

March 6, 1934.

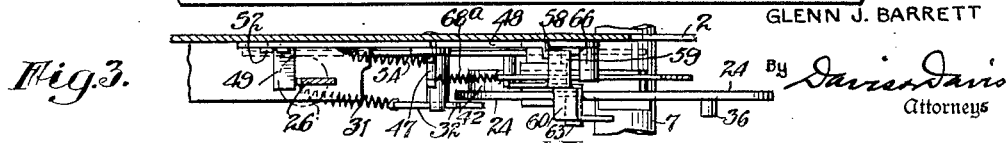
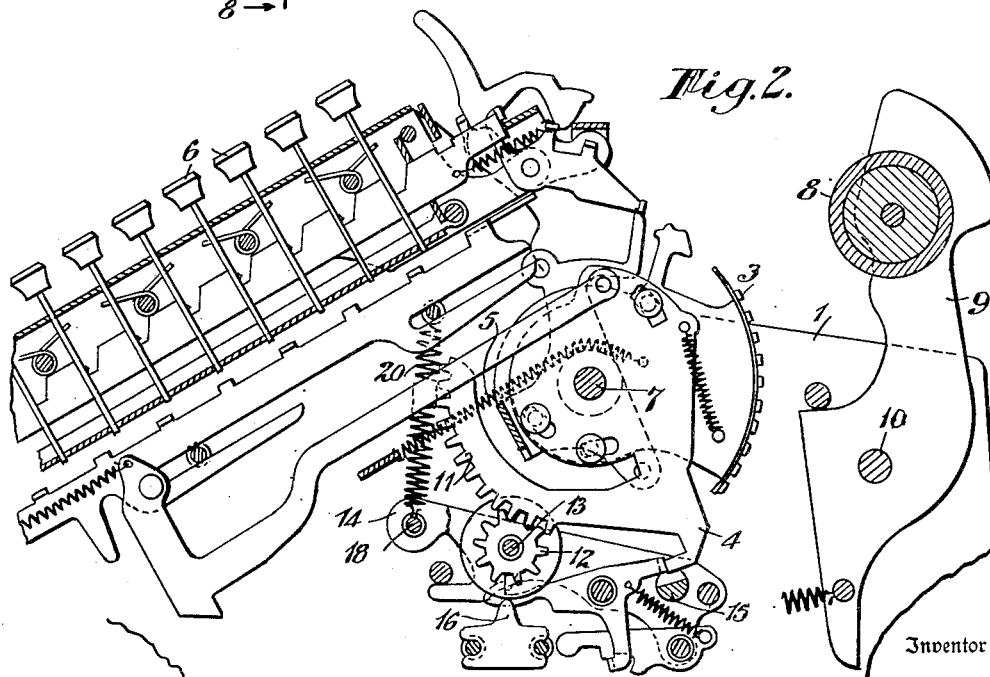
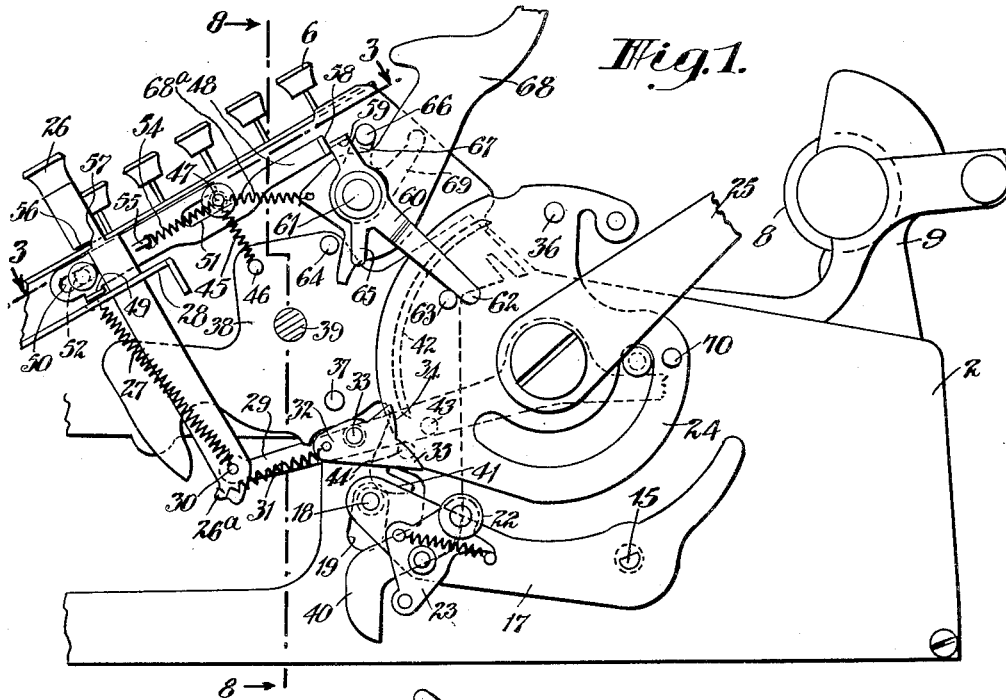
G. J. BARRETT

