

A. F. C. GARBEN.
EDUCATIONAL APPLIANCE.

Patented Mar. 10, 1891.

Fig. 1

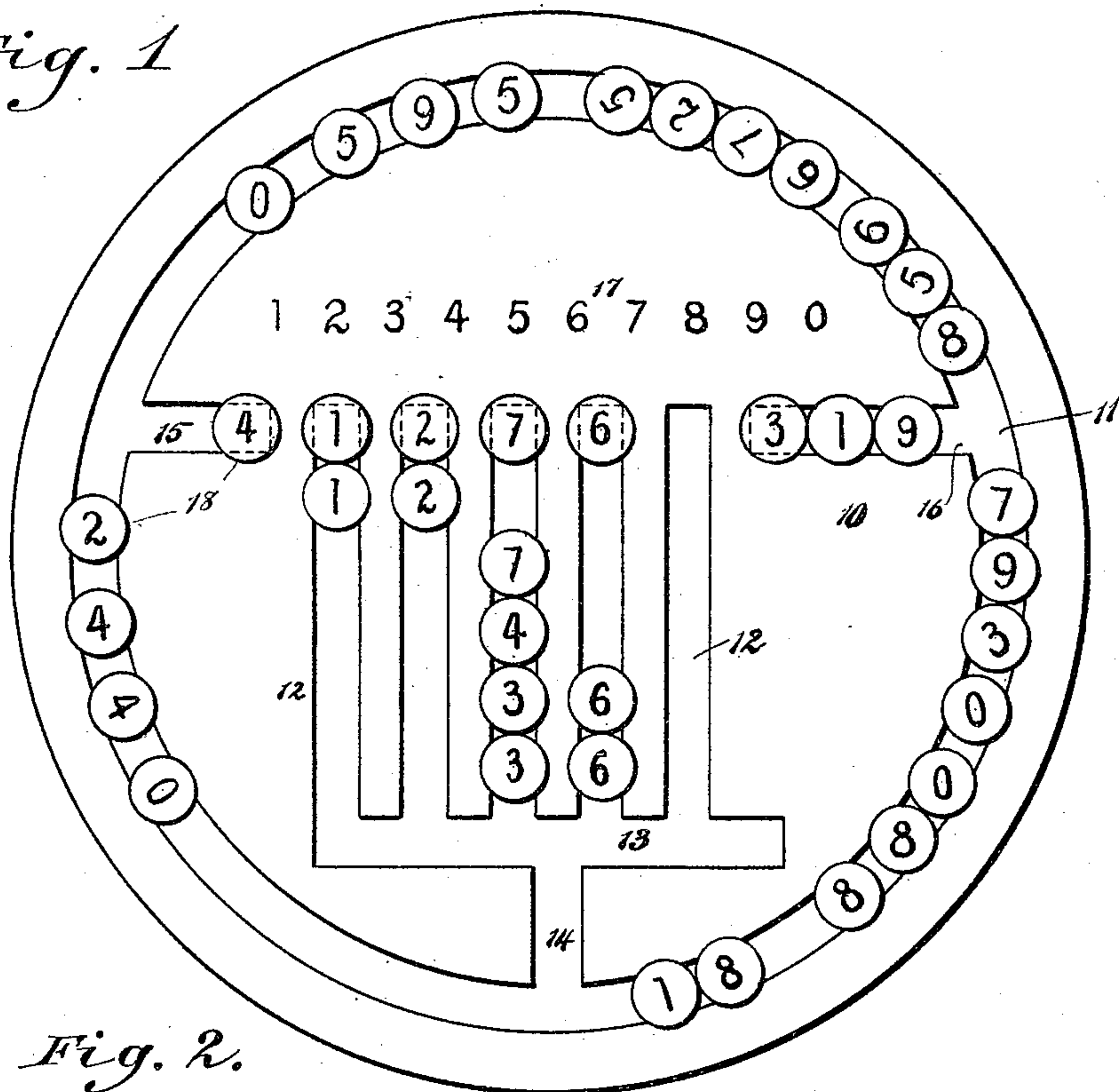


Fig. 2.

