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Gulbransen, Jr.

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[45] **Mar. 5, 1974**

[54] **CURRENCY CONVERTER**

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[73] Assignee: **Graphic Calculator Company**, Barrington, Ill.

[22] Filed: **Dec. 13, 1972**

[21] Appl. No.: **314,832**

[52] **U.S. Cl.** ..... **235/70 A**, 235/78 F, 235/85

[51] **Int. Cl.** **G06g 1/02**

[58] **Field of Search** 235/70, 78, 84, 85, 88, 89

[56] **References Cited**

UNITED STATES PATENTS

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1,444,381	2/1923	Landenberger	235/84
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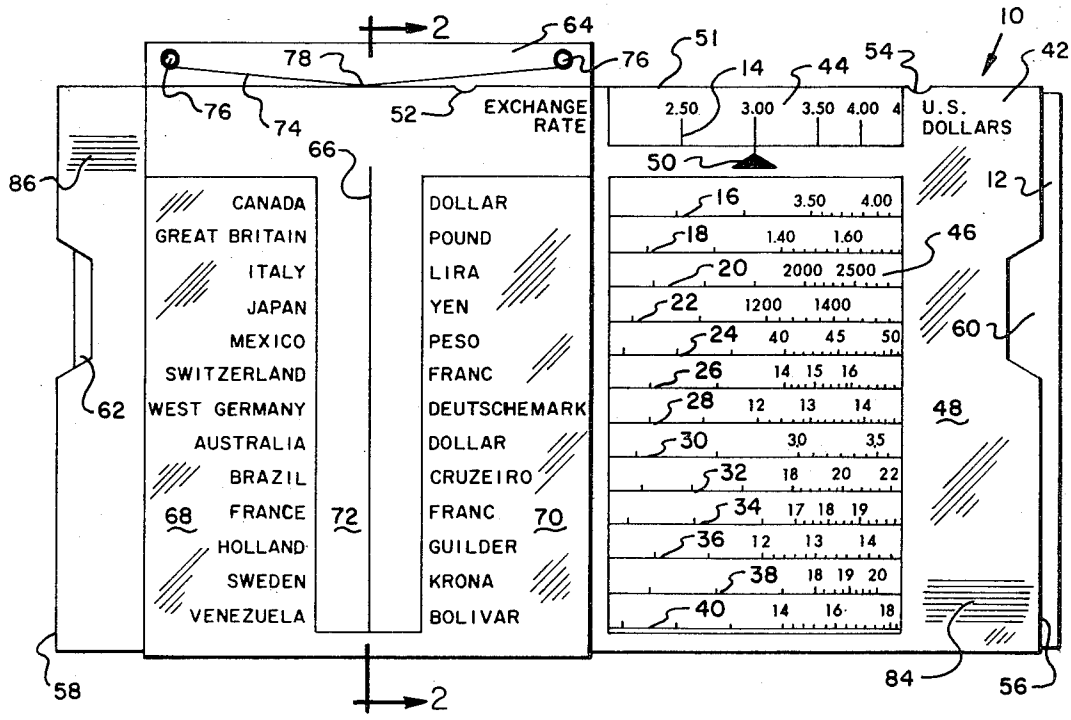
Primary Examiner—Lawrence R. Franklin

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[57] **ABSTRACT**

An improved combination fixed and fluctuating currency converter for converting the value of currency of one country to an equivalent value of currency of another country irregardless of the fluctuation of currency from one country to another. The new and novel slide rule type converter has fixed currency ratios imprinted thereon and can also be utilized to convert curency values when the ratios fluctuate. The slide rule type calculator can also be quickly used to convert currency values ranging from approximately one dollar of United States currency to approximately one million dollars of United States currency.