1,949,445

ADDING MACHINE

Filed April 11, 1932

2 Sheets-Sheet 1



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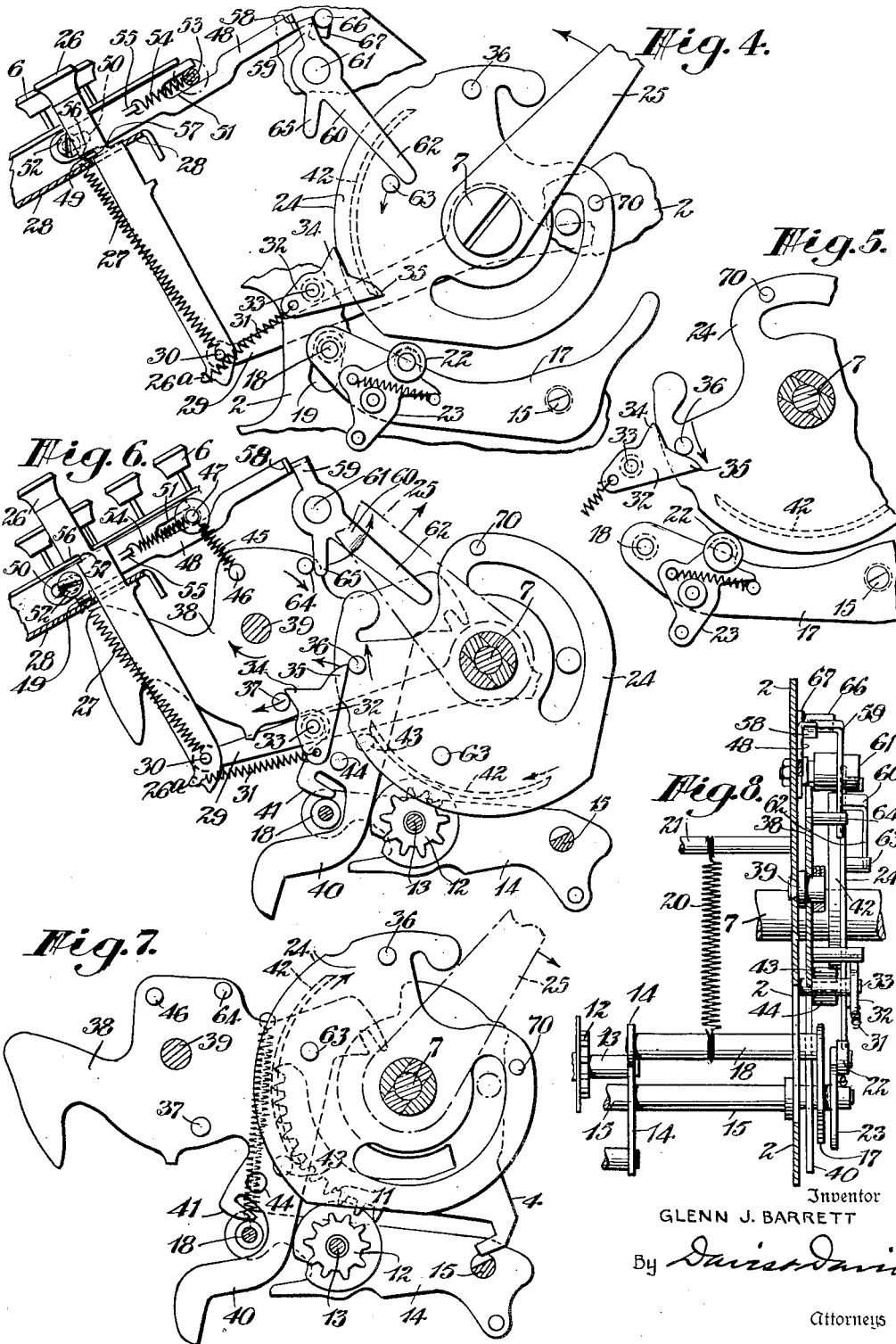
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

1,949,445

ADDING MACHINE

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Application April 11, 1932, Serial No. 604,483

15 Claims. (Cl. 235—60)

This improvement relates to the non-add key of an adding machine, and is particularly adapted for machines of the type known commercially as the Corona adding machine, the construction and operation of which are substantially as shown and described in Barrett Patent No. 1,811,840 of June 30, 1931.