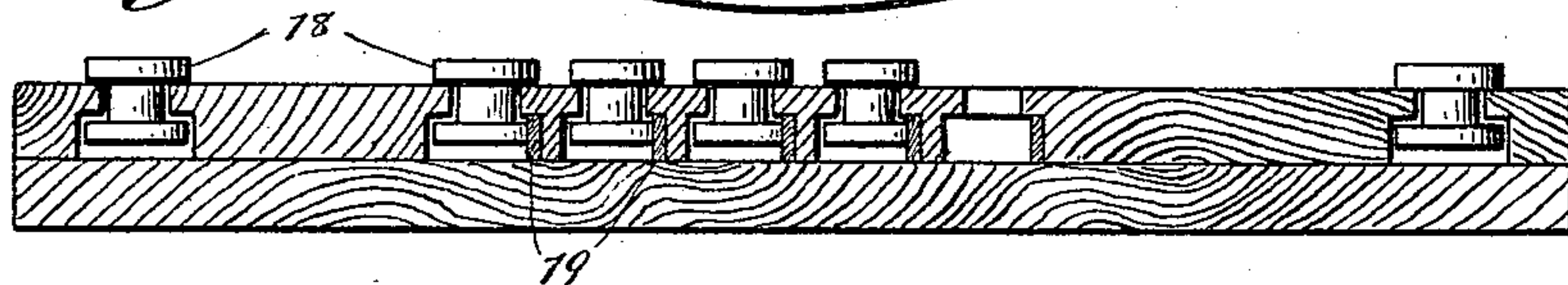


Fig. 3.

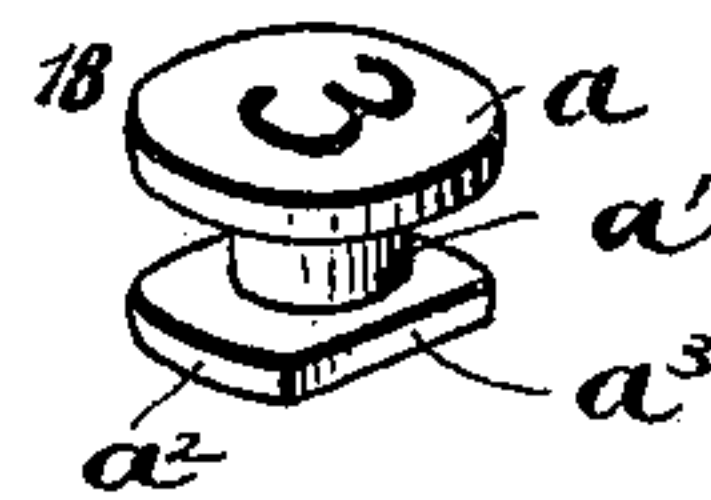


Fig. 4.



WITNESSES:

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EDUCATIONAL APPLIANCE.

SPECIFICATION forming part of Letters Patent No. 448,019, dated March 10, 1891.

Application filed April 4, 1890. Serial No. 346,563. (No model.)

To all whom it may concern:

Be it known that I, ADOLPH F. C. GARBEN, of Hoboken, in the county of Hudson and State of New Jersey, have invented a new and
5 useful Improvement in Educational Appliances, of which the following is a full, clear, and exact description.

My invention relates to an improved game, and has for its object to provide a simple and
10 readily-manipulated board or chart in which examples in arithmetic may be performed with precision and ease.

The invention consists in the novel construction and combination of the several
15 parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the
20 views.

Figure 1 is a plan view of a board or chart especially arranged for working out examples. Fig. 2 is a vertical section through the same.
25 Fig. 3 is a perspective view of one of the movable blocks or buttons; and Fig. 4 shows two of the blocks in section, one having a rubber spring and the other a spiral spring.

