

J. J. WALSH.
RESETTING DEVICE FOR ADDING MACHINES.
APPLICATION FILED NOV. 29, 1907.

Fig. 2.

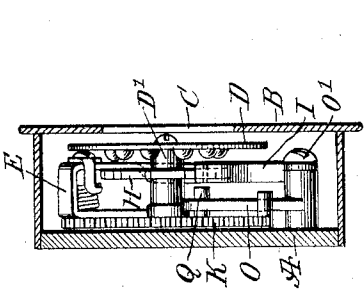


Fig. 4.

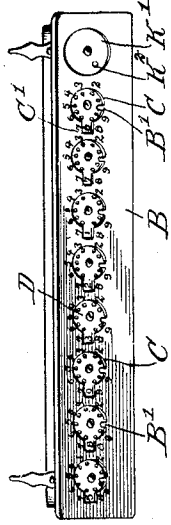


Fig. 1.

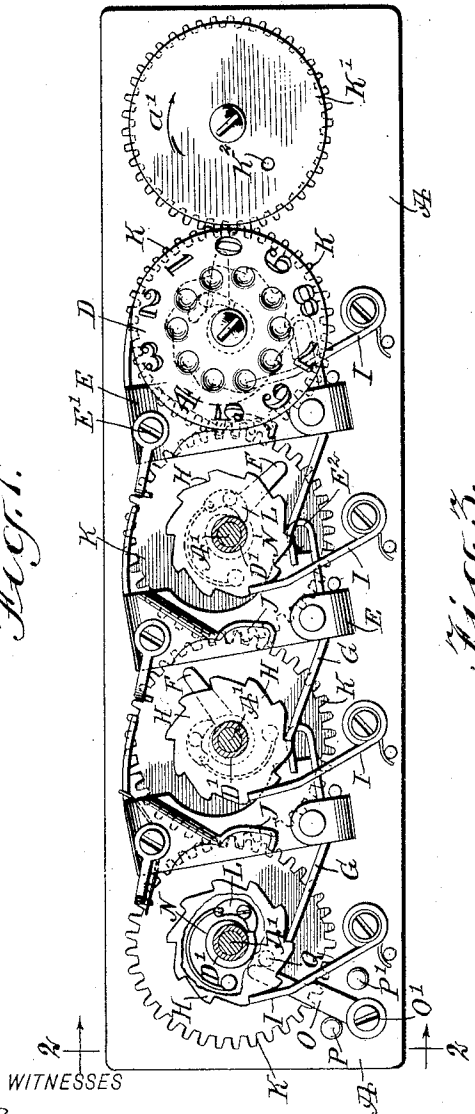
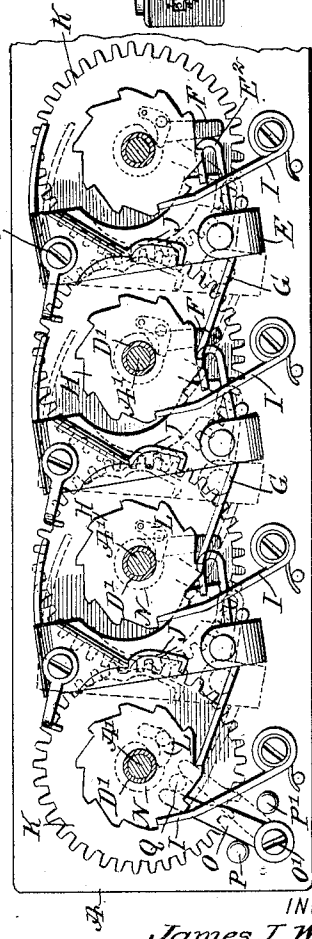


Fig. 3.



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RESETTING DEVICE FOR ADDING-MACHINES.

No. 897,688.

Specification of Letters Patent.

Patented Sept. 1, 1908.

Application filed November 29, 1907. Serial No. 404,236.

To all whom it may concern:

Be it known that I, JAMES J. WALSH, a citizen of the United States, and a resident of Elizabeth, in the county of Union and State of New Jersey, have invented a new and Improved Resetting Device for Adding-Machines, of which the following is a full, clear, and exact description.

The invention relates to adding machines, such as shown and described in Letters Patent of the United States, No. 689,255, granted to me December 17, 1901.

The object of the invention is to provide a new and improved resetting device for adding machines, arranged to permit the user to quickly raise the numeral disks to zero position whenever it is desired to do so.

The invention consists of novel features and parts and combinations of the same, which will be more fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of an adding machine provided with the improvement, the cover being removed, and parts being in section and parts being broken out; Fig. 2 is a transverse section of the same on the line 2—2 of Fig. 1; Fig. 3 is a sectional plan view of the adding machine provided with the improvement and showing the parts in a different position from the one shown in Fig. 1, and Fig. 4 is a reduced perspective view of an adding machine provided with the improvement.