In machines of this type, it is usual to provide a non-add key for use when it is desired to list an item without adding it. Heretofore such non-add keys have been provided with latching means becoming effective immediately upon depression or actuation of the key, to latch the key down or in operative position. A non-add key adapted to be latched down on mere depression of the key has been found to be objectionable in many respects. For instance it frequently happens that the key is accidentally or inadvertently depressed. Then if it becomes automatically latched down it will, if not restored before the handle is operated, introduce an error into the total in a normal adding operation of the machine.

In some adding machines of this type, it is necessary to manually hold the non-add key in depressed or actuated position during the operation of the control or main operating member. With such an arrangement, an error is likely to enter by careless manipulation of the key or by releasing it prior to the completion of its function.

The main object, therefore, of the present improvement is to provide a latching device for the non-add key, which is adapted to be controlled entirely by the main operating member, either handle operated or otherwise, so that mere depression or actuation of the key, either by design or inadvertence, will not cause the key to be locked or latched down. The present arrangement is such that the non-add key will become latched down only after it has been depressed and held down until the main operating member has been started and moved a short distance away from its normal idle position on the forward stroke thereof.

The latching of the non-add key is so controlled by the main control mechanism, that the non-add key will be latched down only during such portion of the forward and return strokes of the main operating member as may be required to complete the function of preventing the addition of the item on the accumulators. Also, the arrangement is such that the control mechanism automatically controls the release also of the non-add key.

A further object is to provide cooperating devices between the latch for the non-add key and the main operating member, whereby the latch is automatically moved to non-latching position and held ineffective to latch down the non-add key when the main operating member returns to or is held in normal idle position. The latch is provided with a spring adapted to move the latch strip and permit the latch to become effective (if the non-add key is depressed) when the main operating member has moved away from normal idle position on its forward stroke.

For certain calculations on or manipulations of the adding machine, it may be desirable to prevent automatic latching down of the non-add key when the main operating member is moved from its normal idle position on the forward stroke, or occasionally, it may be required to release the latch after the handle has been started. To meet these requirements the present improvement is provided with manually operable means for releasing the latched non-add key and locking out or blocking operation thereof after the handle has been started or for blocking movement of the latch and preventing it from latching the depressed non-add key either before or during the operation of the main operating member. This feature of the improvement includes cooperating means under control of the main operating member for restoring the manually operated releasing or latch blocking means after it has been set or operated for holding or releasing the latch, whereby the latch and associated parts may again become effective at the next operation of the main operating member.

An important desirable feature of the present improvement is that the non-add key may be released and retracted before the main operating member has fully returned to its normal idle position, and this is accomplished by a novel arrangement of devices adapted to be operated by the main operating member cooperating with the non-add mechanism.

The improved non-add key and the controlled latching device therefore are more particularly shown in the accompanying drawings, in which

Fig. 1 is a broken away side view of the machine with the cover removed to show the non-add key and related parts;

Fig. 2 a broken away longitudinal sectional view of the main adding mechanism of the machine;

Fig. 3 a fragmentary sectional plan view of the latch mechanism for the non-add key, the section being taken on the line 3—3 of Fig. 1;

Fig. 4 an operation detail view, representing

the non-add key latched down after the handle has started on the forward stroke;

Fig. 5 a fragmentary operation view showing the position of certain of the parts near the end of the forward stroke;

Fig. 6 an operation view, illustrating a further step in the operation of the non-add device with the main operating member on the return stroke;

Fig. 7 a fragmentary detail view to illustrate the position of certain parts during the operation of the machine; and

Fig. 8 a broken away vertical sectional view on the line 8—8 of Fig. 1.

