Sept. 21, 1954 R. GIUNTINI 2,689,685

DEVICE FOR TRANSLATING SUMS OF ONE UNIT SYSTEM INTO EQUIVALENT SUMS IN ANOTHER SYSTEM

Filed Sept. 14, 1953

Fig. 1.

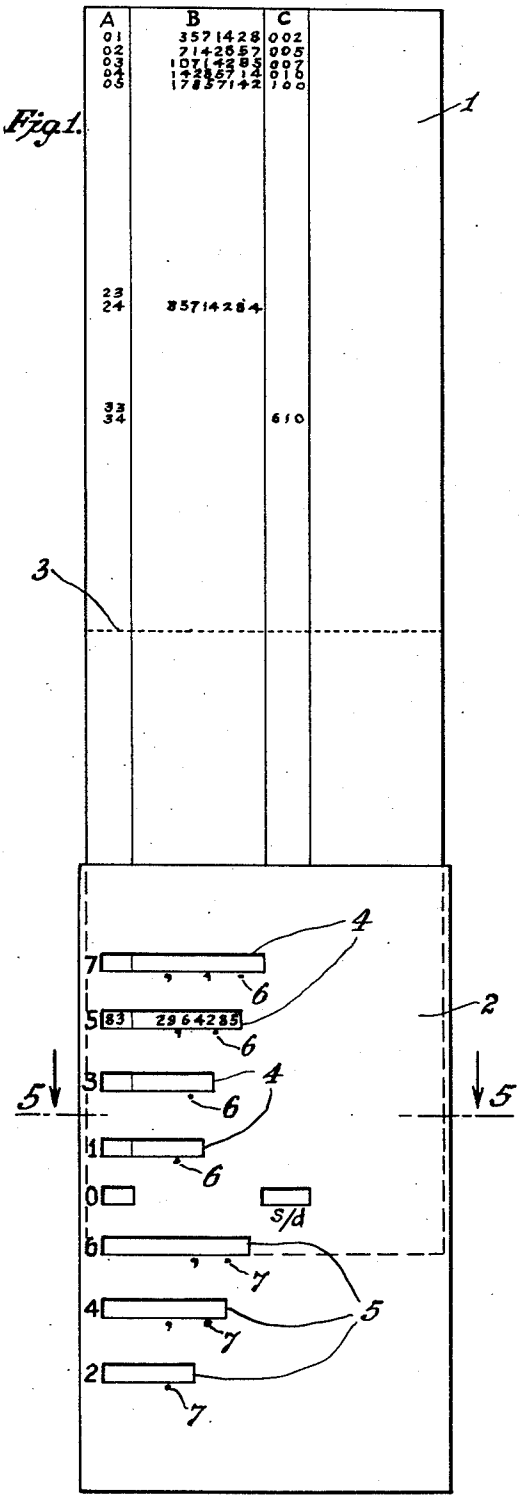


Fig. 2.

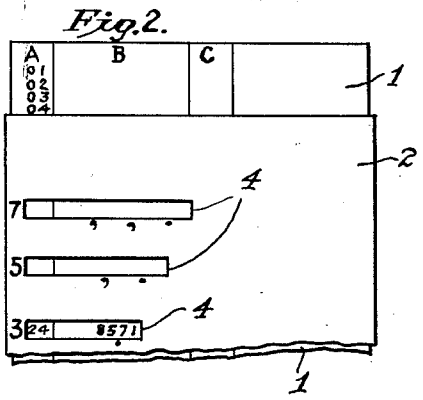


Fig. 3.

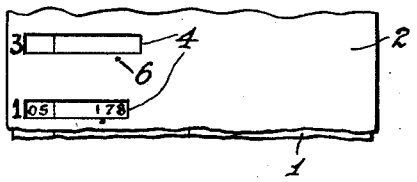


Fig. 4.

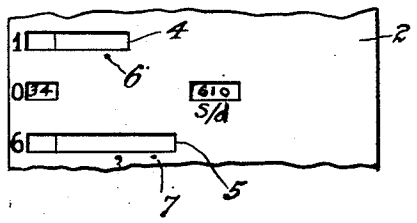
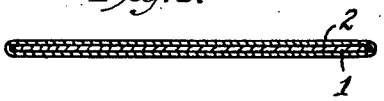


Fig. 5.



INVENTOR.
ROLAND GIUNTINI

BY

Kenyon & Kenyon

ATTORNEYS.

Patented Sept. 21, 1954

2,689,685

UNITED STATES PATENT OFFICE

2,689,685

DEVICE FOR TRANSLATING SUMS OF ONE UNIT SYSTEM INTO EQUIVALENT SUMS IN ANOTHER SYSTEM

Roland Giuntini, Kew Gardens, N. Y.

Application September 14, 1953, Serial No. 379,943

5 Claims. (Cl. 235—89)

1

This invention relates to a device for translating a sum of one system of units into an equivalent sum in another system of units requiring the use of a conversion factor.

