April 15, 1924. 1,490,858

J. C. SEEGERS

EDUCATIONAL CHART

Filed May 2, 1923 2 Sheets-Sheet 1

Fig. 1.

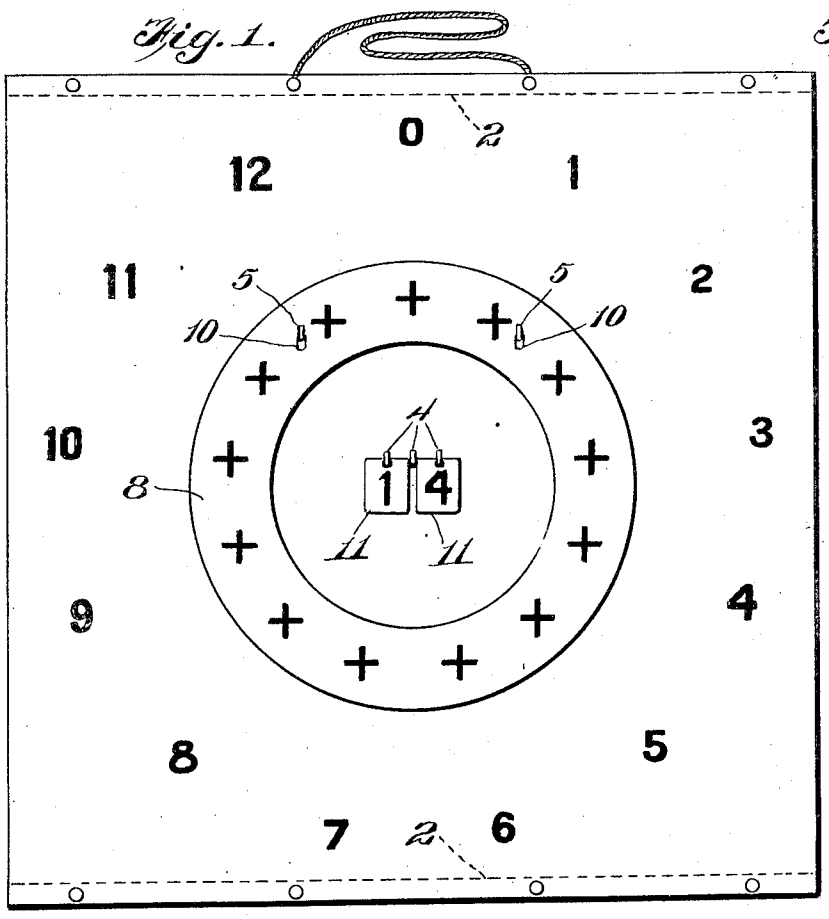


Fig. 2.

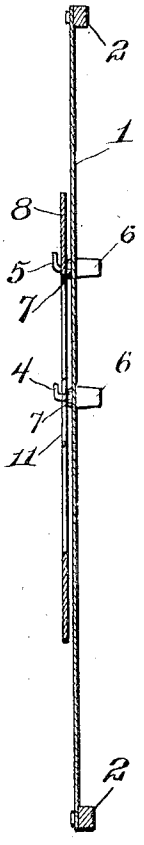


Fig. 3.

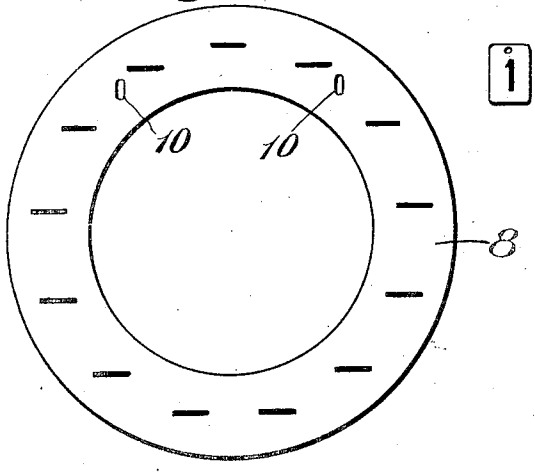
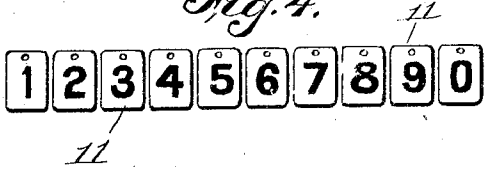


Fig. 4.



