

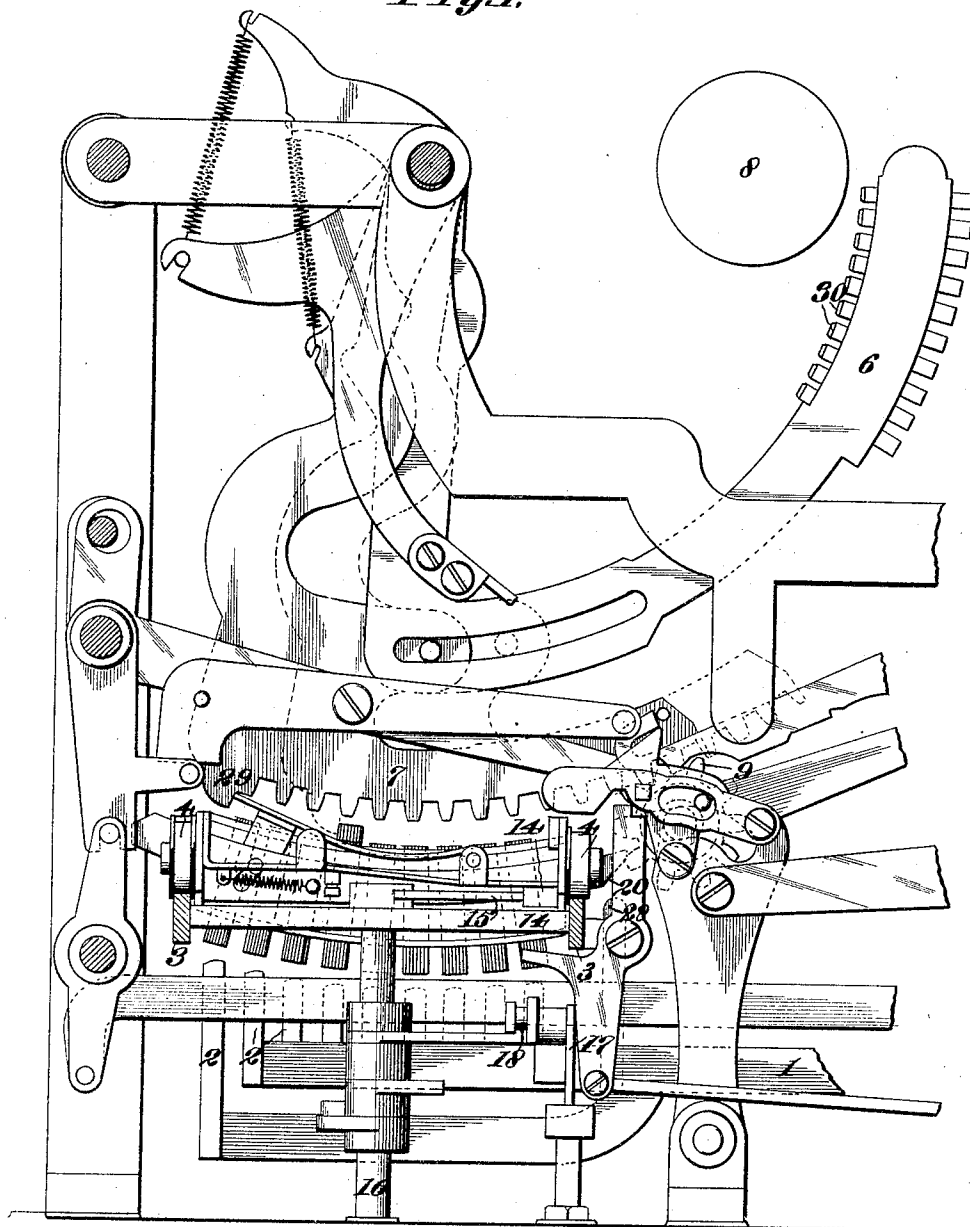
H. LANDSIEDEL.
RECORDING MACHINE.
APPLICATION FILED JUNE 11, 1909.

1,054,356.

Patented Feb. 25, 1913.

2 SHEETS—SHEET 1.

Fig. 1.



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Charles Pickles
Sec'y C. Bunn.

Inventor:
Harry Landsiedel.
By J. D. Rippey,
att'y

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2 SHEETS-SHEET 2.

Fig. 2.