As previously indicated, the present improvement is shown as incorporated in a late model of the Corona adding machine, the general plan and arrangement of which are illustrated in Patent No. 1,811,840. It will be seen from Figs. 1 and 2 that the keyboard and listing and accumulating mechanism of the machine are supported between main frame side plates 1 and 2. Also, that the control mechanism and control keys and associated parts, including the main operating member operated by a handle in the machine shown but which may be power-operated, are located at the right hand side of the machine and on the outside of frame plate 2. In general, full keyboard adding machines of this type include printing or type segments 3, associated with adding sectors 4, adapted to be positioned by the action of suitable springs 5 after the item or number to be added has been set up on the numeral keys 6, which have been depressed to represent the digits of the item.

The printing segments 3 and adding sectors 4 are pivotally mounted for rotation on and about the shaft 7, which is supported in bearings in the side plates 1 and 2, and may be referred to as the control or handle shaft. When the handle 25 is operated after an item has been set up on the keys 6 of the keyboard, the printing segments 3 will be positioned for printing the digits of the item on paper backed by the platen 8. The platen 8, in this machine, is mounted in a rock frame 9 pivoted at 10 and adapted to be rocked forward by the handle until the platen or rather the paper on the platen is brought into contact with the type on the segments 3. At the same time the printing segments 3 are positioned to represent the item set up on the keyboard (on keys 6), the adding sectors 4, which are provided with rack teeth 11, will be positioned to represent the item or number set up, and which is to be added and listed in the normal operation of the machine.

The addition of items, as usual in these machines, is effected on the return stroke of the handle when the adding sectors 4 are being restored to the normal position shown in Fig. 2; and during this return motion of the sectors 4 the accumulators 12 are kept in mesh with the sector racks 11 to add or accumulate the item in the usual way.

The accumulator pinions 12 are rotatably mounted upon a shaft or rod 13, supported in a rock frame 14 mounted on a pivot rod 15 having bearings in the side plates 1 and 2, the arrangement being such that the accumulator frame 14 may be rocked or moved downward to withdraw the accumulator pinions 12 from mesh with the sector racks 11. When so withdrawn, the accumulator pinions are held in alignment and against rotation by suitable detents such as the toothed shaped lugs 16.

As will be seen in Figs. 1 and 8, the accumula-

tor frame rock shaft 15 extends through the main frame side plate 2 and is provided on the outside of the frame side plate with a rock arm 17, which is connected at its front end to the accumulator rock frame 14 by a rod 18, extending through an opening 19 in the side plate 2. A spring 20 connected between the rod 18 and a fixed rod 21 is adapted to resiliently hold the accumulator rock frame in meshing position as shown in Fig. 2.

The accumulator frame rock arm 17, as will be seen in Fig. 1, carries a roller 22 rotatably mounted on a spring-actuated tappet 23, the roller being arranged to cooperate with the cam edge of the main operating member 24, when the latter is operated by the handle 25 or by other suitable means, to thereby rock the accumulator rock frame 14 on the forward stroke of the handle and move the accumulators 12 out of mesh with the sector racks 11 to prevent rotation of the accumulators. This operation, as will be understood, is the usual normal operation during addition of items, the accumulator pinions being restored to mesh with the sector racks on the return stroke of the handle for accumulating the items, as more specifically described in the patent above referred to.

During the normal operation of the machine, items are listed or printed on paper backed by the platen 8 and are accumulated on the accumulator pinions 12 substantially in the manner just described, but there are occasions when it is desired to list or print the item on the paper, without including it in the total or having it accumulated on the accumulators. For this purpose, any suitable non-add key may be provided, such as the key 26, which in the present instance is held in normal inactive position by a spring 27. The non-add key 26 is arranged to slide in a shelf bracket 28, the lower end of the key being supported by a rock arm 29, to which the key stem is pivoted at 30. The lower end of the non-add key stem at 26a is provided with a spring 31, connected with an actuator pawl 32, pivoted at 33 to the main frame side plate 2, as will be seen in Figs. 1 and 4.

The actuator pawl 32 is provided with two finger-like extensions 34 and 35, the lower and longer one 35 being adapted to be swung by the non-add key 26 (Fig. 5) into the path of a stud 36 projecting from the face of the main operating member 24, and located near its upper periphery, when in idle position, as will be seen in Figs. 1 and 4. The stud 36, however, will on the forward stroke of the handle engage the front face of the actuator finger 35 as shown in Fig. 5 and on account of the resilient connection of the spring 31, the stud 36 will move the actuator until it passes the finger 35 and will then engage it on the lower side during the first part of the return stroke of the main operating member, as illustrated in Fig. 6.

