

No. 614,454.

Patented Nov. 22, 1898.

M. T. FISH.
ADDING MACHINE.

(Application filed Mar. 14, 1898.)

(No Model.)

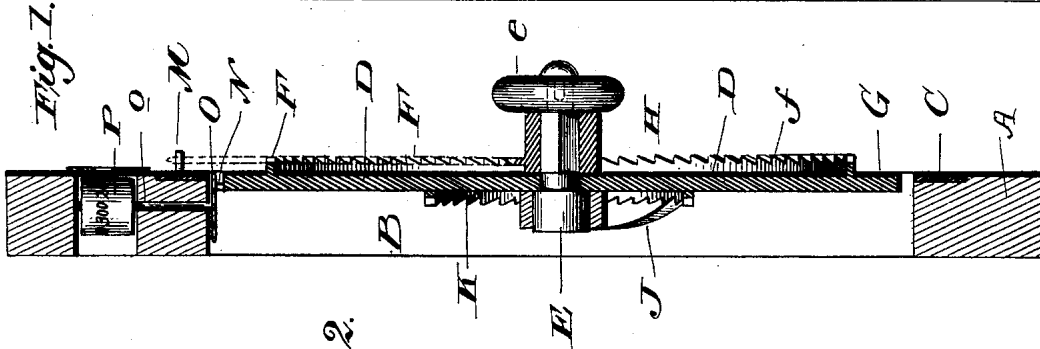
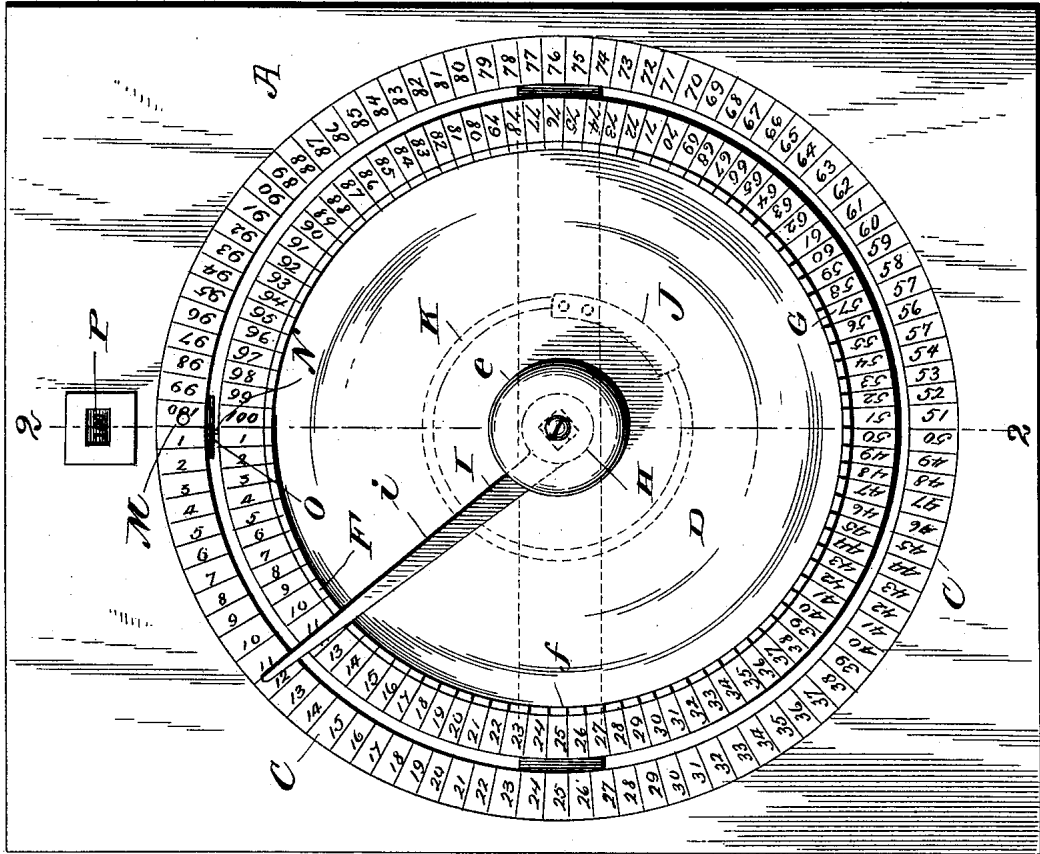


Fig. 1.

Fig. 2.

Witnesses
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UNITED STATES PATENT OFFICE.

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ADDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 614,454, dated November 22, 1898.

Application filed March 14, 1898. Serial No. 673,731. (No model.)

To all whom it may concern:

Be it known that I, MYRON T. FISH, a citizen of the United States, residing at Mecklenburg, in the county of Schuyler and State of New York, have invented certain new and useful Improvements in Adding-Machines, of which the following is a specification.

My invention relates to a machine for adding numbers; and it consists of a device of this character of very simple construction and one which is easy to operate and certain in its computations.

Figure 1 is a top plan view of an apparatus embodying my improvements. Fig. 2 is a central section taken on the line 2 2 of Fig. 1.

