J. C. LOTTERHAND.
COMBINED ADDING AND TYPE WRITER MACHINE.
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Fig. 1.

Attest:
Alan Mc. Donnell.

Inventor:
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by William R. Baird.
His Atty.
To all whom it may concern:

Be it known that I, JASON C. LOTTERHAND, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Combined Adding and Type-Writing Machines, of which the following is a specification.

My invention relates to combined type-writers and adding-machines, and has for its object the locking of the actuating parts after any particular number has been recorded on the type-writer and registered on the numeral-wheels, so that no further numbers can be recorded upon the type-writer machine without actuating the adding mechanism to include within the total sum last registered and recorded.

In Letters Patent of the United States No. 811,157, granted to me on the 30th day of January, 1906, I have shown and described a combined type-writer and adding mechanism, which comprises, among other instrumentalities, means for locking the type-writer key-levers against movement when any item to be added has been recorded on the type-writer and to keep the same locked until the actuating-bar of the adding mechanism has been depressed. The means referred to consist substantially of a universal frame, the upper bar of which rests under and presses upward against the type-writer key-levers in their farthest position in one direction and the lower bar of which, as the numeral-key levers of the type-writer are depressed, retracts the finger of a moving carriage to actuate step by step the adding mechanism. There is a tongue secured to this moving carriage, the lower end of which moves in a slot in a bar mounted to move transversely across the machine. When the units figure of the number to be recorded has been written, the tongue referred to has been moved to the end of the slot and has moved the bar referred to until certain hooks carried by it have engaged with the universal frame above referred to. The operation just described serves to hold the universal frame rigid and locks the type-writer key-levers against further movement. An element called an "intermediate lever," which is made in two parts—an outer removable member and an inner fixed member—serves to couple the writing and adding mechanism in a way described in the patent referred to and which need not be repeated here. It is sufficient to say that a leader on the type-writer carriage engages with the upper end of this intermediate lever to move the finger-carriage above referred to, and it is the contact of this leader with the upper end of the intermediate lever which produces a unison of movement of the parts of the type-writing and adding mechanism. When the units figure has been written, as above described, the universal frame referred to would be released by depressing a train of levers comprising a bar transversely across the frame of the carriage and which bar engages with a hook forming the lower end of the removable portion of the intermediate lever and depresses such removable portion and releases the intermediate lever from engagement with the leader on the type-writer carriage and permits the type-writer carriage to return to its initial or normal position. During such return the finger-carriage is necessarily carried by the intermediate lever, to which it is attached, to the right. This moves the finger on the carriage and releases the rod and hooks thereon above referred to from the universal frame, which rests against the type-writer key-levers.

Ordinarily and with an attentive and careful operator of the machine it would be noticed whether or not the number recorded had been added in at the right end of the line after the units figure of such number had been written; but the operator may not be attentive and may forget to depress the bar of the adding mechanism, (which, through the train of levers above referred to, causes the disengagement of the intermediate lever and the leader of the type-writer carriage,) and he may move the type-writer carriage to a new line and commence to write thereon without adding into the sum-total the number which has just been recorded. When he moves the type-writer carriage to its new position, this permits the finger-carriage above referred to to return to its initial position, consequently throws the tongue carried by it out of engagement with the transverse bar,
which locks the universal frame in the same manner as though the bar of the adding mechanism had been depressed, although it has not, in fact, been depressed, and the numeral key previously recorded on the typewriter has not been added. To prevent this from occurring, I provide the following means, which is the subject-matter of this application. Amount upon any convenient place on the framework of the typewriter and in proximity to the intermediate lever a spring-actuated hook, which is adapted to engage with a detent suitably placed on the outer movable member of the intermediate lever.

These parts are so arranged that the hook is adapted to engage with the detent as the lever is moved, and the unit figure of the number recorded on the typewriter is registered on the adding mechanism. The intermediate lever is held by such hook, and the carriage is prevented from returning to its initial position until the hook is disengaged from the detent referred to. This disengagement takes place upon depressing the movable member of the intermediate lever, which moves the detent away from the hook of the hook. This depression of the lever is effected by depressing the actuating-bar of the adding mechanism, which, through the same train of mechanism as depresses it, to secure its disengagement from the leader on the typewriter carriage secures its disengagement from the retaining-lock referred to—that is, the intermediate lever cannot be moved and the finger-carriage cannot be returned to its initial position so that another number can be recorded until the operating-bar of the adding mechanism is depressed, which depression releases the universal frame which locks all of the typewriter key-levers against further motion. If the operator should endeavor to write another number without depressing his operating-bar, he will find that he cannot move his typewriter carriage to write except to the right of the adding zone and cannot move it to write anything within the adding zone. Having his attention thus called to the matter, he will naturally depress such operating-bar before attempting to proceed with his work.