At the beginning of the return stroke of the main operating member 24, the stud 36, by engaging the actuator finger 35 will rock the actuator 32 about its pivot 33 and the other finger 34 thereof will engage a pin or stud 37 extending into the path of the actuator and from a rock plate 38 pivotally mounted on a stud 39 projecting from the frame side plate 2, as will be seen in Figs. 1 and 6.

The rock plate 38 is provided with a depending arm 40, recessed on one side and provided with a cam lug 41, adapted, when the rock plate 38 is rocked by the actuator 32 (Fig. 6) to engage the rod 18 and move the rock arm 17 and the asso-

ciated accumulator rock frame 14 downward to substantially the position shown in Figs. 6 and 7, so that the accumulators 12 are out of mesh with the adding sector racks 11. The main operating member 24 is provided with a locking member 42, in the form of a circular arc, shown in dotted lines in the drawings as located back of and near the periphery of the main operating member.

When the main operating member 24 is moved forward by the handle, in the normal adding operation, this arcuate locking member 42 will pass between two studs 43 and 44, projecting from the face of the rock plate 38 and located close together, as indicated in Figs. 1 and 6 and the plate will be locked against movement. However, should the non-add key 26 be operated so that the actuator pawl 32 will be actuated on the return stroke of the main operating member, the rock plate 38 will be positioned as shown in Fig. 6, and locking member or arcuate sector 42 will pass back of the upper stud 43 and hold the rock plate 38 in the non-add position, with the cam 41 holding the accumulator out of mesh with the sector racks 11 until the main operating member has returned to normal position. Fig. 7 illustrates the position of the parts just before the locking sector 42 releases the stud 43, near the end of the return stroke.

A tension spring 45 connected between a pin 46 on the rock plate 38 and a fixed stud 47 is adapted to restore the rock plate 38 and resiliently hold it in the normal position shown in Fig. 1.

It will be observed that after the non-add actuator pawl 32 has been engaged by the stud 36 of the main operating member, on the return stroke of this member, the work of the non-add key is completed and it may be released and permitted, under the action of its spring 27, to return to normal position as shown in Fig. 6. In the meantime, however, it is required to be held down or latched in the position shown in Fig. 4.

As previously explained, it is preferable that the latching means for the non-add key shall be controlled entirely by the main operating member and for this purpose, a latch slide bar 48 provided with a laterally extending latch lug 49 is slidably mounted on the main frame plate 2 above the bracket 28, the latch slide being provided with slotted openings 50 and 51, cooperating respectively with supporting pins 52 and 53, the latter being substantially an extension of the spring supporting stud 37.

A spring 54 for actuating the latch is connected to a lug 55 on the latch strip 48 and to the fixed pin 47, as will be seen in Figs. 1 and 6. The non-add key stem is provided with an overhanging shoulder at 56 adapted to engage the latch lug 49 and limit the depression of the key. Adjacent the shoulder 56 of the non-add key there is located a notch 57, into which the latching lug 49 may be drawn by the latch spring 54 to latch the non-add key in depressed or operative position. Normally, however, as previously pointed out, the latch 48 is not permitted to latch the key down until after the handle, or rather the main operating member 24, has been started on the forward stroke.

In order to obtain this control, the rear extension of the latch strip 48 is provided with a laterally extending ear 58, adapted to be engaged by the bent over end of the arm 59 of a rock lever 60, pivoted on a stud 61. The rock lever 60 is provided with a downwardly and rearwardly projecting arm 62, adapted, as shown in Fig. 1, to be engaged by a stud 63 on the face of the main

operating member 24, when the latter is in normal idle position. In this position, the upper arm 59 of the rock lever, engaging the lug 58 on the latch strip 48, will hold the key latching lug 49 in the position shown in Fig. 1, that is, out of engagement with the latching notch 57, so that the non-add key will not be latched down, even though it may be depressed, until the main operating member 24 has been started on the forward stroke and moved far enough to move the stud 63 away from the lever arm 62, thereby permitting the latch spring 54 to move the latch and effect the latching down of the key 26.

