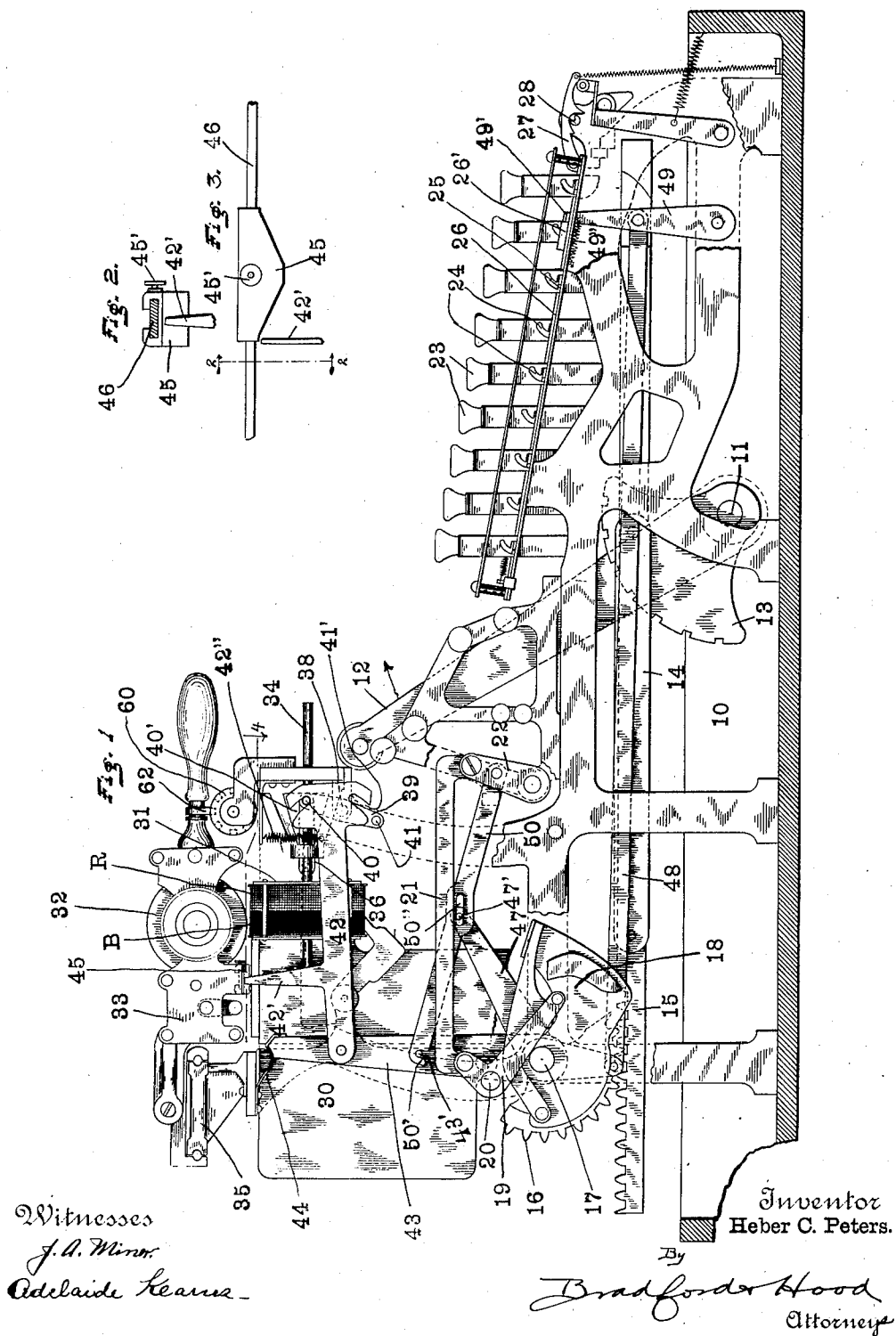


1,048,093.

H. C. PETERS.
 ADDING MACHINE.
 APPLICATION FILED SEPT. 26, 1904.

Patented Dec. 24, 1912.

