

March 6, 1934.

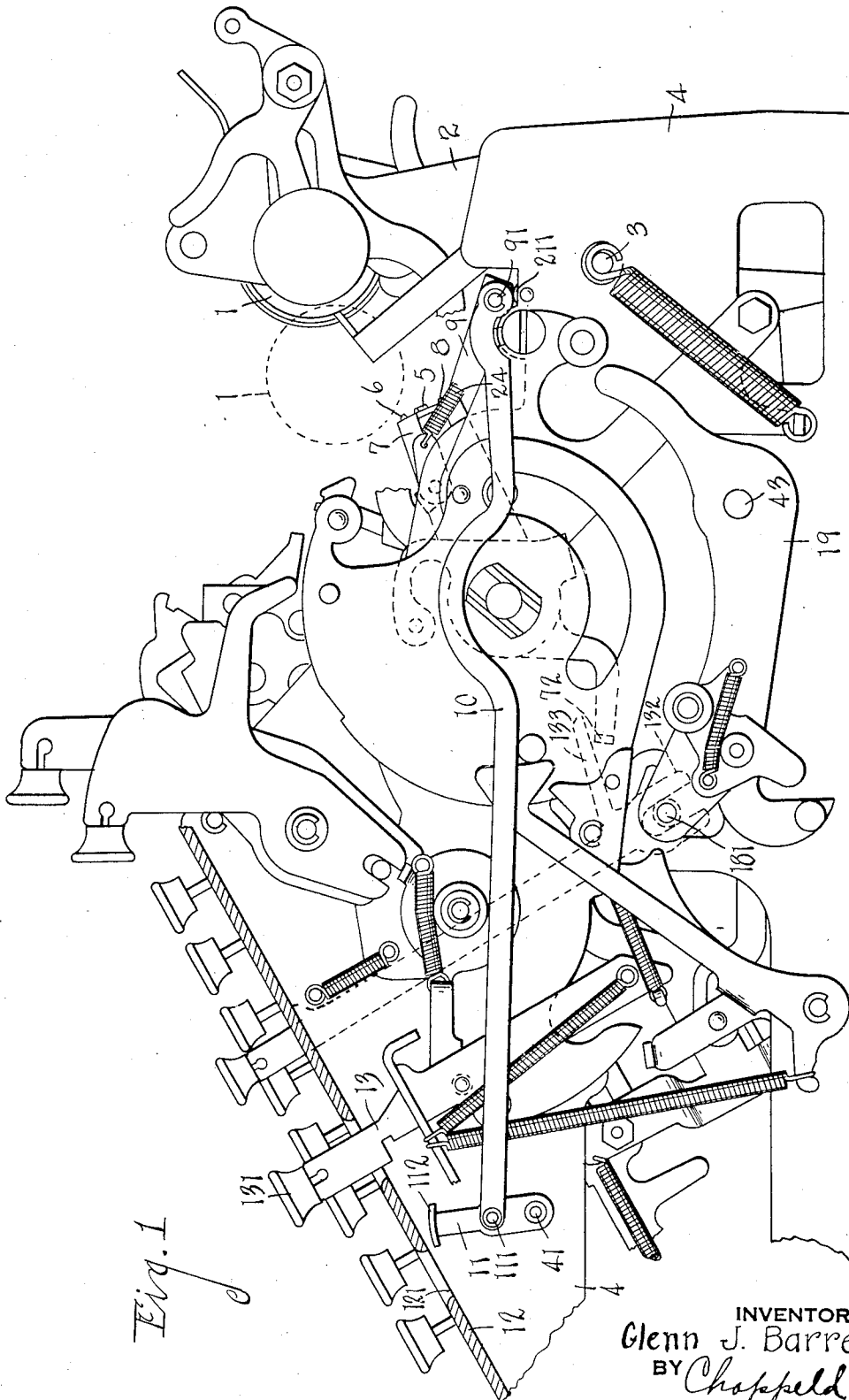
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1,949,706