7 Claims, 5 Drawing Figures



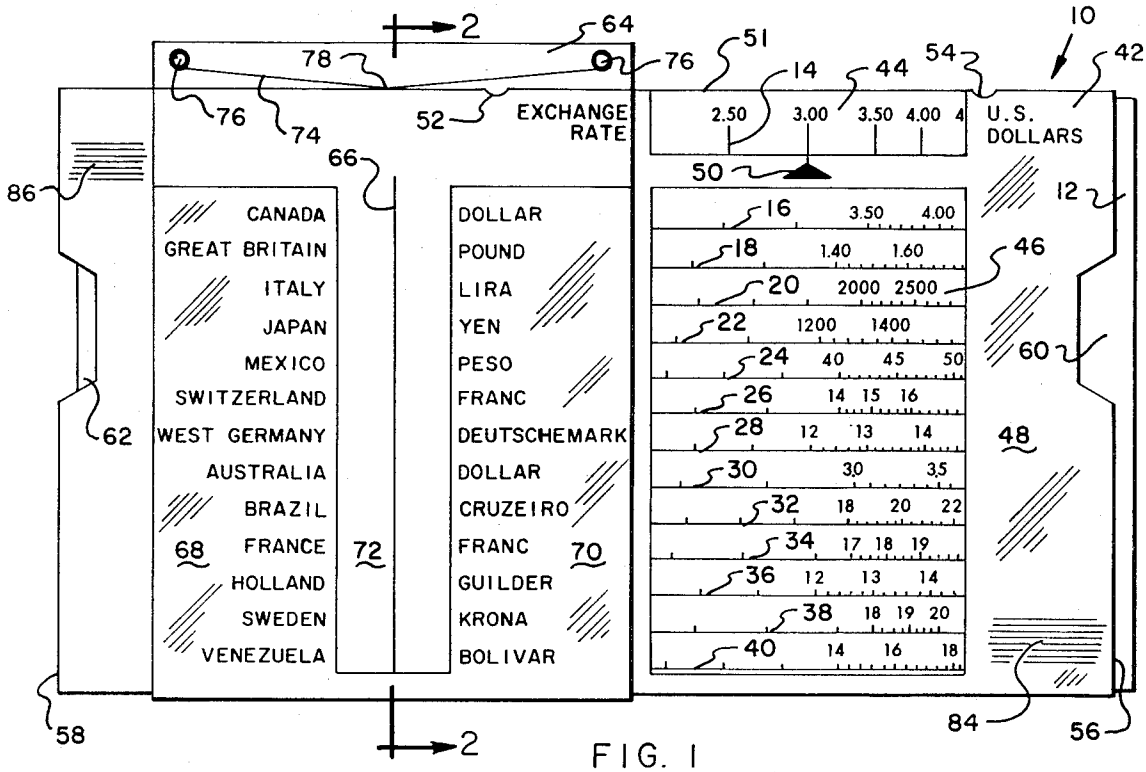


FIG. 1

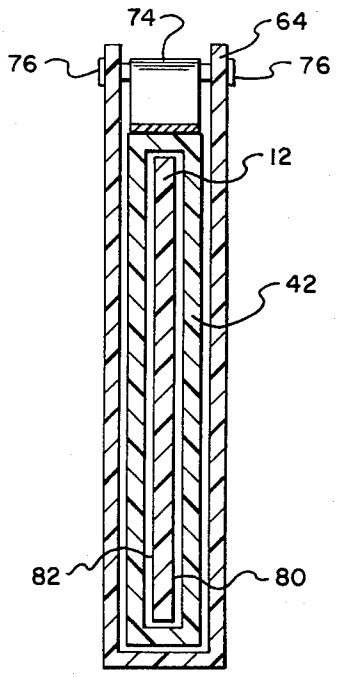


FIG. 2

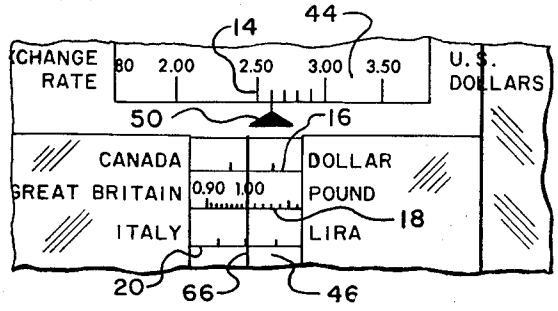


FIG. 3

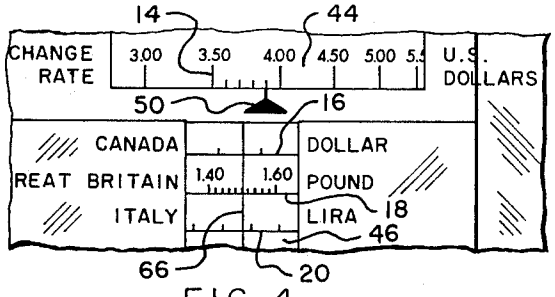


FIG. 4

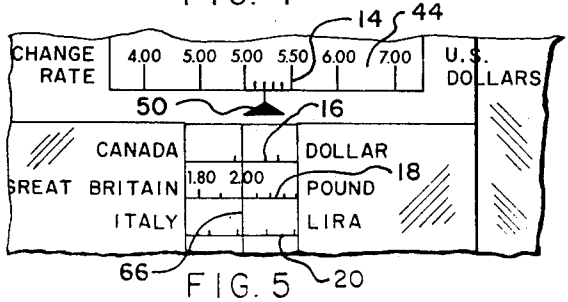


FIG. 5

CURRENCY CONVERTER

BACKGROUND OF THE INVENTION

In prior years, the currency values of one country remained stable in comparison to the currency values of another country. Under these stable conditions a traveler from one country to another, in order to convert his money, had only to have at his disposal a simple tabulation which illustrated a range of currency values from one country along with the equivalent ranges of currency values of the other country. These tabulations sometimes took the form of simple slide charts as typified by the U.S. Pat. No. 3,083,906, issued to R. Giuntini on Apr. 2, 1963 and the U.S. Pat. No. 2,689,685, issued to R. Giuntini on Sept. 21, 1954 wherein the user could quickly convert from the currency of one country to the currency of another country since, as before mentioned, the rates of the two countries always remained fixed from day to day or month to month as to each other and hence the scales on the rule remained fixed as to each other.

When the traveler was visiting several foreign countries, he either had to have a slide chart fixed rate converter at his disposal for several countries or he had to resort to a complicated money converter in the form of a book or other similar device as typified in the U.S. Pat. No. 2,684,202, issued to R. Giuntini on July 20, 1954. This type of multiple converter, that is a converter good for many countries, was satisfactory whenever the ratios of currency values were fixed in relation to each other but soon became obsolete whenever the currency values started fluctuating as the monetary systems of the many countries became mobile instead of being fixed.

By a slide chart fixed rate converter it is meant a slide chart having a currency range of values on one numerical scale for one country and an equivalent currency range of values being accurately positioned on another numerical scale for another country which as many scales being used are positioned below or beside each other as is desired for each different country. With a slide chart fixed rate converter, the positioning of the respective scales as to each other is