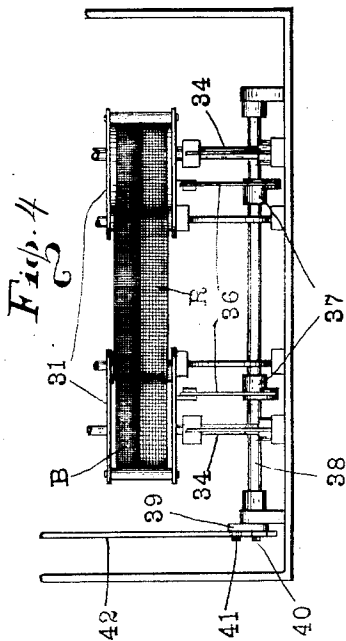
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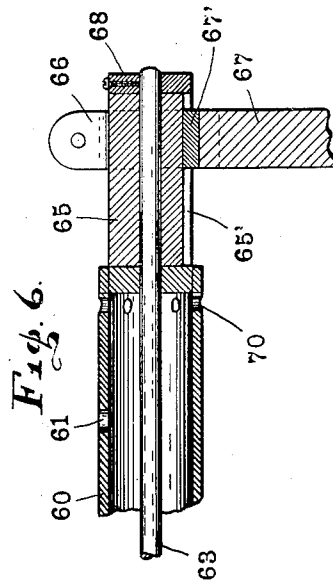
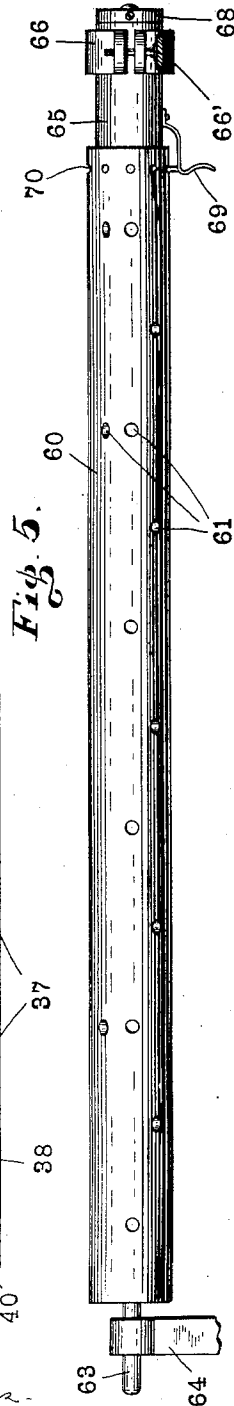
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 3 SHEETS—SHEET 2.



Witnesses
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3 SHEETS—SHEET 3.

