

A. W. PRICE.
 Improvement in Arithmetical Sum-Setter.
 No. 126,123. *Fig. 1.* Patented April 23, 1872.

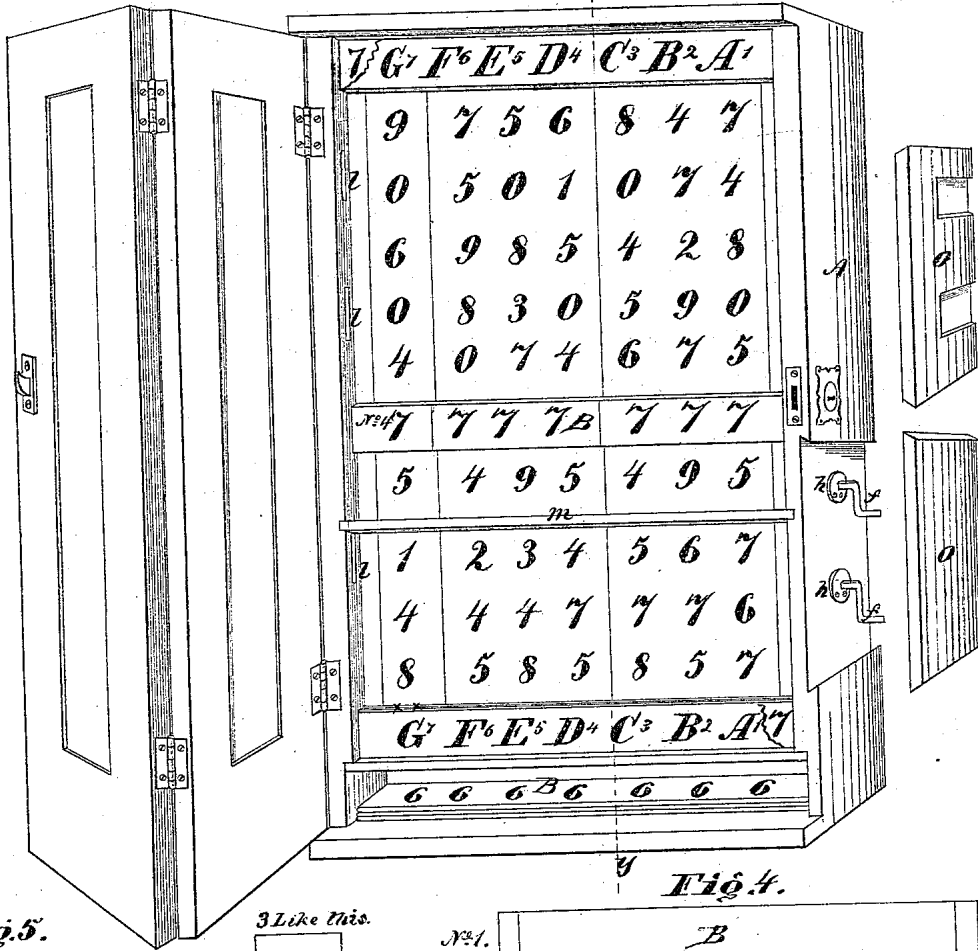
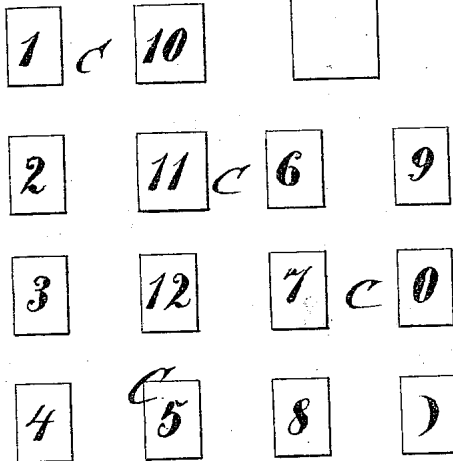
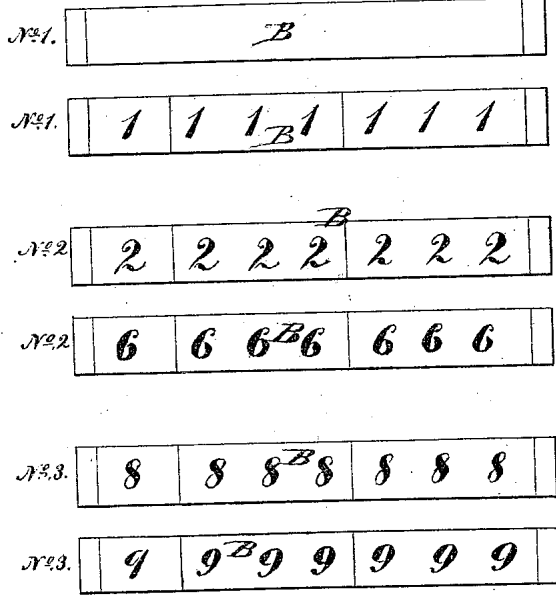


