

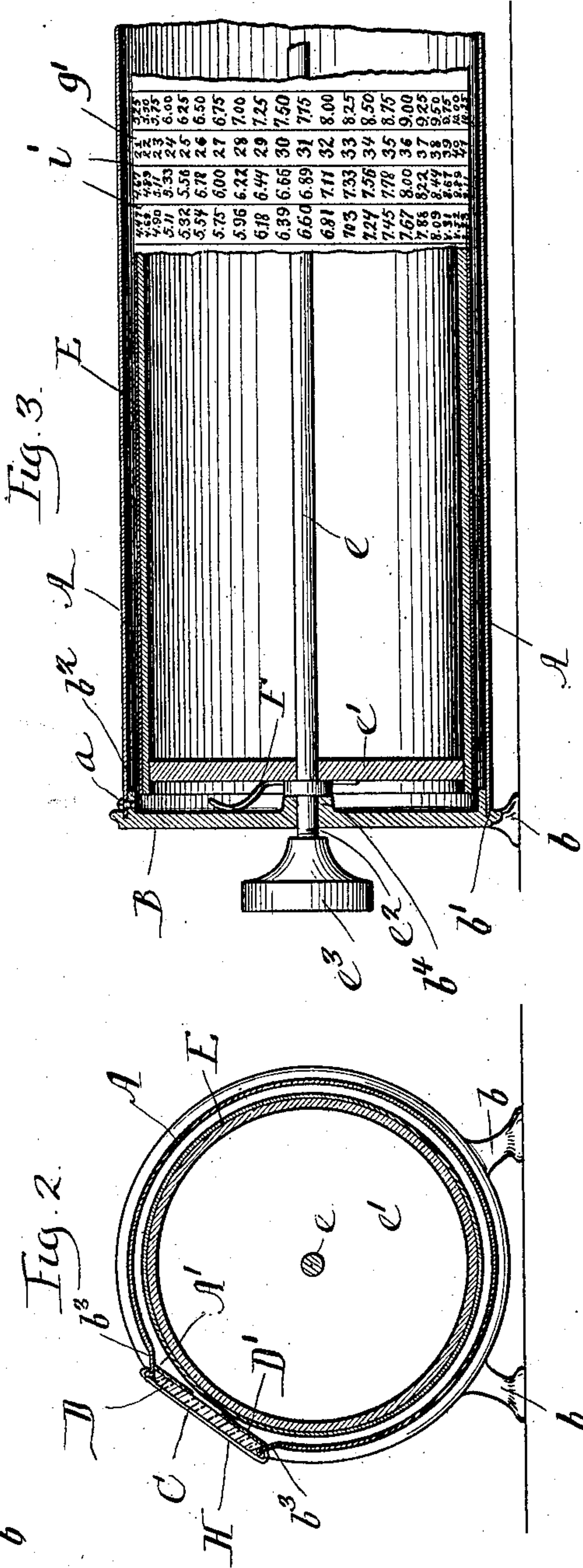
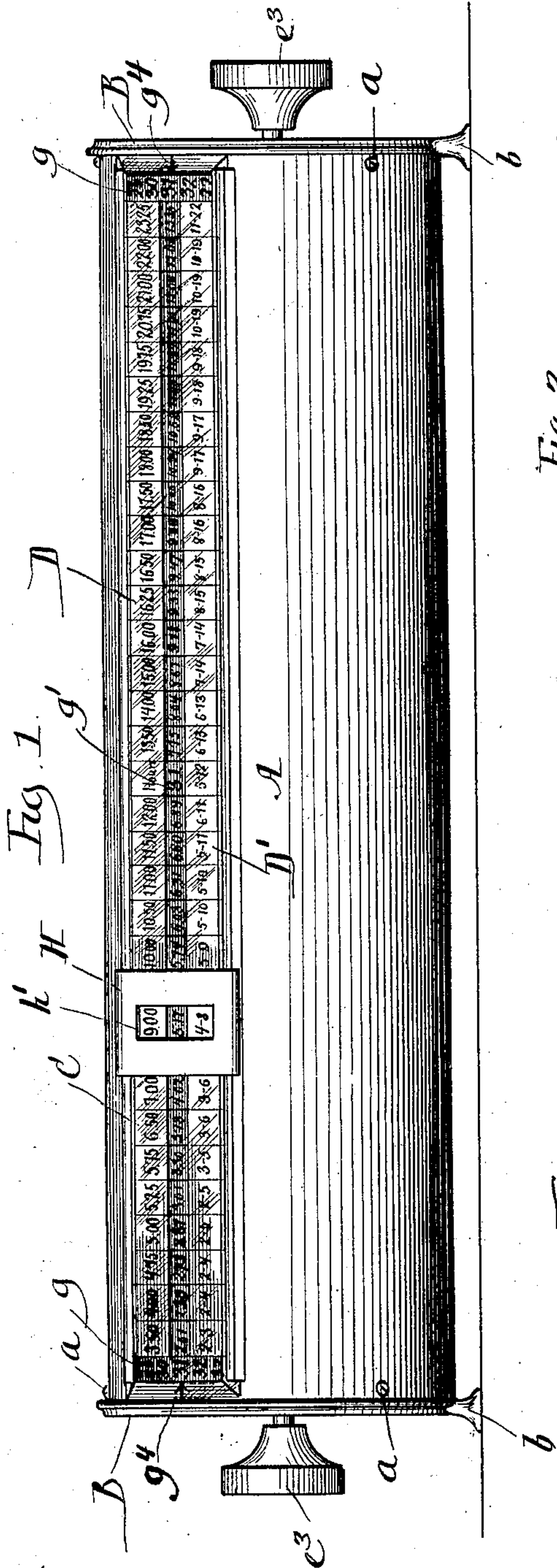
No. 760,360.