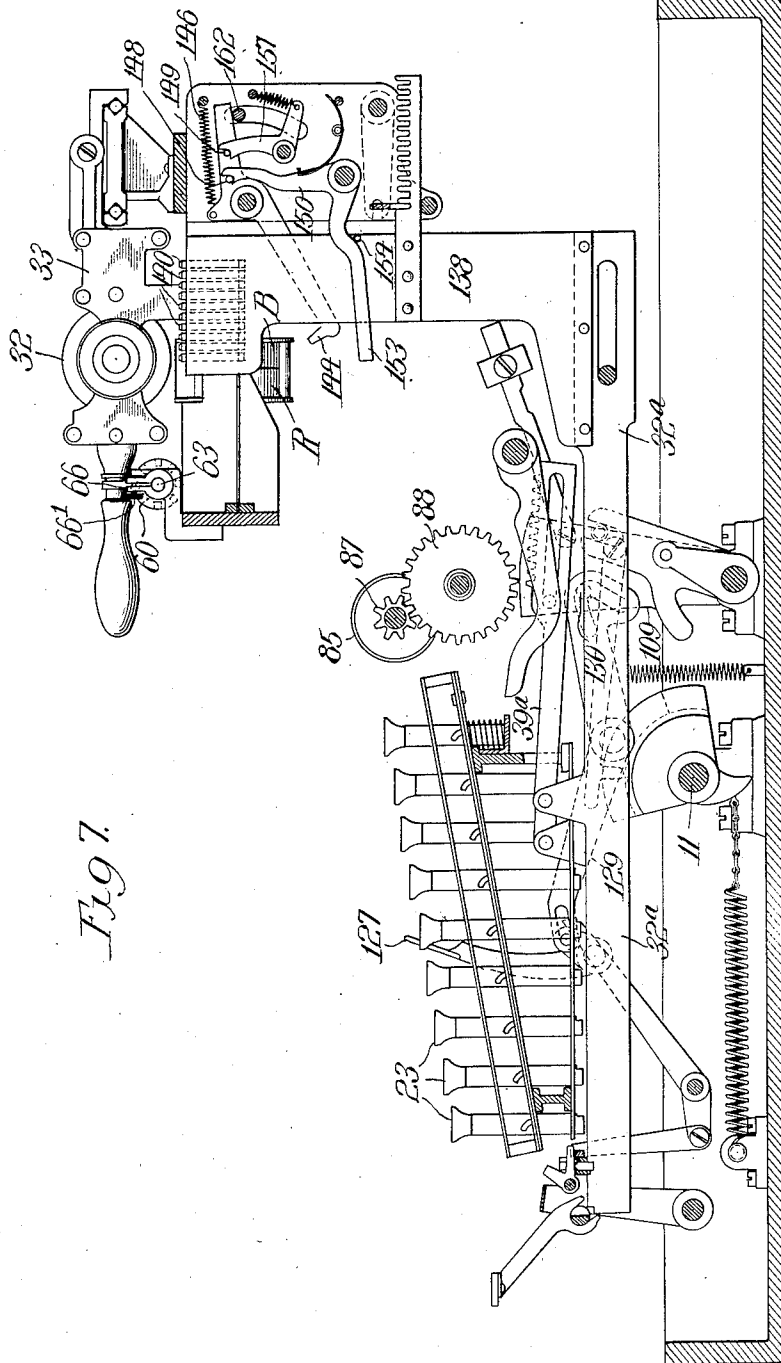


Fig. 7.

Witnesses

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UNITED STATES PATENT OFFICE.

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ADDING-MACHINE.

1,048,093.

Specification of Letters Patent.

Patented Dec. 24, 1912.

Application filed September 26, 1904. Serial No. 225,907.

To all whom it may concern:

Be it known that I, HEBER C. PETERS, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Adding-Machines, of which the following is a specification.

In Patent No. 654,181, issued on July 24, 1900, to F. C. Rinsche, means are shown whereby, upon the operation of the totaling key in an adding machine, a polychrome ribbon may be shifted with relation to the type in such manner that the total may be printed in a color different from the color in which the items have been printed, the construction being such that the items can only be printed in one color, and the totals in the other.

The principal object of my present invention is to provide means whereby the color position of the polychrome mechanism may be changed for different columnar printing positions and to also provide means by which the total in any column may be printed in a color contrasting with that of the items.

A further object of my present invention is to provide means by which the printing position of the polychrome ribbon may be made to depend upon the operation or non-operation of the number-keys rather than the totaling key, and may also be made to depend upon the position of the paper-carriage relative to the printing type, the arrangement being such that two or more columns may be printed, by shifting the carriage, the color of the items in the columns being automatically changed, when desired, by the shifting of the carriage, and the total of each column being automatically printed in a color different from the color of the items in its column.

In a machine capable of printing in two or more columns with different colors it is also desirable that different arrangements of the columns be producible, and to this end a further object of my invention is to provide means by which any desired arrangement of columns may be had.

The accompanying drawings illustrate my invention.

Figure 1 is a side elevation of an adding machine of the Rinsche type equipped with

my invention, only those portions of the machine proper which are necessary to illustrate my invention being shown; Fig. 2 is a sectional detail on line 2—2 of Fig. 3; Fig. 3 a side elevation of the parts shown in Fig. 2 on a scale larger than that shown in Fig. 1; Fig. 4 a plan on line 4 of Fig. 1; Fig. 5 a plan of the adjustable carriage-holder; Fig. 6 a sectional detail of a portion of the parts shown in Fig. 4; and Fig. 7 a longitudinal sectional elevation of said Rinsche machine illustrating more particularly the printing mechanism and the means for taking a total.

In the drawings, 10 indicates the main frame of the machine, in which is journaled the main drive shaft 11 provided with the operating handle 12. Shaft 11 carries a segment 13 to which is pivoted one end of the link 14, the opposite end of said link carrying a rack-bar 15 which meshes with a segment 16 carried by shaft 17. Shaft 17 carries a cam 18 adapted to operate a bell-crank lever 19 pivoted at 20 to the main frame.

The details of the cam device need not be described, the same being well known. Suffice it to state that when the handle 12 is drawn forward the bell crank 19 moves upward and rearward under the action of springs (not shown) guided by one portion of the cam structure and an automatic engagement is brought about between another portion of the cam structure and said bell crank to complete the movement of the latter which, in the reverse or rearward throw of the operating handle, is restored to normal.

Bell-crank 19 has attached thereto a link 21, which in turn is connected to a lever 22. The number-keys 23 of the keyboard are each provided with a V-shaped slot 24 into each of which is extended a pin 25 of a slide 26, a slide 26 being provided for each vertical bank of keys 23. Each slide 26 carries at its lower end a pawl 27 adapted to engage a catch-bar 28. The printing section 30, which is shown only in outline in Fig. 1, has arranged adjacent thereto a ribbon-carriage 31 which carries a polychrome ribbon consisting of two portions B and R which are held in a plane between the printing type of the section 30 and the platen 32 of

the paper-carriage 33. The ribbon rolls 31 (forming a ribbon carriage) are carried upon horizontal guide rods 34 and are reciprocable horizontally on said rods. The paper-carriage 33 is reciprocable longitudinally on a track 35.