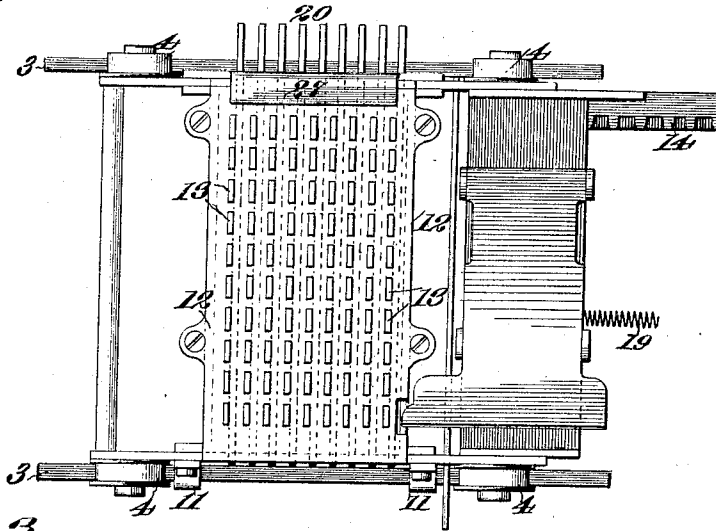


Fig. 3.

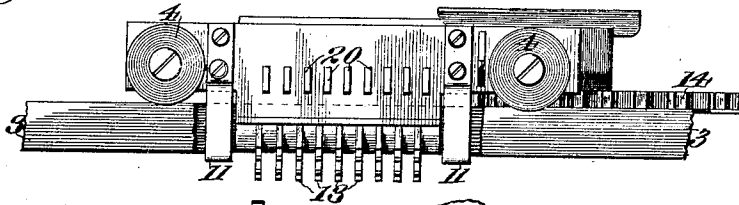


Fig. 4.

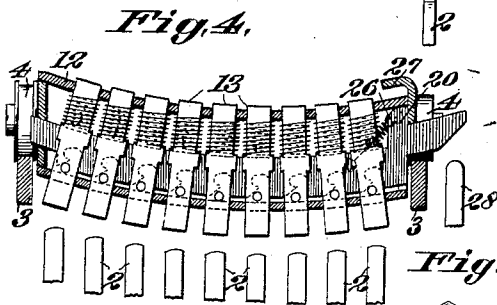


Fig. 5.

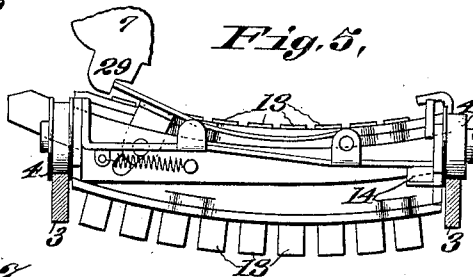


Fig. 7.

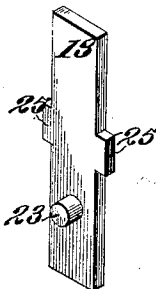


Fig. 6.

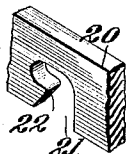


Fig. 8.

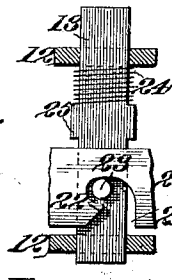
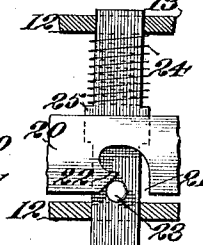


Fig. 9.



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UNITED STATES PATENT OFFICE.

HARRY LANDSIEDEL, OF POPLAR BLUFF, MISSOURI, ASSIGNOR TO DALTON ADDING MACHINE COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

RECORDING-MACHINE.

1,054,356.

Specification of Letters Patent.

Patented Feb. 25, 1913.

Application filed June 11, 1909. Serial No. 501,618.

To all whom it may concern:

Be it known that I, HARRY LANDSIEDEL, a citizen of the United States, residing at Poplar Bluff, Butler county, Missouri, have
5 invented a new and useful Recording-Machine, of which the following is a specification.

This invention relates to adding and recording machines and particularly to adding and recording machines of the cross-carriage type. A well known machine of this type is illustrated and described in an application filed on or about January 24th, 1903 by Hubert Hopkins. The principles
10 of that machine are now well known commercially. In these machines as now on the market, and as illustrated and described in the said application and patent there is contained a set of ten keys arranged in convenient manner in a key-board, and having
15 their inner or rear ends provided with extensions under a movable carriage in which numbers may be set up or represented by pins which are operated by the extensions of the key levers as the keys are sequentially operated. Recording mechanism is embodied in said machines and is operable effectively to record the numbers thus set up in the carriage. Adding mechanism is also
20 included and is operable automatically to add the numbers set up in the carriage and recorded by the recording mechanism.