important since the user generally lines up a hairline on the slide chart frame to sight the conversion values from one country to another country. The layout of each individual scale on this type of converter does not have to be logarithmic since multiplication and division is not necessary as is common in other types of slide rules in general having logarithmic scales.

A somewhat similar fixed currency converter book is shown in the U.S. Pat. NO. 3,023,956, issued to E. Rondthaler on Mar. 6, 1962 wherein there is provided a series of pages for each country and a sliding transparent indicator for converting the currency from U.S. currency to the currency of the particular country shown on each page and vice versa. This converter, while basically being a fixed rate converter could be utilized to show percentage fluctuations above or below the official fixed rate of exchange so that the traveler would know if he is getting a bargain or being taken when he converted his money at the various conversion exchanges in the foreign countries.

In order to use this type of converter throughout many foreign countries, the traveler was required to have a separate transparent slide for each of the countries if he wished to convert from the money of a country other than the U.S. to another foreign country since the converter was designed to convert only from say U.S. currency to foreign currencies and back again but made no provision for converting between countries other than the U.S. As a result this converter was somewhat limited unless the traveler had a transparent slide at his disposal for each country that he intended to visit so that the converter gave him the flexibility that he needed during his travels.

With the advent of fluctuating currency between some countries and also fixed currencies between other countries, the need arose to provide a simple and easy to operate money converter that could be rapidly used to convert money values irregardless of the fact that the rate fluctuated from day to day or month to month or remained fixed between countries from day to day or month to month. In addition with the extensive world wide travel that is being done today, a need arose for a calculator that could also be used to convert currency values between any country listed on the converter and not just between a basic country such as the U.S.A. and several foreign countries.