As shown more particularly in Fig. 7 the adding machine of the Rinsche patent aforesaid is provided with printing mechanism arranged in a plane below the platen and under the control of a series of longitudinal bars which are themselves controlled in extent of movement by the rows of keys corresponding therewith and such machine is furthermore provided with a total key and connections whereby a total may be printed at the will of the operator. For convenience in description I will employ, as far as practicable, the same reference characters in describing the mechanisms just referred to as are employed in said Rinsche patent. The machine is provided with a series of longitudinal bars 32^a (numbered 32 in said patent) which correspond in number with the rows of keys of different denominations and whose forward movement, that is movement to the left in Fig. 7, is controlled, in degree, by the value or number keys. Each of these bars is provided with an upwardly extending vertical plate or type-carrying frame 138 in whose upper end are mounted a series of parallel movable type 140 representing the cipher and the nine digits 1 to 9 and extending in that order from front to rear or from left to right in Fig. 7. In the normal position of the type-plates the cipher types thereof are at the printing point or line and in position to be struck by their respective hammers 144, but when any one or more of such plates is permitted to move forward the particular type corresponding in value to the particular key operated in the row of keys corresponding to such type plate is presented to the printing line and placed in position to be struck by its hammer 144. Each hammer is under the control of two triggers 150 and 157 which normally restrain the hammer against the tension of its spring 146. When one of the plates or frames 138 is moved forwardly the movement of its pin 154 against the forwardly extending arm 153 of the first trigger releases the trigger proper from engagement with the pin 148 on the rearwardly extending end of the hammer 144. But the release of this particular trigger does not permit the hammer to strike until the second trigger 151 is released from contact with a second pin 149 on the hammer. This latter trigger is under the control of a bail or universal rod 162 which is operatively connected in suitable manner with the main operating shaft or handle of the machine as indicated in the patent aforesaid. When such handle is operated and the bail thereby

swung downwardly the second trigger 157 is rocked so as to be disengaged from the pin 149 whereupon the hammer is free to deliver its blow to the particular type presented thereto, after which the parts are restored to their normal position. Each of the bars 32^a is provided with a pivoted rack 39^a (marked 39 in said patent) which, in the rearward or return movement of its bar, is arranged to be thrown into mesh with the gear 88 which in turn meshes with the pinion 87 of the accumulator or adding wheel 85, with the result that the value of the key operated, which determines the extent of movement of the bar 32^a is communicated to the adding wheel corresponding to the row to which such operated key belongs. When a total is to be taken or printed the racks are moved into mesh with their gears 88 prior to the initial or forward movement of their bars 32^a, and such bars are permitted to move distances corresponding to the value expressed on their respective adding wheels, and such value representing the total is thereupon printed by contact of the hammers 144 against the particular types presented to them. This particular movement of the racks in the taking of a total is under the control of a total key or lever 127 which is operatively connected with the pivoted lever 129 whose rearward end is angularly slotted in order to receive a pin 130 projecting from the side of the plate or arm 109. The construction and arrangement is such that upon a rearward swinging of the total lever 127 and operation of the shaft 11, the arm 109 will be rocked and the pivoted racks will be thrown into engagement with the gears 88. In taking a sub-total the total lever 127 is left in its rearwardly swung position during a full movement of the operating handle, so that upon a return movement of the bars 32^a to normal position the racks will be left in engagement with the gears 88 which will thereby be rotated, in reverse direction, so as to restore to the adding wheels the total or amount originally represented by them. If it is desired to take a grand total and clear the machine the total lever 127 is restored to normal position when the operating handle is in its forward position with the result that after such total is printed the racks will be disengaged from the gears 88 and will return to normal position without affecting or rotating the gears 88, which in the movements just described, have turned the adding wheels back to zero.

All of the parts thus far described are of ordinary and usual construction, such as thoroughly illustrated in the Rinsche patent already mentioned. In said patent connections are made between the ribbon rolls and the total key whereby the ribbon rolls are shifted by the movement of the total key, and are then automatically returned by

means of a spring. However, in the present instance, this shifting is not controlled by the total key but by the value or number keys, the ribbon being alternately shifted whenever the machine is operated without an item set up on the key-board and such shifting being interfered with in such event and the ribbon thereby caused to remain in its then shifted position so that all of the items of the same column may be printed in the same color and the items of different columns printed in different colors but with the totals in a color contrasting with that of their respective items.