In the drawings, Figure 1 is a rear elevation of a combined type-writing and adding mechanism provided with my invention; Fig. 2 is a central vertical section and partial side elevation of the lower portion of the combined mechanisms. Fig. 3 is a perspective view of the frame and lever connections between the actuating-bar of the adding mechanism and the intermediate lever. Fig. 4 is an enlarged rear view of the intermediate lever. Fig. 5 is a side elevation of the same, showing the movable member in its lowest position by dotted lines, and Figs. 6, 7, and 8 are details showing the relative positions of the intermediate lever and safety-locks when the former is in its successive positions, Fig. 6 showing the lever engaged with the hook, Fig. 7 the lever in partial engagement, and Fig. 8 the parts in the positions they occupy just prior to engagement or just after release, the supporting-bracket being shown in dotted lines.

Referring specifically to the drawings, 30 is the typewriter mechanism, of usual form, comprising keys, a platen-roller, carriage, ink-ribbons, and other usual parts.

20 is the casing of the adding mechanism, and 22, 22 are its side walls.

30 is a rail secured to the typewriter carriage. Upon it is mounted a movable lever 33. 30 is an intermediate lever pivotally mounted upon a hub 91, secured to a bracket 92 on the typewriter frame. This lever is composed of an outer member 93, movable upon an inner one 94, by means of slots 95, 95 and stops 96. The upper end of the outer member 93 is in the path of the leader 83 and is intermittently moved upon its pivot as the typewriter carriage, and with it the leader 82, is moved step by step. The lower end of 93 is pivotally connected to a stud 610, secured to a movable carriage 69 by means of a link 611.

The carriage 60 carries the finger or arm 67 which actuates the mechanism which brings the adding mechanism in alinement with the numeral-keys of the typewriter. This mechanism is fully described in the patent before referred to and such description need not be repeated here.

100 is the operating-bar of the adding mechanism, which must be depressed in order to produce the sum-total of the numbers recorded. It is provided with two levers 110, 110, fulcrumed in suitable bearings and engaging between their inner extremities a transverse rod 111.

A lever 112, provided with a fork 113 and fulcrumed at any suitable point on the frame of the machine, is provided at its outer extremity with a transverse rod 114, supported at its other end by a crank 115, suitably pivoted to the frame of the machine in line axially with the fulcrum of the lever 112. The rod 114 is adapted to engage in a hook 98, 115 formed at the lower extremity of the outer movable member 95 of the intermediate lever 90, formed in this instance by bending the member, as shown in Figs. 2, 4, and 5.

425 indicates one of the typewriter levers such as are shown in patent to H. J. and F. X. Wagner, No. 634,672, dated September 26, 1899, the type of machine used being the well-known Underwood, although other forms may be used with slight changes to adapt each make.

50 is the universal frame comprising a bar 51, supported at the extremities of a pair of bell-crank levers 52, mounted at opposite sides of the frame of the adding-machine, a 130
rod 53 being supported at the other extremity of the bell-crank levers, the latter being pivoted to swing on suitable bearings 54.

900 indicates a hook pivoted to the bracket 92 or any suitable part of the frame upon a suitable screw or pin 901, the said hook being engaged by a spring 902 in such a manner as to press its forward end downward, such downward movement being limited by a pin 903, upon which the hook normally and yieldingly rests. In this normal position the hook is in the path of a pin or dent 904 on the movable member 93 of the intermediate lever 90 below its pivot, so that when the upper end of the intermediate lever 90 is moved to the left by the leader 83 on the type-writer carriage, and consequently the lower end of the said lever 90 is moved to the right, the said hook 900 will be automatically engaged over the dent 904, and the return movement of the lever is prevented until the dent is released from the hook, as hereinafter described.

The hook 900 being located between the bracket 92 and the lever 90 and the dent 904 being on the outer member 93, said dent is passed through a slot 905 in the inner stationary member 94 of the lever 90, so as to bring the dent into the plane of the hook 900 and at the same time permit of the movement of the outer member 93 upon the inner member 94, as stated.

To the outer member 93 of the intermediate lever 90 is secured a dependent flaring pinched spring 930, the lower extremities of which embrace the hub 91 when the outer member 93 is in its lower position, while the hub is equally well held between the main body of the spring when the hub is in its upper position.

