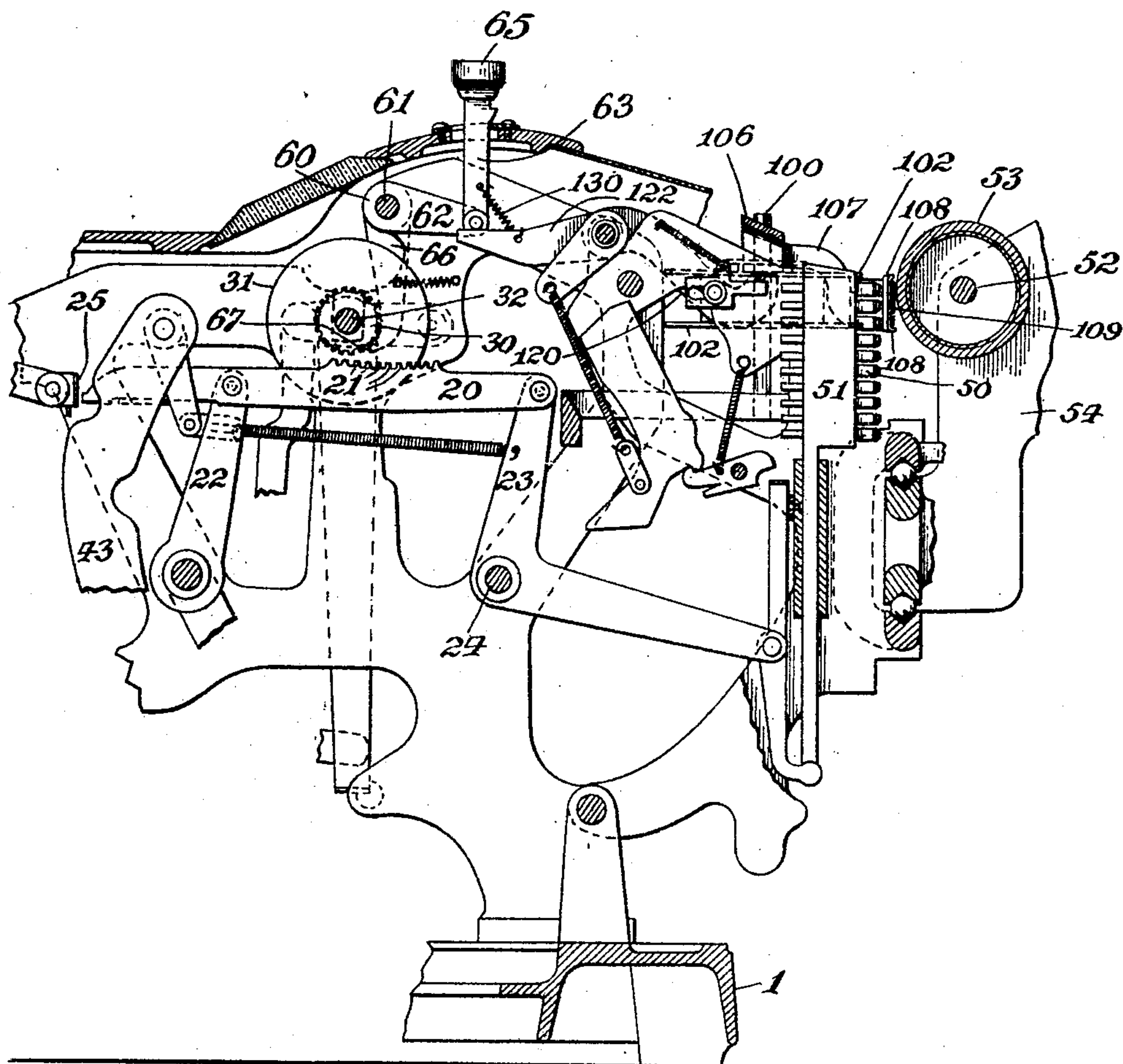


C. H. HERZOG.  
CALCULATING MACHINE.  
APPLICATION FILED MAR. 5, 1907.

924,066.

Patented June 8, 1909.  
2 SHEETS—SHEET 1.

Fig. 1.

