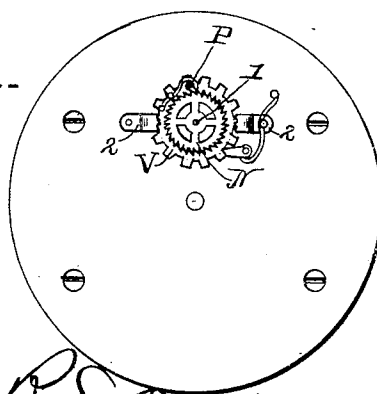
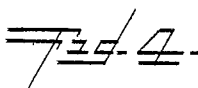
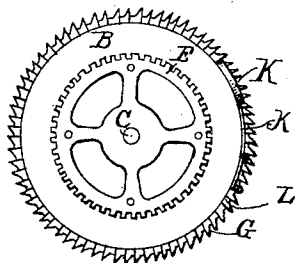
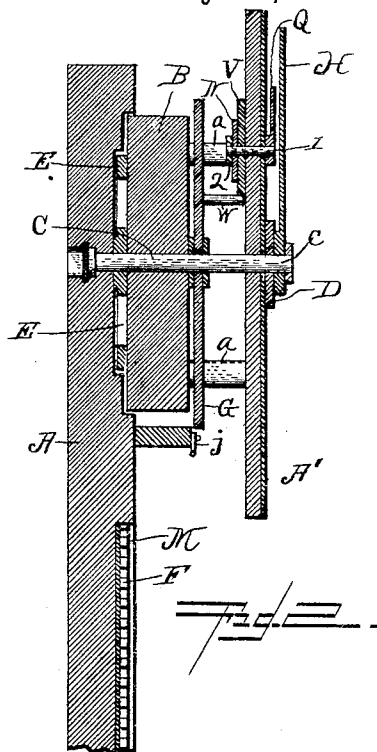
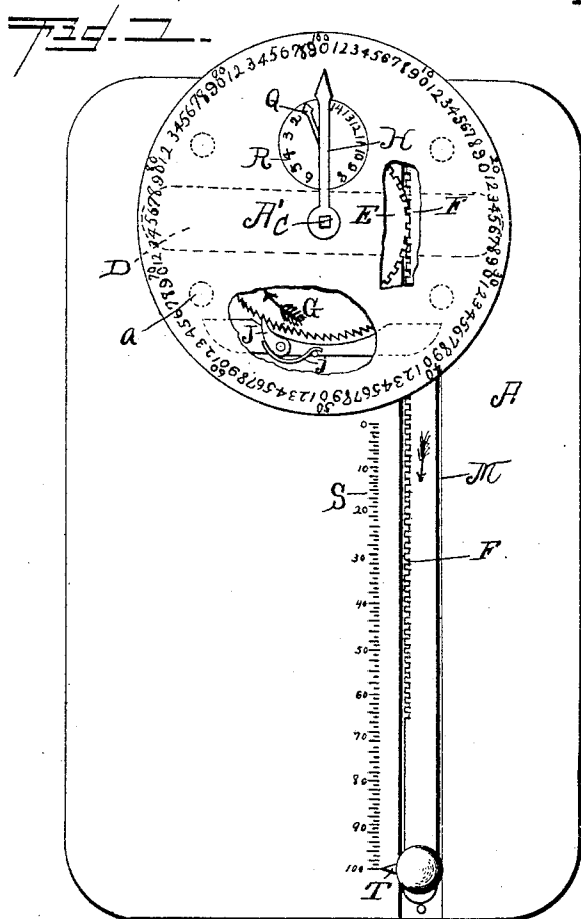


(No Model.)

R. S. ROBERTSON.
ADDING MACHINE.

No. 479,531.

Patented July 26, 1892.



WITNESSES

C. S. Frye.

Thomas E. Turpin

P.S. Robertson
INVENTOR

By *J. W. Fitzgerald & Co.*
Attorneys.

UNITED STATES PATENT OFFICE.

RINALDO S. ROBERTSON, OF ARTONDALE, WASHINGTON.

ADDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 479,531, dated July 26, 1892.

Application filed October 16, 1891. Serial No. 408,889. (No model.)

To all whom it may concern:

Be it known that I, RINALDO S. ROBERTSON, a citizen of the United States, residing at Artondale, in the county of Pierce and State of Washington, have invented certain new and useful Improvements in Adding-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to adding-machines; and it consists in certain new and useful improvements that will be hereinafter fully described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of my improved adding-machine. Fig. 2 is a central longitudinal section. Fig. 3 is a plan view of the inner sides of the rotating drum and pinions and the wheels connected thereto. Fig. 4 is a plan of the inner side of the indicator-face.

In the following specification reference will be had to these several parts by letters and figures of designation, A being the body or support, to which the adding mechanism is secured by erecting thereon the posts *a*, between which is mounted the circular drum B, which is loosely mounted on the axle C, journaled in the body A and the overreaching brace D, as clearly shown. In order to effect control of the rotation of said drum B, I secure to the inner side thereof the pinion E, which is adapted to mesh with the teeth on the cog-bar F, and by such means the said wheel and its accompanying drum are revolved. The ratchet-wheel G is placed outside the drum and is fixedly secured to the axle C, with which it is arranged to rotate. To the outer end *c* of the axle C is secured the hand H, said hand being adapted to move over the face A' when the axle is turned.