MANUAL CLEAR SIGNAL DEVICE FOR ADDING MACHINES

Filed April 25, 1932

3 Sheets-Sheet 1



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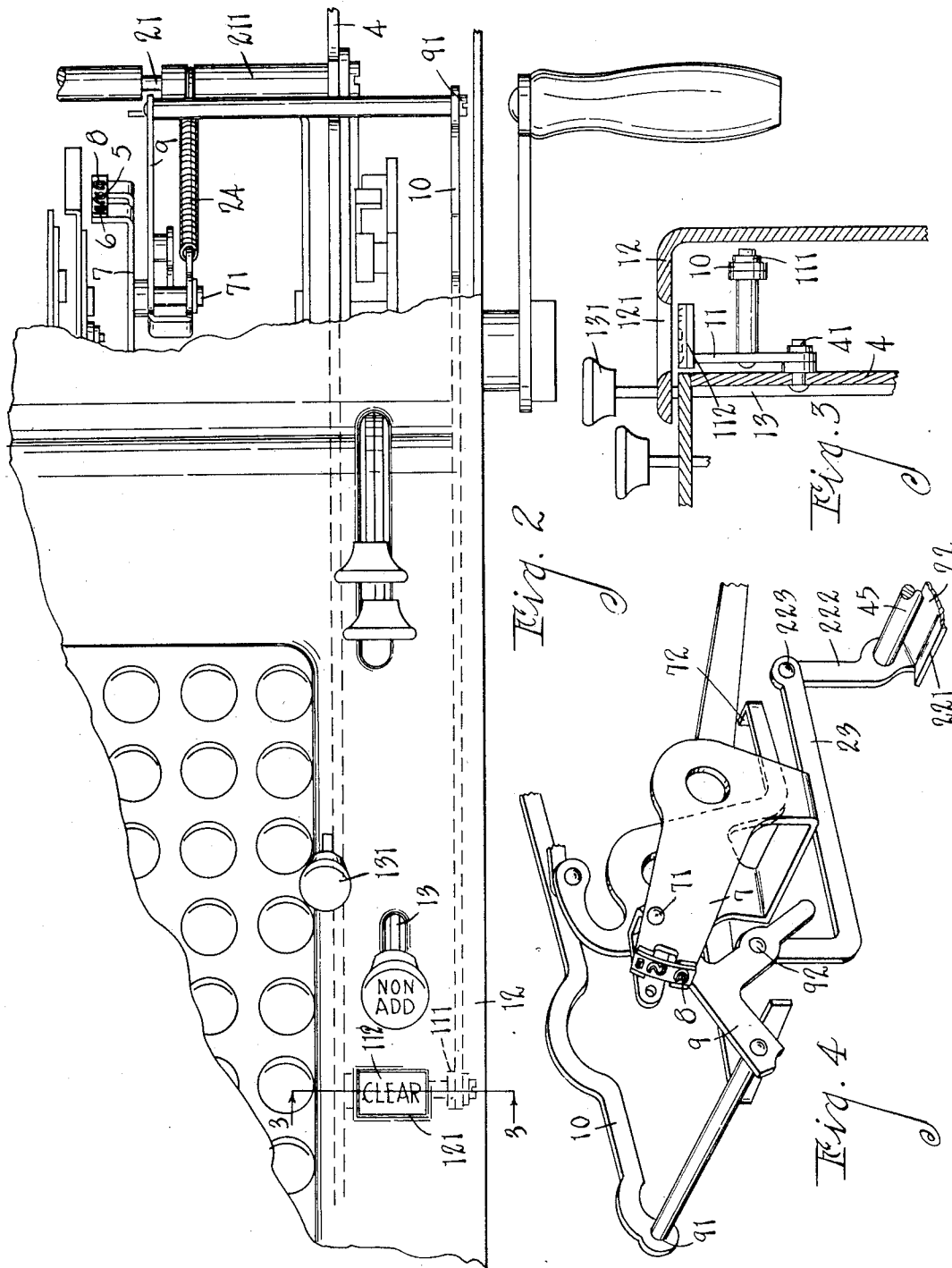
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MANUAL CLEAR SIGNAL DEVICE FOR ADDING MACHINES