15 In the present construction the ribbon rolls are connected by links 36 each to an arm 37 carried by a horizontal shaft 38. Said shaft carries at one end a two-arm lever 39 the upper end of which carries a pin 40, and the lower end of which carries a pin 41. Arranged in a plane parallel with the arm 39 is a link 42 which is provided, adjacent pins 40 and 41, respectively, with a pair of slots 40' and 41', respectively. The opposite end of link 42 is pivoted to a lever 43 which swings freely upon shaft 17, and is held in one of the other of its positions of adjustment by means of a light spring catch 44. Link 42 is provided with an upwardly extending finger 42' the upper end of which is arranged in the path of movement of a cam 45 which is longitudinally adjustable upon a bar 46 secured to the paper-carriage 33, the said longitudinal adjustment being obtained by any suitable means, as, for instance, the small thumb-screw 45'. As many cams 45 may be provided as desired. Freely pivoted upon shaft 17 adjacent lever 43 is a bell-crank lever 47 one end of which is connected by means of a link 48 with a lever 49 pivoted to the main frame near the forward end. The lever 49 is provided with a cross-bar 49' at its upper end, which cross-bar lies immediately above the slides 26 and extends across all of said slides. Each of said slides is then provided with a block 26' which, when its slide is operated, will engage the cross-arm 49' and swing lever 49 so as to thus swing bell-crank lever 47. The cross-bar 49' is held in engagement with the blocks 26' by means of a light spring 49''. Pivoted to lever 22 is one end of a link 50 the opposite end of which is provided on its lower edge with an open ended slot 50' adapted to receive a pin 43' carried by the lever 43. Link 50 is provided at an intermediate point with a slot 50'' which is adapted to receive a pin 47' carried by the adjacent end of bell-crank lever 47. Link 42 is normally held upward by means of a light spring 42'', and when in this position pin 40 of the lever 39 lies in the slot 40' of link 42, and pin 41 of said lever 39 is entirely outside of slot 41'.

65 In operation, with the parts in the posi-

tion shown in Fig. 1, if the hand lever 12 be moved in the direction indicated by the arrow, it will operate, through shaft 11, segment 13, link 14, rack 15, segment 16, shaft 17, cam plate 18, bell-crank 19 and link 21, to swing lever 22, and this will move link 50 to the left, the link sliding freely upon pin 47' of bell-crank lever 47, and swinging lever 43, whereupon a pull will be exerted upon the link 42, thus pulling upon pin 40 of lever 39 and swinging shaft 38 so as to thereby, through links 36, shove the ribbon-holder 31 to the left, and thus bring the R portion thereof to printing position. This is the action when no one of the keys 23 has been operated and when the paper-carriage is in a position where the cam 45 thereof does not engage the finger 42'.

If the carriage 33 be moved longitudinally until cam 45 engages finger 42', link 42 will be thrown down so as to withdraw its slot 40' from pin 40, and force its slot 41' over pin 41, whereupon the ribbon-holder 31 will be shoved to the left to bring its R portion into printing position, the lever 43 being held in position by the spring 44, so that, upon an operation of the hand-lever 12 with the carriage in the new position, the resultant action due to a pull on link 42 will be to move the ribbon-holder 31 from left to right (instead of from right to left), thus bringing the B portion of the ribbon into printing position. These are the actions of the ribbon-carrier at the time when a total is being printed, the color of this total being, of course, dependent not upon the operation of the total key but upon the non-operation of the value keys of the key-board, and also upon the relative position of the paper-carriage. If, on the other hand, any one of the keys 23 has been operated, the corresponding slide 26 will be moved to the right in Fig. 1, thus bringing its block 26' into engagement with the cross-arm 49' of lever 49, and swinging said lever to the right, whereupon a pull will be exerted upon link 48 which in turn will swing the bell-crank lever 47 and move the pin 47' thereof upward so as to swing link 50 until its notch 50' is withdrawn from pin 43' of lever 43, whereupon an operation of the lever 12 will not cause any movement of the lever 43, and consequently the B or R portion of the ribbon will remain in position, the particular portion which is in printing position being then dependent upon the position of the carriage and no movement of the ribbon-holder taking place during or upon the movement of the main operating handle 12.