One object is to provide such a device in a very inexpensive form which may be operated simply without requiring extensive instructions and which is adapted for the display of advertising data and the like. Another object is to provide this type of device in a form which is accurate yet easily manipulated and which may be made very simply from paper, sheet plastic and the like.

A specific example of the invention is illustrated by the accompanying drawings in which:

Fig. 1 is a plan view of the device in operation;

Fig. 2 is similar to Fig. 1 excepting that it shows only a fragment of the device and illustrates a second step in its use;

Fig. 3 is like Fig. 2 excepting that it shows a third step in the operation;

Fig. 4, again, is like Fig. 2 excepting that it shows a fourth step; and

Fig. 5 is a cross section taken on the line 5—5 in Fig. 1 for the purpose of illustrating the details of construction.

This illustrated device includes a support 1, which may be a sheet of paper, plastic, and the like, is marked with a vertical table comprising a mathematical progression of numbers, section A, each horizontally followed by the product of the number multiplied by the conversion factor, section B. A cover 2 is provided for the table and is slidably connected to the support so as to be shiftable in the vertical direction of the table. As shown the cover 2 is in the form of a flat sleeve snugly but slidably receiving the support 1, the latter being about twice as long as the cover or sleeve and the support being formed with a fold line 3 so that the support may be folded over the cover to provide compactness when the device is not in use.

The cover or sleeve 2 has cut-outs so that the cover forms a vertical series of horizontal frames 4 for the numbers and products. For reasons understood later the cover also forms a second vertical series of horizontal frames 5 for the numbers and products. In each instance the first or uppermost frame of the series is made long enough to frame any one of the numbers and at least a predetermined portion of its following product, and the following frames are each shorter than its preceding frame by a length equal to two digits of the products. Each frame is vertically aligned to frame the numbers and to extend horizontally therefrom to frame a portion of

2

the following product depending in extent on the length of the frame.

The cover 2 is marked as to each of the frames to show the number of digits in the one system, represented by the numbers, translated by the portions of the following numbers framed by the so-marked frame.

Although the windows 4 and 5 have been considered as two series that may also be considered as a single series arranged in two separate groups. In any event, the series or group is in one instance proportioned in length to translate numbers in the one system having an odd number of digits, while the frame of the other series or groups are proportioned in length to translate numbers in the one system having an even number of digits.

For purposes of clarifying the invention, and also to illustrate its use, the drawings illustrate the device as it may be used to translate United States money sums into equivalent sums in British or sterling sums. However, it is to be understood that the invention may be used generally whenever it is desired to translate from any system of units to any other system of units when a conversion factor is necessary.

In this illustrated instance section A of the table is an arithmetic progression running from 1 to 99, while section B starts out with the current conversion factor following the numeral 1 in section A and then proceeds downwardly as described. The window series or group 4 is marked to start with a seven digit number, the maximum which the illustrated table provides, this being followed by a five digit window and so on, this being for odd numbers of digits. The series or group of windows 5 starts to a six digit window, drops to a four digit window and then, of course, then to the final or two digit window. Preferably the sleeve or cover 2 is appropriately marked to identify the appropriate window as is shown by the drawings.

To illustrate the use of the device, assume that $83,245.00 is desired to be translated into an equivalent sum in sterling. This is a five digit number so the number 5 window, of the series or group 4, is first set so that the first two digits of the number in the table section A are framed by the five digit window. The function of the windows 4 is to fix the decimal points, suitable indicia 6 showing the decimal in each of the windows 4 and suitable indicia 7 showing the decimal point in each of the windows 5. Thus the five digit window frames the product 29,642.85, the user jotting this value down on paper or retain-

ing it by memory. This provides the value of $83,000, leaving $245 unaccounted for.

Since $245 is a three digit number the three digit window is next used to frame the number 24 of the table section A, as shown by Fig. 2. The decimal point for the three digit window is automatically indicated so as to give 85.71 as the value obtained from table section B, this sum being set down under the previous sum for ultimate addition. This leaves $5.00 unaccounted for and since this is a one digit number or sum the one digit window is used to obtain the value 1.78.

Addition of the foregoing sums obtained shows that the desired sum is 29,730.34 pounds sterling. Preferably the device is arranged to provide a simple and conventional conversion of the .34 value to shillings and pence. This is the function of the C table or section illustrated and accounts for the inclusion of the 0 window marked to indicate shillings and pence. Thus by simple conversion the .34 fraction may be converted to show that its corresponding value in sterling currency is six shillings and ten pence. This is shown by Fig. 4.

It is particularly to be noted that by arranging the various windows to mark the decimal point for sums descending in value by two digits that the use of the device is very much simplified because the user's eye naturally travels from one window to the next as he picks out the various products which by addition provides the ultimate sum desired.