PATENTED MAY 17, 1904.

G. P. WILEY.  
CALCULATOR.

APPLICATION FILED SEPT. 22, 1902.

NO MODEL.



Witnesses:

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# UNITED STATES PATENT OFFICE.

GEORGE P. WILEY, OF BROOKLYN, NEW YORK.

## CALCULATOR.

SPECIFICATION forming part of Letters Patent No. 760,360, dated May 17, 1904.

Application filed September 22, 1902. Serial No. 124,345. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE P. WILEY, a resident of the city of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Calculators, of which the following is a full, clear, and exact description.

The invention relates to devices employed for calculating, and is designed more particularly for use in calculating the wages due to employees.

One object of the invention is to provide an improved calculator, whereby the amount of wages due to an employee may be quickly and accurately ascertained.

The invention further designs to provide a calculator for the purpose specified which is simple in construction and can be produced at a low cost.

The invention still further designs to provide an improved calculator, whereby the amount of wages under various scales may be quickly and accurately ascertained and without danger of error in reading the displayed figures.

The invention consists in the several novel features of construction hereinafter described, illustrated in the accompanying drawings, and more particularly defined by claims at the conclusion hereof.

In the drawings, Figure 1 is a view in front elevation of a calculator embodying the preferred form of the invention. Fig. 2 is a vertical transverse section. Fig. 3 is a view in central longitudinal section, one end being broken away and a portion of the revoluble drum being shown in elevation.

A denotes a casing within which the several parts of the calculator are held and by which they are inclosed. The cylindrical portion of the casing is usually formed of sheet metal and is secured at each end thereof in a vertical side wall B, usually formed of cast metal. Each of the sides B is provided with feet  $b$ , adapted to rest upon a desk or table, and whereby the calculator will be sustained in desired elevation. The cylindrical portion of the casing is preferably fitted into an angular groove  $b'$ , formed in each of the side walls B,

and is removably secured to the side walls by screws  $a$ , which secure the casing to an annular ledge  $b^2$ , integrally formed with the side walls. An opening  $A'$  extends longitudinally across the front of the casing and is closed by a translucent plate C, which is conveniently held between the bent edges  $b^3$  of opening  $A'$ . Said plate fits snugly between the side plates B and is thereby secured against endwise movement in the casing. To the inner side of the plate C is secured a sheet D, containing in longitudinally-disposed and horizontally-alined series a scale of the several weekly amounts paid to employees. The wage scale is usually printed upon a strip of non-translucent paper, which is pasted upon the inner face of the translucent plate C and adjacent the upper portion of opening  $A'$ . A non-translucent strip  $D'$ , on which amount of wages for hour-fractions—*e. g.*, half-hours and quarter-hours—are indicated, is secured to the inner face of plate C and adjacent the lower portion thereof, and so a clear space is left between the wage scale and the scale of fractional hours. The scale of wages and the scale for fractions are held stationarily within the casing, so these are constantly visible throughout the entire width thereof.

Within the casing is mounted a revoluble drum E, which is sustained by a shaft  $e$ , journaled in a bearing  $b^4$ , formed in each of the side plates B, and a disk  $e'$  at each end thereof. Each end of shaft  $e$  is extended through the adjacent side plate. Each projecting end is provided with a screw-thread  $e^2$ , by which a finger-wheel  $e^3$  is removably secured to the shaft. These finger-wheels serve as means whereby the drum may be conveniently and manually revolved. A friction-spring F, secured to one of disks  $e'$  and pressing against the inner face of one of the side frames, frictionally holds the drum in assigned position. The disks  $e'$  may be secured to shaft  $e$  in any convenient manner. The purpose of this particular construction of the drum and casing is to provide a calculator which can be manufactured at a low cost and which can be readily assembled.