In order to conveniently hold the paper-carriage in its various positions desired, I mount upon the main frame a drum or cylinder 60 which is provided with several series of holes 61, 61, any one of these holes

being adapted to receive a pin 62 carried by the carriage 33, and these holes 61 being arranged in the desired position of vertical columns to be printed. The drum 60 is carried by a shaft 63 which at one end is journaled in bracket 64 carried by the main frame, and at the other end is journaled in a bushing 65 which is mounted in a split collar 66 carried by a bracket 67 carried by the main frame. The bushing 65 is provided with a longitudinal key-way 65' adapted to receive a key 67' secured in bracket 67. The two parts of collar 66 may be drawn together by means of a small thumb-screw 66'. Shaft 63 passes axially through the bushing 65, and secured to its outer end is a collar 68 which serves to hold the bushing axially with relation to the drum. Secured to bushing 65 is a spring catch or detent 69 adapted to enter any one of the circumferential series of holes 70 formed in the adjacent end of drum 60, one of said holes being arranged in axial alinement with each set of holes 61. Under normal conditions the bushing 65 is held against axial displacement in the bracket 67 by tightening screw 66', and the drum 60 is held against angular displacement by the detent 69. The carriage 33 may then be shifted longitudinally, and its pin 62 placed in any one of the holes 61 of the set which is uppermost. If a different arrangement of vertical columns is desired the detent 69 is withdrawn, and the drum 60 rotated until the desired set of holes 61 is uppermost in position to receive the pin 62. If the paper in the carriage does not properly aline with the printing type, the screw 66 may be loosened slightly and the whole drum shifted axially or longitudinally with relation to the paper-carriage, thus shifting the paper-carriage as a whole, and readily bringing the paper into any desired alinement with the printing type. Such an adjustment of the entire carriage is much easier than any adjustment of the paper longitudinally in the carriage.

I claim as my invention.

1. In an adding machine, the combination, with the items printing and column shift mechanisms thereof, of polychrome mechanism, and means for changing the color adjustment of such mechanism automatically as an incident to column shift for printing in different colors in different columns.

2. In an adding machine, the combination, with the printing mechanism thereof, of polychrome mechanism, and means whereby the color position of such mechanism may be automatically changed for printing items in different columns and for printing the totals or footings thereof in colors contrasting with that of their respective columns of items.

3. In an adding machine, the combination, with printing mechanism and a longitudinally movable paper carriage, of polychrome mechanism for printing different colors as determined by and under control of the particular columnar position of the paper carriage.

4. In an adding machine, the combination, with printing mechanism and a longitudinally movable paper carriage, of polychrome mechanism movable to different positions for printing in different colors, and means for automatically moving said mechanism as an incident to longitudinal movement of said paper carriage.

5. In an adding machine, the combination, with printing mechanism and a longitudinally movable carriage, of polychrome mechanism under the control of the latter for causing printing in different colors in different columnar positions of the paper carriage.

6. In an adding machine, the combination, with printing mechanism and a longitudinally movable paper carriage, of a movable polychrome ribbon, and means for automatically moving said ribbon as an incident to longitudinal movement of said paper carriage for printing different colors in different columnar positions of the paper carriage.

7. In an adding machine, the combination, with printing mechanism and a longitudinally movable paper carriage, of a movable polychrome ribbon movable to different positions for printing in different colors, such movements of the ribbon being under the control of the paper carriage.

8. In an adding machine, the combination, with printing mechanism and a longitudinally movable paper carriage, of a transversely shiftable polychrome ribbon, and adjustable means carried by the paper carriage for shifting said ribbon.

9. In an adding machine, the combination, with the printing mechanism and the number keys, of polychrome mechanism, and means governed by said keys for controlling the polychrome mechanism as to its color adjustment.

10. In an adding machine, the combination, with the printing mechanism and the number keys, of polychrome mechanism, normally presenting one color to the printing line and controlled by the number keys to retain that color in said position.

11. In an adding machine, the combination, with the printing mechanism and the number keys, of shiftable polychrome mechanism arranged to normally present one color to the printing line and controlled by the number keys to retain that color in said position when freed from control of said number keys.

12. In an adding machine, the combination,

tion, with the printing mechanism, main operating shaft and the number keys, of polychrome mechanism arranged to be moved to present different colors to the printing line, and operating connections for said polychrome mechanism arranged to be actuated by the main shaft, the operation of such connections being under the control of any one or more of the number keys.

13. In an adding machine, the combination, with the printing mechanism, main operating shaft and the number keys, of polychrome mechanism arranged to be moved to present different colors to the printing line, operating connections between said polychrome mechanism and the main shaft for operating or moving the latter mechanism whenever said shaft is actuated, and means, under the control of the number keys, for breaking said connections whenever the shaft is actuated with one or more of said keys operated.

14. In an adding machine, the combination, with the printing mechanism, main operating shaft and the number keys, of polychrome mechanism arranged to be moved to present different colors to the printing line, operating connections between said polychrome mechanism and the main shaft for shifting the latter mechanism when the shaft is actuated, the operation of such connections being under the control of any one or more of the number keys, and means for changing or reversing the order of shifting of the polychrome mechanism, whereby different columns of items may be printed in different colors.

