C. A. PITKIN.

COMPUTER.

APPLICATION FILED JUNE 12, 1908.

925,377.

Patented June 15, 1909.

2 SHEETS—SHEET 1.

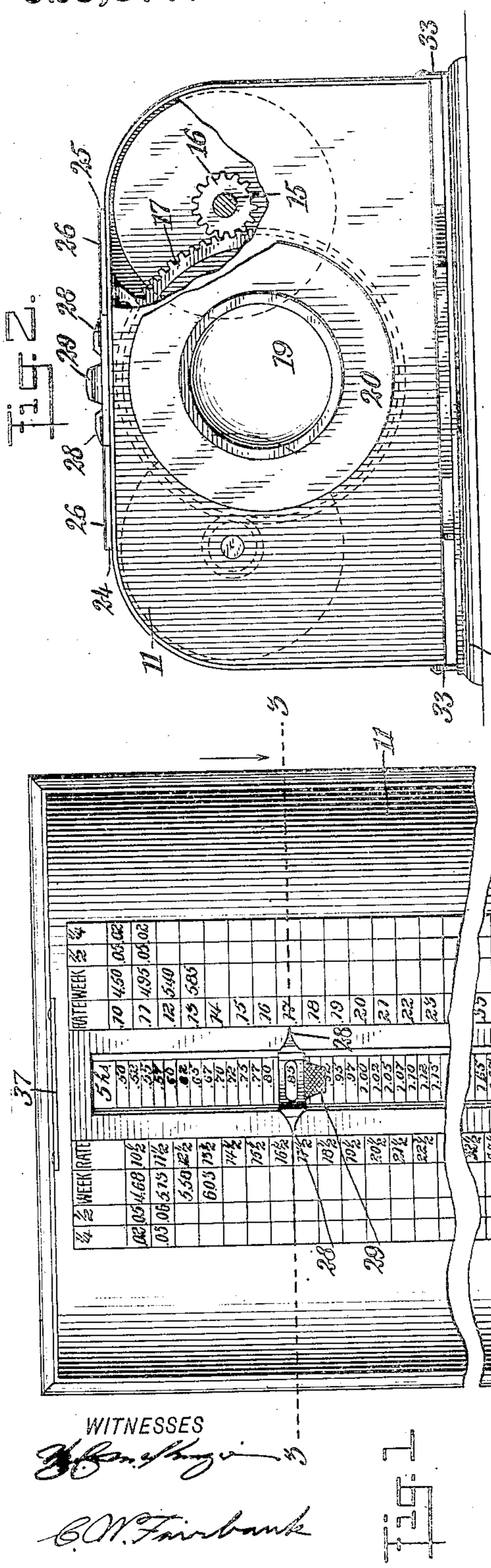

Fig. 2.