When the units figure of the number is recorded on the type-writer, the intermediate lever 90 has been moved by the leader 83 to the limit of its forward or left-hand movement and the dent 904 to the limit of its right-hand movement; the hook 900 has engaged the dent 904. As a consequence the operator cannot return the carriage of the type-writer to its initial position to record another number thereon until the hook has been disengaged from the dent and the intermediate lever released. At this time it is necessary in order that the number just recorded on the type-writer and at the same time registered on the numerical-wheels of the adding-machine be added or included in the total, and, as hereinbefore stated, this is accomplished by depressing the actuating-bar 100 of the adding mechanism. This action raises the inner end of the levers 110, which by means of the engagement of the rod 111 in the yoke 115 operates the levers 112, causing the bar 114 downward and by reason of the engagement of the said bar 114 in the hook 98 of the movable member 93 of the intermediate lever 90 and pulls down the said movable member, thus pulling the dent 904 downward out of engagement with the hook 900 and leaving the intermediate lever 90 free to be returned to its initial position by means of the spring 988. This same depression of the actuating-bar 100 of the adding-machine, as before stated herein and as described in my patent before referred to, actuates the mechanism for depressing the universal frame 51, so as to permit the type-writer key-levers 425 to be again operated, and such depression of the actuating-bar being necessary to the operation of the totalizing mechanism of the adding-machine the addition of the hook mechanism, subject of this application, does not require any new mechanism or necessitate any new operation or action by the operator to operate it. The advantages attending the use of the present invention will be obvious. When the actuating-bar of the adding mechanism has been depressed, the operation is complete. The number just recorded by the type-writer keys has been added in the total on the numerical-wheels of the adding-machine, and all is ready to record another number or to proceed with any other operation with the type-writer. On the other hand, if the actuating-bar of the adding-machine has not been depressed the intermediate lever remains locked by the hook. The only thing about the type-writer that can be moved is the carriage, and the movement of the carriage has no effect upon any other part of the machine. The type-writer keys remain locked against depression because the finger-carriage 60 is locked by the locking of the intermediate lever against its return movement, which must take place before the universal frame can be released to permit the type-writer key-levers to be depressed. Therefore if the operator should omit to operate the actuating-bar of the adding mechanism and should move the type-writer carriage and attempt to operate again with the type-writer keys he will be forcibly reminded by the locked condition of the type-writer key-levers that he has omitted the very necessary operation of the actuating-bar of the adding mechanism. Having thus fully described my invention, what I claim as new is—

1. The combination with the carriage of a type-writer and the adding mechanism of an adding-machine, of an actuating-bar, of an intermediate lever engaged by means of an engagement of the said intermediate lever and of a movable member, having a hook and means for locking said intermediate lever and of a movable member, having a hook and means for locking said intermediate lever...
against return movement until released by the operation of said actuating-lever.

3. The combination with the carriage of a type-writer and a leader thereon, of the adding mechanism of an adding-machine comprising an actuating-lever, and means for locking said connections against return movement until released by the operation of the actuating-lever.

4. The combination with the carriage of a type-writer and a leader thereon, of the adding mechanism of an adding-machine comprising an actuating-lever, connections actuated by said leader in the forward movement of the carriage and means for locking said connections against return movement until released by the operation of the actuating-lever.

5. The combination with the carriage of a type-writer and a leader thereon, of the adding mechanism of an adding-machine comprising an actuating-lever, an intermediate lever actuated by the leader in the forward movement of the carriage, and means for locking the intermediate lever against the return movement until released by the operation of the actuating-lever.

6. The combination with the carriage of a type-writer and a leader thereon, of the adding mechanism of an adding-machine comprising an actuating-lever, an intermediate lever actuated by the leader in the forward movement of the carriage, automatic means for locking the intermediate lever at the end of its forward movement, and connections between the intermediate lever and the actuating-lever, whereby the operation of the latter releases the locking means.

7. The combination with the carriage of a type-writer, an adjustable leader thereon, the adding mechanism of an adding-machine, and an intermediate lever actuated by the forward movement of the carriage and leader, of automatic means for locking the intermediate lever against return movement, and means brought into operation of the adding mechanism for releasing said locking means.

8. The combination with the carriage of a type-writer, an adjustable leader thereon, the adding mechanism of an adding-machine comprising an actuating-lever, and an intermediate lever actuated by the forward movement of the carriage and leader, of automatic means for locking the intermediate lever against return movement, and means brought into operation of the actuating-lever for releasing said locking means.

9. The combination with a type-writer carriage and a moving carriage of an adding-machine, of connections whereby the latter is actuated by the former, means for locking said connections and releasing means operated by the actuating-lever.

10. The combination with a type-writer comprising key-levers and a carriage of an adding-machine, comprising an actuating-lever and a movable carriage, of connections between the carriage of the adding-machine and the type-writer key-levers, connections whereby the adding-machine carriage is actuated by the type-writer carriage, and means for locking the intermediate lever of the adding-machine.

11. The combination with a type-writer carriage and a moving carriage of an adding-machine, of an intermediate pivoted lever, whereby the latter is actuated by the former, means for locking the intermediate lever, and releasing means operated by the intermediate lever.

12. The combination with the carriage of a type-writer, an adding-machine comprising a movable carriage and an actuating-lever, of a pivoted intermediate lever connecting the two carriages, means for locking the intermediate lever at the end of the forward movement of the type-writer carriage, and connections from the actuating-lever of the adding-machine for releasing the locking means.

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

JASON C. LOTTERHAND.

Witnesses:

WILLIAM R. BAIRD,
ALAN MCDONNELL.