The board or chart 10 may be of any desired contour, but is preferably made circular, and in the upper face thereof a series of grooves or channels is produced, inverted-T-shaped in cross-section.
30

A circular groove or channel 11 is located
35 at or near the periphery, and five (more or less) parallel vertical channels 12 are located within the circle 11, extending in the direction of the top and bottom of the board. The channels 12 are connected at their lower ends
40 by a horizontal channel 13, which preferably extend beyond one of the outer channels 12, and the said horizontal channel 13 is connected ordinarily at its center with the circular channel by a short vertical channel 14.

45 For purposes of addition, subtraction, and multiplication the above-named grooves or channels only need be employed; but when examples in division are to be demonstrated the board is provided with two additional
50 horizontal channels 15 and 16, one channel being located at each side of the upper ends the group of vertical channels 12, and each

of the said channels 15 and 16 is connected directly with the circular channel.

At any point upon the board, preferably, 55 however, above the encircled channels, the numerals from "1" to "0" are printed or otherwise produced in their regular order, as shown at 17 in Fig. 1. The object of this arrangement is to instruct the pupil in the se- 60 quence of the figures. If desired, in practice the face of the board or chart may be lined.

In connection with the board a quantity of buttons or blocks 18 are employed, consisting of a head a , a shank a' , and an essentially 65 disk-like bottom a^2 , as best shown in Fig. 3. The head a may be made of any shape—as, for instance, circular, square, or polygonal. Upon the head of each block or button a figure is produced, and three or more blocks 70 having the same figure are used. The circular channel 11 denominates a storage-channel, as the reserve blocks, or those not in actual use, remain therein, and the blocks or buttons are so constructed that they freely slide in 75 any of the channels; but in order to retain the blocks in such position that the figures will read right when they enter the working-channels 12, 15, and 16, the bottom a^2 is squared upon one side, as shown at a^3 in Fig. 80 3, and preferably upon the right-hand side, especially of the channels 12, a strip 19 is attached, whereby when the buttons or blocks are correctly entered in said channels they cannot turn. 85

Any desired block may be carried directly from the storage-channel to the channels 15 and 16, and through the medium of the channels 13 and 14 to the center channels 12.

When a sum in division is to be worked, 90 the divisor is placed in the channel 15, 4 being the divisor shown and the dividend in the upper portion of the channels 12, which, as illustrated, is 1,276, and the example is worked out in the latter channels, the blocks being 95 drawn as required from the storage-channel. The quotient is placed in the channel 16, and in the example illustrated is 319. When working out examples in addition, subtraction, and multiplication, the work is all recorded 100 and performed in the channels 12.

It is evident that letters or other characters or fractions of a complete design may be substituted for the figures upon the blocks,

and that the exact arrangement of the channels need not be strictly adhered to.

When the educational appliance is to be placed in a perpendicular position, a small hole is made in the bottom of the blocks or buttons to receive a spring, (see Fig. 4,) which spring, bearing upon the base wall of the grooves in which the buttons slide, will retain them in position.

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

1. An educational appliance or arithmetical board comprising a board provided with a series of parallel vertical channels 12, closed at their upper ends, a transverse channel connecting their lower ends, an outer storage-channel 11, inclosing the channels 12 13, and a channel 14, connecting said channels 11 14,

and the numeral-buttons sliding in said channels, substantially as set forth.

2. An educational appliance or arithmetical board comprising the board 10, having parallel vertical channels 12, closed at their upper ends, a transverse channel 13, connecting the lower ends of said channels, a storage-channel 11, inclosing said channels 12 13 and connected with the latter by a channel 14, and the opposite transverse short divisor and quotient channels 15 and 16, extending inwardly from the said channel 11 toward but not connected with the left and right channels of the series 12, and the numeral-blocks movable in said channels, substantially as set forth.

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Witnesses:

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