Upon the periphery of drum E is displayed



at desired intervals and in circumferential columns a table containing in succession the number of hours for which an employee may be entitled to an accounting, such being indicated at each end, as at  $g$ , and at the center, as at  $g'$ . This column is preferably repeated for convenience in referring to the hour-columns. Usually the figures of the hour-columns are distinguished from other characters by a contrasting color. Between the columns of hours figures indicating the amount due for the corresponding number of hours indicated in column  $g$  and  $g'$  are arranged in longitudinal series across the drum and corresponding to the amount which may be due under the several rates of wages under the wage scale D—that is to say, the amounts due for each number of hours at the several rates noted in the wage scale are noted in longitudinal alinement, as shown, and at points along the drum which will register with the corresponding rate of wages of the wage scale. The sums estimated according to the number of hours indicated in the hour-column are carried in longitudinal series across the drum, so that all of the figures for one of the numbers of hours indicated in the hour-column will be simultaneously visible through the clear space of plate C. The amount due for the several numbers of hours under a particular wage rate are indicated in circumferential columns extending around the drum and at such points along the drum as will register with the corresponding wage rate indicated in the scale of wages. The columns of the drum are preferably divided by lines  $z'$ . Revolution of the drum will successively bring the amounts due for any number of hours simultaneously within view beneath the wage scale, and so that the amount due for the desired number of hours will be under all of the wage rates and will be simultaneously brought into horizontal alinement and displayed. A sliding frame H is guided longitudinally upon projecting lips or ribs on the casing. Said frame is provided with an opening  $h'$ , through which but a single wage-rate amount due for one of the hours under that rate and the sum due for a fractional portion of the hour under the same may be seen, and the frame H serves to conceal adjacent figures, so that all possible error in reading is avoided. The frame can be readily positioned longitudinally across the front of the casing, so that only the figures belonging to one rate of the wage scale will be visible through opening  $h'$ .

When the operator desires to ascertain the amount due in accordance with the time-sheet, he will turn either one of the finger-wheels  $e^3$  until the number of hours which an employee has been employed is visible in the hour-column  $g'$  or opposite the index  $g^4$  at either side of the casing. Beneath the scale of wages the several amounts calculated under the several

wage rates will then be visible. Slide H of sliding frame will then be shifted until the wage rate of the employee is exposed through the opening in said frame. Only the wages and the amount due for the number of hours for which the employee is to receive pay will be visible through the opening in said frame. If a fraction of an hour is to be calculated, the operator will add the amount seen through opening  $h'$  to the sum indicated in the scale D', and the total will be the amount due for the number of hours and the fraction. It is customary only to account for half and quarter hours, and therefore the amounts calculated according to the wage scale and for quarter and half hours are displayed on scale D'. For example, if the time-sheet shows that an employee has worked thirty-one and one-half hours and is to receive wages at the rate of nine dollars per week the operator will rotate drum E until the figure "31" is indicated in the hour-columns, then shift the slide H until the wage amount—*i. e.*, nine dollars—is visible through opening  $h'$  in said slide. The amount seen within the amount indicated—five dollars and seventeen cents, plus eight cents, which is the sum due for a half-hour and which amount is indicated on the scale D'—makes a total of five dollars and twenty-five cents, which will be the sum due.

The invention possesses numerous important advantages. It provides a calculator by which the wages can be quickly ascertained without calculation upon the part of the operator. The construction is such that the calculator can conveniently rest upon a desk or table. By employing a slide which excludes from view all of the figures except those to be read all likelihood of error in reading is avoided, and so a person not skilled in mathematics can readily prepare the wage account. The arrangement of the wage scale and the scale for indicating the sums due for hour fractions is such that the amounts due are visible between the scales, so the hour-fractions will not confuse the operator in event no hour fractions are to be calculated. The construction of the device is such that it can be produced at a low cost.

The invention is not to be understood as restricted to the precise details of construction shown and described, but may be varied without departing from the spirit of the invention.

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

1. The combination with a casing having a longitudinally-extending opening therein, of a transparent plate closing said opening, a strip having a wage scale printed thereon in longitudinally-alined series, said strip being secured to the back of said plate and a revolvable drum having a list of hours indicated thereon in a circumferential column at each end



and having the corresponding sums indicated thereon in accordance with the several rates of the wage scale, in circumferential columns and registering with the rates of the wage scale.

2. The combination with a casing having a longitudinally-extending opening therein, of a transparent plate closing said opening, a strip having a wage scale printed thereon in longitudinally-alined series, a revoluble drum having a list of hours indicated thereon in a circumferential column at each end and having the corresponding sums indicated thereon in accordance with the several rates of the wage scale in circumferential columns and registering with the rates of the wage scale, and a strip having the fractional-hour rates thereon in corresponding relation to the wage scale, said strips being secured to the back of said plate, and arranged so a longitudinally-extending view-opening will be left therebetween.

3. The combination with a casing having a

longitudinally-extending opening therein, of a transparent plate closing said opening, a strip having a wage scale printed thereon in longitudinally-alined series, said strip being secured to the back of said plate, a revoluble drum having a list of hours indicated thereon in a circumferential column at each end and having the corresponding sums indicated thereon in accordance with the several rates of the wage scale in circumferential columns and registering with the rates of the wage scale and a slide fitting against the outer face of said plate, arranged to be moved across said opening, having an opening therein through which only one of the amounts of the wage scale and the corresponding sums of the drum, can be seen, and serving to exclude from view the adjoining figures of the wage scale and columns on the drum.

GEORGE P. WILEY.

In presence of—

H. M. DIXON,  
J. H. HONS.