May 24, 1955 E. F. HAMER 2,708,797

COUNTING FRAME

Filed June 7, 1954 2 Sheets-Sheet 1

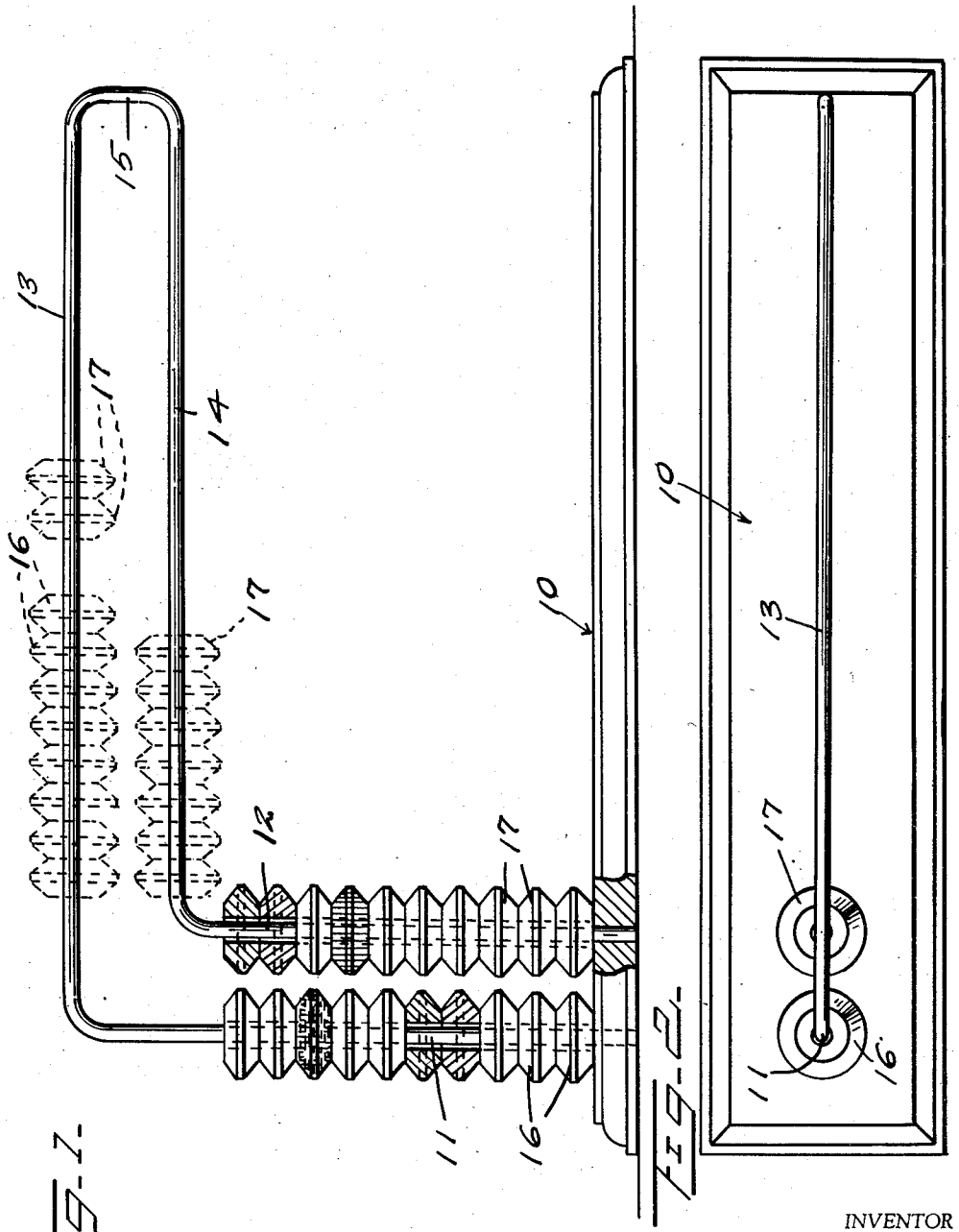


Fig. 1.