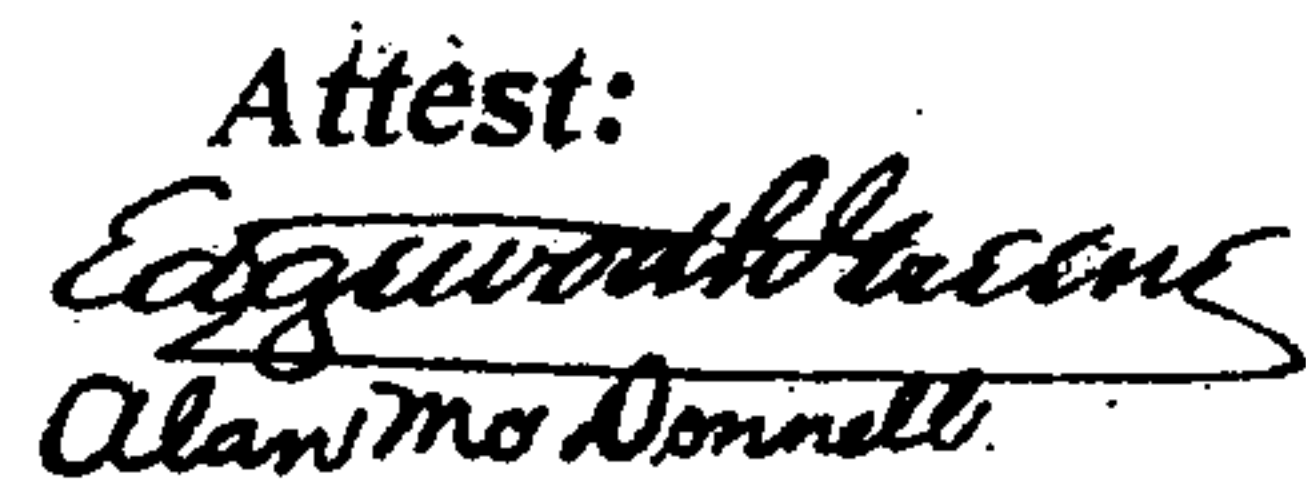


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Charles H. Herzog Inventor:  
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his Att'y.

**924,066.**

2 SHEETS-SHEET 2.



Charles H. Herzog Inventor:  
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# UNITED STATES PATENT OFFICE.

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## CALCULATING-MACHINE.

No. 924,088.

Specification of Letters Patent.

Patented June 8, 1909.

Application filed March 5, 1907. Serial No. 360,745.

*To all whom it may concern:*

Be it known that I, CHARLES H. HERZOG, a citizen of the United States, residing at Kingston, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Calculating-Machines, of which the following is a specification.

In a co-pending application for Letters Patent of the United States Serial No. 335,357, filed September 20, 1906, by Charles N. McFarland, there is described and shown a device whereby, on the well known Wales adding and listing machine, 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 strip on which the accumulated items are recorded without including it in such series of items or adding it into the total when these items are totalized. Using the machine in the manner described in said co-pending application, it has been found that confusion is apt to result between those items on the record which form part of the enumerated series to be totalized and those which form part of the second series which are not to be totalized.

The purpose of my invention is to avoid this confusion by printing the items which are not to be totalized in a different colored ink from that in which the accumulated items are printed so that there will be no difficulty in distinguishing them. I accomplish this purpose by the construction hereinafter described which is so arranged that when the elimination key which interrupts the function of the accumulating mechanism is depressed, the inking ribbon is automatically and merely as an incident of the depression of such key, so moved that there is presented to the point of print a differently colored inking ribbon or a differently colored strip of the same inking ribbon. As it is more convenient, in the normal operation of the machine, to use black inking ribbons, I so arrange the parts that the items to be accumulated are printed in black and in order to afford a striking contrast between these items and those of the non-accumulated series I print the latter in red

and make the inking ribbon of two parts viz: one black strip and one red strip.

In the drawings, Figure 1 is a side elevation and partial vertical section on the plane of the line 1—1 in Fig. 2 of that portion of an adding machine of the type 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 and Fig. 4 is a side elevation of the same.

In the drawings, 1 is the frame of the machine on which the 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 path of rack bars 20 one for each numeral wheel. These are each provided with toothed racks 21 on their upper edges and are supported at their front ends upon links 22 suitably pivoted and at their rear ends upon the extremities of bell crank levers 23 mounted to oscillate upon a shaft 24; the other ends of the levers 23 being pivotally connected with the printing mechanism. The rack bars 20 are adapted to mesh with pinions 30 with which the numeral wheels 31 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 be readily understood that when the rack bars are moved forward and the racks are in mesh with the pinions 30 the extent of the rotation of the wheels is determined by the extent of such movement of the racks which movement is in turn governed by the position of the key stops above referred to and which is permanently controlled through a series of other stops 25 provided for that purpose.