It has been pointed out that the non-add key, its work completed, may be released shortly after the beginning of the return stroke of the main operating member 24 and before the stud 63 thereon returns to engagement with the rock lever arm 62. For this purpose, the rock plate 38 is provided with a stud or pin 64, adapted to engage a short arm or finger 65 on the rock lever 60 and rock the latter into the position shown in Fig. 6, to thereby move (to the left) the latch strip 48 and release the non-add key 26 and permit the spring 27 thereof to restore it to normal position whenever plate 38 is rocked into the position shown in Fig. 6. It will be observed, however, that independent of this release of the key 26 by the rocking of plate 38, the stud 63 on the main operating member 24 will always engage the arm 62, on the return stroke of the handle as the main operating member nears the idle position and will also operate the rock lever 60 to move the latch slide 48 to ineffective position, if said slide be in key-locking position, and, as long as the main operating member remains in idle position, the lever 60 will prevent the latch from latching down the non-add key.

In the machine of the patent above referred to, as more fully explained in said patent, setting of the total key rocks the control plate in counterclockwise direction (as viewed in Fig. 1) from its normal idle position to shift the device 22-23 out of coactive relation with member 24, in order that, upon oscillation of the main operating handle 25, the accumulators shall mesh with the adding sectors 4 during both the forward and return strokes of the handle to print the total standing on the accumulators and then restore the accumulators to the positions they occupied prior to actuation of the handle. Accordingly, setting of the total key alone, results in printing a sub-total. If a final total, instead of a sub-total, is to be taken, it is necessary that the accumulators shall mesh with the adding sectors on the forward stroke of the handle as in taking a sub-total, and also that the accumulator shall, as in the case of the non-add operation hereinbefore described, remain out of mesh with the adding sectors on the return stroke of the handle. Accordingly, in the machine of said patent, when it is desired to take a final total, both the total key and the non-add key are set before oscillating the handle.

Under some conditions of operation of the present machine, therefore, as for instance in taking a sub-total, it is not required that the non-add key should be either depressed, or retained in depressed position if standing depressed through accident or otherwise, when handle 25 is actuated, and accordingly, means is provided for temporarily locking the latch so that it cannot be set to function during the forward stroke of the handle. For this purpose and in order to block latching motion of the latch 48, or to re-

lease key 26 if it is latched down, a stud 66 is mounted on a movable supporting arm 67, so as to project into the path of the latch engaging arm 59 on the rock lever 60, and the stud 66 lies directly in front of the forward edge of a key 68 (which may be the total key) pivoted, as will be seen in Fig. 1, on the stud 61, about which the latch lever 60 rocks. The stud supporting arm 67, in order to permit lateral motion of the stud 66 is pivotally mounted on the pivot stud 61 and is integral with a friction arm 69 adapted to frictionally engage the frame side plate 2, so as to temporarily hold the stud 66 in either the position shown in Fig. 1, or in an advanced position to engage or move the arm 59 and the latch 48 and block latching motion of the latch, or release the latch, according to the position of the latch; in other words, the action of latch spring 54 is blocked, so that when the main operating member removes the pressure of the stud 63 from the arm 62 of the rock lever 60, the latch 48 cannot operate.

In order to restore this latch blocking stud 66 and permit the latch and the associated latch lever to function normally, a stud or pin 70, mounted upon and projecting from the face of the main operating member 24, is adapted to engage the rear side of the latch lever arm 62 at or near the end of the forward stroke of the handle, thereby rocking the lever 60 and moving the blocking stud 66 back to its normal position, thus releasing the latch for normal latching operations under the action of its spring 54. As previously indicated, the key 68 by operating the blocking stud 66 may be used to move the latch strip 48 and release the non-add key if it has been held depressed and latched down after the handle has started on the forward stroke. This feature is important, because there is no other means of releasing the non-add key latch after the main operating member has moved forward until after device 32 set by said key has functioned on the return stroke of the handle 25 as above described, if the key has been inadvertently depressed and held down until the handle has been started.

It is believed that the operation will be understood from the description given, but to review briefly:—When an item is set up on the keyboard and it is desired that the item should be printed or listed without addition on the accumulators, the non-add key 26 is depressed and held until the main operating member has started on the forward stroke, thereby removing the pin or stud 63 from engagement with the lever 60, thus allowing the latch strip 48 to be drawn rearward by its spring 54 and permitting the latch 49 to engage the notch 57 in the non-add key stem. The non-add key positions the actuator pawl 32 to be engaged by the stud 36, and, after the actuator pawl 32 has been moved to the position shown in Fig. 6, on the return stroke of the main operating member, the stud 64, on the rock plate 38, will engage the finger 65 of latch lever 60 and the upper end 59 thereof will actuate the latch strip 48 in releasing direction or toward the left, as seen in Figs. 1 and 6, and release the non-add key 26, so that the latter will, under the action of its spring 27, be restored to normal position.