15. In an adding machine, the combination, with the printing mechanism, main operating shaft and the number keys, of polychrome mechanism arranged to be moved to present different colors to the printing line, operating connections between said polychrome mechanism and the main shaft for shifting the latter mechanism when the shaft is actuated, the operation of such connections being under the control of any one or more of the number keys, and means under the control of the operator for reversing the order of shifting of the polychrome mechanism, whereby different columns of items may be printed in different colors.

16. In an adding machine, the combination, with the movable paper carriage, number keys, and the main shaft of the machine, of polychrome mechanism arranged to be moved to present different colors to the printing line, operating connections located between the main shaft and polychrome mechanism and controlled as to operation by the number keys, and means under the control of the paper carriage for reversing the order of shifting of the polychrome mechanism whereby different col-

umns of items may be printed in different colors according to the particular columnar position of the carriage.

17. In an adding machine, the combination, with the printing mechanism of polychrome mechanism arranged to normally present either one of two different colors to the printing line, and means for automatically shifting to the other color as an incident to operation of the printing mechanism.

18. In an adding machine, the combination, with the printing mechanism, and with the movable paper carriage, of polychrome mechanism arranged to normally present either one of two different colors to the printing line, and means under the control of the carriage for automatically shifting from one color to another as an incident to operation of the printing mechanism.

19. In an adding machine, the combination, with the printing mechanism, and with the movable paper carriage, of polychrome mechanism arranged to normally present either one of two different colors to the printing line governed by the position of the carriage, and operating connections for shifting the polychrome mechanism as an incident to operation of the printing mechanism.

20. In an adding machine, the combination, with recording means and means for predetermining the action thereof, of a paper carriage, means for associating the paper carriage and recording mechanism in different columnar relations, polychrome mechanism adapted to cooperate with said recording mechanism, and means dependent upon the columnar relation between the carriage and recording mechanism for automatically determining the active color-position of the polychrome mechanism.

21. In an adding machine, the combination, with recording means and means for predetermining the action thereof, of a paper-carriage, means for associating the paper-carriage and recording mechanism in different columnar relations, polychrome mechanism adapted to cooperate with said recording mechanism, means dependent upon the columnar relation between the carriage and recording mechanism for automatically determining the active color-position of the polychrome mechanism, and other means for shifting the polychrome mechanism colorwise in any columnar position of the recording mechanism and carriage.

22. In an adding machine, the combination of, printing type, a paper-carriage movable transversely with relation thereto into different columnar positions, a polychrome strip adapted to be introduced between said type and carriage, and means carried by the carriage for automatically shifting the polychrome strip colorwise in different positions of the carriage.

23. In an adding machine, the combination of, printing type, a paper-carriage movable transversely with relation thereto into different columnar positions; a polychrome strip adapted to be introduced between said type and carriage, means carried by the carriage for automatically shifting the polychrome strip colorwise in different positions of the carriage, and other means for shifting the polychrome strip colorwise in any position of the carriage.

24. In an adding machine, the combination of, printing type, a paper carriage movable transversely with relation to said type to different columnar positions, number keys for predetermining the position of said printing type, a polychrome strip adapted to be interposed between the type and carriage, means controlled by said number-keys for predetermining the active color-position of the polychrome strip, and means for producing the recording action.

25. In an adding machine, the combination of, printing type, a paper carriage movable transversely with relation to said type to different columnar positions, number-keys for predetermining the position of said printing type, a polychrome strip adapted to be interposed between the type and carriage, means controlled by said number-keys for predetermining the active color-position of the polychrome strip, means for producing the recording action, and means controlled by the position of the carriage for reversing the effect of the number-keys upon the polychrome strip.

26. In an adding machine, the combination, with recording means and means for predetermining the action thereof, of a paper-carriage, means for associating the paper-carriage and recording mechanism in different columnar relations, a polychrome strip coöperating with the recording mechanism, means for bringing different portions of said polychrome strip into active position, and two means for determining the operation of the said shifting means, one of said determining means being controlled by the columnar relation between the recording means and carriage and the other of said determining means being controllable by the operator, and intermediate connections between said two means whereby the effect of one will be reversed by the other in its different positions.

27. In an adding machine, the combination of, printing mechanism, means for predetermining the action thereof, an operating handle for operating the predetermined printing mechanism, a paper carriage, means for associating the paper-carriage and printing mechanism in different columnar relations, a polychrome strip adapted to coöperate with said printing mechanism, a shiftable carriage for said strip whereby the strip

may be shifted from one color to another with relation to the recording mechanism, intermediate connections between the operating handle and the polychrome carriage whereby said carriage may be shifted by the action of the handle, and means for rendering said connections effective or ineffective by the predetermining means.