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Fig. 5.

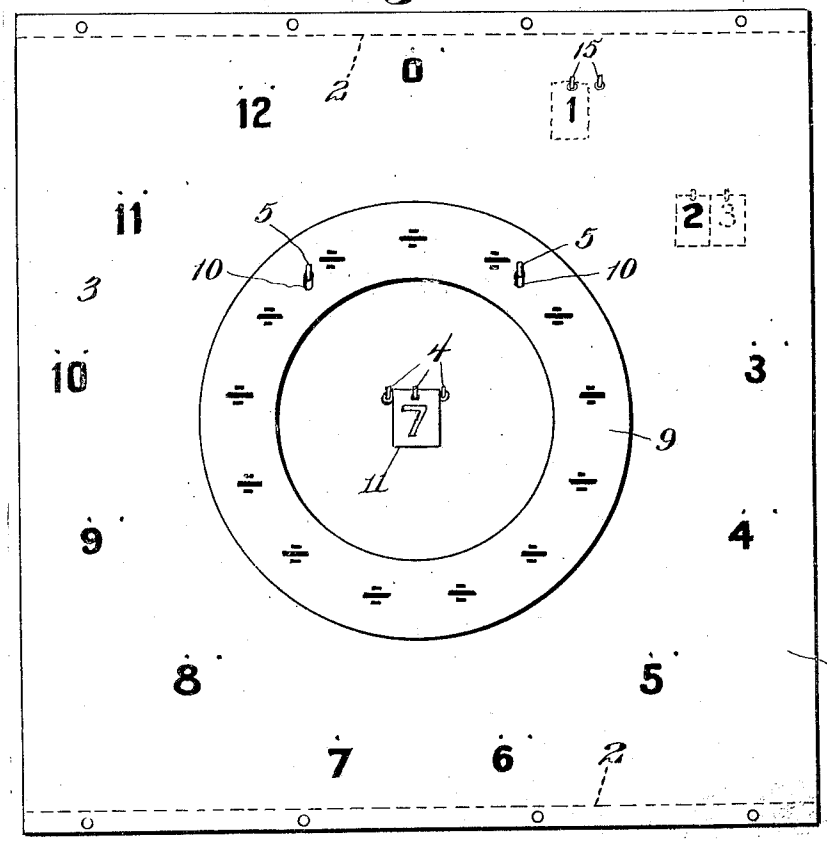


Fig. 6.

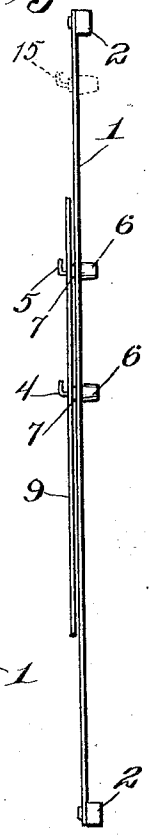


Fig. 7.

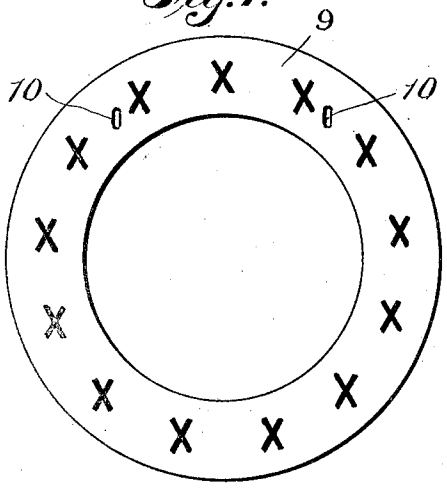
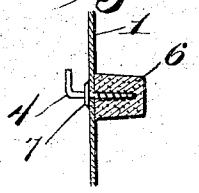


Fig. 8.