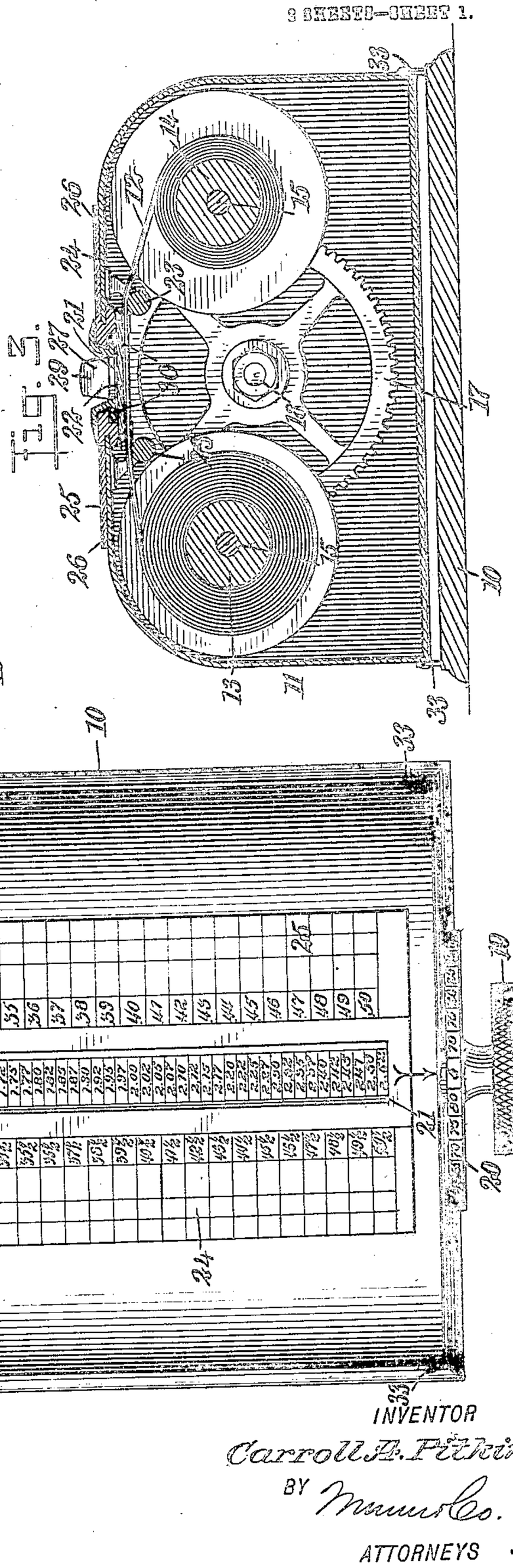

Fig. 1.

WITNESSES

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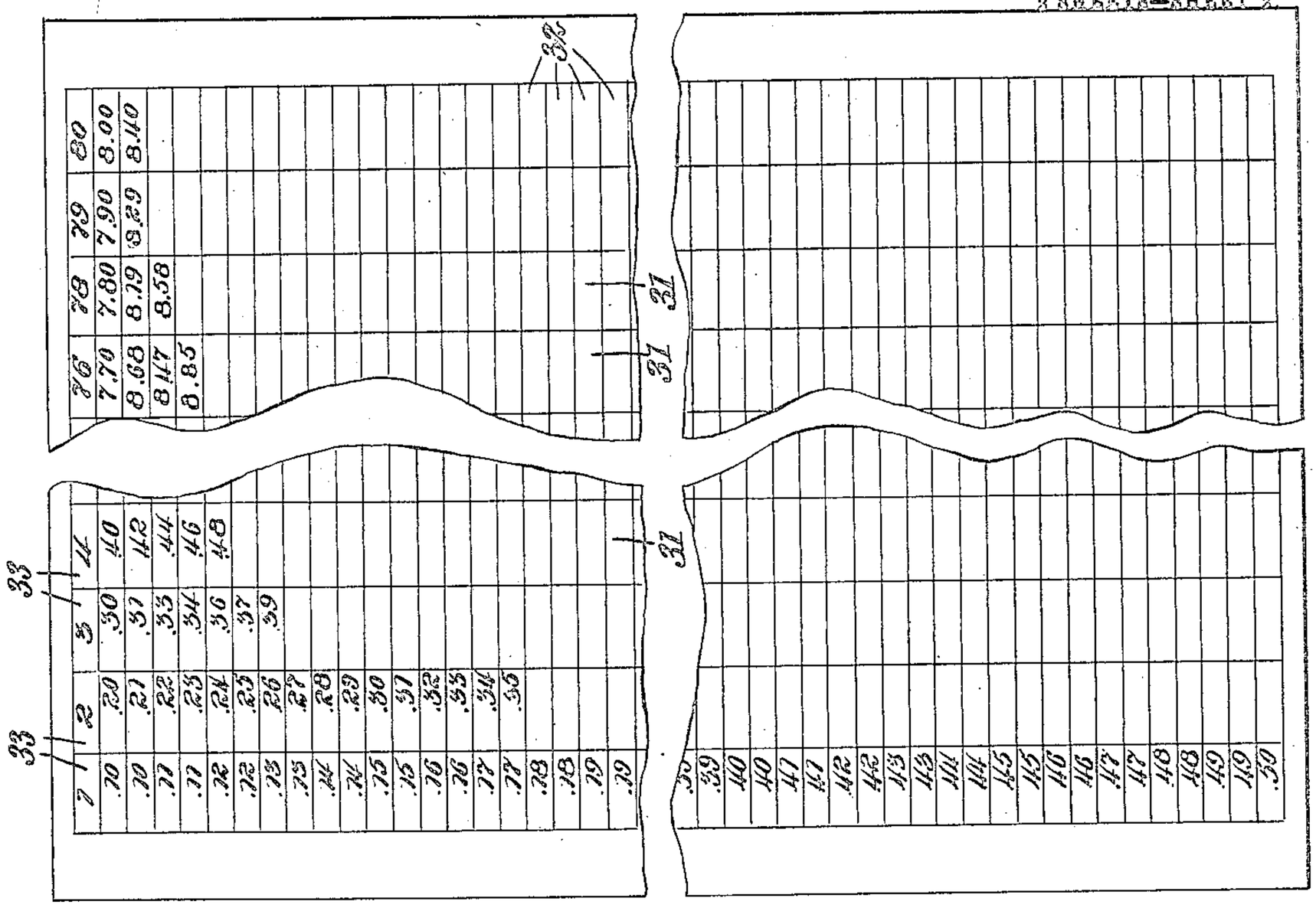