Fig. 2.

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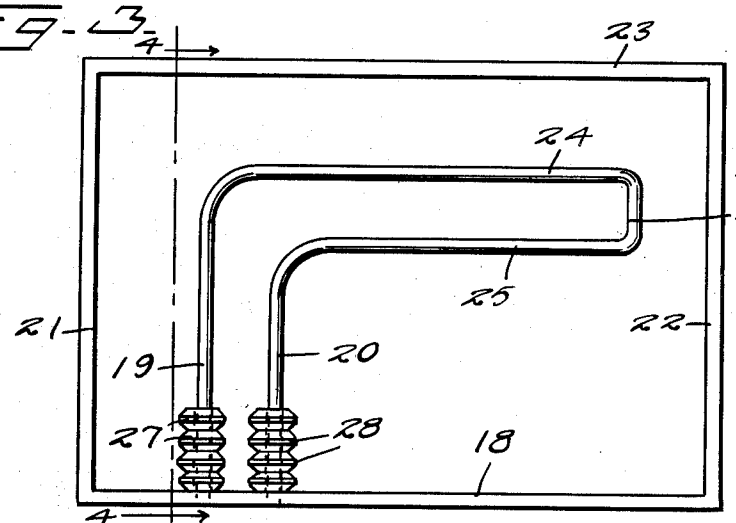
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COUNTING FRAME

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FIG. 3.



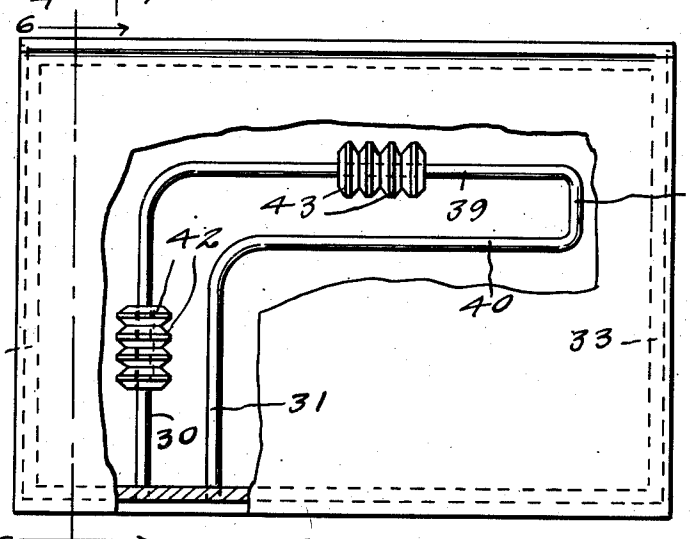


FIG. 5.

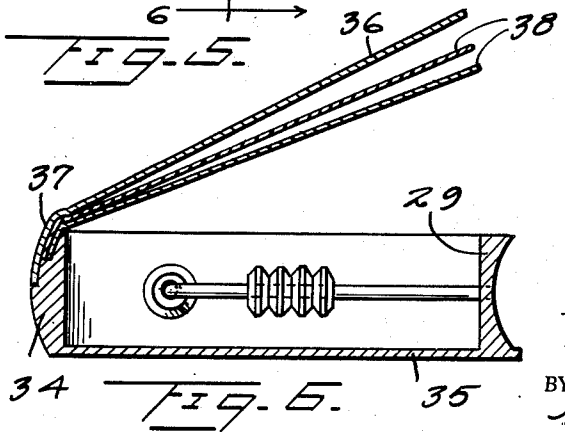


FIG. 6.

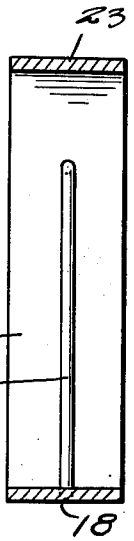


FIG. 4.

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COUNTING FRAME

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Application June 7, 1954, Serial No. 434,718

4 Claims. (Cl. 35—33)

This invention relates to educational devices.

