

(No Model.)

D. I. CRAIG.
ADDING MACHINE.

No. 454,715.

Patented June 23, 1891.

Fig. I.

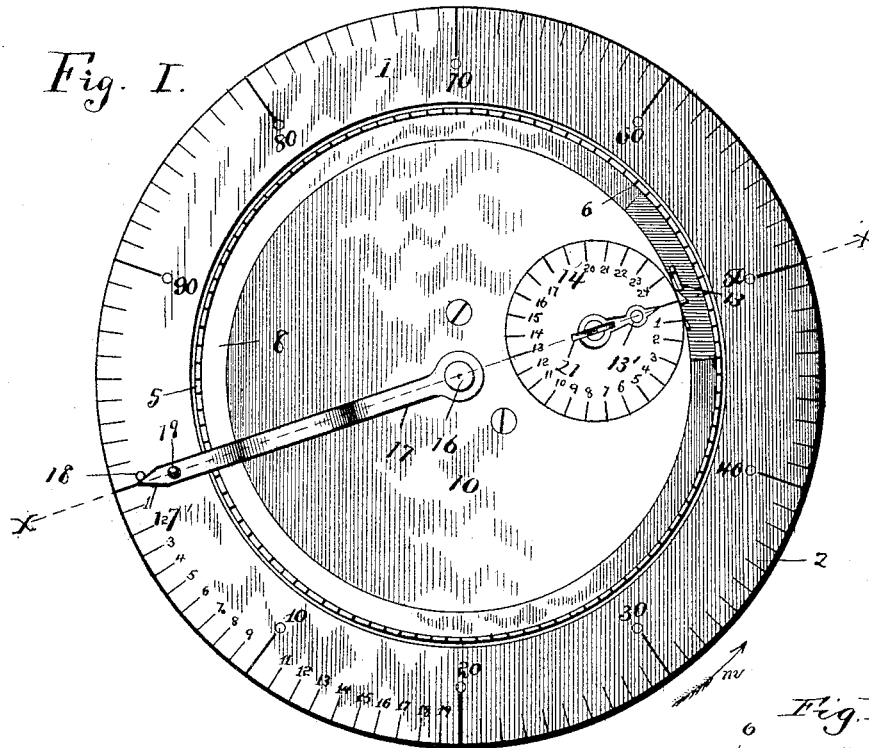


Fig. II.

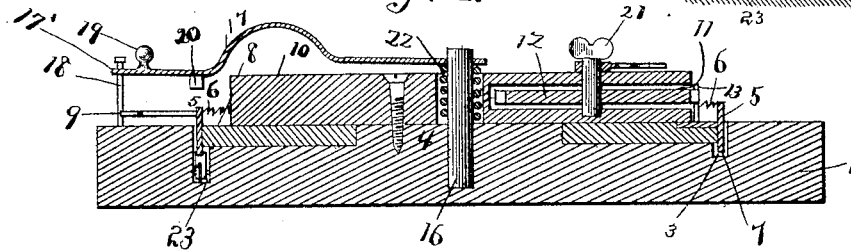


Fig. V.

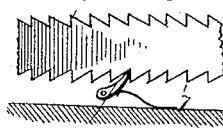


Fig. III.

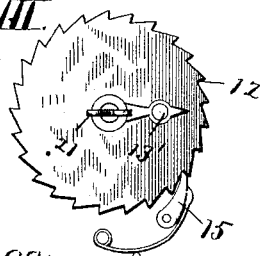
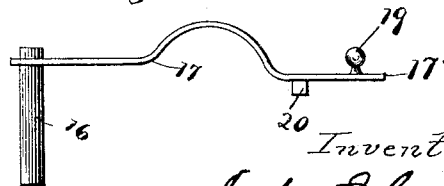


Fig. IV.



Witnesses:

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UNITED STATES PATENT OFFICE.

DUDLEY IRVINE CRAIG, OF SILVER KING, ARIZONA TERRITORY.

ADDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 454,715, dated June 23, 1891.

Application filed October 9, 1890. Serial No. 367,552. (No model.)

To all whom it may concern:

Be it known that I, DUDLEY IRVINE CRAIG, a citizen of the United States, residing at Silver King, in the county of Pinal and Territory of Arizona, 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 improvements in adding-machines, and has for its object to provide a machine which will automatically and accurately add one or two columns of figures.

A further object of my invention is to provide an adding-machine which shall be of such compact form as to be carried by a person desiring to use the same without the least inconvenience, and a still further object of my invention is to provide a machine of such simple construction as to render the same not only durable but also cheap of manufacture.

