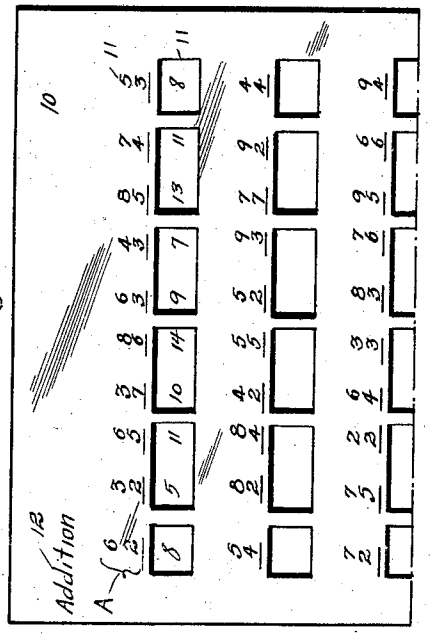


Fig. 1.

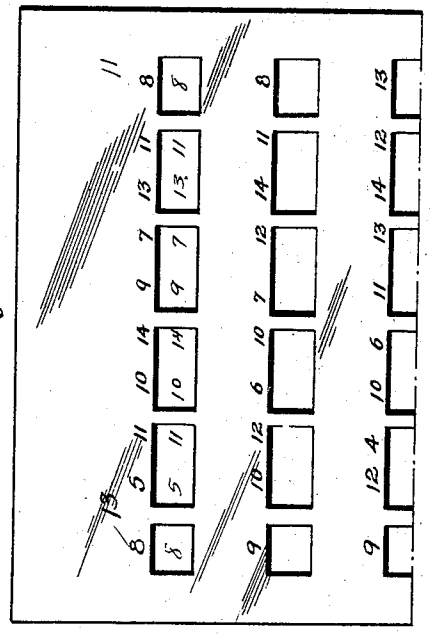


Fig. 2.

Witnesses
Will Freeman.
A. H. Hague

Inventor
John Ward Studebaker
BY Orwig & Bair
Attorneys

UNITED STATES PATENT OFFICE.

JOHN WARD STUDEBAKER, OF DES MOINES, IOWA.

PRACTICE EXERCISE-CARD IN MATHEMATICS.

1,157,599. Specification of Letters Patent. Patented Oct. 19, 1915.

Application filed May 25, 1915. Serial No. 30,406.

To all whom it may concern:

Be it known that I, JOHN WARD STUDEBAKER, a citizen of the United States, and resident of Des Moines, in the county of Polk and State of Iowa, have invented certain new and useful Practice Exercise-Cards in Mathematics, of which the following is a specification.

The object of my invention is to provide a practice exercise card for mathematics of simple, durable and inexpensive construction, so made and arranged that certain problems may be shown by suitable indicating characters on the face of the card adjacent to openings adapted to be placed over suitable writing material and that the answers or results of the working out of the problems may be shown on the opposite side of the sheet adjacent to the openings therein.

My invention consists in the construction, arrangement and combination of the various parts of the device whereby the objects contemplated are attained as hereinafter more fully set forth pointed out in my claims and illustrated in the accompanying drawings, in which:

Figure 1 shows the face of an exercise card embodying my invention, illustrating simple problems in addition, and showing the totals of the first series of problems in the lower sheet of paper. Fig. 2 shows the exercise card turned over for checking the results of the addition. Fig. 3 shows the face of a modified form of my exercise card illustrating the cards used for problems in multiplication, and showing the result of one of the problems on the lower paper. Fig. 4 shows a reverse side of the card shown in Fig. 3, illustrating the construction of the card, and the method for checking the answers.

In the accompanying drawings, I have shown in Figs. 3 and 4, a slightly modified form of my device, simply illustrating the variety of forms in which my practice exercise cards may be made.

In the accompanying drawings, in Fig. 1, I have used the reference numeral 10 to indicate generally a card which may be made of pasteboard or the like, and may be of any suitable construction, preferably of some tough paper capable of withstanding considerable rough handling.

