

C. N. McFARLAND.
 ADDING MACHINE.
 APPLICATION FILED JUNE 27, 1907.

940,709.

Patented Nov. 23, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

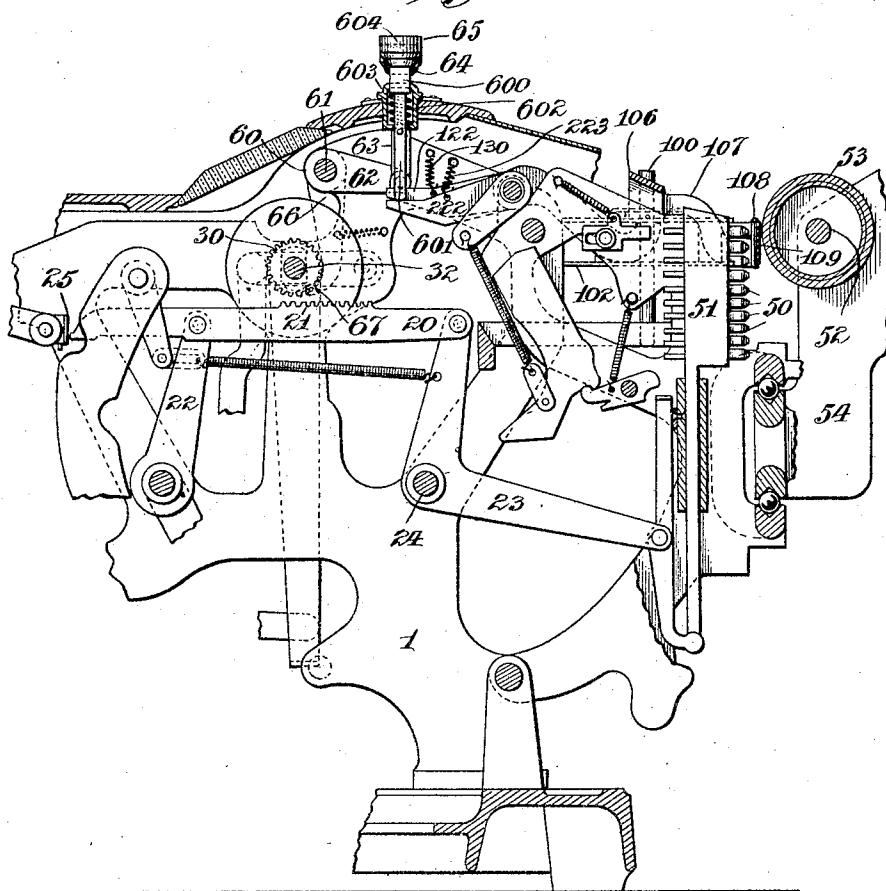
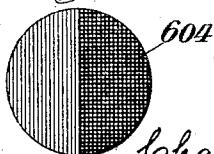


Fig. 5.



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Inventor:
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 by William R. David his Atty.

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2 SHEETS—SHEET 2.

Fig. 2.