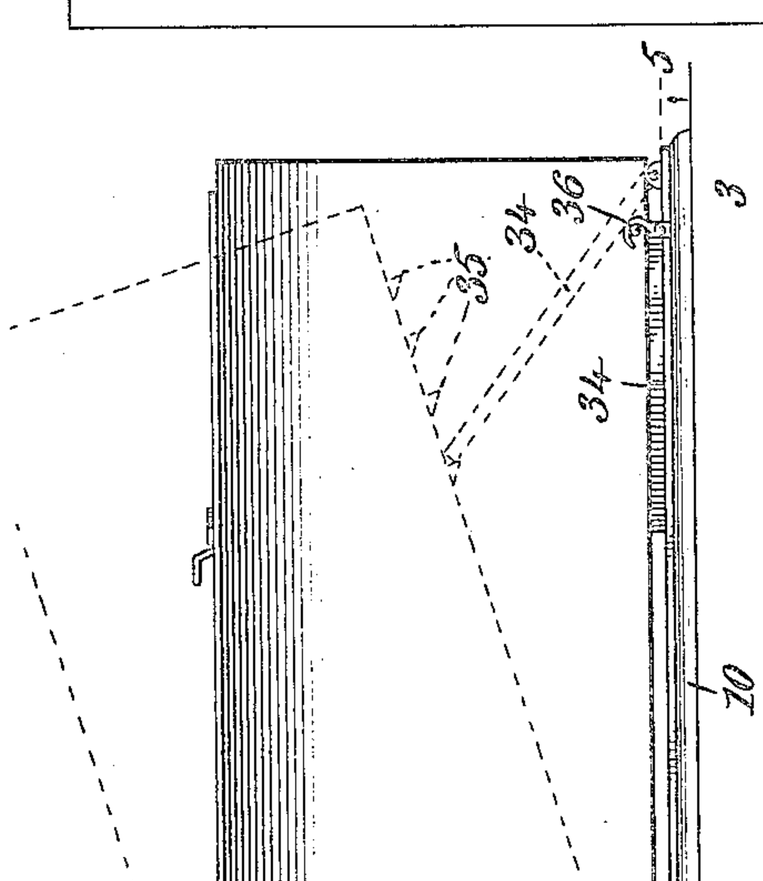

FIG. 4.

