Loomis & Johnson.

Calculating-Machine

No. 73732 Patented Jan. 28, 1868.

Fig. 1

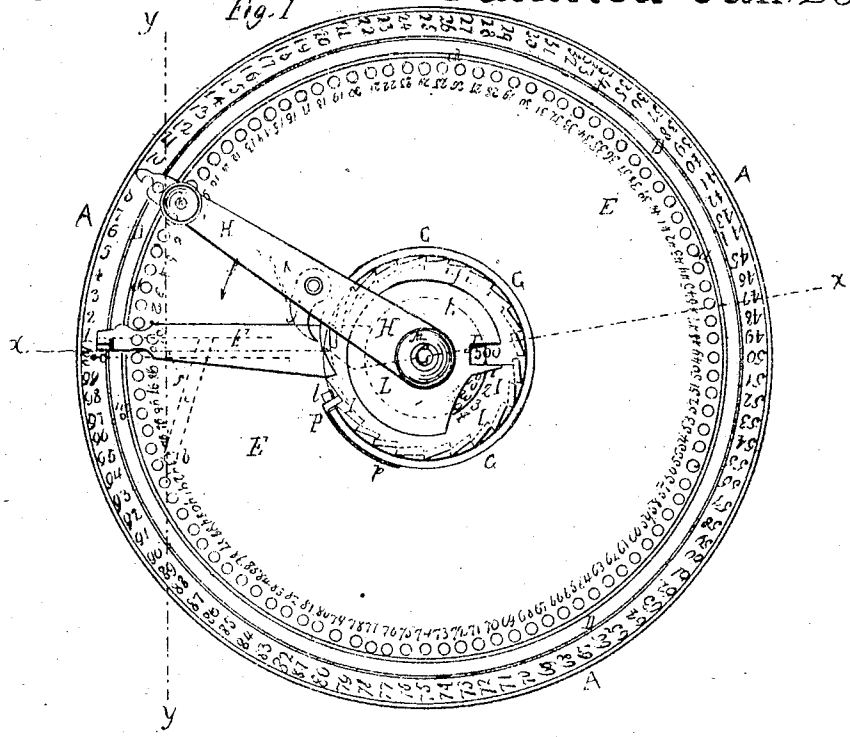


Fig. 2

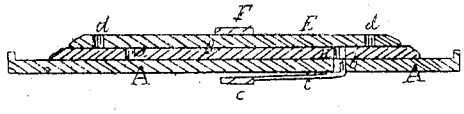
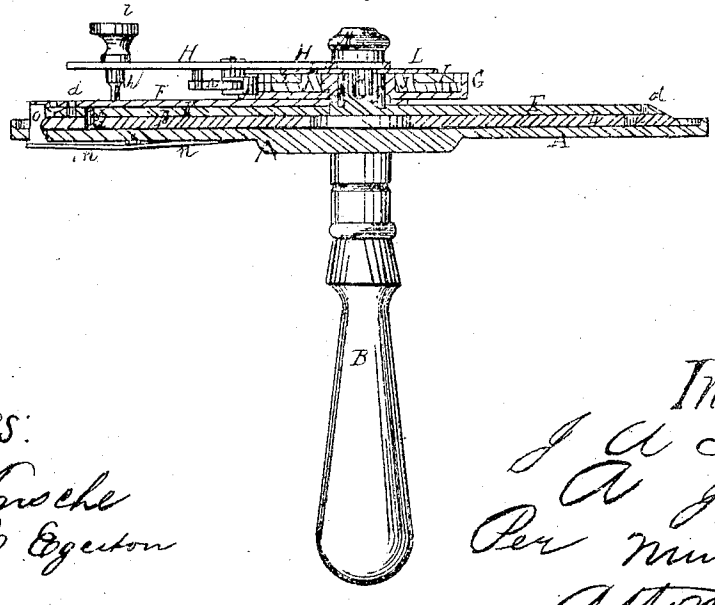


Fig 3.



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Letters Patent No. 73,732, *dated January* 28, 1868.

IMPROVEMENT IN CALCULATING-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that we, JAMES A. LOOMIS and ALONZO JOHNSON, of Springfield, in the county of Hampden, and State of Massachusetts, have invented a new and improved Calculating-Machine; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a plan or top view of our improved calculating-machine.

Figure 2 is a vertical central section of the same, the plane of section being indicated by the line *x x*, fig. 1.

Figure 3 is a vertical sectional view of the same, the plane of section being indicated by the line *y y*, fig. 1.

Similar letters of reference indicate corresponding parts.

This invention relates to a new device for adding numbers, and is particularly applicable for counting lumber, as it is provided with a device for registering the number of feet counted, as well as the number of boards or pieces.

The invention consists in the use of two circular plates, which are placed one upon the other, around a stationary arbor, the upper plate being marked around its rim with the numbers from 1 to 100. The two plates are connected in such a manner that they turn together, except when one hundred is completed, when the lower plate will remain stationary, while the upper or dial-plate advances one figure, thereby registering one additional hundred, which is seen by referring to a pin on the lower plate, and the opposite figure on the dial-plate.

The units are counted by means of a pointer, which turns on the aforesaid arbor, and which fits into holes or notches in the dial-plate, carrying the same around as far as needed, when that figure on the dial-plate which is opposite to a stop on a stationary disk, upon which the two other plates revolve, will indicate the tens and units. A pawl on the pointer moves a small disk once during each move of the pointer, and thereby the number of boards or pieces measured is registered.