Upon a suitable support adjacent to the periphery of the wheel G, I secure the dog J, which is held into engagement with the ratchet edge of said wheel G by the spring *j*. Upon the periphery of the circular disk or drum B, I secure the pawl K, which is held in engagement with the series of cog or ratchet teeth L on the under side of the wheel G, adjacent to the edge thereof, by means of the spring *k*, as clearly shown. The actuating cog-bar F is held to the base longitudinally

therewith by guides M, and the cogs thereon are arranged to mesh with the cogs of the pinion E.

Journaled at one end in the indicator-face A' and at its opposite end in an overreaching bar or strap 2 is a short shaft 1, upon the outer end of which is fixed a hand Q, which is designed to be moved around on the dial R in such a manner that its free end will point to one of the numerals arranged in a circle upon said dial.

Fixedly mounted on the shaft 1 is a ratchet-wheel N, which is engaged by a spring-pawl P, which serves in practice to prevent backward rotation of the drum. Also fixedly mounted on the shaft 1 is a sprocket-wheel V, the number of teeth of which corresponds to the number of numerals on the dial R. This wheel V is designed to be engaged by a lug W upon the outer side of the ratchet-wheel G, whereby it will be seen that at the completion of each revolution of said wheel G the wheel V and the hand Q will be moved from one number to the next succeeding number within the circle R to register the hundreds.

On the outer edge of the indicator-face A', I provide the series of numerals, preferably from "1" to "100," though greater numbers may be used. I prefer to place "1" at the top of the indicator, to be followed to the right, regularly in their order, by the several numbers indicated, when "100" or the last of the series, will be placed alongside and to the left of "1." On the dial R, I arrange any series of numerals; but in the drawings I have shown from "1" to "14," running from the top of the circle to the left and around to the point of beginning. The sizes of the wheels E & V are so determined that the wheel G will make one revolution while the hand Q is moved from any one numeral to another. Between the circular disk and the end of the body A, I place upon the outside of said body the longitudinally-disposed scale S, having a series of numbers from "1" to "100."

The adjustment of these several parts in combination with the cog-bar F is so perfectly made that when it is desired to register any given number from "1" to "100" or from "1" to "1,000," as the case may be, the machine being set at "0," said rack-bar, carrying the

indicator T, is pulled in the direction of the arrow in the guide M until said indicator T points to the number upon the scale S that it is desired to register, when it will be seen that the indicator-hand H will point to the same number upon the circular face. By arrangement of the dogs above referred to the drum may be rotated in both directions, while the pinion G can be rotated in a single direction only—that is to say, when the cog-bar is drawn in the direction of the arrow the dog K will engage with the ratchet-teeth L upon the inner side of the wheel G and rotate said wheel in the direction of the arrow as long as the cog-bar is drawn downward.

As the wheel G is rotated in the direction of the arrow the dog J will engage with the ratchet-teeth upon the periphery thereof and prevent opposite rotation of the same when the cog-bar is moved in a direction opposite to that indicated by the arrow; but the drum B will be permitted to rotate in both directions by reason of the construction of the ratchet-teeth engaging the dog K, as will be readily understood.

Having thus described the construction of my improved counting-machine and indicator, its operation is as follows: When it is desired to register any number—for instance, “155”—the cog-bar F is drawn downward, so that the indicator T upon its lower end will point to “100” upon the scale S. By this movement the indicator-hand H will be caused to make one revolution upon the disk A', if said disk carries the numbers from “1” to “100” only, and the hand Q will be moved from “0” to “1.” The cog-bar is then moved upward until the indicator T points to “0” upon the scale S when said bar is drawn in the direction of the arrow, so that the indicator T thereon will point to the number “55,” which will cause the hand H to point to “55.” In the example above referred to by way of illustration it will be seen that the number registered is immediately determined by reading the numbers to which the hands carried over the small and the large dials A' and R, taken in conjunction with each other, point.

Believing that the advantages, operation, and construction of my improved indicator will be fully understood from the foregoing specification, considered in connection with the accompanying drawings, further description is deemed unnecessary.

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

1. In an adding-machine, the combination, with the body, the dial mounted on the body and having a series of numbers arranged in a circle, the axle carrying a hand adapted to swing upon the outside of the dial, and the ratchet-wheel G, fixedly mounted upon the axle, of a drum loosely mounted on the axle and carrying a pawl adapted to engage and rotate the ratchet-wheel G in one direction, a pinion fixedly connected to the drum, the scale S, and the longitudinally-movable rack-bar engaging the pinion of the drum and carrying a finger or index, substantially as and for the purpose set forth.

2. In an adding-machine, substantially as described, the combination, with the body, the dial mounted on the body and having a series of numbers arranged in a large circle and a series of numbers arranged in a smaller circle, the axle carrying a hand adapted to swing upon the outside of the dial, the shaft I, carrying a hand adapted to swing upon the outside of the dial, a sprocket-wheel fixed on said shaft, and the ratchet-wheel G, fixedly mounted upon the axle and carrying a depending lug adapted to engage the teeth of the sprocket-wheel, of the drum loosely mounted on the axle and carrying a pawl adapted to engage and rotate the ratchet-wheel G in one direction, a pinion fixedly connected to the drum, the scale S, and the longitudinally-movable rack-bar engaging the pinion of the axle and carrying an indicator, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

RINALDO S. ROBERTSON.

Witnesses:

D. C. MACON,
MAGGIE MACON.