PATENT SPECIFICATION 738,591

Date of filing Complete Specification : Nov. 2, 1953.

Application Date : Oct. 31, 1952. No. 27451/52.

Complete Specification Published : Oct. 19, 1955.

Index at Acceptance :—**Class 106(1)**, B5A, B5G(12 : 19).

COMPLETE SPECIFICATION.

Purchase Tax and/or Monetary Calculator.

We, ROBINSON & CLEAVER LIMITED, a Company incorporated in Northern Ireland, of 56 Donegall Place, Belfast, Northern Ireland, and RONALD HAMILTON SCOTT, a British Subject, of Bensfield, Wadhurst, Sussex, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to a calculator, which may be used to calculate purchase tax on goods or to handle monetary calculations based on a period of time between any two given dates.

When calculating purchase tax, before the amount of purchase tax, which is chargeable on an article, can be ascertained, there are, in addition to the cost price, two further factors, namely Counting House Discount and Uplift, which may have to be taken into consideration in determining the Statutory Wholesale Price upon which all Purchase Tax calculations are based. When the appropriate factors are co-related, the resultant is further co-related to the D. line, which is a known factor and represents a monetary level in relation to the Statutory Wholesale Price below which no Purchase Tax is payable and above which Purchase Tax is calculated at certain given percentage rates. The calculation of the amount of Purchase Tax payable on ranges of articles must of necessity involve a considerable amount of work, including staff to do the necessary calculations, and inevitably causes a wastage of man hours, which cannot be monetarily accounted for.

One object of the present invention is to provide a Purchase Tax calculator by means of which a single person can readily and easily ascertain the Purchase Tax on any number of goods over a wide range.

Another object is to provide a calculator which can be used for any monetary calculations dealing with, for example, interest rates per annum over a portion of a year, or with allying the pound sterling to a calendar date.

According to one aspect of this invention a calculator comprises at least two disc-like members of different diameters concentrically mounted upon a common spindle, and a transparent cursor also mounted on said spindle, one of said members bearing one or more logarithmic price scales and two linear date scales indicating the day and month, in one case in an ordinary year and in the other in a leap year, a second member carrying around its periphery, ascending and descending logarithmic percentage scales and two pairs of ascending and descending linear scales, one pair representing the number of days in an ordinary year and percentages from 0 to 100, the other pair the number of days in a leap year and percentages from 0 to 100.

According to another aspect, a Purchase Tax calculator comprises four parts, all rotatable with respect to each other, three of said parts comprising disc-like members of different diameters, at least two of which are concentrically mounted upon a common spindle, the fourth part consisting of a transparent cursor also mounted on said spindle, one of said disc-like members bearing one or more logarithmic Cost Price scales, a second bearing, around its periphery, ascending and descending logarithmic percentage scales representing respectively Uplift and Counting House Discount, and one or more sets of linear scales representing Purchase Tax at different rates, whilst the third bears one or more linear Statutory Wholesale Price scales.

Preferably the third disc-like member of the Purchase Tax calculator is in the form of an annulus or ring mounted on guides encircling that other disc-like member which is of larger diameter than the remaining disc-

[*Price ~~3s. 0d.~~*]

like member, the last two said members being in the form of discs mounted one above the other on the common spindle, the lower disc being of greater diameter than the upper. Preferably also the lower disc is formed of opaque material, whilst the upper disc is also opaque and is formed with a transparent tongue adapted to overlap a part of both the lower disc and the annular ring which is again of opaque material.

In the monetary calculator, as distinct from the Purchase Tax calculator, three disc-like members are preferably provided, all concentrically arranged, the outermost and innermost members being rotatable with respect to the middle member; in this case the innermost member carries the two pairs of scales, and the ascending and descending logarithmic percentage scales, the middle member bears the logarithmic price scale, and the outermost member carries the two linear date scales. Preferably also the members are formed of opaque material, the innermost member being formed with a transparent tongue adapted to overlie a part of the other member (or members when three are provided), as in the Purchase Tax calculator.

One form of this invention, as applied to a Purchase Tax calculator, is shown in plan in the drawing accompanying the Provisional Specification, in connection with which drawing it should be clearly understood that the figures on the various scales are arbitrarily taken except in so far as concerns those which will indicate the final result of an example of calculation as set out hereinafter.

Referring to the drawing, the calculator comprises a spindle 1 on which are rotatably mounted three of the four component parts of the calculator, that is to say a cursor A, an upper disc B and a lower disc C. The lower disc C has rotatably mounted thereon, for example by means of guides (not shown) encircling the disc, an annular member D.

