

J. I. BOGUE.  
 Calculator.

No. 207,487.

Patented Aug. 27, 1878.

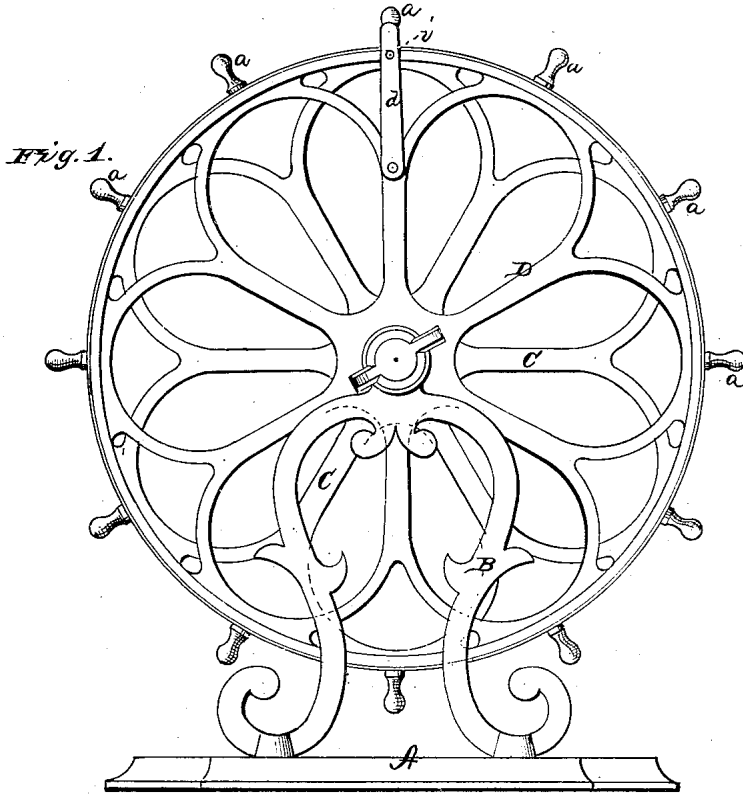
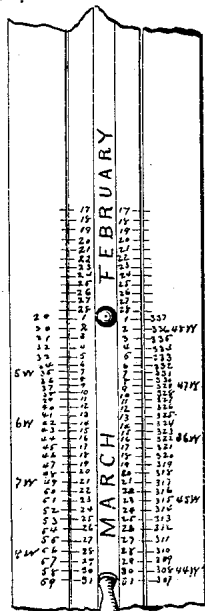


Fig. 1.



WITNESSES  
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Fig. 2.

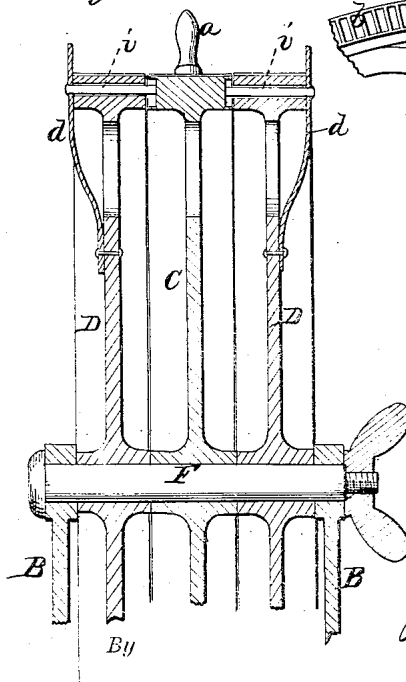


Fig. 4.

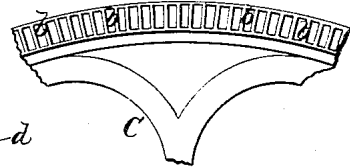


Fig. 5.



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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN CALCULATORS.

Specification forming part of Letters Patent No. 207,487, dated August 27, 1878; application filed March 15, 1878.

### *To all whom it may concern:*

Be it known that I, JAMES ISAAC BOGUE, of the city and district of Montreal, in the Province of Quebec and Dominion of Canada, have invented new and useful improvements and combination of wheels and attachments thereto, which are fully set forth in the following specification and accompanying drawings.

The object of my invention is to furnish a combination by which time, past or future, can be computed and counted at a glance without calculation and with mathematical precision; the first part whereof relates to the combination of three wheels, on the face of the circumference (or spherical face) of which is printed, lithographed, engraved, painted, or otherwise marked words, letters, figures, and rules or indicators in such a manner that any number of days from each day of the year to any other day in the year may be counted or computed at a glance without calculation and with mathematical precision.

The second part of my invention relates to the combination of three wheels, one of which being divided on both sides or edges into three hundred and sixty-five notches, corresponding with the rules or indicators and figures on the face of the circumference (or spherical face) of said wheels, and which said wheel is also divided in the center of the face of the circumference (or spherical face) thereof by twelve knobs or handles at or near the intersection of the months of the year there indicated, the object of which said knobs or handles is to mark the division of each month, to revolve the wheels, and also that the fingers may not soil the face of the circumference (or spherical face) of said wheels.