SUMMARY OF THE INVENTION

In order to overcome the difficulties inherent in prior art money converters and to be able to respond to the rapidly changing money value fluctuations between countries, there has been provided by the subject invention a new and novel fluctuating currency conversion slide rule type calculator that may be used to convert currency values whether or not the rate is fixed or fluctuating. This is accomplished by providing a moveable frame and/or slide upon which is formed indicia designating a range of currency values for a plurality of countries. The range of values of each country may be imprinted as a logarithmic scale on the moveable frame so that they are fixed as to each other according to a given ratio between the countries on that day as a logarithmic scale or they may be imprinted on the frame in a random manner within the useful range of the converter.

Surrounding the moveable frame is a fixed frame which has formed thereon a first reference indicator which is used in combination with a second reference indicator contained on a moveable frame surrounding the fixed frame as a slide rule to convert the value of currency of one country to that of another country as will be detailed more fully hereinafter.

Accordingly it is an object of the invention to provide a new and novel currency converter of the slide rule type using slide rule principles which can quickly be utilized to convert the currency value of one country to the currency value of another country irregardless of the fluctuations of the currency values between the respective countries.

Another object of the invention is to provide a new and novel currency converter for fluctuating currency values which contains a large range of currency values and can be utilized by not only a traveler but by banking institutions as well wherein higher values of currency are converted than would normally be converted by the average traveler.

Still another object of the invention is to provide a new and novel currency converter that has a minimal number of parts and which is easy to use and carry without having to resort to voluminous numbers of

pages and other paraphernalia in order to perform the simple operation of converting currency values.

These and other objects and advantages of the invention will become apparent from a review of the drawings and from a study of the description of the preferred embodiment contained hereinafter.

BRIEF DESCRIPTION OF THE DRAWING

FIG. **1** is a plan view of the subject currency converter;

FIG. **2** is a sectional view, taken along line **2–2** of FIG. **1**; and

FIGS. **3–5** are partially enlarged plan views of the currency converter showing the method of converting from the currency value of the United States to the currency values of Great Britain using the subject invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawing in general and in particular to FIG. **1** of the drawing there is shown generally by the numeral **10** the subject currency converter which comprises a first moveable frame **12** having formed thereon, on at least one side thereof, a plurality of separate indicia 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38 and 40 designating a range of currency values for a plurality of respective foreign countries. The indicia 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38 and 40 may be laid out on their respective lines as logarithmic scales of the type and base common in the slide rule art such as to the base **10** or the base *e*. In addition to these bases it is within the spirit and scope of the invention that the indicia scales could be laid out to other bases that would allow slide rule multiplication and division to be performed.

In the preferred embodiment shown, the plurality of currency indicia **14–40** are laid out to the logarithmic base **10** and are arranged on the moveable frame or slide **12** so that the United States currency is listed uppermost on the frame with the remaining foreign countries being listed below the United States on the slide. It is preferable to use the countries shown in the prefered embodiment since this allows the currency converter to be used for travelers throughout a large majaority of the world; however it is within the spirit and scope of the invention that more or less countries could be utilized as the manufacturer of the currency converter prefers. When the currency indicia **14–40** are placed on the slide **12**, they are preferably placed thereupon in the ratio that they bear to the United States assuming a fixed rate prevailed since in the embodiment shown the currency converter **10** has been designed primarily for converting from U.S. currency to a foreign currency or back again. That is to say that the currency indicia **16** is located below the currency indicia **14** in the approximate position that would allow the converter to be used as a fixed rate converter and each successive currency indicia **18, 20** etc., would also be so located in relation to the U.S. currency value 14. Thereafter, as will be explained more fully hereinafter, the currency converter can be used as a fixed rate converter if the currency ratio stays the same or can also be used as a fluctuating rate converter if the currency ratio varies thereafter.

Referring now to FIGS. **1** and **2** there is shown a fixed frame **42** which surrounds the first moveable frame **12** in a manner well known in the art of slide rule design. The fixed frame **42** has formed thereon means **44** for viewing the currency indicia 14 of U.S. currency values and also means **46**, for viewing the currency indicia **16–40** of the foreign countries contained on the converter. When the fixed frame **42** is formed of plastic or some other similar material, the remaining portion **48** of the frame **42** can be painted to black out all of the indicia except that portion which is desired to be viewed in the viewing means or windows **44** and **46**.