The cursor A is formed of transparent material and is of such a length as to extend beyond the outer periphery of the ring D and has marked thereon a hairline running from the central spindle 1 to the extremity of the cursor. The upper disc B, which is of less diameter than the lower disc C, is formed of opaque material and provided with a transparent tongue portion B1 which overlaps a part of both the lower disc C and ring D which are also opaque. The said disc B has marked thereon a radial line provided with an arrow tip at the periphery of the opaque portion of said disc, said radial line being continued across the centre of the transparent tongue B1. Around the periphery of the opaque portion of the disc B are ascending and descending logarithmic percentage scales, the arrow tip representing zero. One scale ascends to the left and represents Uplift, whilst the scale to the right descends and represents Counting House Discount. As will be seen from the drawing, Uplift is added and Counting House Discount subtracted. The said disc B also has marked thereon a number of sets of linear scales, each set comprising a scale for each of the current rates of Purchase Tax; two such sets are shown on the drawing, each set including scales for the Purchase Tax rates of 25%, 33⅓%, 50% and 66⅔%, which rates cover those normally in use at the present time. As shown, only one set is partly graduated.

The lower disc C carries around its periphery one or more logarithmic Cost Price scales; in the particular example illustrated one such scale is shown, which is only partly graduated although other scales can be provided to cover between them the range of prices, for example from 2/- to 20/-, £1 to £10, and £10 to £100.

The annular ring bears one or more linear Statutory Wholesale Price scales, and in the actual example illustrated again one such scale is shown, partly graduated, although other scales covering, for example from 0/- to 20/-, £0 to £10 and £0 to £100, can be provided.

As one example of the manner in which the calculator can be used it is assumed that it is desired to calculate the Purchase Tax on the following given factors:—

Cost Price	40/-
Counting House Discount	5%
Uplift	16⅔%
D. Line	32/4
Purchase Tax	66⅔%

In order to ascertain the monetary value of the Purchase Tax, the disc B is rotated on the spindle 1 until the arrow tip on the disc B registers with the 40/- mark on the logarithmic scale on the disc C (Cost Price); the cursor A is then moved until its hairline covers the 5% scale mark on the Counting House Discount scale on disc B. It will now be found, assuming the scale divisions to be true (and not as illustrated), that the cursor will read 38/- on the logarithmic scale on disc C.

The next step is to make the arrow tipped radial line on disc B coincide with the hairline on the cursor, after which the cursor is reset at 16⅔% on the Uplift scale, so that the cursor should then read the Statutory Wholesale Price of 44/4 on the logarithmic scale on disc C. The annular ring D is now rotated until 44/4 on its linear scale coincides with the hairline on the cursor and thus with the same figure on the logarithmic scale. The upper disc B is now rotated until the hairline on the transparent tongue B1 covers the scale division of 32/4 on the linear scale on the ring D, thus setting the said tongue at the D Line of 32/4.

Purchase Tax is payable on the difference

between the D. Line of 32/4 and the Statutory Wholesale Price of 44/4, that is to say on 12/-.

To complete the calculation all that is required is to read off the amount of Purchase Tax on the 66⅔% scale where the hairline on the cursor cuts the said scale line, which, as shown in the drawing, is at 8/-, so that the actual Purchase Tax to be chargeable on the example above quoted is 8/-.

It will, of course, be appreciated that at the setting as shown in the drawing, the cursor will similarly give the monetary value of Purchase Tax on the example quoted if the Purchase Tax were to be calculated at 25%. 33⅓% or 50%, in which case it would be respectively 3/-, 4/- and 6/-.

Finally it is to be understood that when Purchase Tax is calculable at 100% this is obtained by subtracting the D. Line value from the Statutory Wholesale Price when the cursor has been set to Uplift percentage as referred to above, further calculations mentioned thereafter being, in this case, unnecessary.

It will, of course, be obvious that the calculator according to the present invention may be used to obtain the result needed when it is desired to add or subtract any given percentage to a price of articles, when, for example, no Purchase Tax is chargeable; in this case all that is necessary is that the disc B is rotated on the spindle 1 until the arrow tip of the said disc registers with the price on which the percentage has to be added or subtracted on the logarithmic scale, and the cursor A moved until its hairline covers the desired added or subtracted percentage on the add or subtract scale mark on the disc B, the result being obtained by reading off the amount where said cursor cuts the logarithmic scale on the disc C.