The card 10 is provided with a series of openings 11, preferably arranged in horizontal rows from the top to the bottom of the card, as illustrated in Fig. 1. Above the openings are certain indicating characters 11 arranged to form methematical problems. The cards may contain indicating characters 12 showing the nature of the problems. The indicating characters 11, shown in Fig. 1, form problems either in addition or subtraction. The card illustrated, however, is the card used for addition, as will be more fully explained.

In the practical use of the card 10, shown in Fig. 1, the card is placed over a sheet of white paper or over any material capable of receiving suitable impressions, and the pupil places the total of the addition in the opening below the problem. It will be noted that where the card is used for subtraction, the operation is the same, except that the lower number is subtracted from the upper number instead of being added thereto. The total thus obtained is set down on a sheet of paper below the card 10; the card 10 is then turned over until the upper row of openings register with the upper row of totals on the lower sheet. The back or reverse face of the card 10, is provided with indicating characters 13, giving the total of the additions of the different columns on the face of the card.

It will be noted that the totals are so arranged that by simply turning the card over the total of the addition of column A, shown in Fig. 1, will be indicated above the total as shown on the extra sheet of paper through the opening 11 at the right hand side of the card 10 when the card is thus up, but at the left hand side of the sheet when the reverse side of the sheet is up, as illustrated in Fig. 2.

The other totals are arranged in the same way, so that when the card is reversed, the totals printed on the card will be immediately adjacent to the openings over the totals made by the pupil, as illustrated in Fig. 2, so that the results of the working of the problems may be quickly and easily compared and checked.

In Fig. 3, I have shown a similar card indicated by the reference character 14, having the openings 15 arranged preferably in horizontal rows, as shown, with indicating characters 16 above the openings, arranged for problems in multiplication. The indicating characters 17 show the nature of the problems on the sheet 14. The openings 15 are larger than the openings 11, shown in Fig. 1, simply for the reason that the prob-

lems are more complicated and involve more numerals.

In Fig. 4, I have illustrated the reverse side of the card, 14 and also have shown the results of the multiplication problems just below the openings, instead of just above them. It will be seen, however, that the indicating characters 18 showing the results of the multiplication are arranged adjacent to the openings which register with the characters made by the pupil on the sheet of paper below the sheet 14, so that the products of the pupil's calculation are adjacent to the products shown on the reverse side of the card 14.

My improved practice exercise cards for mathematics may be made in a vast number of modified forms, without departing from their essential features of construction and arrangement, and it is my intention to cover by this application any such modified forms as may be included within the scope of my claims.

The advantages of my cards may be largely seen from the foregoing description. By the use of cards of this kind, the teacher is saved the time of copying the problem on the black board, or of reading it to the class. The pupils are saved the time of copying the problem on paper.

In addition to the saving of time already referred to, it is possible, where my cards are used, for the teacher to give more attention to the individual pupil and furnish the individual pupil with the work demanded by his particular needs. For instance, if the majority of a class need work in addition, while one or two are advanced in addition, but laggard in multiplication, the one or two pupils mentioned may be given multiplication cards, while the rest of the class may be given the addition cards.

The pupils are able to quickly and easily check the results of their calculations by simply turning the cards over.

The cards may be used repeatedly, so that the saving of time is accomplished each time the cards are used.

I claim as my invention:

1. In a device of the class described, a card having a plurality of openings, indicating characters on one side of said card adjacent to said openings for mathematical problems, said openings being of such size as to permit pupils to mark through them on paper or the like placed below the card for setting down the results of the problems indicated on the face of the card, said cards being provided on their reverse sides with indicating characters showing the results of the problems on the face of the card.

2. In a device of the class described, a card having a plurality of openings, indicating characters on one side of said card adjacent to said openings for mathematical problems, said openings being of such size as to permit pupils to mark through them on paper or the like placed below the card for setting down the results of the problems indicated on the face of the card, said cards being provided on their reverse sides with indicating characters showing the results of the problems on the face of the card, said result indicating characters being so arranged adjacent to the openings in the card that when the card is turned over the result of each calculation will be shown adjacent to the calculation made by the pupil through the opening in the card.

Des Moines, Iowa, May 21, 1915.

JOHN WARD STUDEBAKER.

Witnesses:

J. MAHER,

A. SHERMAN.