Formed on the fixed frame **42** is a first reference indicator **50** in the form of an arrowhead which may also be painted on the frame **42** as is well known in the art. Also formed on the upper portion **51** of the frame **42** is a pair of indents **52** and **54** whose function will be described more fully hereinafter. The frame **42** also has formed on each end **56** and **58** thereof a pair of finger indents **60** and **62** which allow the moveable frame **12** to be easily grasped by the user of the device.

Surrounding the fixed frame **42** is a second moveable frame **64** having formed thereon a second reference indicator **66** in the form of an elongated hairline. The second moveable frame **64** may also be formed of plastic and has imprinted thereupon the names of the countries and the names of their repective currencies which corresponds to the country currency indicia printed on the first moveable slide **12** and also in the order printed on that slide. The area **68** surrounding the country names as well as the area **70** surrounding the currency names may be blacked out by paint also thereby leaving a transparent generally T-shaped window area **72** through which may be viewed the U.S. currency indicium **14** as well as the foreign currency indicia **16–40** along with the first reference indicator **50** as will be more fully described hereinafter.

The second moveable frame **64** has formed in the upper portion thereof a leaf spring **74** which is held therein by means of a pair of eyelets **76.** The leaf spring **74** is generally V-shaped having an apex **78** which is designed to engage within the indents **52** or **54** to hold the frame **64** on the frame **42** when the slide frame **64** is not being used. When the slide frame **64** is being utilized the V-shaped leaf spring **74** provides bias to the frame **64** so that it may be slid horizontally on the frame **42** while allowing the hairline **66** to always remain in its true vertical position.

In the preferred embodiment shown, the range of currency values 14 of the United States currency range from 1 dollar 10 dollars and the equivalent foreign currency values 16–40 are in their proportionate range. While in the drawings only one side **80** of the currency converter has been shown for simplicity, in the preferred embodiment the other side **82** would also contain currency indicia of the same or other foreign countries with the currency indicia of the United States currency ranging from 100 to 1,000 dollars. In addition the construction of the face of the moveable frame **64** would be similar to that shown in the drawings with a second reference indicator **66** also being provided. In this manner the currency converter has a capability of converting fixed or fluctuating currencies through a range from the smallest values used by the average tourist to the larger values used by the international banks and businessmen.

If the currency converter were to be manufactured primarily for use by a national other than a United States citizen, it could simply be done by reversing on

the first moveable frame **12,** the currency values 14 of the United States currency with one of the currency values 16–40 of the desired foreign countries thereby allowing the converter to be quickly used by a foreign traveler as well since the values of his country's currency would be positioned in the viewing window **40** and could be easily located. However, this is not absolutely required since the converter can be used by any person regardless of which currency value is shown in the viewing window **44** and which is shown in the viewing window **46** as will be more easily understood hereinafter as reviewing the operation of the converter using Brown slide rule techniques.

The fixed frame **42** also may have formed thereon instructional material **84** on the use of the converter as well as approximate currency exchange rates **86** between the United States currency and the desired foreign country. These approximate currency exchange rates **86** would be an aid to the traveling tourist between countries where the rate fluctuated very infrequently but resort would have to be made by the user to official exchange rates where the daily rates fluctuated greatly.

Referring to FIG. **3,** there is shown an example of how the new and novel currency calculator can be utilized to convert from the British pound to the equivalent U.S. currency or vice versa. Initially, upon desiring to make such a conversion, the user of the device ascertains that the current exchange rate is one British pound equals 2.60 U.S. dollars. This is obtained either from the exchange rate data **86** printed on the fixed frame **42** or from the official rate of exchange published daily by the various national banks and newspapers.

Upon determining the rate of exchange between the U.S. and Great Britain, this rate of 2.60 is then set in the viewing window **44** at the first reference indicator **50** as shown in FIG. **3** of the drawing by sliding the moveable slide **12** to the right until the arrow is pointing to 2.60 on the scale **14.** Thereupon the second moveable frame **64** is positioned so that the second reference indicator **66** is over the Great Britain equivalent of one pound in the viewing window **46.** This then sets the exchange ratio in the currency calculator and it can now be easily used to convert back and forth between currency values of these two countries as long as the second moveable frame **64** is not moved from this previous setting.