The adding machine illustrated in the drawings is mounted on a back plate A and is inclosed by a cover B, provided in its top with apertures C, through which appear the numeral disks D, having their hubs D' mounted to turn on studs A' arranged on the back plate A, each numeral disk D being adapted to be turned by the use of a stylus or other tool in the hand of the operator, the turning motion from the left to the right being limited by a stop lug B' formed on the cover B and projecting into an opening C. The mechanism employed for turning a numeral disk D from a preceding one may be of any approved construction, preferably, however, like the construction shown and described in the Letters Patent above referred

to, so that further detail description of the said mechanism is not deemed necessary, it being sufficient to state that between adjacent numeral disks D is arranged a lever E, fulcrumed at E' on the back plate A and carrying a cam surface E² for engagement by a finger F on the hub D' of the preceding numeral wheel D, the said lever E also carrying a spring-pressed pawl G engaging a ratchet wheel H on the hub D' of the next following numeral disk D. Spring-pressed dogs I are fulcrumed on the back plate A and engage the ratchet wheels H, to hold the same and the numeral disks D against reverse turning, and each ratchet wheel H is also adapted to be engaged by a retarding dog J, fulcrumed on the preceding lever E.

The resetting device for resetting the numeral disks D at zero is arranged as follows: On the studs A' are mounted to turn loosely gear wheels K of a train of gear wheels, also having an initial or actuating gear wheel K' in mesh with the gear wheel K mounted on the stud A' on which the unit numeral wheel rotates. The initial gear wheel K' is provided with a socket or recess K², slightly inclined, and adapted to receive a stylus or other tool in the hand of the operator, to enable the latter to turn the gear wheel K' and hence the entire train of gear wheels K whenever it is desired to reset the numeral disks D at zero, as hereinafter more fully explained. On the upper face of each gear wheel K is fulcrumed a spring-pressed pawl L, adapted to engage a single-toothed ratchet wheel N, secured to or formed on the hub D' of the corresponding numeral disk D. The ratchet wheels N and the pawls L are so arranged that when the numeral disks D are turned by the operator from the left to the right, then the gear wheels K remain stationary, as the pawls L glide over the ratchet wheels N.

When the operator inserts the stylus in the socket K² and turns the gear wheel K' in the direction of the arrow a', then the gear wheels K are rotated, and the pawls L of the tens numeral disk D and that of the thousands numeral disk D engage the ratchet wheels N and turn the said numeral disks correspondingly, that is, from the left to the right. When the operator, after having given a complete turn to the gear wheel K', turns the latter in a reverse direction, then a reverse turning motion is given to the gear wheels K,

whereby the pawls L turn the ratchet wheels N for the units and hundreds numeral disks D, to rotate the latter from the left to the right.

5 In order to limit the turning motion given by the operator to the gear wheel K' to one full revolution in either a forward direction, as indicated by the arrow a', or a reverse direction, the following arrangement is made:
 10 A stop arm O is fulcrumed at O' on the back plate A and has a limited swinging motion between stop pins P, P', secured on the back plate A. The free end of the stop arm O is adapted to be engaged by a pin Q, arranged
 15 on the face of the last gear wheel K of the train of gear wheels. Thus when the initial gear wheel K' is turned in the direction of the arrow a' and has nearly completed a revolution, then the pin Q engages the arm
 20 O and swings the same from the right to the left, until the arm O abuts against the stop pin P, thus preventing the arm O from swinging further from the right to the left, at the same time preventing further turning of
 25 the last gear wheel K by the pin Q abutting against the locked arm O. The gear wheel K' can now be turned in the inverse direction of the arrow a', and when having nearly completed a revolution then the pin Q en-
 30 gages the stop arm O at the opposite side and swings the same from the left to the right, until the stop arm O abuts against the stop pin P', thus preventing the stop arm O from further turning in this direction. From the
 35 foregoing it will be seen that when the initial gear wheel K' is turned in one direction, then alternate numeral disks D are rotated, to bring the numeral 9 into registering position at the offset opening C' in the face of the
 40 cover B, and when the initial gear wheel K' is turned in the reverse direction of the arrow a' then the remaining numeral disk wheels are turned, to bring their numerals 9 into register with the opening C', and a slight
 45 further turning of the initial wheel K' in this direction causes the numeral disks to pass to zero position, that is, the units and hundreds numeral disks D are turned by the corresponding gear wheels K, their pawls L and the ratchet wheels N, while the tens and
 50 thousands numeral wheels D are turned from the preceding numeral wheels by the action of the fingers F, the cam surfaces E², levers E and pawls G. The turning movement of the initial gear wheel K' is finally interrupted by the arm O abutting against the
 55 stop pin P'.