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3 Sheets-Sheet 2



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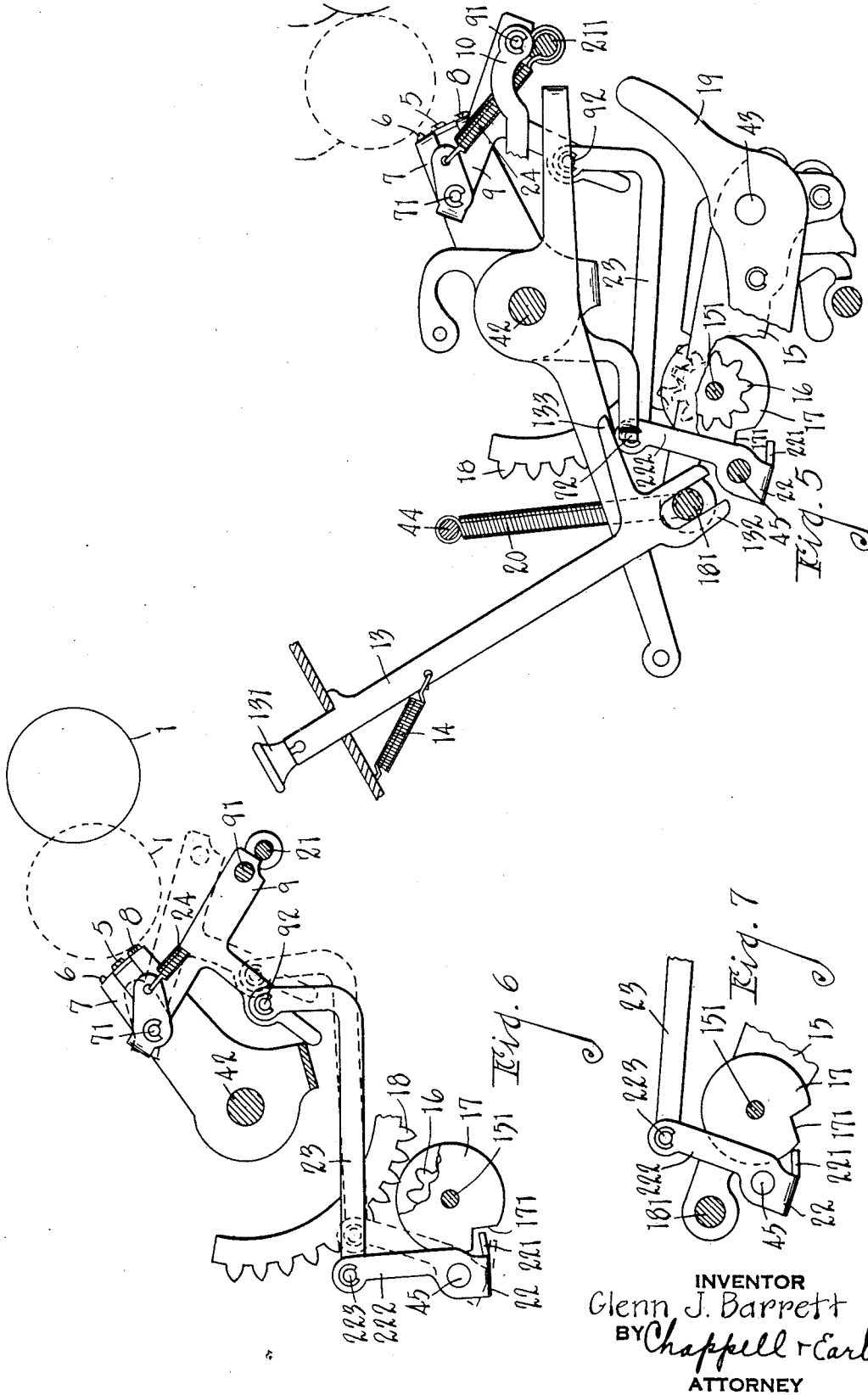
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3 Sheets-Sheet. 3



UNITED STATES PATENT OFFICE

1,949,706

MANUAL CLEAR SIGNAL DEVICE FOR
ADDING MACHINESGlenn J. Barrett, Grand Rapids, Mich., assignor
to Portable Adding Machine Company, Syracuse, N. Y.

Application April 25, 1932, Serial No. 607,321

3 Claims. (Cl. 235—60)

The objects of the invention are:

First, to provide a signal manually settable to print upon a tape or paper some distinguishing sign which appears at subsequent operations of the adding machine, to indicate that the accumulators were thus previously clear or at zero position, and also in that construction to provide a visible indicator also manually settable in conjunction with the setting of said distinguishing printable sign, to indicate to the operator that the accumulators are clear and ready for subsequent operation of said machine.