By now referring to FIG. **4** of the drawing there is shown how to convert from U.S. dollars to British pounds once the exchange rate of 2.60 has been set into the converter as beforementioned. If for example, the traveler now wished to find out how much $3.90 U.S. currency was in Great Britain, he would simply relocate the first moveable frame **12** until the first reference indicator **50** lined up with $3.90 as shown in FIG. **4** and would read the equivalent British currency value of 1.5 pounds in the viewing window **46** at the hairline reference indicator **66.** In converting back to U.S. currency, the user would reverse these steps to get the equivalent U.S. rate. For example, referring to FIG. **5,** if the user wished to find out how much 2.0 pounds British currency was in U.S. currency, he simply would reposition the first moveable frame **12** until 2.0 pounds British currency was aligned in the viewing window **46** at the hairline **66** and would read the equivalent U.S. currency of $5.20 in the viewing window **44** at the first reference indicator **50.**

Other quick conversions could be made back and forth between U.S. and Great Britain currency as long as the original setting of the exchange rate of $2.60 has been left in the currency converter by virtue of keeping the second moveable frame fixed after the initial ratio has been set. All conversion, after the initial rate setting, is then made by moving the first moveable frame **12.** If the exchange rate between these two countries were to change from the initial setting of 2.60, the user would then have to reset the new rate in the converter in the manner before described.

Since, as before mentioned, the first moveable frame **12** has U.S. dollar values ranging from $1 to $10 on one side and U.S. dollar values from $100 to $1000 on the other side, when it becomes necessary to find values between $10 and $100 on the currency converter, the user of the device simply multiplies the final figure obtained on side **1** by 10 to get the actual value. In a similar manner, when using the second side of the device, which may contain higher currency values, the user can convert between $100 U.S. dollars and $1000 U.S. dollars and then convert to higher denominational values by simply multiplying the answer by 10,000, 1,000 etc., in order to obtain the higher values. This allows the same converter to be used by travelers as well as bankers without requiring the converter to be unduly large to accomodate the great range of values.

When the currency indicia **14–40** are fixed as to each other on the slide **12,** as before mentioned, in the relationship of the then current exchange rate, the converter can be used as a slide chart fixed rate converter by simply aligning the currency value on the slide **12** of any two desired countries with the second reference indicator **66** and ignoring, or not using, the first reference indicator **50.** However, whenever any one or some of the respective foreign exchange rates fluctuate and the scales as a fluctuating currency converter of the slide rule type, use must be made to the first as well as the second reference indicator. From this it can be seen that the currency converter can be manufactured as a slide chart fixed currency converter, by the initial alignment of the respective currency values 14–40 on the slide **12,** and can also be used as a fluctuating currency converter by using the second moveable frame **64** in conjunction with the first reference indicator **50** on a slide rule as before mentioned.

It should become apparent that the basic currency converter taught by the subject disclosure can also be manufactured in other simplified forms such as in the form commonly known as a circular slide rule without departing from the spirit and scope of the invention. When manufactured in this form or the preferred embodiment, the subject converter is greatly simplified and can be quickly and easily utilized by either world travelers or international businessmen with the same basic instrument serving both types of user. As a result, the complicated and lengthy tables and conversion devices previously used can be discarded in favor of the simplified and improved device of the present invention. While it is apparent that many changes can be made in the arrangement of the parts of the device without departing from the spirit and scope of the invention, the present invention is not to be limited to the preferred embodiment shown which has been given by way of illustration only.

Having described my invention, I claim:

1. A currency converter of the slide rule type used for converting the value of currency of one country to the value of currency of another country, comprising:

a. a first moveable frame having formed thereon, on at least one side thereof, a plurality of separate lines of indicia, one line of indicia being a reference line designating a currency range of one country and being laid out as a logarithmic scale; the remainder of the lines of indicia designating a currency range of other countries and being laid out in relation to the currency range of the reference country and also being laid out as logarithmic scales;

b. a fixed frame surrounding said first moveable frame and having formed thereon means for viewing said indicia; said fixed frame also having formed thereon a first reference indicator;

c. a second moveable frame, surrounding said fixed frame and moveable thereon, said second moveable frame having formed thereon, on at least one side thereof, a second reference indicator; and

d. said first and second reference indicators being used in combination with said reference line of indicia and said remainder of lines of indicia as a slide rule to convert the value of currency of one country to that of another country irregardless of the fluctuations of the currency from one country to another country.