The present invention relates specifically to the movable carriage and the parts therein which are operable to represent numbers struck on the key-board, the adding and recording mechanism which are operable to add and record the numbers remaining and operating substantially as found in the machines at present in use and as illustrated and described in the said application and patent of Hubert Hopkins.

The object of the present invention is to provide an improved carriage wherein the numbers may be set up or represented by the keys, said carriage including a series of movable pins arranged in rows and being movable in one direction by the keys to represent numbers, and arranged in such manner that the pins will be returned to idle position when any other pin in the respective rows of pins is operated.

In the accompanying drawings in which I have illustrated one embodiment of my invention, Figure 1 is a sectional view of the rear portion of a machine of the type above referred to, illustrating the carriage in its relation to the recording and adding mechanism. Fig. 2 is a plan view of the carriage. Fig. 3 is a rear side elevation of the carriage. Fig. 4 is a cross sectional view of the carriage, showing the arrangement of the pins and the cooperating sustaining parts. Fig. 5 is an end elevation of the carriage. Fig. 6 is a perspective view of a portion of one of the sustaining parts contained in the carriage. Fig. 7 is a perspective view of one of the pins in the carriage. Fig. 8 illustrates one of the pins in its elevated or set position. Fig. 9 illustrates the relation of the pins and the cooperating parts in idle position.

In the machines of the type referred to there is a set of ten key levers which extend longitudinally in the machine and are provided at their rear ends with vertical extensions 2, arranged in substantially the same vertical plane. Extending transversely above the rear ends of the key levers are two rails 3 upon which are mounted the rollers 4 which sustain the movable carriage. A shaft 5 sustains the type-carriers 6 and the gear parts 7 which are operable to record the numbers set up in the carriage on paper fed to the type-carriers around a platen 8. The gear parts automatically operate the adding mechanism 9 to add the numbers recorded, and after the type-carriers and gear parts have thus operated and caused any number to be recorded the carriage is automatically returned to its idle position (except in instances of "repeating") ready to receive a new number.

The carriage includes two side plates 10 which are supported by the rollers 7 operating on the rails 3, one of said plates having hooks 11 engaging under the adjacent rail 3 to prevent derailment of the carriage. Parallel arcuate plates 12 constitute the top and bottom, respectively, of the carriage, said plates being shaped to conform to the arc in which the gear parts 7 operate. Within the carriage, a series of rows of pins 13 are arranged, said pins extending through holes

in the bottom and top plates 12. The rows of pins extend transversely of the carriage longitudinally of the machine and, in idle position, the row of pins at the left with respect to the operator facing the machine is vertically above the ends of the key terminals 2, so that when any key lever is operated its terminal 2 will strike against and elevate a corresponding pin in the first row, except the key for the digit "9," the arrangement of which will be explained. The carriage has a rack 14 enmeshed with a gear segment 15 on a shaft 16 and an escapement bar 17 extends cross-wise over the levers 1 and is operated by said levers when they are operated to set up numbers in the carriage. Escapement mechanism 18 entrains the escapement bar with the shaft 16, just as in the machine of the Hopkins application, and as found in the machines in commercial use. An actuating spring 19 connecting the carriage with some stationary part of the machine actuates the carriage one step leftwardly each time the escapement is operated. This movement, as is well known, brings the different rows of pins successively over the key terminals 2.

Alongside of each row of pins a slide bar 20 is arranged, said bars having notches 21 in their lower edges. The number of notches in each bar is the same as the number of pins in the row to which the bar belongs and in each of said notches there is formed a hook 22. The normal or idle position of the pins 13 is their lowest position, each pin having a projection 23 adjusted to engage against the upper side of bottom plate 12 to prevent displacement thereof. The pins are actuated toward their lowest positions by encircling springs 24 having as abutments the top plate 12 and shoulders 25 on the pins. When any key lever is operated its terminal 2 will strike against the lower end of the corresponding pin 13 raising said pin and compressing its encircling spring 24 the projection 22 sliding the bar 20 rearwardly until said projection 23 is above the projection 22 at which time the spring 26 will snap the bar 20 forwardly engaging the projection 22 under the projection 23 thereby sustaining the pin so raised in its elevated position as clearly shown in Fig. 8. Each of the bars 20 is provided with a spring 26 whereby said bars are yieldingly held in their forward position. The operation of all the pins is the same and in this way one pin in each row may be set up to represent a digit in a number and the entire number will be represented by the total number of pins elevated with the exception of "9's" for which there is a permanent stationary bar. Said bar is shown at 27 and comprises a plate attached to the end plate 10. The bars 20 project through the end plate 10 at the front of the

carriage and the "9" key has a projection 28 arranged in such position that it will strike against the oblique lower edges of the bars 20 and actuate said bars rearwardly in opposition to their springs 26.