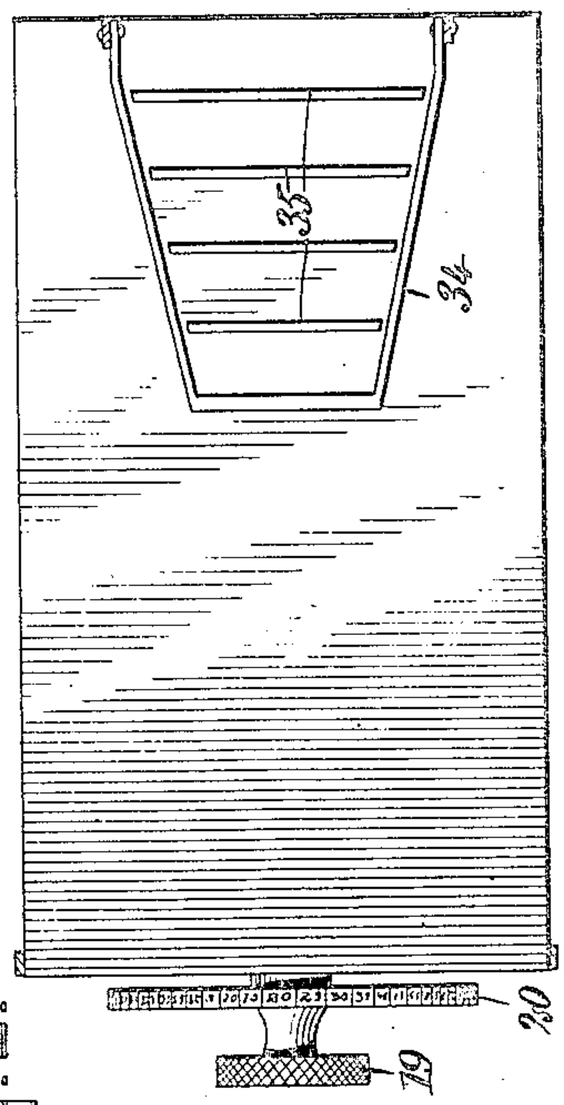

FIG. 5.

FIG. 7.

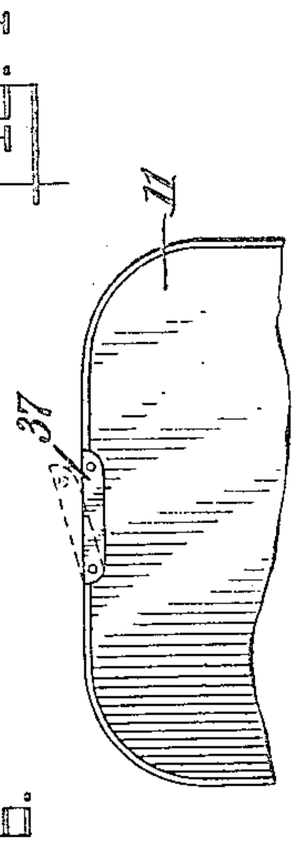

FIG. 6.

WITNESSES

E. Burkhardt

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UNITED STATES PATENT OFFICE.

CARROLL A. PITKIN, OF MONTPELIER, VERMONT.

COMPUTER.

No. 925,377. Specification of Letters Patent. Patented June 15, 1909.

Application filed June 12, 1908. Serial No. 438,049.

To all whom it may concern:

Be it known that I, CARROLL A. PITKIN, a citizen of the United States, and a resident of Montpelier, in the county of Washington and State of Vermont, have invented a new and Improved Computer, of which the following is a full, clear, and exact description.

This invention relates to certain improvements in computers, and more particularly to that type of computer in which there are provided two relatively movable members, one of which carries a series of multipliers and the other of which carries a series of multiplicands, and for each multiplicand a series of products resulting from the use of each of the several multipliers.

The object of the invention is to provide certain improvements in these relatively movable members and in the mechanism for operating one of them. My improved computer may be used for a variety of different systems of payment such as daily, bi-weekly, monthly, etc., and for a variety of different purposes dependent upon the data printed upon the two relatively movable members, but the device is especially designed for use as a payroll computer.