A represents a circular plate, which is stationary, fixed upon a handle, B, and from the centre of the face of which an arbor, C, projects. D is a circular plate, a little smaller in diameter than the disk A, which is placed upon the face of the plate A, and around the arbor C. It is perforated with one hundred holes, *a a*, which are arranged on a circular line, at equal distances from each other. A pin, *b*, which is fixed to a spring, *c*, that is arranged on the under side of the disk A, fits through a hole in the latter into one of the holes *a* in D. Its upper end is bevelled, as shown in fig. 2, whereby the disk D is allowed to be turned in one direction, (arrow, fig. 1,) while it cannot be turned in the opposite. E is a disk, a little smaller in diameter than the disk D, and set around the arbor C, and upon the disk D. It is perforated with one hundred holes, *d d*, which are arranged near its circumference, at equal distances from each other, as is clearly shown in fig. 1. F is a spring, which is fitted around the arbor C so as to revolve around the same, and which has a pin, *e*, near its end, at its under side, said pin passing through a hole, *f*, in the disk E, into one of the holes *a* in the disk D, as shown in fig. 3. Thus the disks D and E are connected, so as to revolve together in the direction of the arrow, shown in fig. 1. G is a small circular plate, which is fitted above the spring F around the arbor C, and the arrangement of which will be hereinafter explained. It is provided with two pins, *g g*, at its under side, which fit into a shoulder in the arbor, whereby it is prevented from revolving around the said arbor. Above the plate G is fitted, around the arbor, a pointer or hand, H, which revolves on the arbor, and by a nut, M, which is screwed upon the upper end of the arbor, the hand H, plate G, spring F, and disks D and E, are held down in their position on the said arbor. At the end of the hand H, at its under side, is a pin, *h*, which fits into one of the holes *d d* in the plate E. A knob or handle, *i*, is fixed near the end of the pointer H, and a pawl, *j*, at its under side. The end of this pawl is forced by a spring, *k*, against the rim of the plate G. In this plate G is an annular recess, in which two or more annular plates, I and J, are fitted loosely, so as to turn around the arbor C. The circumference of these plates, I and J, is notched, like that of ratchet-wheels, and a portion of the rim of the plate G is cut out, so that the pawl *j* is or can be forced by the spring

h into the notches in the plates I and J. Upon the faces of the plates A and E are marked, near to their respective peripheries, the first hundred figures. When the end of the pointer H stands over the figures 100, on A, the pawl *j* strikes against a shoulder, *l*, on the plate G, and prevents the hand and the places D and E from being turned further.

The operation is simple, and as follows: The pointer, standing at 100, on A, is moved in the direction opposite to the arrow, to that figure in A which it is desired to add. At that point it is connected with the plates D and E by the pin *h*, which is passed through that hole, *d*, which stands opposite to the desired figure on A. Then the pointer and the plates D and E are carried around until they stop at 100 in A, when the figure on E which is opposite to 100 in A represents the tens and units of feet of lumber that have been counted. The hundreds are marked by a pin, *m*, which is fixed to the plate D. The edge of the plate D is bevelled. A spring, *n*, fixed on the under side of the plate A, has a lug, *o*, which fits around the edge of the plate D, and which, when it is pressed down, binds the said plate so that it will not move. When the end of the spring F arrives opposite to 100 in A, it comes against the bevelled or rounded lug *o*, which is also arranged opposite to that figure, and is raised by the same, so that it will press it upon the bevelled edge of the plate D, and so that the pin *e* is lifted out of the hole *a* in the plate D. When, then, the pointer is moved, it will only carry the plate E along until the spring F has passed over the lug *o*, and dropped into the next hole, *a*. Thus the plate E was moved one figure, while D remained stationary, and the pin *m* has thus arrived opposite to another figure in the plate E. That figure on E near which the pin *m* stands denotes the hundreds that have been counted, while that figure on E, which is opposite to 100 on A, denotes the tens and units. The disk I, which is moved one tooth during each move of the pointer, is provided with figures on its face, of which one is displayed through a slot or hole in a stationary covering-plate, L. If this disk I cannot be made large enough to register the required number, another plate, J, may be used, which would, for instance, register the hundreds, or thirties, or fifties, according to the number of teeth on I. One of the notches in the latter is deeper than the rest, and allows the pawl to be brought into the teeth in J, thereby moving the said plate J one tooth during each complete revolution of the plate I.

It will be seen that this machine registers altogether automatically, and that it requires only care to insert the pin *h* into the right hole, *d*, and to then bring the pointer as far around until the pawl strikes the shoulder *l*. *p* is a spring-catch, by which the disks I and J are held in position.

We claim as new, and desire to secure by Letters Patent—

1. The plates A, D, and E, when connected by the pins *b* and *e*, respectively, and when operated by means of the pointer H, all made substantially as herein shown and described.

2. The plates A, D, and E, and pointer H, in combination with the pawl *j*, plate G, and ratchet-disk I, (or I and J,) all made and operating substantially as herein shown and described.

3. The device for counting the hundreds, consisting of a combination of the spring F with the lug *o* on spring *n*, and with the disks A D E and pin *m*, all made and operating substantially as herein shown and described.

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