Second, to provide means whereby it is impossible to latch said printable sign or said visible indicator in functioning printing position when said accumulators of said adding machine are not clear or at zero position.

Third, to provide means for releasing said printable sign from printing position, and said indicator from visible position on the operation of said adding machine when any of its accumulators are not at zero position, and also admit of the retention of said distinguishing sign and said visible indicator in functioning positions during successive operations of said adding machine after being manually positioned as above, during the time the accumulators of said adding machine remain at said zero position.

And such other and further objects as will hereinafter appear.

A structure embodying the principles of my invention is clearly illustrated in the accompanying illustrations, in which:

Fig. 1 is a partial side elevation view of a portion of the controlling parts of the well known Corona adding machine to which I have chosen to adapt my invention for the purpose of illustration.

Fig. 2 is a plan view of a portion of the said Corona adding machine, showing its operating handle, the upper right hand corner of its keyboard, and the case broken away to expose portions of my invention connecting to the manually settable distinguishing sign type, and a top view of my visible indicator, and depressible key for positioning same, said indicator exposing the word "Clear" as hereinafter described.

Fig. 3 is a detail sectional view of a portion of the case and main frame of said Corona adding machine taken on line 3—3 of Fig. 2, showing a front view of the indicator arm, its connections, and the depressible key for positioning said indicator.

Fig. 4 is a detail fragmentary perspective view of the type signal arm of said Corona adding machine to which I have added my distinguishing

sign type, together with the latching means for holding said distinguishing type in printing position, and connections from the same which extend to the visible indicator.

Fig. 5 is a right side detail elevation view of a portion of my invention together with certain parts of said Corona adding machine with which my invention cooperates, and particularly shows a side view of the "Clear" key and its cooperative connections to the identifying clear type support, and also to the accumulator frame of said Corona adding machine.

Fig. 6 is a detail elevation showing certain operative parts of the Corona adding machine, particularly the accumulators and cooperating adding sectors, the carrier for my identifying type, and the latching means for retaining said identifying type in printing position.

Fig. 7 is a detail elevation showing a small portion of the tripping means for restoring said identifying type to normal non-printing position and for preventing engagement for the latching means, as will be hereinafter described.

I have chosen to illustrate the principles of my invention as applied to the well-known Corona adding machine. However, my invention may be applied to any standard form of adding machine having the following operative elements: a main operating mechanism, means for setting up a number to be added and for printing same upon suitable tape or paper, oscillating adding sectors, individual accumulators to cooperate therewith pivotally mounted in a movable accumulator frame and adapted to go into and out of mesh with said adding sectors during the normal operation of said main operating mechanism.

In machines of this class, the forward movement of the operating means positions the adding sectors while the accumulators are out of mesh therewith. Before said adding sectors are returned toward normal position, said accumulators are forced back into mesh with said adding sectors. In the Corona adding machine, the accumulators are forced out of mesh with the adding sectors during the early portion of the forward movement of the main operating mechanism, and are returned into mesh with said sectors during the early portion of the return movement of said main operating mechanism, which movements are well understood by those skilled in the adding machine art.

The parts will be identified by their numerals of reference.

1 is the platen of the Corona adding machine

(see Fig. 1) in normal position, pivotally mounted in the platen frame between the side plates 2 thereof. The platen frame is pivotally mounted at 3 in the main frame of the adding machine between the main side plates 4. In the Corona adding machine, the platen frame is drawn forwardly during the operation of the machine until the platen forcibly impinges to print previously positioned type. The dotted lines in Fig. 1 indicate the position of the platen 1 when impinging said type.

5 and 6 are signal identifying types upon the Corona mounted upon a pivoted arm 7. These signal types 5 and 6 form no part of my invention, but in lieu of providing a separate mounting for my "Clear" type, which I prefer to be a "C", I utilize this same mounting 7. 8 is said "C" type. I have provided separate connections hereinafter described which will manually position this "C" signal, slightly to the right of the printing line. This is independent of the means in the Corona adding machine for automatically positioning the regular signals 5 and 6.