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

Figure 1 is a top plan view of a device constructed in accordance with my invention; Fig. 2 is an end view thereof, a portion thereof being broken away; Fig. 3 is a transverse section on the line 3—3 of Fig. 1, taken in the direction of the arrow; Fig. 4 is a side elevation of the device shown on a smaller scale and indicating in dotted lines certain of the parts in elevated position; Fig. 5 is a horizontal section on the line 5—5 of Fig. 4, taken in a direction indicated by the arrow; Fig. 6 is a view of a portion of one end of the casing; and Fig. 7 is a face view of the chart, portions thereof being broken away.

In the specific form of my device illustrated in the accompanying drawings, I provide a base 10 of wood or any other suitable material, and mounted upon the base is a casing 11 of sheet metal or the like. Within the casing is mounted a movable chart, a portion of which may be seen through a slot in the wall of the casing, and on the wall adjacent the slot is a scale or table of figures, bearing a relationship to those on the chart. As shown, the chart 12 is formed of two thicknesses, one being of paper upon which the numerals are printed and the other or outer being of celluloid to protect the paper and prevent the numerals from being worn or erased. The opposite ends are secured to two spools 13 and 14, journaled on arbors 15 supported by the casing or wall 11. Each of the arbors is provided with a small pinion or gear wheel 16, adjacent one end of the spool, and intermediate the two pinions is a large gear wheel 17 intermeshing with both. The gear wheel 17 is of such size in respect to the size of the pinions 16 and the length of the chart, that one complete revolution of the gear wheel 17 transfers the chart from one spool to the other, so that the maximum rotation of the gear wheel 17 in one direction is a single revolution. The gear wheel is mounted on a short shaft 18 carried by one end of the casing, and on the outer end of the shaft is a hand wheel 19 and a disk 20, the purpose of which will be hereinafter set forth.

Intermediate the spools, the upper wall or top of the casing is provided with a slot 21 closed upon the inner surface of the casing wall by a strip of glass or other suitable transparent material 22. Beneath the glass strip and adjacent the edges thereof, I provide two rollers or idlers 23, over which the chart passes in going from one spool to the other and which serves to hold the chart closely adjacent the under surface of the glass. The top wall of the casing, adjacent opposite sides of the slot, is provided with two scales 24 and 25, each of which may, if desired, be covered by a thin sheet of celluloid 26, to preserve the numbers against wear and erasure. Movable longitudinally of the slot 21 and adjacent the outer surface of the glass, is a slide 27 having an aperture through which one number on the chart may be read and having oppositely-disposed pointed ends 28 directed outwardly toward the scales 24 and 25. The slide may, if desired, be provided with a tongue piece 29, by means of which it may be readily moved along the slot, and is preferably provided with flanges 30, which engage in grooves adjacent the surface of the glass and hold the slide in place.

In using my improved computer for determining the amounts due employees working at different rates and for different times, the chart may be printed substantially as shown. The chart is subdivided into a plurality of columns 31, extending transversely of the chart, and each column is of a width substantially equal to the width of the slot in the casing. The chart is also divided into a series of rows extending longitudinally of the chart and subdividing each of the columns into sections. In the space 33 at the head of each column is printed a series of numerals indicating the hours which a person might work during a week, as, for instance, from "1" to "80", and extending down each column is the amount due a person for working the number of hours indicated at the head of the column and at different rates, as, for instance, from ten cents to fifty cents an hour. As shown, the scale 25 at one side of the slot, is subdivided into four columns, one to indicate the rate at which the employee works, the second to indicate the salary for the week in case the employee has worked the standard number of hours, and the remaining two columns indicate the amounts due for fractions of an hour, as, for instance, a half and a quarter. The scale 24 is substantially identical with the scale 25, save that to facilitate the reading of the numbers, the scale 25 is used for whole numbers and the scale 24 for half numbers. For instance, the scale 25 in the column adjacent the slot would have the rates "10", "11", "12", &c., and the column of the scale 24, adjacent the slot, would have the rates "$10\frac{1}{2}$", "$11\frac{1}{2}$", "$12\frac{1}{2}$", &c.