Because of the flat nature of the device it may be easily carried since it is made of sheet material it is easy to apply advertising data and the like. The device may be made so inexpensively so that it may be given away as an advertising item. At the same time its possibilities are extensive. For example, in the case of the specific example it is possible to translate a sum as large as $9,999,999 into its equivalent value in pounds sterling. To do this requires a table that is only ninety-nine numbers long so that the device is small enough to be easily put in a pocket or handbag. The use of the device is uncomplicated and the device may be operated by anyone capable of reading numbers and able to do simple addition. At the same time the results obtained are exact.

I claim:

1. A device for translating a sum of one system of units into an equivalent sum in another system of units requiring the use of a conversion factor, the device including a support marked with a vertical table comprising a mathematical progression of numbers each horizontally followed by the product of the number multiplied by the conversion factor, and a cover for the table and which is slidably connected to the support so as to be shiftable in the vertical direction of the table, the cover forming a vertical series of horizontal frames for the numbers and products, the first frame of the series being long enough to frame any one of the numbers and at least a predetermined portion of its following product and the following frames each being shorter than its preceding frame by a length equal to two digits of the products, each frame being vertically aligned to frame the numbers and to extend horizontally therefrom to frame a portion of the following products depending in extent on the length of the frame.

2. A device for translating a sum of one system of units into an equivalent sum in another system of units requiring the use of a conversion factor, the device including a support marked with a vertical table comprising a mathematical progression of numbers each horizontally followed by the product of the number multiplied by the conversion factor, and a cover for the table and which is slidably connected to the support so as to be shiftable in the vertical direction of the table, the cover forming a vertical series of horizontal frames for the numbers and products, the first frame of the series being long enough to frame any one of the numbers and at least a predetermined portion of its following product and the following frames each being shorter than its preceding frame by a length equal to two digits of the products, each frame being vertically aligned to frame the numbers and to extend horizontally therefrom to frame a portion of the following products depending in extent on the length of the frame, the cover being marked as to each of the frames to show the number of digits in the one system, represented by the numbers, translated by the portions of the following numbers framed by the so marked frame.

3. A device for translating a sum of one system of units into an equivalent sum in another system of units requiring the use of a conversion factor, the device including a support marked with a vertical table comprising a mathematical progression of numbers each horizontally followed by the product of the number multiplied by the conversion factor, and a cover for the table and which is slidably connected to the support so as to be shiftable in the vertical direction of the table, the cover forming a vertical series of horizontal frames for the numbers and products, the first frame of the series being long enough to frame any one of the numbers and at least a predetermined portion of its following product and the following frames each being shorter than its preceding frame by a length equal to two digits of the products, each frame being vertically aligned to frame the numbers and to extend horizontally therefrom to frame a portion of the following products depending in extent on the length of the frame, the cover being marked as to each of the frames to show the number of digits in the one system, represented by the numbers, translated by the portions of the following numbers framed by the so marked frame, the support being in the form of a flat strip of material and the cover being in the form of a flat sleeve through which the support is slidably arranged.

4. A device for translating a sum of one system of units into an equivalent sum in another system of units requiring the use of a conversion factor, the device including a support marked with a vertical table comprising a mathematical progression of numbers each horizontally followed by the product of the number multiplied by the conversion factor, and a cover for the table and which is slidably connected to the support so as to be shiftable in the vertical direction of the table, the cover forming a vertical series of horizontal frames for the numbers and products, the first frame of the series being long enough to frame any one of the numbers and at least a predetermined portion of its following product and the following frames each being shorter than its preceding frame by a length equal to two digits of the products, each frame being vertically aligned to frame the numbers and to extend horizontally therefrom to frame a portion of the following products depending in extent on the length of the

frame, the cover being marked as to each of the frames to show the number of digits in the one system, represented by the numbers, translated by the portions of the following numbers framed by the so marked frame, the support being in the form of a flat strip of material and the cover being in the form of a flat sleeve through which the support is slidably arranged.

5. A device for translating a sum of one system of units into an equivalent sum in another system of units requiring the use of a conversion factor, the device including a support marked with a vertical table comprising a mathematical progression of numbers each horizontally followed by the product of the number multiplied by the conversion factor, and a cover for the table and which is slidably connected to the support so as to be shiftable in the vertical direction of the table, the cover forming a vertical series of horizontal frames for the numbers and products, the first frame of the series being long enough to frame

any one of the numbers and at least a predetermined portion of its following product and the following frames each being shorter than its preceding frame by a length equal to two digits of the products, each frame being vertically aligned to frame the numbers and to extend horizontally therefrom to frame a portion of the following products depending in extent on the length of the frame, the cover being marked as to each of the frames to show the number of digits in the one system, represented by the numbers, translated by the portions of the following numbers framed by the so marked frame, the series being arranged in two separated groups with the frames of one group proportioned in length to translate numbers in the one system having an odd number of digits, and the frames of the other group proportioned in length to translate numbers in the one system having an even number of digits.

No references cited.