If it is desired to prevent the latch 48 from operating or to release at will the non-add key when it is latched, then the key 68 can be pulled forward to engage the stud 66 and move it and the arm 59 forward and thereby hold the latch

strip 48 in non-latching position; or move the latch strip forward to disengage the latch lug 49 from the notch 57 in the non-add key if this key be latched in its set or depressed position. At the end of the forward stroke, if the key 68 has been operated to release the latch, the stud 70 will restore the blocking stud 66. At the completion of the return stroke of the main operating member, the stud 63 will engage the latch lever arm 62 and hold the latch in normal non-latching position, as indicated in Fig. 1.

It will be understood that while what is now considered the preferred form of the improvement has been shown and described, it is obvious that various modifications in the specific details of construction and arrangement may be made without departing from the spirit and scope of the invention.

What we claim is:

1. In an adding machine of the character described, a main operating member, a rock plate adapted to be rocked by the main operating member, accumulators upon which items are added, means whereby rocking of said rock plate moves the accumulators so as to prevent the addition of items, a non-add key, an actuator for rocking said rock plate, said actuator being positioned by the non-add key so as to be actuated by the main operating member, a spring-actuated latch for latching the non-add key in non-add position, and a pivoted lever cooperating with the main operating member to prevent the latch from becoming effective when the main operating member is in idle position, the latch becoming effective after said operating member has started on the forward stroke.

2. An adding machine as in claim 1, wherein said rock plate for preventing the addition of items on the accumulators is provided with means for actuating said pivoted lever and releasing the non-add key before said main operating member has returned to normal position.

3. An adding machine as in claim 1 wherein a manually operable frictionally engaged stop lug is provided for preventing the latch from latching the non-add key when the main operating member is operated, and means actuated by said operating member at the end of the forward stroke to restore said stop lug so that said latch may function normally.

4. In an adding machine of the character described, the combination of a main operating member, a non-add key adapted when held in depressed position to operatively prevent the addition of items when the main operating member is operated, a spring-actuated latch for holding said key in depressed position, manually operable means for rendering said latch ineffective, and means actuated by said main operating member to restore said manually operable means so as to permit the latch to again function normally.

5. In an adding machine having a non-add key for preventing it from adding an item when operated, means for automatically holding said key in active position until addition has been prevented and thereafter automatically releasing said key during each operation of the machine initiated with said key manually held in active position, and manually operable means for disabling said first-mentioned means for a single operation only of the machine following actuation of said manually operable means.

6. In an adding machine having a non-add key for preventing it from adding an item when operated, means for automatically holding said key

in active position until addition has been prevented and thereafter automatically releasing said key during each operation of the machine initiated with said key manually held in active position, manually operable means for locking said holding means against operation, and means for automatically restoring said locking means to idle position before completion of an operation of the machine initiated with said locking means in locking position.

7. In an adding machine of the kind having numeral keys for setting up numbers to be added, adding means, and actuating means for operating the adding means to add a number set up and restore the set numeral keys, the combination with said keys, adding means and actuating means, of a spring-returned and normally idle non-add key, means movable by said non-add key into position to prevent the adding means from adding a set up number during operation of the actuating means, locking means normally urged in a direction to lock the non-add key in active position, means controlled by said actuating means to hold said locking means out of locking position until operation of said actuating means is initiated, a control key, and means settable by said control key to prevent said locking means from moving to locking position upon initiation of operation of said actuating means.

8. In an adding machine of the kind having numeral keys for setting up numbers to be added, adding means, and actuating means for operating the adding means to add a number set up and restore the set numeral keys, the combination with the said keys, adding means and actuating means, of a spring-returned and normally idle non-add key, means movable by said non-add key into position to prevent the adding means from adding a set up number during operation of the actuating means, locking means normally urged in a direction to lock the non-add key in active position, means controlled by said actuating means to hold said locking means out of locking position until operation of said actuating means is initiated, a spring-returned and normally idle control key, means settable by said control key to prevent said locking means from moving to locking position upon initiation of operation of the actuating means, and means controlled by said actuating means for automatically restoring said control-key-set means to idle position before the operation of the actuating means ceases when said actuating means is put into action after setting of said key-set means by the control key.