In using the device, the hand wheel 19 is turned to bring the number of hours which the employee has worked in view through the slot in the casing. The slide is moved down the slot until one of the pointers 28 thereon is directed toward the rate at which the employee is paid and through the opening in the slide may then be seen the amount due; as, for instance, if the employee has worked five hours at seventeen cents an hour, the numeral "85" will be visible through the opening in the slide. If the employee has been present the standard or required number of hours, it is not necessary to turn the hand wheel to bring that column of the chart to view, but the scale 24 or 25 will indicate the total week's wages opposite each rate. For instance, if forty-five hours is considered a week's work, the amount $4.50 would be presented in the second column adjacent the rate "10 cents" of the first column. If the employee has worked a fraction of an hour, the amount due for that fraction, will be found in the column on the casing, and this amount will be added to the amount due for the whole number of hours at the head of the column. For instance, if an employee has worked five and one-quarter hours at ten cents an hour, the amount "2 cents" on the casing in the one-quarter column, should be added to the "50 cents" on the chart.

To facilitate the turning of the chart to the desired hour column, the disk 20 is provided with a series of numerals about the periphery thereof, corresponding to the hour columns of the chart. As the wheel is moved its maximum distance by one rotation of the hand wheel 19, the disk 20 may be subdivided into the same number of divisions as there are columns on the chart. Each division may be marked, or, as indicated, only each fifth column. The wheel 19 and disk 20 may be rapidly rotated to bring the desired number on the periphery approximately to the desired position, but as the chart travels at a far greater rate than does the periphery of the wheel, the wheel is used only to adjust the chart to its approximate position and then the exact position is determined by an inspection of the heads of the columns on the chart as the wheel 19 is rotated very slowly.

To facilitate the reading of the numerals and the operating of the device, the casing is preferably pivoted to the base, and so constructed that it may be held at any desired inclination in respect thereto. The base, as shown particularly in Figs. 4 and 5, is provided with two upwardly-extending lugs 33 at the lower front corners thereof, and is provided with a brace 34 pivoted at the rear end thereof. The under surface of the casing is provided with a series of stops 35, against any one of which the brace may be held to support the casing in an inclined position. For holding the casing rigid to the base, the base may carry short hooks 36 pivoted thereto and adapted to engage with pins on the sides of the casing, as shown in Fig. 4.

For permitting the removal of the glass 22, to clean the same, it is preferably mounted in suitable guideways and may be removed through the rear end of the casing. For normally preventing the removal of the glass and holding it in position, I preferably provide a small plate 37 held in place by a couple of screws, one of which may be removed to permit the blade to be swung out of the path of the longitudinal movement of the glass. To further facilitate the reading of the numerals on the chart, a microscopic lens may be mounted on the slide.

It is evident that the numerals at the heads of the several columns on the chart and the numerals in the rate column on the scale, constitute multiplier and multiplicand, and that the number in the column opposite to a given number on the scale, is the product of said last-mentioned number and the one at the head of the column.

For using the device for other purposes than for computing a payroll, the scales and chart may be replaced by others having the desired multipliers, multiplicands and products thereon.

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

1. In combination, a casing having a slot therein, two spools within said casing and disposed upon opposite sides of said slot, a chart having its opposite ends secured to said spools and movable beneath said slot, a scale on said casing adjacent said slot, and means for rotating said spools simultaneously in the same direction, to bring the chart beneath said slot, said means including a hand wheel, gearing connecting said hand wheel and said spools whereby a single rotation of the hand wheel moves said chart to the limiting extent, and a dial carried by said hand wheel and exposed to view, said dial traveling at a lower rate of speed than said chart and being subdivided to correspond to the subdivisions on the chart.

2. In combination, two spools, a chart having its opposite ends secured to said spools, a scale adjacent said slot, means for rotating said spools simultaneously to bring different portions of the chart adjacent the scale, said means including a hand wheel, a gearing connecting said hand wheel and said spools, whereby a single rotation of the hand wheel moves said chart to the limiting extent, and a dial carried by said hand wheel and traveling at a lower rate of speed than said chart and being marked to correspond to subdivisions on the chart.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CARROLL A. PITKIN.

Witnesses:
FRED B. THOMAS,
W. H. BURNHAM.