It is understood that it is wholly immaterial how many numeral disks D are used, as the arrangement holds good in either case, it being, however, understood that the adding machine is usually provided with numeral disks up to the tenth million, as indicated in
 60 Fig. 4.

65 Having thus described my invention, I

claim as new and desire to secure by Letters Patent:

1. In an adding machine, a series of number disks, and a resetting mechanism comprising a train of gear wheels, and connections between the gear wheels and the number disks, whereby the turning of one of the end gear wheels of the train in opposite directions will reset the said number disks to zero position.

2. In an adding machine, a series of number disks mounted to turn, and means for resetting the number disks comprising a train of gear wheels of which one is the actuating gear wheel, connections between the gear wheels and the number disks whereby two complete turns of the actuating gear wheel in opposite directions will set the number disks to zero, and means for limiting the turning movement in both directions.

3. An adding machine comprising a series of number disks, mounted to turn, and a resetting device for resetting the number disks to zero position, the said resetting device having an initial or actuating gear wheel, a train of gear wheels actuated thereby, and connections between the said train of gear wheels and the number disks, whereby the turning of the initial gear wheel in one direction will move sundry of the number disks toward zero position, and the turning of the actuating gear wheel in the opposite direction will complete the movement of said number disks to zero position and move the remaining number disks to said position.

4. An adding machine provided with a series of number disks mounted to turn, and a resetting mechanism for the number disks comprising a train of gear wheels of which one is the actuating gear wheel, connections between the gear wheels and the number disks, whereby alternate number disks can be turned nearly to zero position when the actuating gear wheel is turned in one direction, and the remaining number disks can be turned to zero position when the actuating gear wheel is turned in the opposite direction, and connections between the number disks whereby the movement of the said remaining number disks to zero position completes the turning movement to zero position of the said alternate number disks.

5. In an adding machine a series of manually controlled number disks mounted to turn, a resetting mechanism comprising a train of gear wheels of which one is the initial or actuating gear wheel, the others being mounted to turn loosely on the axes of the number disks, connections between alternate gear wheels and the corresponding number disks for turning said number disks toward zero position when the initial gear wheel is turned in one direction, connections between the remaining gear wheels and the corresponding number disks whereby the said

number disks are turned to zero position when the said initial gear wheel is turned in the opposite direction, and mechanism for turning a number disk from a preceding one, 5 whereby on the completion of the turning movement in the last mentioned direction all the number disks will be restored to zero position, and means for limiting the turning movement of the actuating gear wheel in 10 both directions.

6. An adding machine comprising a series of number disks, each capable of being turned manually, mechanism for turning a number disk from a preceding one, a resetting device 15 for resetting the said number disks at zero position, the said resetting device having a train of gear wheels and spring pressed pawls carried on the said gear wheels and adapted to engage a tooth on the said number disks 20 for rotating the latter to zero position, a stop arm having a limited swinging motion, and a pin on the last gear wheel of the train of gear wheels and adapted to engage and impart a swinging motion to the said stop arm and to 25 be stopped by the latter.

7. An adding machine comprising a series of number disks, each capable of being turned manually, mechanism for turning a number disk from a preceding one, a resetting device 30 for resetting the said number disks at zero position, the said resetting device having a train of gear wheels, of which one is the initial or actuating one and the others are mounted to turn loosely on the axis of the said number 35 wheels, a spring-pressed pawl on the said

loose gear wheels, a tooth on the hub of each number disk and adapted to be engaged by the said pawl on the corresponding gear wheel for turning the number disk to zero position on turning the initial or actuating 40 gear wheel, a back stop arm mounted to swing, spaced stops for limiting the swinging motion of the said stop arm, and a pin on the last gear wheel of the train of gear wheels for engaging the said stop arm to impart a swing- 45 ing motion to the latter and to be stopped by it.

8. In an adding machine the combination with a casing comprising a back plate and a cover for the same provided with apertures 50 in its top, of manually controlled number disks, mounted to turn on studs arranged on the back plate, a train of gear wheels, also mounted to turn on said studs, means for turning said number disks from said gear 55 wheels to reset the number disks at zero, a stop arm fulcrumed on said back plate, stop pins on said back plate between which the said arm has limited swinging movement, and a pin on the face of one of said gear 60 wheels, and adapted to engage the stop arm, for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES J. WALSH.

Witnesses:

THEO. G. HOSTER,
EVERARD B. MARSHALL.