

H. K. Bugbee,

Arithmetical Frame.

N^o 43,545.

Patented July 12, 1864.

Fig: 2.

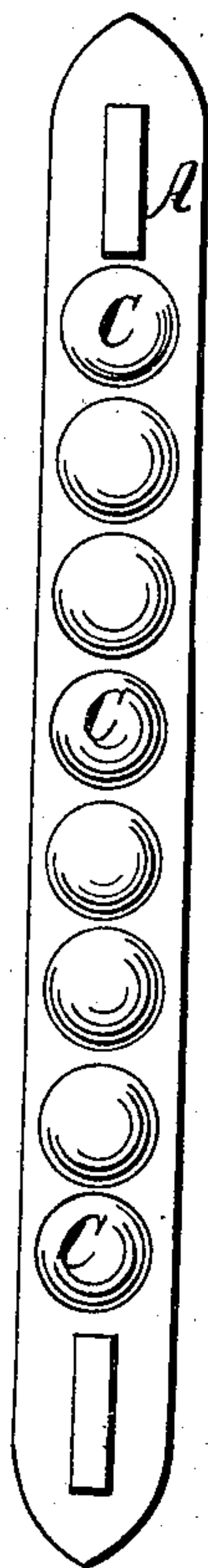
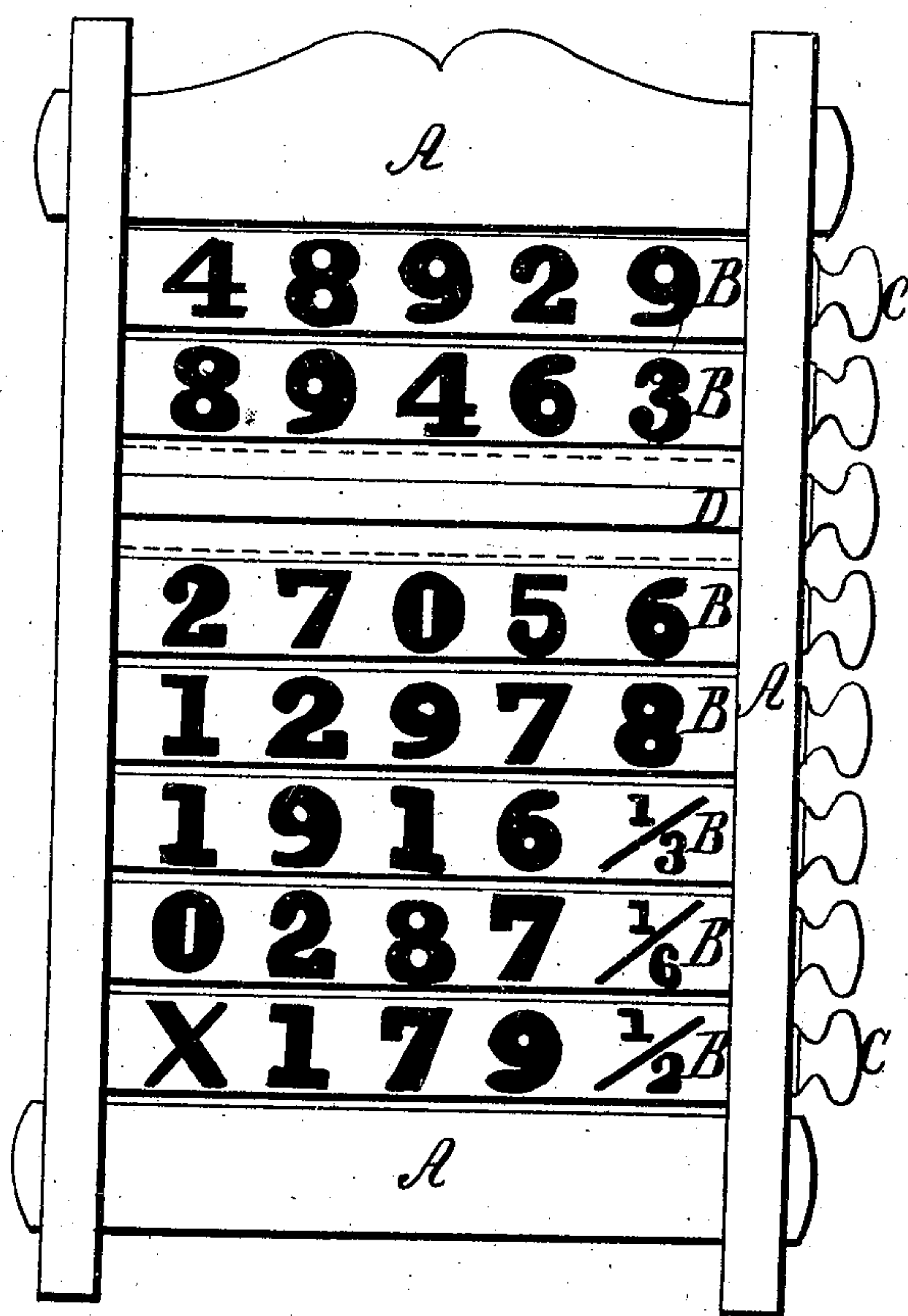


Fig: 1.



Witnesses;

Inventor;

J. C. Brownell

A. C. Boardman

Henry K. Bugbee

UNITED STATES PATENT OFFICE.

HENRY K. BUGBEE, OF ELIZABETHPORT, NEW JERSEY, ASSIGNOR TO
AMERICAN SCHOOL APPARATUS COMPANY, OF SAME PLACE.

IMPROVEMENT IN ARITHMETICAL FRAMES.

Specification forming part of Letters Patent No. **43,545**, dated July 12, 1864; antedated
July 7, 1864.

To all whom it may concern:

Be it known that I, HENRY K. BUGBEE, of Elizabethport, in the county of Union and State of New Jersey, have invented a new and useful Arithmetical Frame for Teaching Addition, Subtraction, &c., in Schools; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, in which—

Figure 1 is a front view of the said frame as it appears in use, and Fig. 2 is a side view.

Similar letters refer to the same parts.

My said invention consists in the employment of a series of slats placed horizontally in a frame and revolving separately, said slats having figures on each side so arranged as to make columns of figures for adding, subtracting, &c. It is particularly useful in schools for giving practice in addition, since by simply turning any slat till the opposite side is presented the example is varied, and the teacher, without making any figures, can present a vast variety of examples for pupils to add or subtract, multiply, &c.

In the drawings, A A is a frame, in which slats B B are placed in any desired quantity, and having figures on each side thereof so arranged as to form columns of figures. C C are the ends of said slats, which pass through one side of the frame A, and by which the slats are easily revolved with the fingers. D is a

slat revolved so as to present the edge and to show the limit of the particular example presented for practice. By using only two slats an example in subtraction is given or in simple addition, and by having different colors on opposite sides of the slats and a proper arrangement of figures the back of the third slat may show the sum of the figures on the first and second, and the back of each succeeding slat may show the sum of the figures on the front side of all the preceding ones. It is evident that in place of slats square or triangular revolving bars may be used; but I prefer to make the frame with slats, as shown in the drawings herewith. A double frame, equivalent to two frames placed side by side, would give still greater variety; but owing to the increased bulk I consider it less desirable than the single frame.

What I claim as my invention, and desire to secure by Letters Patent, is—

A frame containing a series of horizontal slats revolving vertically, and provided with figures on one or both sides so arranged as to form columns of figures, the whole being constructed substantially as and for the purposes herein set forth, and forming a new article of manufacture.

HENRY K. BUGBEE.

Witnesses:

F. C. BROWNELL,
N. C. BOARDMAN.