Fig. 5.



Witnesses.
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 Leonard W. Mitchels

Fig. 4.



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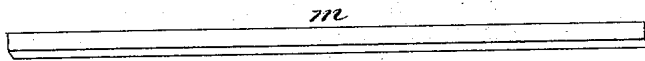
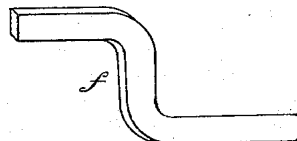
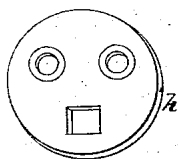
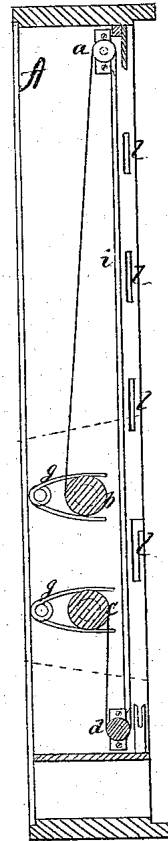
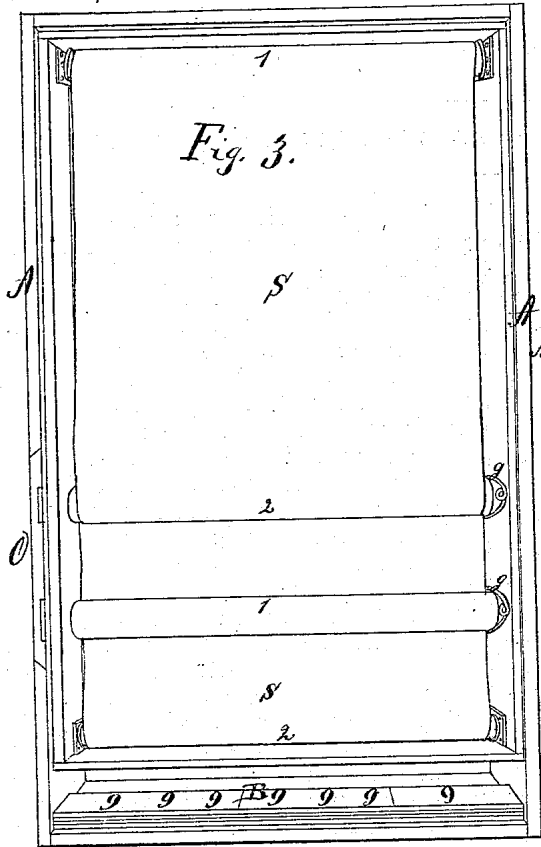


Fig. 6.

Witnesses.

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UNITED STATES PATENT OFFICE.

AMOS W. PRICE, OF DETROIT, MICHIGAN.

IMPROVEMENT IN ARITHMETICAL SUM-SETTERS.

Specification forming part of Letters Patent No. 126,123, dated April 23, 1872.

To all whom it may concern:

Be it known that I, AMOS W. PRICE, of Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in "Arithmetical Charts;" and do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon.

The nature of my invention consists in the construction and arrangement of an arithmetical chart for the purpose of instructing pupils in schools or elsewhere in the rudiments of arithmetic in an easy and practical manner.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing which forms a part of this specification, and in which—

Figure 1 is a perspective view of the entire arithmetical chart, showing the same open. Fig. 2 is a transverse vertical section of the same through line *xy*, Fig. 1. Fig. 3 is an interior rear view. Figs. 4 and 5 show certain bars and blocks with figures on the same; and Fig. 6 shows enlarged views of certain detached parts of the chart.