In the drawings, A represents a frame, which I prefer to make rectangular in shape and relatively thin. In the center of the top of the frame there is formed a circular opening B, and upon the edge of the top, bounding this opening, or upon an annulus of suitable material secured to the frame, is marked off a scale C with numbers, preferably from "1" to "100," extending entirely around the opening.

A circular disk D is arranged concentrically within the opening and is supported so that it may be turned on a central axis perpendicular to the top face of the case, being for this purpose mounted upon a centrally-arranged post or pivot-pin E or upon a sleeve H, surrounding the post, so that the disk will be free to turn independently of the post or pin. At or near the outer edge of the disk and extending upward at right angles therefrom is a flange F, having its upper edge notched or formed into ratchet-teeth *f*. There are preferably one hundred of these teeth and they are numbered consecutively, as represented at G. The radial arrangement of the spaces and division-marks of the two scales C and G is the same.

The post E is rotatable and is provided with a handle or knob *e*, by which it may be manipulated. It has a hand or pointer I secured to it so that the two turn together and arranged so as to extend over and be adapted to engage with the ratchet-teeth *f*. The inclined sides of the ratchet-teeth are so arranged that the hand I, which is preferably of some spring metal and bears upon the ratchet-toothed edge of the flange with a

slight yielding force, may be moved freely over the teeth in one direction from a lower to a higher number, but cannot move in the other direction without engaging with the teeth and causing the wheel to move with the hand.

A pawl J is arranged to engage with a ratchet K on the under side of the disk and prevents the disk from turning backward accidentally, as when the hand is being moved back over the ratchet-teeth *f*.

A pin M projects up from the frame A in the path of the hand, being arranged between the numbers "1" and "100" of the scale C, and serves to limit the movement of the hand at the proper point in its forward movements.

N is a laterally-projecting pin or projection extending radially from the disk and arranged to act upon a star-wheel O on a shaft *o* each time the disk makes a complete revolution or is moved one hundred spaces of the scale. This shaft *o* carries a count-wheel or disk of a counting or registering device P, such as is well known in the art and which need not, it is thought, be further illustrated or described.

The hand or pointer I is eccentrically mounted upon the pin or post E, so that one of its edges *i* is radial to a circle struck from the axis of such arm. The edge *i* is the front one—that is, the one which engages with the notches or ratchet-teeth *f* when the hand is moved to turn the disk. The edge *i* is thus always parallel with the scale-marks C and G of the subdivision up to which the hand is moved, and this tends to accuracy and care in the manipulation of the instrument.

To illustrate the working of the instrument, it will be supposed that the parts are all set at "0" and that the first number to be registered is "11." The hand is turned back until the edge *i* thereof is over the subdivision-mark "11" on the scale C, when under the conditions supposed it will be over the subdivision-mark "11" of the scale G on the rotatable disk. The hand is then turned forward until it strikes the pin M, carrying with it the disk E eleven spaces. If the next number to be added to that already indicated by the apparatus be ninety-two, the hand will be turned back to the number "92" on the scale C, no reference being paid to the scale

G, as the hand will be over the number "3" on this latter scale when it comes to rest under the conditions supposed. The hand is then again carried forward until it strikes the pin M, carrying the disk with it. The disk has in the two movements referred to been advanced through one hundred and three spaces of its scale, or one complete revolution and three spaces. In completing the revolution and at the instant of making the one hundredth forward step or unit of forward movement of the disk E the laterally-extending pin N engages with the star-wheel O and operates the counting mechanism, so that it is caused to show the number "100." The total, as shown by the machine, will thus be "103," one hundred being indicated by the counting mechanism P and the units ("3") by the disk-number which is opposite to the pin M.

The apparatus which I have invented is exceedingly simple in construction and operation and does not require the use of a hinged or articulated hand or pointer or that the latter should be made to register with perforations in the disk, as is common in this class of devices and is a slow and tedious operation.

What I claim is—

1. In an adding-machine the combination of a rotatable disk provided with a numbered scale, and having a notched or ratchet-toothed flange substantially perpendicular to the face of the disk, and a pointer or hand rotatable over the face of the disk and adapted to en-

gage with the notches or teeth of such flange, substantially as set forth.

2. In an adding-machine, the combination of a frame provided with a scale, a rotatable disk also provided with a scale, and having a flange which is substantially perpendicular to the face of the disk and has its upper edge notched or ratchet-toothed, a rotatable spring-pointer or hand held in engagement with the toothed edge of such flange with a slight yielding force, and arranged to be freely moved over the same in one direction but to engage therewith when turned in the opposite direction, and a handle for moving the pointer arranged over the center of the disk, substantially as set forth.

3. In an adding-machine, the combination of a frame provided with a circular scale, a rotatable disk also provided with a circular scale and having a flange which is substantially perpendicular to the face of the disk and has its upper edge notched or ratchet-toothed, and a rotatable pointer, I, eccentrically mounted upon an axis situated at the center of the said scales, and having one of its edges radial to its axis, the hand or pointer being arranged to move freely over the toothed edge of the said flange in one direction but to engage therewith when turned in the opposite direction, substantially as set forth.

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Witnesses:

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