What we claim is:—

1. A calculator comprising at least two disc like members of different diameters, concentrically mounted upon a common spindle, and a transparent cursor, also mounted on said spindle, one of said members bearing one or more logarithmic price scales, and two linear date scales indicating the day and month, in one case in an ordinary year and in the other in a leap year, a second member carrying, around its periphery, ascending and descending logarithmic percentage scales, and two pairs of ascending and descending linear scales, one pair representing the number of days in an ordinary year and percentages from 0 to 100, the other pair the number of days in a leap year and percentages from 0 to 100.

2. A purchase tax calculator comprising four parts, all rotatable with respect to each other, three of said parts comprising disc-like members of different diameters, at least two of which are concentrically mounted upon a common spindle, the fourth part consisting of a transparent cursor also mounted on said spindle, one of said disc-like members bearing one or more logarithmic Cost Price scales, a second bearing, around its periphery, ascending and descending logarithmic percentage scales representing respectively Uplift and Counting House Discount, and one or more sets of linear scales representing Purchase Tax at different rates, whilst the third bears one or more linear Statutory Wholesale Price scales.

3. A purchase tax calculator as claimed in Claim 2 in which the third disc-like member is in the form of an annulas or ring mounted on guides encircling that other disc-like member which is of larger diameter than the remaining disc-like member, the last two said members being in the form of discs mounted one above the other on the common spindle, the lower disc being of greater diameter than the upper.

4. A purchase tax calculator as claimed in Claim 3, in which the lower disc is formed of opaque material, whilst the upper disc is also opaque and is formed with a transparent tongue adapted to overlap a part of both the lower disc and the annular ring which is again of opaque material.

5. The modification of the calculator claimed in Claim 1 in which three disc members are provided, all concentrically arranged, the outermost and innermost members being rotatable with respect to the middle member, the innermost member carrying the two pairs of scales and the ascending and descending logarithmic percentage scales, the middle member bearing the logarithmic price scale and the outermost member the two linear date scales.

6. A monetary calculator substantially as hereinbefore described.

7. A purchase tax calculator substantially as hereinbefore described with reference to the drawing accompanying the Provisional Specification.

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PROVISIONAL SPECIFICATION.

Purchase Tax and/or Monetary Calculator.

We, ROBINSON & CLEAVER LIMITED, a Company incorporated in Northern Ireland, of 56 Donegall Place, Belfast, Northern Ireland, and RONALD HAMILTON SCOTT, a

British Subject, of Bensfield, Wadhurst, Sussex, do hereby declare this invention to be described in the following statement:—

This invention relates to a purchase tax calculator.

Before the amount of purchase tax, which is chargeable on an article, can be ascertained, there are, in addition to the cost price, two further factors, namely Counting House Discount and Uplift, which may have to be taken into consideration in determining the Statutory Wholesale Price upon which all Purchase Tax calculations are based. When the appropriate factors are co-related, the resultant is further co-related to the D. line, which is a known factor and represents a monetary level in relation to the Statutory Wholesale Price below which no Purchase Tax is payable and above which Purchase Tax is calculated at certain given percentage rates. The calculation of the amount of Purchase Tax payable on ranges of articles must of necessity involve a considerable amount of work, including staff to do the necessary calculations, and inevitably causes a wastage of man hours, which cannot be monetarily accounted for.

The object of the present invention is to provide a Purchase Tax calculator by means of which a single person can readily and easily ascertain the Purchase Tax on any number of goods over a wide range.

A Purchase Tax calculator, according to the present invention, comprises four parts, all rotatable with respect to each other, three of said parts comprising disc-like members of different diameters, at least two of which are concentrically mounted upon a common spindle, the fourth part consisting of a transparent cursor also mounted on said spindle, one of said disc-like members bearing one or more logarithmic Cost Price scales, a second bearing, around its perimeter, ascending and descending percentage scales representing respectively Uplift and Counting House Discount, and one or more sets of scales representing Purchase Tax rates, whilst the third bears one or more linear Statutory Wholesale Price scales.

Preferably the third member is in the form of an annulus or ring mounted on guides encircling that disc member which is of larger diameter than the remaining member, the last two said members being in the form of discs mounted one above the other on the common spindle, the lower disc being of greater diameter than the upper.

Preferably also the lower disc is formed of opaque material, whilst the upper disc is also opaque and is formed with a transparent tongue adapted to overlap a part of both the lower disc and the annular ring which is again of opaque material.