A represents a case, of suitable dimensions, provided with two panel-doors, as shown, having lock and key, said doors being hinged together and opening toward the left for convenience sake. This case A contains four horizontal rollers, *a*, *b*, *c*, and *d*, and an apron, *i*, as shown in Fig. 2. The rollers *b* *c* are each provided at one end with a crank, *f*, and they are prevented from turning, except when desired, by means of wire-spring brakes *g* *g* applied to one end of each. O represents a beveled sliding board or block, which, when in place, forms a portion of the outside of the case A, and when detached exposes the ends of the rollers *b* *c* to admit of the application of the cranks *f* *f*. S represents a sheet containing figures and forming the chart, as seen in the drawing, and is stretched over the opposite rollers *a* and *d*, and the ends attached to the rollers *b* *c*, passing outside of the apron *i*, which apron thus forms a solid backing for the sheet S. By the application of the two cranks *f* *f* the whole of the figured portion of the sheet or chart S may be brought by a rotary and reverse motion back

and forth into view in front of the apron *i*. A portion of each end of the sheet S is left blank to admit of all the figured portion being brought into view in front of the apron *i*. The figures upon the sheet S, which figured portion constitutes the chart, are so arranged as to present for school use a full, special, and complete graded series of examples for drill and practice in numeration, addition, subtraction, multiplication, and division. Although I use a certain arrangement of figures, I deem it not necessary to describe the same particularly, as this arrangement might perhaps be somewhat changed and still answer substantially the same purpose. B B represent slats, figured as shown in Fig. 4, which are used to vary or form new combinations on the sheet S. These slats may each or all be used alternately or interchangeably to cover up every second horizontal row of figures on the sheet S by placing their ends into slots or grooves *l* in the sides of the case A, and they are kept in place by means of flexible springs *k* in the grooves at one end, as shown in Fig. 6, and do not interfere with the rolling of the chart. *m* represents a square rod or bar, used to divide off the lower horizontal rows of figures as presented on the chart at any point, to form easy examples in addition for beginners. C C represent seventeen, more or less, square blocks, fourteen of which are figured on one side, as shown in Fig. 5, the rest being entirely blank. These squares are to be used to cover up or change at pleasure any or all of the figures in the lower horizontal row on the sheet S, and are of service in subtraction, multiplication, and division. They are inserted into a long narrow groove, *x*, in the edge of a cleat at the bottom of the case A. Upon the ends of the rollers *b* *c* are attached plates *h*, to receive and form a solid backing or support for the cranks *f* *f*. At the top and bottom of the case A are placed the letters G⁷ F⁶ E⁵ D⁴ C³ B² A¹, consecutively numbered in reverse order to indicate the vertical columns of figures on the chart, and serve the memory of the pupils as to which column was last added or operated on.

By means of the foregoing combination and arrangement is secured a complete and graded system of examples in all the fundamental operations of arithmetic; and all the work is presented to the class in just the same manner

and form as though the examples were successively written on the blackboard. By means of the cranks *ff* every horizontal row of figures on the sheet *S* may become the lower or the bottom row, and with the addition and use of the slats *B B* more than fifty thousand different examples in addition, of seventy figures each, may be produced in an equal number of seconds.

The primary object of this chart is to furnish an almost unlimited amount of ready-made work, and just such work as both pupils and teachers now have to perform by a slow and irksome process, but which, by the use of this chart, both pupils and teachers may economize in all the foundation operations of arithmetic in whole numbers, the primary drill and practice, both in time and labor, fully one-half.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The case *A*, constructed as described, with sliding piece *O*, roller *a b c d*, wire brakes *g g*, plates *h h*, cranks *ff*, apron *i*, slots or grooves *l l*, and bar *m*, all substantially as and for the purposes herein set forth.

2. In combination with the case *A*, constructed and arranged with the various parts, as shown and described, I claim the chart *S*, slats *B B*, and squares *C C*, all substantially as and for the purposes herein set forth.

AMOS W. PRICE.

In presence of—

BRADFORD SMITH,
J. C. GOODRICH.