With these and other ends in view my invention consists in the combination, with a base or support, of a revoluble rim carrying a pointer adapted to indicate the numbers on a dial carried by the base or support, a hundreds-wheel arranged on a suitable stationary support within the revoluble rim and adapted to be operated by a stud or lug carried by said rim, a pointer connected to the hundreds-wheel and adapted to indicate on a suitable dial the number of complete revolutions of the revoluble rim, an operating-arm adapted to connect with and rotate the revoluble rim, and mechanism for returning the operating-arm and the indicating-pointers to zero.

My invention further consists in the novel construction and arrangement of parts, as will be hereinafter fully described and claimed.

In order that others may understand my invention, I have illustrated the same in the accompanying drawings, in which—

Figure I is a plan view of an adding-machine constructed in accordance with my invention. Fig. II is a sectional view on the line *xx* of Fig. I. Fig. III is a detail plan view of the mechanism indicating the hundreds, with the dial removed. Fig. IV is a

detail view of the operating-arm. Fig. V is a detail view showing serrations in both edges of the revoluble rim and the pawl engaging with the serrations on the lower side thereof.

Like numerals of reference denote corresponding parts in all the figures of the drawings, referring to which—

1 designates a base or support made of any suitable material and provided on its upper surface with a dial 2. The dial 2 is divided into one hundred equal parts, which are numbered from one to one hundred, (1 to 100,) inclusive.

Within the base or support 1 is formed a circular depression or cavity 3, and in the center of this cavity and made integral with or securely attached to the base 1 is a circular pivot-block 4. Fitted snugly within the depression or cavity 3 is the revoluble rim or annulus 5, provided on both edges with a series of one hundred serrations or teeth 6 7, and said rim or annulus is rigidly united to a disk 8, which at its center is fitted around the pivot-block 4 in the center of the depression or cavity 3. If desired, instead of making the disk 8 solid a skeleton frame may be used and the arms of said frame may be attached to the rim 5 and to another smaller ring fitted around the pivot-block, as is obvious. To the outer side of the revoluble rim 5 is attached in any suitable manner an indicating hand or pointer 9, which extends outwardly over the dial 2 on the upper surface of the base or support 1.

10 designates a support or block, which is suitably secured to the fixed pivot-block 4, and it extends for some distance over the disk 8. In this fixed support or block 10 is formed a chamber 11, situated at or near the edge of said support, within which chamber is suitably journaled a horizontal toothed or serrated wheel 12, the teeth on one portion of which extend slightly beyond the edge of the support or block 10 and are adapted to be engaged one after the other by an upwardly-extending stud or projection 13, which is suitably secured to the upper surface of the disk 8, within the rim 5, and arranged at a point diametrically opposite to the indicating-pointer 9.

The upper end of the shaft or arbor on which the wheel 12 is supported is provided

with a hand or pointer 13', which turns with said shaft and wheel, and said hand is adapted to be moved one point forward on a hundreds-dial 14 on the upper surface of the support or
 5 block 10 every time the wheel 12 is moved one notch or every time the revoluble rim 5 makes a complete revolution.

The wheel 12 is permitted to move in but one direction, and is prevented from backward movement by a spring-pawl 15, suitably
 10 secured within the chamber 11 and engaging with the teeth or serrations on the wheel 12.

In the center of the support or block 10 and the pivot-block 4 is journaled an upright
 15 shaft 16, which has attached to the upper end the horizontal operating-arm 17. The arm 17 is preferably formed of a flat piece of spring metal, and the outer end thereof is bent or
 20 formed into a hand or pointer 17', which normally rests against a post 18, secured in the base 1 at the place where one hundred is marked on the dial 2. The arm 17 is provided
 25 near its outer end with an upwardly-extending projection or thumb-piece 19, and on its lower face said arm has a depending tooth 20, which is adapted, when the outer end of the
 30 arm is depressed, to engage with one of the teeth on the upper edge of the revoluble rim 5. The arm 17 is bent at a point intermediate of its length into the upwardly-extending
 35 bend or swell, so that as said arm is revolved about its pivot it will clear or pass over a thumb-piece 21, carried by the hand or pointer 13' of the hundreds mechanism. Near the
 40 pivot of the arm 17 is connected one end of a coiled spring 22, and the other end of the spring, after passing around the shaft 16 in a suitable box, is securely attached thereto.