A preferred form of Purchase Tax calculator is shown in plan in the accompanying drawing in connection with which it should be clearly understood that the figures on the various scales are arbitrarily taken except in so far as concerns those which will indicate the final result of an example of calculation as set out hereinafter.

Referring to the drawing, the calculator comprises a spindle 1 on which are rotatably mounted three of the four component parts of the calculator, that is to say a cursor A, an upper disc B and a lower disc C. The lower disc C has rotatably mounted thereon, for example by means of guides (not shown) encircling the disc, an annular member D.

The cursor A is formed of transparent material and is of such a length as to extend beyond the outer perimeter of the ring D and has marked thereon a hairline running from the central spindle 1 to the extremity of the cursor. The upper disc B, which is of less diameter than the lower disc C, is formed of opaque material and provided with a transparent tongue portion B1 which overlaps a part of both the lower disc C and ring D. The said disc B has marked thereon a radial line provided with an arrow tip at the perimeter of the opaque portion of said disc, said radial line being continued across the centre of the transparent tongue B1. Around the perimeter of the opaque portion of the disc B are ascending and descending logarithmic percentage scales, the arrow tip representing zero. One scale ascends to the left and represents Uplift, whilst the scale to the right descends and represents Counting House Discount. As will be seen from the drawing, Uplift is added and Counting House Discount subtracted. The said disc B also has marked thereon a number of sets of scales, each set comprising the current rates of Purchase Tax; two such sets are shown on the drawing, each set including the Purchase Tax rates of 25%, 33⅓%, 50% and 66⅔%, which rates cover those normally in use at the present time, As shown, only one set is partly graduated.

The lower disc C carries around its perimeter one or more logarithmic Cost Price scales; in the particular example illustrated two such scales are shown, of which only one is partly graduated and the scales cover between them the range of prices, for example from 2/- to 20/-, £1 to £10, and £10 to £100.

The annular ring D bears one or more linear Statutory Wholesale Price scales, and in the actual example illustrated two such scales are shown only, one of which is partly graduated, the scales covering, for example from 0/- to 20/-, £0 to £10 and £0 to £100.

The scales of the sets of scales, namely Cost Price, Statutory Wholesale Price and Purchase Tax, are related to and used in conjunction with each other, preferably by means of background colours.

As one example of the manner in which

the calculator can be used it is assumed that it is desired to calculate the Purchase Tax on the following given factors:—

Cost Price	40/–
Counting House Discount	5%
Uplift	16⅔%
D. Line	32/4
Purchase Tax	66⅔%

In order to ascertain the monetary value of the Purchase Tax, the disc B is rotated on the spindle 1 until the arrow tip on the disc B registers with the 40/- mark on the logarithmic scale on the disc C (Cost Price); the cursor A is then moved until its hairline covers the 5% scale mark on the Counting House Discount scale on disc B. It will now be found, assuming the scale divisions to be true (and not as illustrated), that the cursor will read 38/- on the logarithmic scale on disc C.

The next step is to make the arrow tipped radial line on disc B coincide with the hairline on the cursor, after which the cursor is re-set at 16⅔% on the Uplift scale, so that the cursor should then read the Statutory Wholesale Price of 44/4 on the logarithmic scale on disc C. The annular ring D is now rotated until 44/4 on its linear scale coincides with the hairline on the cursor and thus with the same figure on the logarithmic scale. The upper disc B is now rotated until the hairline on the transparent tongue B1 covers the scale division of 32/4 on the linear scale on the ring D, thus setting the said tongue at the D line of 32/4.

Purchase Tax is payable on the difference between the D. Line of 32/4 and the Statutory Wholesale Price of 44/4, that is to say on 12/-.

To complete the calculation all that is required is to read off the amount of Purchase Tax on the 66⅔% scale where the hairline on the cursor cuts the said scale line, which, as shown in the drawing, is at 8/-, so that the actual Purchase Tax to be chargeable on the example above quoted is 8/-.

It will, of course, be appreciated that at the setting as shown in the drawing, the cursor will similarly give the monetary value of Purchase Tax on the example quoted if the Purchase Tax were to be calculated at 25%, 33⅓%, or 50%, in which case it would be respectively 3/-, 4/- and 6/-.

Finally it is to be understood that when Purchase Tax is calculable at 100% this is obtained by subtracting the D. Line value from the Statutory Wholesale Price when the cursor has been set to the Uplift percentage as referred to above, further calculations mentioned thereafter being, in this case, unnecessary.