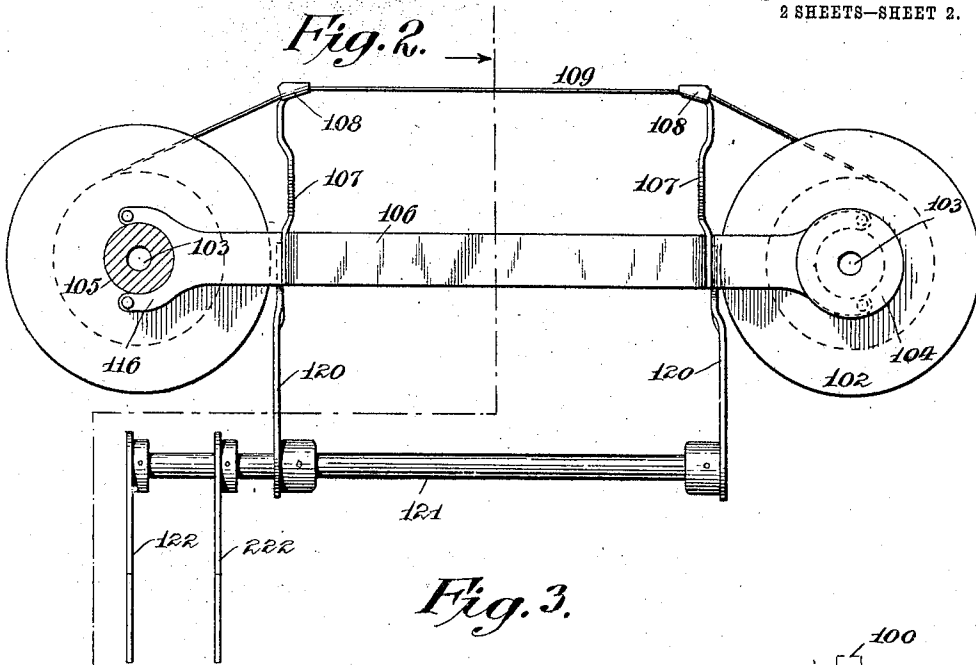


Fig. 3.

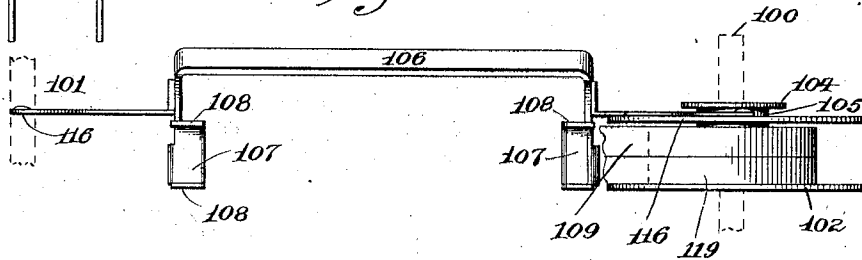
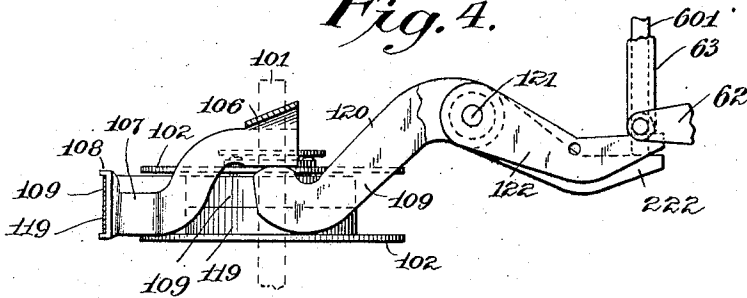


Fig. 4.



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UNITED STATES PATENT OFFICE.

CHARLES N. MCFARLAND, OF DORRANCETON, PENNSYLVANIA, ASSIGNOR TO THE
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ADDING-MACHINE.

940,709.

Specification of Letters Patent.

Patented Nov. 23, 1909.

Application filed June 27, 1907. Serial No. 381,002.

To all whom it may concern:

Be it known that I, CHARLES N. MCFARLAND, a citizen of the United States, and a resident of Dorranceton, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Adding-Machines, of which the following is a specification.

My invention relates to adding machines and particularly to the well known Wales adding machine described and illustrated in U. S. Patent #797032, granted August 15, 1905, in which the printing mechanism is mounted at the end of the device farthest from the operator and comprises a platen on which the paper to receive the record is supported, means for appropriately positioning the type at the line of print in front of the platen, means for propelling the type toward the platen and an inking ribbon interposed between the type and the platen.

The machine, in some of its styles, is likewise provided with means whereby the function of the accumulating mechanism may temporarily be interrupted without, at the same time, suspending the function of the remaining mechanism of the machine, so that an item may be printed on the paper recording strip on which the accumulated items are recorded without including it in the series of items accumulated or adding it into the total when these items are added up.

In using the machine in the manner last mentioned, it has been found by experience that sometimes confusion ensues between the items printed on the strips which have been accumulated and those which have not. In order to avoid such confusion, or rather to lessen the tendency which exists to have it occur, the machine is provided with means whereby the items not to be totalized are recorded in an ink of a different color from that in which the other items are recorded, and briefly this is accomplished by providing appropriate means for moving the inking ribbon frame as an incident of the depression of the key for interrupting the function of the accumulating mechanism so that there is automatically and of necessity presented to the line of print a strip of inking ribbon provided with a different colored ink from that in which the accumulated items are recorded.

I have ascertained, by experience in using the machine that it may be convenient to use

the multi-colored ribbon strip for varying the color of the recorded items at the will of the operator, so that any item, whether it is accumulated or not, may be recorded in a colored ink, if desired. It may also be convenient to designate totals or sub-totals in a different colored ink at the will of the operator. To that end I have provided the ribbon supporting frame with a supplementary button and lever and appropriate intermediate connections and it is these parts included within this construction which form the subject matter of this application for a patent.