2. The currency converter as defined in claim 1 further comprising one of said lines of indicia comprising a range of currency values being formed on said first moveable frame for United States of America currency in the amounts of 1 dollar to 10 dollars and further comprising said first frame having formed on the other side thereof a range of currency values for United States of America currency in the amounts of 100 dollars to 1,000 dollars.

3. The currency converter as defined in claim 1 further comprising said first moveable frame having formed thereon on said lines of indicia on at least one side thereof a range of money values from at least the United States of America, Canada, Great Britain, Italy, Japan, Mexico, Switzerland, West Germany, Australia, Brazil, France, Holland, Sweden and Venezuela.

4. The currency converter as defined in claim 3 further comprising said first moveable frame having formed on the other side thereof a range of money values as separate lines of indicia for the same countries as itemized in claim 3 and further comprising the range of money values for the United States of America being from 1 dollar to 10 dollars on one side of said frame and being from 100 dollars to 1,000 dollars on the other side of said frame.

5. The currency converter as defined in claim 1 further comprising said fixed frame having formed therein on the upper portion thereof indent means and further comprising said second moveable frame having formed thereon indent receiving means, said indent means and said indent receiving means serving as a means to retain said second moveable frame on said fixed frame and to prevent the second moveable frame from dropping off of the fixed frame whenever the converter is positioned vertically.

6. A combination fixed and fluctuating rate currency converter, comprising:

a. a first moveable frame having formed thereon, on at least one side thereof a plurality of separate lines of numerical indicia being laid out as logarithmic scales, each separate indicia line designating a range of currency values of a respective country, the separate lines of indicia being arranged on the frame so that the values of the respective countries are laid out in a relationship to each other corresponding to the then existing fixed rates of exchange between the countries;

b. a fixed frame surrounding said moveable frame and having formed thereon, viewing means for viewing the indicia contained on said moveable frame, said fixed frame also having formed thereon a fixed reference indicator;

c. a second moveable frame, surrounding said fixed frame and moveable thereon, said second moveable frame having formed thereon a moveable reference indicator;

d. said first moveable frame with indicia and said moveable reference indicator being used in combination as a fixed rate money calculator by lining up any two desired lines of indicia beneath the moveable reference indicator; and

e. said first moveable frame with indicia, said fixed reference indicator and said moveable indicator being used in combination as a slide rule as a fluctuating money calculator.

7. The currency converter as defined in claim 6 further comprising said fixed frame having formed therein on the upper portion thereof indent means and further comprising said second moveable frame having formed thereon indent receiving means, said indent means and said indent receiving means serving as a means to retain said second moveable frame on said fixed frame and to prevent the second moveable frame from dropping off of the fixed frame whenever the converter is positioned vertically.

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(5/69)

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,795,795 Dated March 5, 1974

Inventor(s) CAPRON R. GULBRANSEN, JR.

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

In the Abstract, Line 8 - Change "currency" to —currency—.

In the Specification, Col. 2, Line 16 - After "day to day or" insert —from—.

In the Specification, Col. 2, Lines 39-40 - Delete "as a logarithmic scale" and insert the same wording after the word —imprinted— on Line 40.

In the Specification, Col. 3, Line 46 - Change "majaority" to —majority—.

In the Specification, Col. 4, Line 49 - Between " 1 dollar" and "10 dollars" insert —to—.

In the Specification, Col. 5, Line 13 - Delete "Brown" and insert in place thereof —known—.

In the Specification, Col. 6, Lines 38-40 - Delete "and the scales as a fluctuating currency converter of the slide rule type" and insert the same wording after the word —indicator— on Line 42.

Signed and sealed this 8th day of October 1974.

(SEAL)
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McCOY M. GIBSON JR.
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents

PO-1050
(5/69)

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