An object of this invention is to provide an educational device for teaching the elements of arithmetic to children in the early grades of a child's education.

Another object of this invention is to provide a device whereby a child may learn arithmetic by sight and touch.

A further object of this invention is to provide an educational device which is simple in construction and will withstand relatively hard usage and will be attractive to a child.

With the above and other objects in view, my invention consists in the arrangement, combination and details of construction disclosed in the drawings and specification, and then more particularly pointed out in the appended claims.

In the drawings:

Figure 1 is a detail side elevation, partly broken away and in section, of a counter or educational device constructed according to an embodiment of this invention.

Figure 2 is a plan view of the device.

Figure 3 is a detail side elevation of a modified form of this invention.

Figure 4 is a sectional view taken on the line 4—4 of Figure 3.

Figure 5 is a plan view, partly broken away and in section, of another modification of this invention.

Figure 6 is a sectional view taken on the line 6—6 of Figure 5.

Referring to the drawings, and first to Figures 1 and 2, the numeral 10 designates a base member which has secured thereto a pair of vertically disposed parallel rods 11 and 12. Rod 11 has formed integral with the upper end thereof a horizontally disposed elongated rod 13, and rod 12 has formed integral therewith a horizontally disposed elongated rod 14 which is spaced from rod 13 and parallel therewith.

The outer ends of the rods 13 and 14 are connected together by means of a connecting portion 15.

Rod 11 has initially disposed thereabout a plurality of workpieces or counters 16 and rod 12 has initially disposed therebetween an equal number of workpieces 17. Preferably the workpieces 16 and 17 are formed of differentiating colors such as yellow and red, respectively, so that in the use of the device a child can readily visualize the particular workpieces which are associated with each rod 16 and 17.

Referring now to Figures 3 and 4 there is disclosed a modified form of this invention embodying a base 18 which has secured thereto a pair of upwardly projecting parallel rods 19 and 20.

The base 18 also includes right angle side members 21 and 22 and a connecting member 23 which, with the side members 21 and 22, forms a rectangular frame structure.

The rods 19 and 20 have extending right angularly from the upper ends thereof horizontal rods 24 and 25, respectively, which are connected together by means of a connecting portion 26.

The rods 19 and 20 have loosely disposed thereabout

a plurality of workpieces or counters 27 and 28, respectively, which, as in Figure 1, are formed of differentiating colors.

Referring now to Figures 5 and 6, there is disclosed another modification of this invention embodying a base member 29 which has secured thereto a pair of upright or vertical rods 30 and 31. The base member 29 has fixed to the opposite ends thereof end members 32 and 33, and a connecting member or back 34 is fixed between the end members 32 and 33.

A lower cover 35 is fixed to the frame structure formed by the base 29, end members 32 and 33, and the back member 34. In the present instance the support for the counter structure is formed to simulate a book, and a cover 36 is hingedly secured as at 37 to the back member 34.

A pair of instruction sheets or leaf members 38 are also secured to the back 34 and are adapted to be raised upwardly with the device resting on the bottom wall or plate 35.

The leaf members 38 have instruction indicia disposed thereon for instructing the user of the device as to the manner in which the device may be used, and the sheets 38 may also have various problems incorporated thereon.

The rods 30 and 31 have extending right angularly from the upper ends thereof horizontal rods 39 and 40, and a connecting rod 41 is integral with and connects the outer ends of the rods 39 and 40.

Workpieces 42 and 43 are adapted to be initially disposed about the rods 30 and 31 and are shifted from rods 30 and 31, as will be hereinafter described.

In the use of this device, and referring first to Figures 1 and 2, the base 10 is placed on a horizontal support with rods 11 and 12 in an upright position. Initially, the workpieces or counters 16 and 17 will be disposed on rods 11 and 12, respectively.

A given number of workpieces 16 are moved upwardly onto the horizontal rod 13, and in the present instance eight of the workpieces 16 are shifted upwardly onto rod 13. A given number of workpieces 17 are then shifted upwardly onto horizontal rod 14, and in the present instance, nine of the workpieces 17 are shifted upwardly onto rod 14.