In the drawings, Figure 1 is a side elevation and partial vertical section of that portion of an adding machine of the kind described embodying my invention; Fig. 2 is an enlarged top plan view of the inking ribbon frame and lifter; Fig. 3 is a rear elevation thereof; Fig. 4 is a side elevation of the same, and Fig. 5 is a plan view of the finger piece of the supplementary key.

In the drawings, 1 is the frame of the machine on which parts are mounted. These parts include a bank of keys arranged in denominational series, each key provided with a stem by the depression of which a stop corresponding to the numeral value of the key depressed is interposed in the paths of rack bars 20, one for each numeral wheel. These rack bars are each provided with tooth racks 21 on their upper edges and are supported at their front ends upon links 22 suitably pivoted, either in the frame of the machine, or on some convenient part thereof and at their rear ends upon the extremities of bell crank levers 23 mounted to oscillate upon a shaft 24. The other ends of these levers 23 are pivotally connected with the printing mechanism. The rack bars 20 are adapted to mesh with pinions 30 with which the numeral wheels are provided. These numeral wheels display in proper order on their edges (not shown) the numbers from 1 through 9 to 0, and are all mounted on a common shaft 32, there being one numeral wheel for each denominational series of keys.

It will readily be understood that when the rack bars are moved forward the extent of their movement is governed by the position of the key stops above referred to, and this movement in turn governs the extent of rotation of the numeral wheels when they

are in mesh with the racks, during the return movement of the latter to normal position. The forward movement of the racks to any extent is governed by other stops 25 which are actuated by the key stops.

The machine is actuated by a handle which oscillates a shaft (not shown) which, in turn, through appropriate mechanism, reciprocates the rack bars 20 and through them communicates movement to the proper parts of the printing mechanism.

The printing mechanism comprises a series of type bars 50 arranged in vertical order in a carrier 51 so that when a rack is moved the type bars are raised until the proper one is in a position opposite the point of print. This point of print is in a fixed horizontal plane opposite a shaft 52 on which the platen 53 is mounted and which in turn is placed in a carriage 54 adapted to move laterally across the rear end of the machine.

At each side of the framework of the machine there are provided bell crank levers 60 pivoted at 61. One arm 62 of the lever is hinged by a stem 63 to a key 64 provided with a finger piece 65, which projects above the upper case of the machine. The other arm 66 of the same lever is provided at its lower end with a foot or hook 67 adapted to swing in under the numeral shaft 32 to support it. It is obvious that when this key 64 and its stem 63 is depressed the bell crank lever 60 will be swung to move the hooks 67 under the ends of the shaft 32 so that when the rack bars 20 are oscillated the pinions cannot come into contact with them (see Fig. 1). In other words, the purpose of this key which is called an elimination key is to interrupt the function of the adding mechanism so that while the depression of the numeral keys will cause the registration of the corresponding numbers on the strip of paper provided for that purpose, yet so long as this key is depressed, such items will not be added by the machine.

At a convenient place on each side of the frame 1 are mounted vertical spindles 100, 101. On these are placed two ribbon spools 102 of usual construction, each provided with a central aperture 103 engaging with one of the spindles on which the spools turn and on which they are free to reciprocate vertically. Each spool 102 is provided with an upper horizontal flange 104 connected to its upper plate by a collar 105. The spools are supported in a frame consisting of a cross piece 106 provided at each extremity with a fork 116 to embrace the collar 105. Projecting outwardly from the cross piece 106 are ribbon guides 107 provided with horizontal flanges, top and bottom, 108, between which an inking ribbon 109 is adapted to move.

Back of the spool frame is a lifter com-

prising two levers 120 rigidly fixed to a cross rod 121 suitably mounted in the frame of the machine, and which rod is adapted to cooperate with the lower end of the key stem 63, so that when the key 64 is depressed the lever is tilted, which movement actuates the levers 120 and these in turn lift the ribbon spools to bring the lowermost strip 119 to the point of print. This strip is of a different color from the upper part of the ribbon and is preferably saturated with red ink. It will thus be seen that when the elimination key is depressed and so long as it is held depressed the item set up by the numeral keys will be printed in red ink and, of course, will not be added into the machine.