It will, of course, be obvious that the calculator according to the present invention may be used to obtain the result needed when it is desired to add or subtract any given percentage to a price of articles, when, for example, no Purchase Tax is chargeable; in this case all that is necessary is that the disc B is rotated on the spindle 1 until the arrow tip of the said disc registers with the price on which the percentage has to be added or subtracted on the logarithmic scale, and the cursor A moved until its hairline covers the desired added or subtracted percentage on the add or subtract scale mark on the disc B, the result being obtained by reading off the amount on the said cursor where said cursor cuts the scale division on the ring D.

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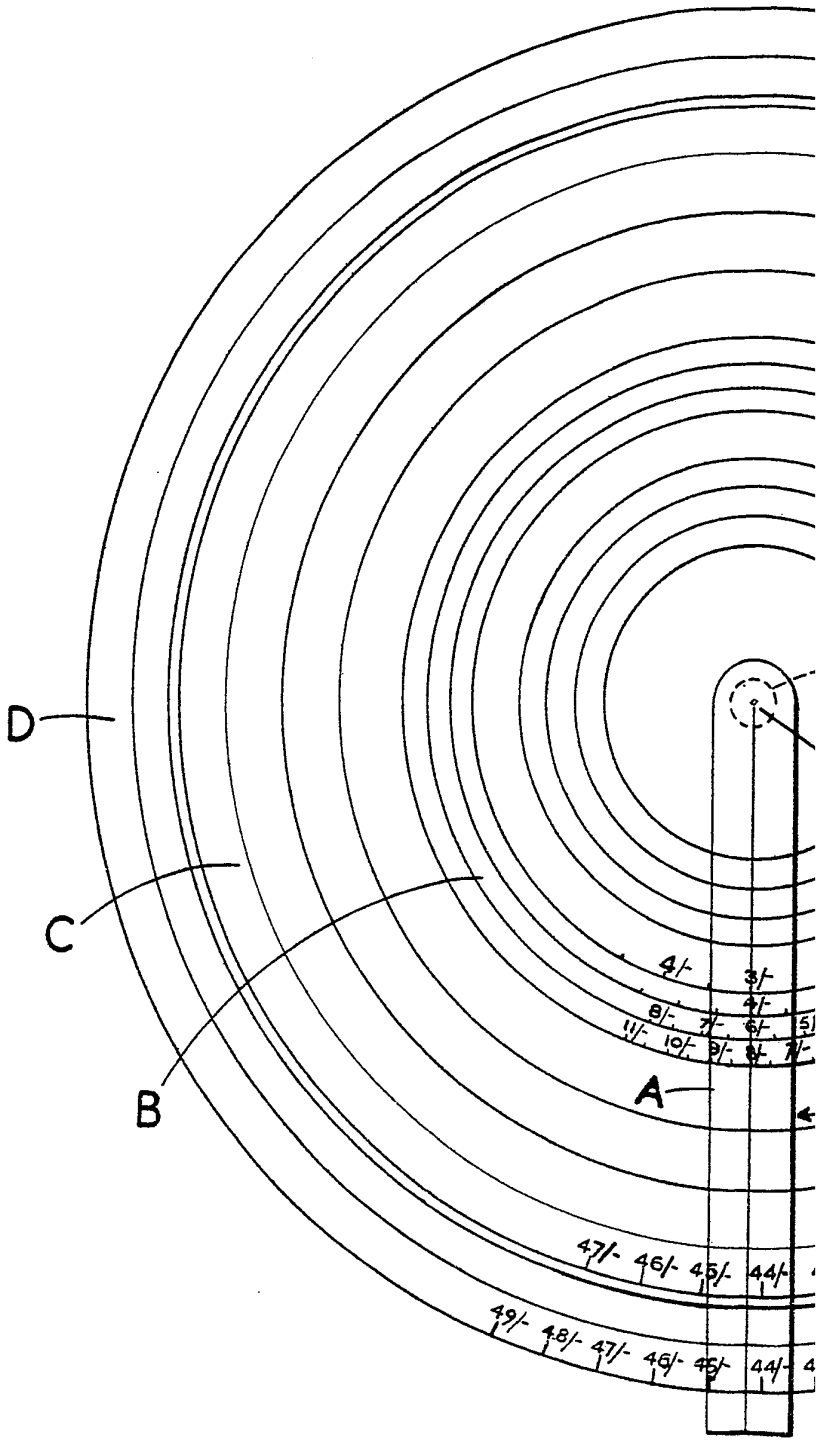
Abingdon: Printed for Her Majesty's Stationery Office, by Burgess & Son (Abingdon), Ltd.—1955.
Published at The Patent Office, 25, Southampton Buildings, London, W.C.2,
from which copies may be obtained.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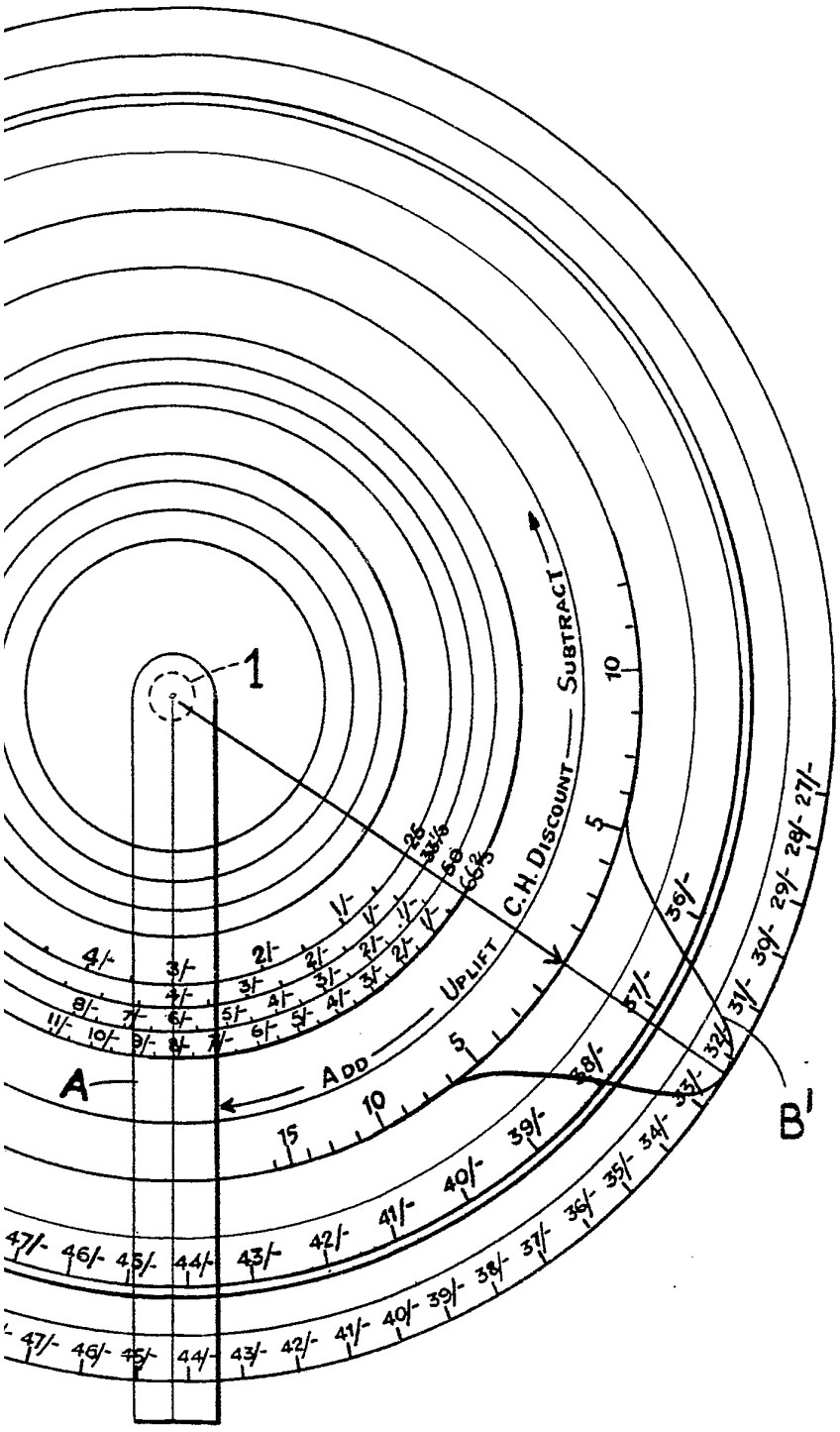
738,591 PROVISIONAL SPECIFICATION

1 SHEET

This drawing is a reproduction of the Original on a reduced scale.



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1 SHEET

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