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UNITED STATES PATENT OFFICE.

JOHN CONRAD SEEGERS, OF WILMINGTON, NORTH CAROLINA.

EDUCATIONAL CHART.

Application filed May 2, 1923. Serial No. 636,244.

To all whom it may concern:

Be it known that I, JOHN C. SEEGERS, a citizen of the United States of America, residing at Wilmington, in the county of New Hanover and State of North Carolina, have invented certain new and useful Improvements in Educational Charts, of which the following is a specification.

This invention relates to improvements in educational charts.

The primary object of the invention is to provide simple and effective means for quickly and conveniently teaching arithmetic and giving drills in arithmetical problems in class rooms.

A further object of the invention is to provide means which will permit of ready and quick changing of a series of interchangeable card digits to present different problems to a class that the pupils may be effectively drilled in addition, subtraction, division, and multiplication.

A still further object of the invention is to provide basic fixed digits in clock-wise formation, and interchangeable rings with arithmetical signs thereon, and card digits to cooperate with the fixed basic digits to be used in drilling a class in arithmetic.

Another object of the invention is to provide detachable hooks placed with reference to the basic digits to support the interchangeable card digits and the interchangeable signs to determine the intended arithmetical drill.

The invention also comprehends improvements in the details of construction and arrangement of parts, which will be hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings:

Fig. 1 is a front elevation, showing the use of two central card digits associated with a ring having plus or addition signs thereon.

Fig. 2 is a central section of the same.

Fig. 3 is a detail front view of the opposite face of the ring shown in Fig. 1.

Fig. 4 is a detail of the various card digits.

Fig. 5 is view similar to Fig. 1 but showing the use of one central digit, and a ring showing division signs.

Fig. 6 is a side elevation of the same.

Fig. 7 is a detail of the opposite side of the ring shown in Fig. 5.

Fig. 8 is a detail view of one of the hooks and its support.

The numeral 1 indicates a chart, reinforced at its top and bottom at 2—2, and provided with a loop cord to afford convenient means for hanging the chart on a wall or the like.

Printed in bold large type on the chart are digits from 0 to 12, suitably spaced apart and arranged in a circular field as shown at 3. Within the confines of the circular field of the digits 3, are hooks 4, and beyond these hooks, are other hooks 5.

For convenience, the chart will be provided with points where the hooks are to be located and when the chart is to be used, the threaded ends of the hooks are punched through the material and screwed into cork or like blocks 6. Flanges 7 on the hooks engage the face of the chart and clamp the latter against the ends of the cork, hence the hooks are rigidly supported in operative position.

8 and 9 indicate rings having openings 10 to engage over the hooks 5. These rings are about one-half the diameter of the circular field formed by the digits 3, and are provided on opposite sides with signs to indicate the character of arithmetical problems to be taught. On one surface of one ring will be printed the addition or plus signs, and on the opposite side the subtraction or minus signs. On one surface of the other ring will be printed multiplication signs, and on the opposite surface division signs.

The signs on the respective surfaces are thirteen in number, and are spaced apart and in radial alignment with the digits 3 when a ring is supported on the chart.

The hooks 4 are disposed adjacent what would be the axis of the rings when supported on the hooks 5. Three hooks 4 are shown in the group and are intended to receive and support cards 11, each bearing a number, and for clearness in description will

be hereinafter referred to as digit cards. There will be a series of digit cards bearing numbers 0 to 9, and each card will be provided with an opening to slip over one of the hooks 4. To reduce the number of the parts, each card will have a number on each opposite side, as shown. If a single digit card is to be used in the drill, it will be supported on the middle hook 4, and if two digit cards are to be used to form the proper numeral, they will be supported on the end hooks. The hooks are so disposed and the digit cards are so proportioned, that the numerals will be substantially in radial alignment with the signs on a supported ring, and the digits arranged in the outer circular field as clearly shown in the drawings.