In the elementary teaching of addition, it is found that the child can more readily understand the addition of a small number to a larger one, and if the problem is 8+2 the answer is obtained by shifting two of the workpieces 17 horizontally to the right and upwardly on rod 15 to rod 13. There will then be eight yellow workpieces 16 and two red workpieces 17.

Various other problems in addition, subtraction, or the like may be worked out.

As an example, if the problem is 10—5 all of the workpieces 16 may be shifted upwardly onto rod 13 and then five of such workpieces may be shifted either onto rod 14 or may be returned to rod 11, leaving five workpieces 16 on rod 13.

By forming the workpieces 16 and 17 in differentiating colors the child can more readily understand the manner in which the workpieces are subtracted one from the other or added one to the other.

This device is designed for teaching elementary mathematics to children in the early grades, and it has been found that with a device of this kind the children will more readily retain the problems involved in elementary arithmetic.

The device shown in Figures 3 and 4 operates in the same manner as that in Figures 1 and 2, but by providing the frame structure which includes the base 18 and the side members 21 and 22 with the top member 23, a number of these devices may be stacked together.

In the same manner, the device shown in Figures 5 and

6 provides a means whereby the counting structure will be protected by the frame or housing structure, and in addition, the instruction sheets 38 will provide elementary instruction to the student which is immediately visible as the student is working out the various problems.

What is claimed is:

1. An educational device comprising a rectangular frame, a pair of rods fixed to one side of said frame and projecting toward the opposite side thereof, a second pair of parallel rods integral with said first pair of rods and projecting right angularly therefrom and parallel with said sides of said frame, a connecting rod connecting the ends of said second pair of rods together, and a plurality of workpieces loosely disposed on said first pair of rods, said workpieces being selectively shiftable onto said second pair of rods and from one member of said second pair of rods to the other member thereof.

2. An educational device comprising a rectangular frame, a pair of rods fixed to one side of said frame and projecting toward the opposite side thereof, a second pair of parallel rods integral with said first pair of rods and projecting right angularly therefrom and parallel with said sides of said frame, a connecting rod connecting the ends of said second pair of rods together, and a plurality of workpieces loosely disposed on said first pair of rods, said workpieces being selectively shiftable onto said second pair of rods and from one member of said second pair of rods to the other member thereof, said workpieces being of differentiating colors with the workpieces on one of said first pair of rods having a color different from the workpieces on the other of said first pair of rods.

3. An educational device comprising a substantially rectangular frame, said frame having opposed side walls, opposing end walls, and opposing top and bottom walls, said top wall being pivotally connected to one of said side walls, a pair of rods fixedly secured to the other side wall intermediate the transverse edges thereof adjacent one end thereof and projecting toward said one side wall, a second pair of parallel rods formed integrally with and projecting right angularly from said first pair of rods, said second

pair of rods being parallel with said side walls, a connecting rod integrally formed with and connecting the free ends of said second pair of rods, and a plurality of workpieces slidingly engaged on said first pair of rods, said workpieces being selectively movable from said first pair of rods to said second pair of rods and from one member of said second pair of rods to the other member thereof by moving over said connecting rod.

4. An educational device comprising a substantially rectangular frame, said frame having opposed side walls, opposing end walls, and opposing top and bottom walls, said top wall being pivotally connected to one of said side walls, a pair of rods fixedly secured to the other side wall intermediate the transverse edges thereof adjacent one end thereof and projecting toward said one side wall, a second pair of parallel rods formed integrally with and projecting right angularly from said first pair of rods, said second pair of rods being parallel with said side walls, a connecting rod integrally formed with and connecting the free ends of said second pair of rods, and a plurality of workpieces slidingly engaged on said first pair of rods, said workpieces being selectively movable from said first pair of rods to said second pair of rods and from one member of said second pair of rods to the other member thereof by moving over said connecting rod, said workpieces being of differentiating colors with the workpieces on one of said first pair of rods having a color different from the workpieces on the other of said first pair of rods.

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