Assuming that all the pins 13 are in their idle or initial position, a number may be set up or represented in the carriage by striking the digit of the number consecutively on the proper keys by which pins in the carriage corresponding to said digits will be raised and sustained in their elevated position thereby representing the number. In any row in which a "9" digit occurs no pin 13 will be raised but the bar 27 will indicate the digit "9" for that row. The carriage being drawn transversely by its actuating spring 19, positions the pins 13 and the bar 27 representing the number under the gear parts 7. The latter are provided with heel projections 29 which will engage against the pins 13 which had been raised and against the bar 27 for the "9's" of the number. Engagement of the gear parts with the parts of the carriage representing the number, will cause the type 30 representing the same number that is represented in the carriage to be stopped at the printing line adjacent to the platen 8 on which record may be made by driving the type in a well known manner. Backward movement of the type-carriers and gear parts will operate the adding mechanism 9 to add the number thus recorded and the carriage, as is well known, automatically is moved toward the right of the machine with respect to the operator to its idle position. In the Hopkins machine the pins are automatically depressed when the carriage returns to idle position, but in the present instance the pins of the last number recorded or added, remain elevated. As previously stated the carriage stops in its idle position with the first row of pins vertically above the key terminals 2. A new number may then be set up in the carriage simply by striking the digits of that number on the keys. When another key is operated its pin 13 will, as above described, be raised and its projection 23 will slide the bar 20 rearwardly. This will remove the projection 22 from engagement under the projection 23 of any other pin in that row and permit the pins spring 24 to lower the releasing pin while the newly operated pin will be sustained by engagement of its projection 23 over the projection 22 of the sustained bar. All the keys and pins are operated in this same way and the last number set up in the carriage which had been recorded will be eliminated or cleared automatically by setting up another number containing an equal or greater number of digits.

The carriage in the present instances is provided with the usual stop plate 30 which

prevents forward movement of any of the gear parts whose operation is not necessary to record and add the number.

I am aware that there may be variations and alterations in the construction and arrangement of the parts comprising the present invention without the least departure from the spirit and scope of the invention. I do not restrict myself to identical features, but

What I claim and desire to secure by Letters Patent is—

1. In an adding and recording machine, a carriage, a series of rows of pins in said carriage, a series of key-levers, means whereby operation of said levers will set said pins to represent numbers, and mechanism for moving said carriage to idle position while said pins are in set-up position, in combination with means whereby a set-up pin in one row will be returned to idle position whenever another pin in that row is moved to represent a digit, and means for causing all of said pins to return to idle position, substantially as specified.

2. In an adding machine, a carriage, a row of pins in said carriage, keys operable to move either of said pins in one direction, a bar adjacent to said pins, means whereby said bar will hold said pins in the position to which they may be moved by said keys, means whereby each pin which may have been moved by a key will be returned to idle position whenever another pin in said row is moved by its key, and a key for causing all of said pins to return to idle position, substantially as specified.

3. In an adding machine, rails, a carriage mounted on said rails, mechanism for moving said carriage on said rails, a series of rows of pins in said carriage, a movable bar adjacent to each row of pins, keys operable to cause said carriage to be moved on said rails and to set one pin in each of as many rows of pins as desired effectively to represent numbers, interlocking devices whereby said bars will hold said pins in the position to which they are moved by their keys, means whereby said pins in the respective rows will be returned to idle position as an incident to the setting of other pins in the respective rows, and means for causing all of said pins to return to idle position, substantially as specified.

4. In an adding machine, a carriage, anti-friction devices supporting said carriage, mechanism for moving said carriage longitudinally, keys operable to cause said last-named mechanism to operate, a series of rows of pins in said carriage adjustable by said keys effectively to represent numbers in said carriage, and a key operable to release said adjusted pins, substantially as specified.

5. In an adding machine, the combination

with recording mechanism, of a carriage, means for setting up a number in said carriage, and moving said carriage to proper position relative to said recording mechanism incidentally to the setting up of a number in said carriage, means for eliminating the previous number from said carriage, incidentally to the setting of any other number, and anti-friction supports upholding the carriage, substantially as specified.

6. In an adding machine, a series of rows of pins, keys operable to move said pins in one direction, plates arranged to hold said pins in the position in which they are moved by said keys, and a key operable to move each of said plates effectively to release all of said pins, substantially as specified.