Secured to the cross rod 121 is a second rearwardly extending lever 222. Mounted in a suitable aperture in the frame of the machine is a supplementary key 600 (preferably arranged near to the key 64) and provided with a depending stem 601 adapted to engage with the end of the lever 222 to depress it and provided with a retracting spring 602 surrounding the stem 601 within a casing 603 provided for that purpose, so that the key 600 will automatically be restored to its initial position after depression.

A suitable spring 223 serves to assist the restoration of the parts to their original positions. A finger piece 604 is provided for the key 600 and is preferably divided into colored panels on its upper surface as indicated in Fig. 5.

If the operator desires to have any item, which is set up on the numeral wheels thereby transferred to the printing mechanism, recorded in an ink of a different color from that normally employed, he will depress the supplemental key 600. This in turn will actuate the lever 222 and rest the lifter and the ribbon spools in the manner previously described to bring the strip 119 to the point of print. So long as the key 600 is kept depressed the items thereafter recorded by the printing mechanism will continue to be printed in the distinguishing ink on the ribbon strip 119 until the key 600 is restored to its initial position. If, at the same time, that the key 600 is kept depressed the elimination key 64 is also depressed, nothing occurs and the position of the strip 119 with reference to the point of print is not altered, because the lifter and the ribbon spools have been already moved to place. In effect, therefore, while the actuation of the key 64 compels the printing of an item recorded but not accumulated in a distinguishing color, the actuation of the key 600 enables the operator at his operation to record any other item also in a distinguishing color.

What I claim as new is:—

1. In a machine of the class described, comprising a printing mechanism, numeral

wheels, means for operating them, operative connections between said means and the printing mechanism, and means for rendering the numeral wheels inactive while the printing mechanism is actuated and simultaneously causing items to be printed during such inactivity of the numeral wheels in a distinguishing manner, means for causing other items to be printed in the same distinguishing manner independently of the ordinary functions of the printing mechanism.

2. In a machine of the class described, comprising a printing mechanism provided with an inking device, numeral wheels, means for operating them, operative connections between said means and the printing mechanism, and means for rendering the numeral wheels inactive while the printing mechanism is actuated and simultaneously causing items to be printed during such inactivity of the numeral wheels in a distinguishing manner, means for causing other items to be printed in the same distinguishing manner independently of the ordinary functions of the printing mechanism, comprising a supplemental key adapted to move the inking device of the printing mechanism.

3. In a machine of the class described, comprising an accumulating mechanism, an inking ribbon, means whereby its position may be varied and a plurality of optionally operable means whereby the positioning means may be actuated, one of said means being adapted at the same time automatically to interrupt the function of the accumulating mechanism.

4. In a machine of the class described, comprising an accumulating mechanism, an inking ribbon, means whereby its position may be varied and a plurality of optionally operable means whereby the positioning means may be actuated, one of said means being adapted at the same time automatically to interrupt the function of the accumulating mechanism, and automatically to restore the inking ribbon to its original position when such interruption ceases.

5. In a machine of the class described, comprising an accumulating mechanism, an inking ribbon, means whereby its position may be varied, a plurality of optionally operable means whereby the positioning means may be actuated, one of said means being

adapted at the same time automatically to interrupt the function of the accumulating mechanism and the other of said means being adapted to independently move said positioning means, and means for restoring the positioning means after such independent movement.

6. In a machine of the class described, comprising an accumulating mechanism, an inking ribbon, means whereby its position may be varied, a plurality of optionally operable means whereby the positioning means may be actuated, one of said means being adapted at the same time automatically to interrupt the function of the accumulating mechanism, and the other said means being adapted to independently move said positioning means, and means to automatically restore the inking ribbon to its original position after each operation.

7. In a machine of the class described, comprising an accumulating mechanism, and strips of differently colored inking ribbons, a plurality of optionally operable means adapted to move one of said strips to a predetermined position, one of said means being adapted at the same time automatically to interrupt the function of the accumulating mechanism, and the other of said means being adapted to independently move said positioning means, and means for restoring the positioning means after such independent movement.

8. In a machine of the class described, comprising an accumulating mechanism and strips of differently colored inking ribbons, a plurality of optionally operable means adapted to move one of said strips to a predetermined position, one of said means being adapted at the same time automatically to interrupt the function of the accumulating mechanism, and the other of said means being adapted to independently move said positioning means, and means to automatically restore the strips to their original positions after each operation.

Witness my hand this 24th day of June 1907, at the borough of Dorranceton, in the county of Luzerne and State of Pennsylvania.

CHARLES N. McFARLAND.

Witnesses:

A. L. WILLIAMS,
P. L. DRUM.