To drill a class in larger problems than is possible with the arrangement thus far described, I may arrange hooks 15, adjacent the digits in the circular field 3, so that the digit cards having digits of higher or different values, may be placed over the permanent digits, thus affording means for drilling an advanced class in more complicated problems than is possible with digits of lower value.

In use, the chart is suitably supported through the medium of the loop, and if the class is to be drilled in addition, the ring 8 bearing the plus signs is placed on the hooks 5, then a digit card or cards is or are slipped on the hooks 4. The central digit is now in substantial radial alignment with the signs on the ring and the digits in the outer circular field and the instructor with pointer in hand, traversing a radial line passing through the digits and sign, calls on a class or a pupil as the case may be to name the sum of the two digits. Hence, if the digit cards show the numeral 14 and the instructor passes the pointer over the chart say from 14 through the plus sign to 6, the class or pupil will understand from the plus sign that 14 and 6 are to be added, and will answer accordingly, and so by jumping from one digit alignment to another, the class or pupil can be drilled in a great variety of combinations, and in a short time the sum of any combination becomes well fixed in the minds of the student.

If the class is to be drilled in subtraction, multiplication, or division, the ring 9 having the corresponding signs will be substituted for the addition signs and through the same procedure with the pointer, the class can be drilled until all the possible combinations of problems within the scope of the device are learned. In drilling the class, the sum total of the examples are not only learned, but the pupils are able to visualize the various digits which greatly expedites the lessons. Then again, the possible combinations which may be formed with the chart, make it easy for the instructor to arrange problems for his students without writing upon the black board.

If the class becomes proficient in the combinations possible with the fixed digits in the outer field, then the card digits can be placed on the hooks 15 located in the outer field and thereby problems involving higher figures can be studied.

It is evident that with the fixed digits in the outer field thirteen different problems can be worked out with one digit card, and by changing this card or adding cards or changing the rings, there is practically no end of problems which may be made up for use in drilling a class. Furthermore, the arrangement is such that problems can be formed to suit the grade or the intelligence of the students.

What I claim is:

1. An educational chart, comprising an outer annular field of spaced apart digits, a card digit removably supported substantially centrally of the digits of the outer field, and an intermediate removably supported member presenting arithmetical figures substantially in radial alignment with the card digit and the respective digits of the outer field.

2. An educational chart, comprising an outer field of spaced apart digits arranged in a circle, an interchangeable card digit supported substantially centrally of the digits of the outer field, and an intermediate interchangeable element having arithmetical signs thereon substantially in radial alignment with the digit appearing on the card digit and the respective digits of the outer field.

3. An educational chart, comprising a chart provided with an outer field of spaced apart digits, means on the chart to support card digits substantially centrally of the outer field of digits, interchangeable card digits adapted to be supported on the supporting means, other supporting means on the chart between the first mentioned supporting means and the outer field of digits, and interchangeable rings having thereon arithmetical signs corresponding in number to the number of digits in the outer field and arranged to be in radial alignment with the card digit and the digits in the outer field when supported on said other means.

4. An educational chart, comprising a plurality of fixed spaced apart digits arranged in an annular field, hooks adjacent the fixed digits, interchangeable card digits adapted to be supported on the hooks, interchangeable card digits arranged substantially in the center of the digits in said annular field, means on the chart to support the centrally disposed card digits, an interchangeable ring interposed between the central card digits and the fixed digits, said ring hav-

ing arithmetical signs on opposite faces in radial alignment with the central digit and the fixed digits.

5. An educational chart, comprising fixed digits, interchangeable card digits adapted to be positioned within the confines of the fixed digits, and interchangeable rings having arithmetical signs of different character on opposite sides arranged to be in radial alignment with the card digit and the fixed digits, when the respective ring is supported on said chart, and means for detachably supporting the selected ring on said chart.

In testimony whereof I affix my signature.

JOHN CONRAD SEEGERS. [L. S.]