7. In an adding machine, a carriage, several series of pins in said carriage, keys operable to set said pins to represent numbers, means for moving said pins and carriage a denominational space at each operation of the keys, and a key separate from said first named keys operable to cause said carriage to move a denominational space independently of setting the pins, substantially as specified.

8. In an adding machine, a carriage, anti-friction devices supporting said carriage, pins in said carriage, mechanism operable to move said carriage longitudinally, a movable plate adjacent to said pins, keys operable to cause said mechanism to move said carriage longitudinally and to latch said pins on said plate to represent numbers, and a key operable to release any latched pins and to cause said carriage to move while the remainder of said pins remain stationary in the carriage, substantially as specified.

9. In an adding machine, a carriage, a series of parallel plates mounted transversely in said carriage, a series of pins alongside of each of said plates, keys operable to move one pin and its plate simultaneously, inter-locking devices whereby said pins will be sustained in the position to which it is moved by its key, and a key operable to release all of said pins and cause said carriage to move, substantially as specified.

10. In an adding machine, a carriage, a series of pins in said carriage, mechanism for moving said carriage longitudinally, keys operable to set said pins and to cause said mechanism to operate, a key operable to release all of said pins which may be set, and means for returning said carriage to its initial position while said pins remain in the positions determined by any of said keys, substantially as specified.

11. In an adding machine, a carriage, pins in said carriage, anti-friction devices supporting said carriage, mechanism for moving said carriage longitudinally on said anti-

friction devices, keys for causing said mechanism to operate and operable to set said pins to represent numbers, a key for releasing all of said pins and causing said moving mechanism to operate, and means for returning said carriage to its initial position while the pins which had been set to represent a number remain in position to represent said number, substantially as specified.

12. In an adding machine, a carriage, means for moving said carriage longitudinally, pins in said carriage, keys operable to set said pins to represent numbers, means for returning said carriage to its initial position while said pins remain set, and means for causing all of said pins to return to idle or unset position in said carriage, substantially as specified.

13. In an adding machine, a carriage, pins in said carriage, levers operable to set said pins to represent numbers, locking devices holding said pins in their set position, and a lever operable to unlock all of said pins and cause said carriage to move, in combination with recording mechanism operable to record the numbers set in said carriage, and mechanism controlled by said recording mechanism operable to return said carriage to its initial position while said pins remain locked in their set position, substantially as specified.

14. In an adding machine, a carriage, a series of pins in said carriage, mechanism operable to move said pins to position to represent numbers, locking devices arranged to hold said pins against accidental displacement, and a key operable at will to release all of said pins, in combination with mechanism operable to record the numbers represented by said pins, mechanism operable to add said numbers, and mechanism operable

to move said carriage to its initial position while said pins remain locked in position to represent the number added and recorded, substantially as specified.

15. In an adding machine, a carriage, a series of pins in said carriage, keys operable to set said pins to represent numbers, means for holding said pins when they are set, a key operable to release all pins, and an escapement for moving the carriage when said last-named key is operated, substantially as specified.

16. In an adding machine, a carriage, a series of rows of pins in said carriage, springs actuating said pins in one direction, levers operable to move said pins in opposition to their springs to represent numbers, latches for holding said pins in the positions to which they are moved by said levers, means for releasing said pins, an escapement for moving said carriage, and means for restoring said carriage to initial position while said pins remain latched, substantially as specified.

17. In an adding machine, a carriage, an escapement for moving said carriage, a series of pins in said carriage, springs actuating said pins in one direction, levers operable to set said pins to represent numbers, latches for holding said pins when they are set, means for restoring said carriage to its starting point while said pins remain set, and means for releasing said pins, substantially as specified.

In testimony whereof I have hereunto affixed my signature in the presence of two witnesses, this 4th day of June 1909.

HARRY LANDSIEDEL.

Witnesses:

CHARLES PICKLES,
G. A. McCORMICK.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington. D. C."

Correction in Letters Patent No. 1,054,356.

It is hereby certified that in Letters Patent No. 1,054,356, granted February 25, 1913, upon the application of Harry Landsiedel, of Poplar Bluff, Missouri, for an improvement in "Recording-Machines," an error appears in the printed specification requiring correction as follows: Page 1, line 14, after the name "Hubert Hopkins," insert the words and numerals *and which eventuated in patent No. 1,039,130, dated September 24, 1912;* and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 15th day of April, A. D., 1913.

[SEAL.]

C. C. BILLINGS,

Acting Commissioner of Patents.