Attached to each of the other two wheels is a clasp, catch, or locker at the figures 365 on each, intended to fit into the notches on the sides or edges of the wheel first described, the object of which is to secure any of the divisions of the wheel first described at the figures 365 on each; and attached to each of the last-mentioned two wheels is also a balance-weight, intended to keep the clasps, catches, or lockers above described pointing upward, the whole to revolve on a shaft or arbor mounted on a foot or stand.

In the annexed drawing, Figure 1 is a side elevation of my machine. Fig. 2 is a central vertical section of a part thereof. Fig. 3 is a front view of a portion of the wheels. Fig. 4 shows a part of the middle wheel; Fig. 5, a detail view.

A represents the bed of the machine, on which are bolted or otherwise affixed two standards, B B, at suitable distances apart to receive between them three wheels, C and D D. These wheels are mounted on a shaft or bolt, F, passing through the upper ends of the standards, and fastened by a thumb-nut on the end thereof.

The wheels C and D D are of precisely the same diameter, and the center or middle wheel, C, has upon its periphery a series of projecting handles, *a a*, at suitable distances apart. The rim of the center wheel, C, is on both sides provided or formed with a series of recesses, *b b*, which are three hundred and sixty-five in number, on each side and at regular equal distances apart.

Each of the side wheels, D, has a pin or bolt, *i*, passing through its rim horizontally, so as to engage with the recesses in the side of the center wheel, C. The outer end of this pin or bolt *i* is fastened to a spring, *d*, which is secured on the outer side of the wheel D, and has its end projecting beyond the rim thereof, so as to form a thumb-piece, by means of which the pin can be easily pulled out to disengage the wheel, and as soon as the pressure is removed the spring throws the pin inward again.

On the circumference of the outer or side wheels, D D, are in any suitable manner affixed numbers from 1 to 365, and in reverse order on the two wheels. Opposite every seventh figure is marked the number of weeks, from 1 to 52, also running in reverse order on the two wheels.

The circumference of the center wheel, C, is divided into corresponding three hundred and sixty-five spaces, and divided, further, in three circumferential rings, the center one of which has the months of the year marked thereon in rotation, and the outer ones marked from 1 to 31 for January, 1 to 28 for February, 1 to 31 for March, and so on around the entire wheel, terminating with December, from 1 to

31, thus taking up the whole three hundred and sixty-five spaces.

The various figures, &c., on the wheels may be engraved thereon, or printed on slips attached to the wheels, or affixed in any other suitable or convenient manner.

The outer wheels, D D, may be provided with counter-weights E, as shown, to keep the starting-point of the machine at the top.

To find out the number of days from any stated day to any future day in the year, find on the wheel in the center the date of the month from which time is to be calculated; revolve this wheel so as to bring the rule or indicator at that date opposite to and corresponding with that at the figures 365 on the left outer wheel; secure it in that position by means of the clasp; then revolve the whole from you until you arrive at the date indicated on the center wheel, to which time is to be calculated. Opposite to the rule or indicator at said date, and corresponding with that of the figures on the left outer wheel, the figures there indicated give the number of days required. If 29th of February is comprised, add one. For instance, if it is desired to find out the number of days from May 17 to July 4, push back the pin or stop *i* on the outer left wheel, D, and revolve the center wheel, C, until the figure 17 in the May division is opposite the figure 365 on the outer left wheel; then turn the wheel backward, and opposite the figure 4 in the July division will be found the number 48, which is the number of days between the two dates named.

To find out the number of days to any stated day from any past day in the year, find, as before, the date to which time is to be calculated; secure it at the figures 365 on the right outer wheel; then revolve the whole toward you until you arrive at the date from which time is to be calculated. Opposite to the rule or indicator at said date, and corresponding with that at the figures on the right outer wheel, the figures there indicated give the number of days required. If 29th February is comprised, add one. For instance, if it is desired to find out the number of days from the 4th of January last past and the coming 4th of July, the number 4 in the July division of the center wheel is

placed opposite the figures 365 of the outer right wheel; then turn the wheels forward until the figure 4 in the January division is in sight, when opposite the same will be found the number 181, which is the number of days sought.

To find out the number of weeks, the same process has to be gone through. The weeks are indicated by the outer range of figures and letters on the outer wheels.

To find out on what date a bill falls due, find, as before, the date of the bill; secure it at the figures 365 on the outer left wheel; revolve the whole until you arrive at the figures on the outer left wheel indicating the number of days at which it is drawn, adding three days. Opposite to the indicator at said number, and corresponding to that at the date indicated on the center wheel, is the date on which it falls due. If 29th February is comprised, deduct one.

To find out what day in the week any date of the year falls on, adjust, as in former cases, the date from which you are counting opposite to the figures 365; revolve the whole until you arrive at the date to which you are reckoning. The spaces from that date to the first indicator of weeks above said date are equal to the number of days from the day of reckoning. As, for instance, suppose you wish to reckon from a Monday, and that the date required falls four spaces from the first indicator of weeks above it, the day of the week on which it falls is a Friday.

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

The combination of the center wheel, C, having a series of three hundred and sixty-five recesses, *b*, on each side, and the side wheels, D D, each having a pin or bolt, *i*, with spring *d*, all the wheels being mounted on a common center, F, in a suitable frame, and provided on their peripheries with figures, &c., substantially as herein described, and for the purposes set forth.

JAMES ISAAC BOGUE.

Witnesses:

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H. BOURDON.