Fig. 1 shows my clear signal type 8 in normal inoperative position as to printing. 9 is a latching arm pivotally mounted on said type arm 7 at 71 (see Figs. 2 and 5). 10 is a link connecting said latching arm 9 at 91 to a visible indicator arm 11 at 111 (see Fig. 1). The indicator arm 11 is pivotally mounted upon the side plate 4 of said Corona adding machine at 41. Fig. 3 is a sectional view of the top portion 12 of the case of said adding machine, showing the opening 121 therein through which the visible indicator 112 may be seen when properly positioned. Upon the upper portion of this indicator 112 is the word "Clear" normally out of sight as in Fig. 1, and swung into visible position, shown in Fig. 2, as hereinafter described.

The arm 7 bearing the clear identifying type "C", is pivotally mounted upon a shaft 42 which extends from the right side plate 4 to one similar on the left side, not shown in my illustrations.

13 is a manually operable key stem, having a key button 131, mounted upon the right side of said adding machine and capable of depression against the tension of the spring 14 which holds the same in normal position.

In the Corona adding machine there is an accumulator frame, the end pieces 15 of which I have indicated in Fig. 5. This frame is pivotally mounted at 43 in the main frame of said adding machine. This accumulator frame 15 carries the individual accumulator elements each comprising a pinion 16, and means for tripping the transfer mechanism, which means is immaterial to my invention and is not shown herewith. To each of these accumulator elements (see Figs. 5, 6 and 7) I have added circular plates 17 with a notch 171 in the peripheries thereof. Said circular plates are rigidly attached to said accumulator pinions 16 and the notches or openings 171 are all arranged in exactly the same relative position to said accumulator elements accumulatively. That is to say, when all of said accumulators are at zero position, the notches or openings 171 in said circular plates 17 will all be in perfect alignment, as shown in Figs. 4, 5 and 6.

It will be noted that said accumulator elements are pivotally mounted in said accumulator frame 15 at 151. Said frame 15 is held in normal position by a suitable spring 20 and vibrates down and up during the operation of the main operating mechanism of said adding machine, moving said accumulator elements out of and back into mesh

with adding actuators 18, these elements and a movement of this sort being common to adding machines of this class.

19 is a trip plate located upon the outside of the main frame of said adding machine and is rigidly attached to the main accumulator frame 15 and is the means through which said frame 15 is actuated. In this plate 15 is a stud 181 shown in section in Fig. 5. 20 is a spring for retaining the frame 15 in normal position, extending from stud 181 to shaft 44 (shown in section) which shaft is mounted between the side plates 4. At the lower extremity of said key 13 is a bifurcated portion 132 adapted to straddle said stud 181. Upon depression of this key 13, owing to the contact with said stud 181, the accumulator frame is forced down, separating the pinions from normal mesh with the adding sectors 18, independently of the main movement of said frame 15 during the operation of said main operating mechanism. 21 is a stop for latching arm 9 and is a reduced portion of cross rod 211 (see Figs. 2, 5 and 6).

72 is an ear, extending outwardly from the lower extension from said arm 7 (see Figs. 4 and 5). 133 is an angular extension finger from said key 13 in proximity to said ear 72. Upon the depression of said button 131, the type arm 7 is raised until said type 8 is positioned in printing position, shown in Fig. 6. At the same time, the accumulator frame is forced downwardly by the movement of said key 13 for reasons explained hereinafter.

When said accumulator elements 15—17 are all at zero position and the key 13 is depressed, the latching arm 9 will be allowed to fall behind the stop 21 (Fig. 6). This locks the type arm 7 with the signal type 8 in printing position, where it will make an impression to the right of the printed item upon the next operation of said main operating mechanism, and where it will remain in said printing position until an operation of said main operating mechanism after some accumulator shall have passed from said zero position, in which case said latch 9 will be lifted and said signal type 8 will return to normal position, shown in Fig. 1, as hereinafter explained.

I shall now describe my improved means for determining whether said latch 9 will engage the stop 21 upon depression of said key 13, and also my means for unlatching said latch 9 during an operation of the main operating mechanism of said adding machine when any accumulator element thereof is not at said zero position.