9. In an adding machine of the kind having settable number keys, and a main operating member for actuating the machine to add a set up number and release any set number keys, the combination of a normally idle depressible non-add key for controlling the machine to prevent the adding of a set-up number when the main operating member is actuated, a spring which returns said non-add key to idle position when said non-add key is not manually held down until actuation of said main operating member is initiated, means controlled by actuating movement of said main operating member initiated with said non-add key normally held down to first lock said non-add key in depressed position until the machine is conditioned to operate without adding and to then release said key, and a normally idle control key operatively connected with said last-mentioned means to release said non-add key at will without releasing any set number keys.

10. In a key-set adding machine having a main operating means for normally actuating the machine to add a set-up number, and a normally idle non-add key for preventing the machine from adding a set up number during an operation of the main operating means, the combination with said key and means, of means controlled by said main operating means to automatically lock the non-add key in active position when the said operating means is started into action with said key manually held in active position and to automatically unlock said key during said operation of said operating means after adding has been prevented, a control key, and normally idle means movable by said control key to lock said last-mentioned means against automatic locking and releasing operation when the main operating means is actuated and also movable by said control key to unlock the non-add key while the latter key is held automatically locked by the said last-mentioned means.

11. In a key-set adding machine having a main operating means for normally actuating the machine to add a set-up number, and a normally idle non-add key for preventing the machine from adding a set up number during an operation of the main operating means, the combination with said key and means, of means controlled by said main operating means to automatically lock the non-add key in active position when the said operating means is started into action with said key manually held in active position and to automatically unlock said key during said operation of said operating means after adding has been prevented, a control key, normally idle means movable by said control key to lock said last-mentioned means against automatic locking and releasing operation when the main operating means is actuated and also movable by said control key to unlock the non-add key while the latter key is held automatically locked by the said last-mentioned means; and means controlled by the main operating means for automatically restoring said normally idle means to idle position during the first operation of the main operating means following a movement of said normally idle means to active position by the control key.

12. In an adding machine of the kind having an operating handle moved first forwardly and then backwardly to actuate the machine, adding mechanism including a totalizer which is actuated to add an item during the return stroke of said handle, and a non-add key which prevents the adding of an item if said key stands depressed as the handle starts its return stroke, the combination of a latch constantly spring urged toward a position in which it will lock said non-add key down if the latter is depressed, a lever for moving said latch to key-releasing position, means operated by said handle for moving said lever to latch-releasing position during the last part of the return stroke of the handle and holding said lever in said latch-releasing position until the handle is again started forward, key-set means for holding said lever in latch releasing position during the forward stroke of the handle, and means operable by said handle to automatically restore said key-set means to idle position at the end of the forward stroke of the handle if said means be set.

13. In an adding machine of the kind having an operating handle moved first forwardly and then backwardly to actuate the machine, adding

mechanism including a totalizer which is actuated to add an item during the return stroke of said handle, and a non-add key which prevents the adding of an item if said key stands depressed as the handle starts its return stroke, the combination of a latch constantly spring urged toward a position in which it will lock said non-add key down if the latter is depressed, a lever for moving said latch to key-releasing position, means operated by said handle for moving said lever to latch-releasing position during the last part of the return stroke of the handle and holding said lever in said latch-releasing position until the handle is again started forward, key-set means for holding said lever in latch releasing position during the forward stroke of the handle, and means operable by said handle to automatically restore said key-set means to idle position at the end of the forward stroke of the handle if said means be set, said key-set means being manually operable by its key to actuate said lever to release the latch to free the non-add key at will prior to the return stroke of the handle during an operation of the machine initiated while said non-add key is depressed.

14. In an adding machine of the character described, a normally idle and spring-returned

non-add key, automatic locking and releasing means for said non-add key for first holding the key in active position and then releasing it to return to normal position after addition has been prevented when said key is moved to active position and the machine actuated, and manually shiftable means for at will locking said automatic means against operation when the machine is actuated with the key depressed.

15. In an adding machine having a general operator for actuating the machine to add a number, and a non-add key depressible to prevent the machine from adding a number when the machine is actuated, the combination with said general operator and non-add key of automatic means normally controlled by the general operator to first lock and then release said non-add key during a single actuation of the machine initiated with said non-add key depressed, normally idle key-operated means shiftable to prevent automatic locking movement of said automatic means under control of the general operator, and means for holding said key-operated means in its shifted active position independently of manual pressure on its operating key.

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35	110
40	115
45	120
50	125
55	130
60	135
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75	150