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 movement is communicated to the printing mechanism. This latter 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 positioned opposite the



point of print which is in a fixed horizontal plane opposite a shaft 52 on which is mounted the platen 53, and which is placed in a carriage 54 adapted to move laterally across 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 to a stem 63 of a key 64 provided with a finger piece 65 projecting above the upper case of the machine. The other arm 66 is provided at its lower end with a hook 67 adapted to swing under the numeral wheel shaft 32 to support it. This key and its stem, when depressed, is adapted to swing the bell crank lever to move the hooks 67 upward and thus to lift the numeral wheel shaft 32 so that the rack bars, if oscillated, cannot engage with the pinions 30. In other words, the purpose of this key which is called the "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 paper record provided for that purpose, yet so long as the key is depressed such items will not be added by the machine.

The parts above described form no part of my invention but are described and claimed in the application for a patent of Charles N. McFarland, Serial No. 335,357, above referred to. My invention relates to the inking ribbon and its related parts.

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, 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 vertically to reciprocate. Each spool 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 107 adapted to embrace the collar 105. Projecting outwardly from the cross piece 106 are ribbon guides 107, 107, provided with horizontal flanges 108, 108, between which an inking ribbon 109 is adapted to move. Back of the spool frame is a lifter comprising two levers 120, 120, rigidly fixed to a cross rod 121 suitably mounted in the frame of the machine and which rod is provided at one end with a rearwardly extending lever 122 adapted to cooperate with the lower end of the key stem 63, so that when the key is depressed the lever is tilted, to move the levers 120, 120, which in turn lift the ribbon spools to bring the lowermost strip of ribbon 119 to the point of print. This strip is of a different color from the upper part of the ribbon and is preferably satu-

rated with red ink. It will thus be seen that when the elimination key is depressed, and so long as it is held depressed, the items set up by the numeral keys will be printed in red and will not be added into the machine. A spring 130 retracts the lever 122 to its original position and restores the black ribbon to the point of print as soon as the key 65 is restored to its original position.

It is obvious that some modifications may be made in the described construction without departing from the principles upon which the invention is based. I may for instance use a plurality of single ribbons instead of a multi-colored wide ribbon. I may use more than two ribbons and provide means for lifting any predetermined one of the series into the printing zone, the color so positioned being indicated by an identical color of a key on the key board.

What I claim as new is:

1. In a machine of the class described, accumulating mechanism, printing mechanism, means for simultaneously operating both of said mechanisms, an elimination key, the depression of which causes an interruption of the operation of the accumulating mechanism, and an inking ribbon supporting frame, in combination with means whereby the mere depression of the elimination key will automatically move the frame to a new position with respect to the point of print, said means comprising vertical supports on which the frame is adapted to slide, and a lifting lever for the frame intermediate the frame and the elimination key.

2. In a machine of the class described, comprising a numeral wheel, means for rotating it, means for holding it out of operative position, and an inking ribbon supporting frame, the combination therewith of means for moving said frame to a new position with respect to the printing point actuated by the means for holding the numeral wheel out of operative position.

3. In a machine of the class described, a numeral wheel, means for rotating it, means for holding the numeral wheel out of connection with the rotating means, and an inking ribbon supporting frame, in combination with means for moving said frame to a new position with respect to the printing point actuated by the means for holding the numeral wheel out of connection with its rotating means.

4. In a machine of the class described, a numeral wheel, a rack for rotating it, means for holding the numeral wheel out of engagement with the rack, and an inking ribbon supporting frame, in combination with means for moving the said frame to a new position with respect to the printing point actuated by the means for holding the nu-



numeral wheel out of engagement with the rack.

5. In a machine of the class described, a numeral wheel, means for operating it, means for holding it out of operative position, and a plurality of inking ribbons, in combination with printing mechanism, and means for bringing a different ribbon into printing position actuated by the means for holding the numeral wheel out of operative position.

6. In a machine of the class described, a numeral wheel, means for rotating it, means for holding the numeral wheel out of connection with the rotating means, and a plurality of inking ribbons, in combination with printing mechanism, and means for bringing a different ribbon to the printing point actuated by the means for holding the numeral wheel out of connection with its rotating means.

7. In a machine of the class described, a

numeral wheel, a rack for rotating it, means for holding the numeral wheel out of engagement with the rack, and a plurality of inking ribbons, in combination with printing mechanism, and means for bringing a different ribbon to the printing point actuated by the means for holding the numeral wheel out of engagement with the rack.

8. In a machine of the class described, a numeral wheel, a shaft on which the wheel is supported, an inking ribbon frame, an eliminating key, a hook engaging under the numeral wheel shaft, and a lever engaging under the inking ribbon frame, said hook and lever being both operated by the depression of the elimination key.

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

CHARLES H. HERZOG.

Witnesses:

A. S. HERRMANN,  
EMMA BURGESS.