22 is a swinging plate pivoted on cross rod bearing 45 in the frame of said adding machine. Said swinging plate 22 has a contact portion 221 extending laterally, and adapted to be contacted by the peripheries of said circular plates 17 when the accumulator frame 15 moves said accumulator elements 16, 17 out of mesh with said adding sectors 18. This main movement occurs during the early portion of the movement of said main operating mechanism of said adding machine. It also occurs upon the depression of said button 131 upon the key 13. Fig. 6 shows the accumulator elements at zero accumulative position with the notch or opening 171 in the circular plates opposite said contact edge 221 of said hinged plate 22. When said circular plates 17 are in this position the movement of said accumulators out of mesh with said adding sectors will not effect the position of said swinging plate 22. Fig. 6 clearly shows the accumu-

lator pinions 16 moved out of mesh with the co-operating sectors 18, and the notch 171 in the circular plates 17 receiving the contact edge 221 of said swinging plate 22. 222 is an upright arm extending from said hinged plate 22. 23 is a connecting link pivoted at 223 and extending from arm 222 to pivot 92 upon the latch 9. A movement of said arm 222 toward the right will communicate a movement to said latch 9, and if moved to its limit will lift said latch 9 to the position shown in dotted lines in Fig. 6, in which event the spring 24 will return said latch and with it, of course, said type 8, to normal position shown in Figs. 1 and 5.

Fig. 7 shows said arm 222 forced to its limit toward the right by the contact of the periphery of 17 against 221, said circular plate not being at zero position as in Fig. 6.

By depression of button 131, if any accumulator is not at said zero position, or happens to be at the position shown in Fig. 7, the latch 9 is forced up to position shown by dotted lines in Fig. 6, and cannot latch against said stop 21. In this event, upon release of said button 131, the signal type 8 returns to normal position as shown in Fig. 1. By reason of the connections to my visible indicator 112, previously described, said indicator moves to a visible position when said signal type is positioned as shown in Fig. 6, and remains in visible position as long as said latch 9 is locked against said stop 21.

Under the foregoing description, it is obvious that the movement of the accumulator elements 16, 17, out of mesh, during the operation of said main operating mechanism of said adding machine, will have the same effect upon the mechanism controlling the position of my "Clear" signal type 8 and the indicator 112, as upon the manual depression of said button 131.

If at any time the operator wishes to ascertain whether the accumulators are clear, and to cause a clear signal to be printed in conjunction with the first item to be added, he depresses said button 131 to its limit. If all of said accumulator elements be at zero position, or the position shown in Fig. 6, then the latch 9 engages the stop 21, as described, which retains the type 8 in printing position, and retains the indicator 112 in visible position, as shown in Fig. 2. After registering the first item to be added after said depression of the button 131, the accumulators shall have passed from the zero position, and upon the next operation of the main operating mechanism of said adding machine, said latch 9 will be disengaged from the stop 21, as previously described, and the clear type 8 and the visible in-

dicator 112 will be returned to normal position again or the position shown in Fig. 1.

If after depression of said button 131, said indicator does not appear in a visible position, the operator knows that said type 8 is not in printing position, and that the accumulators of said adding machine are not all at zero position.

My invention admits of many modifications and adaptations. I wish to claim the specific form shown and also the invention broadly, as pointed out in the appended claims.

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

1. In an adding machine of the class described, the combination of an identifying type mounted upon a suitable movable carrier normally held out of printing position, means for manually positioning said type for printing, means for latching said type in printing position, a visible indicator normally held in concealed position and adapted to swing into visible position, connections between said visible indicator and said movable type support, means actuated by the main operating mechanism of said adding machine during the early movement thereof for unlatching said identifying type from printing position and returning said visible indicator from said visible position, said actuated means being operative only when said accumulator elements are in other than zero positions.

2. In an adding machine of the class described, the combination of an identifying type mounted upon a suitable movable carrier, means for retaining said carrier with said identifying type in normal inoperative position as to printing, means for manually moving said identifying type into printing position, means for latching said type in said printing position, and means for rendering said latching means ineffective actuated by the movement of said accumulators out of mesh with said adding sectors when any of said accumulator elements is not at zero position, said means being governed by the accumulative positions of said accumulators.

3. In an adding machine of the class described, the combination of a movable visible signal, normally held in concealed position, a manually operable means for exposing said signal, means for latching said visible signal in said exposed position, means for rendering said latching means ineffective actuated by the movement of said accumulator elements out of mesh with said adding sectors when any of said accumulator elements is not at zero position, and governed by the accumulative positions of said accumulators.

GLENN J. BARRETT.