The revoluble rim or annulus 5 is permitted
 40 to move in one direction only, and it is kept from movement in the reverse direction by means of a spring-pawl 23, which is secured
 45 at one end within the depression or cavity 3, and the free end of which engages with one of the teeth or serrations on the lower edge of said revoluble rim 5.

To illustrate the operation of the machine, I will describe how three numbers—for example, 15, 20, and 45—are added. The different parts of the machine being in the positions shown in Fig. 1 of the drawings, the
 50 operating-arm 17 is depressed until the tooth 20 engages with the toothed revoluble rim 5, when the same is turned in the direction indicated by the arrow *m* until the pointer on the arm 17 and the pointer 9 (situated in the same vertical plane) point to the number 15
 55 on the dial 2. The pressure on the operating-arm is then removed, and the tooth 20 becomes disengaged from the rim 5, and the arm 17 is returned to its original position in line with the zero-post by means of the coiled spring 22, the revoluble rim being held in a fixed stationary position by the pawl 23. The
 60 operating-arm is now depressed for the second time and the revoluble rim is turned thereby until the pointer of said operating-

arm comes over the number 20 on the dial 2, while the pointer 9 will be advanced and point to the number 35 on said dial. Pressure being
 70 removed from the operating-arm, it is returned to its first position by the spring 22, the spring-pawl 23 holding the rim 5 in place. The operating-arm is now depressed for a third time and the revoluble rim rotated until the pointer
 75 on said operating-arm extends over the number 45 on the dial 2, when the pointer 9 will have been advanced so far around the dial 2 as to point to the number 80, which is the sum of three numbers—15, 20, and 45. Every time
 80 the revoluble rim 5 makes a complete revolution, or, in other words, when the sum of the figures added reaches one hundred, (100,) the stud or projection 13 of the revoluble rim or annulus causes the wheel 12 to turn one tooth
 85 or notch, and the hand or pointer 13' points to the numeral 1 on the dial 14. To place the parts in position for adding another column, the hand or pointer 13' is revolved by means of the thumb-piece 21 until said hand points
 90 to zero on the dial 14, and the revoluble rim 5 is turned around the pivot-block 4 until the pointer 9, secured thereto, points to zero or one hundred on the dial 2.

Changes in the form and proportion of parts
 95 and details of construction may be made without departing from the spirit or sacrificing the advantages of my invention.

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

1. An adding-machine comprising a base or support provided with the depression or cavity, a revoluble rim fitted within said cavity and extending above the base or support, a
 105 hundreds-wheel supported within the perimeter of the rim and above the plane thereof and adapted to be operated thereby, and a freely-movable operating-arm adapted to engage and turn the revoluble rim, as and for
 110 the purpose described.

2. In an adding-machine, the combination of a base or support having the depression or cavity, the stationary pivot-block in the center of said cavity, the block 10, secured to said
 115 pivot-block and extending partially over the depression or cavity, the revoluble rim fitted in said cavity between the block 10 and the base, the hundreds-wheel journaled in the block 10 above the plane of the revoluble rim,
 120 an operating-arm for turning the revoluble rim, and a vertical stud carried by said rim for moving the hundreds-wheel, as and for the purpose described.

3. In an adding-machine, the combination
 125 of a base or support provided with the units-dial, a serrated revoluble rim fitted within a depression or cavity in the base, a pointer carried by the revoluble rim, a hundreds-wheel journaled on a plane above the revoluble rim,
 130 means, substantially as described, for rotating the revoluble rim, and the stud carried by said rim for operating the hundreds-wheel, as and for the purpose described.

4. The combination of a base or support provided with the depression or cavity and the central pivot-block, a serrated revoluble rim fitted around said pivot-block and within the cavity, a hand or pointer carried by said rim and passing over a dial on the base or support, a support secured to the central pivot-block, a hundreds-wheel adapted to be turned by a stud or projection at every complete revolution of the revoluble rim, a hand for rotating the revoluble rim, and means for preventing the rotation of the said revoluble rim in a backward direction, substantially as shown and described.
5. In an adding-machine, the combination of a base or support having a units-dial, a revoluble rim provided on both edges with a series of serrations or teeth and fitted within a depression or cavity in the base, a hundreds-wheel journaled within the perimeter of the revoluble rim and adapted to be rotated by a lug or projection carried by said rim, a pawl fitted in the depression or cavity in the base and engaging with the teeth or serrations in the lower edge of the revoluble rim, and an operating-arm having a depending projection adapted to be thrown into engagement with the notched revoluble rim, substantially as shown and described.
- In testimony whereof I affix my signature in presence of two witnesses.

DUDLEY IRVINE CRAIG.

Witnesses:

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