28. In an adding machine, the combination of, printing mechanism, means for predetermining the action thereof, a paper-carriage, means for associating the paper-carriage and printing mechanism in different columnar relations, a polychrome strip adapted to coöperate with said printing mechanism, a shiftable carriage for said strip whereby the strip may be shifted from one color to another with relation to the recording mechanism, intermediate connections between the operating handle and the polychrome carriage whereby said carriage may be shifted by the action of the handle, means for rendering said connections effective or ineffective by the predetermining means, and means controlled by the different columnar relations of the carriage and recording mechanism for changing the color-position of the polychrome strip.

29. In an adding machine, the combination, with recording mechanism and number-keys for predetermining the operation thereof, of a paper-carriage movable into different columnar positions with relation to the recording means, a polychrome strip adapted to coöperate with the recording mechanism, a carriage for said strip movable with relation to the recording mechanism to bring differently colored portions of said polychrome strip into active position with relation to the recording means, a rock-shaft connected to said carriage, a two-arm lever carried by said rock-shaft, an operating handle for operating the predetermined recording mechanism, intermediate connections between said operating handle and the two-arm lever, said intermediate connections consisting in part of a link adapted to engage either end of the two-arm lever, means carried by the carriage for shifting said link with relation to the two-arm lever, and manually operated means for rendering the connection between the operating lever and the two-arm lever effective or ineffective.

30. In an adding machine, the combination, with recording mechanism and number-keys for predetermining the operation thereof, of a paper-carriage movable into different columnar positions with relation to the recording means, a polychrome strip adapted to coöperate with the recording mechanism, a carriage for said strip movable with relation to the recording mechanism to bring differently colored portions of said polychrome strip into active position

with relation to the recording means, a rock-shaft connected to said carriage, a two-arm lever carried by said rock-shaft, an operating handle for operating the predetermined recording mechanism, intermediate connections between said operating handle and the two-arm lever, said intermediate connections consisting in part of a link adapted to engage either end of the two-arm lever, and means carried by the carriage for shifting said link with relation to the two-arm lever.

31. In an adding machine, the combination, with recording means and means for predetermining the action thereof, of a paper-carriage capable of occupying different columnar relations to the recording mechanism, polychrome mechanism adapted to cooperate with said recording mechanism, and means controlled by the predetermining means for determining the active position of the polychrome mechanism.

32. In an adding machine, the combination, with recording means and means for predetermining the action thereof, of a paper support adapted to cooperate with said recording means, polychrome mechanism adapted to cooperate with said recording means, an operating means for operating the predetermined recording means, intermediate connections between the said operating means, and said polychrome mechanism for shifting the polychrome mechanism colorwise with relation to the recording mechanism, and means for rendering said intermediate connections effective or ineffective.

33. In an adding machine, the combination of, printing mechanism, means for predetermining the operation thereof, a paper carriage, means for associating the paper carriage and printing mechanism in different columnar relations, a polychrome mechanism arranged to cooperate with said printing mechanism, and means for normally maintaining differently colored portions of the polychrome mechanism in active position with relation to the printing mechanism in different columnar relations of the paper carriage and recording mechanism.

34. In an adding machine, the combination of, printing mechanism, means for predetermining the operation thereof, a paper-carriage, means for associating the paper carriage and printing mechanism in different columnar relations, a polychrome mechanism arranged to cooperate with said printing mechanism, means for normally maintaining differently colored portions of the polychrome mechanism in active position with relation to the printing mechanism in different columnar relations of the paper-carriage and recording mechanism, and means for shifting said polychrome mechanism colorwise from its normal position in the different columnar positions, whereby

different columns may be printed in different colors and a total of contrasting color may be printed in any column.

35. In an adding machine, the combination, with recording means and means for predetermining the action thereof, of a paper support adapted to cooperate with said recording means, means for operating the predetermined recording means, intermediate connections between said operating means and said polychrome mechanism for shifting the polychrome mechanism colorwise with relation to the recording mechanism, and means for varying the colorwise effect of said operating means upon the polychrome mechanism.

36. In an adding machine, the combination of, printing mechanism, means for predetermining the operation thereof, a paper carriage capable of being shifted into different columnar positions with relation to the printing mechanism, a polychrome strip adapted to be inserted between the printing mechanism and paper carriage, and means for automatically changing the item-printing color-position of the polychrome strip by the shifting of the paper carriage from one columnar position to another.

37. In an adding machine, the combination of, printing mechanism, means for predetermining the operation thereof, a paper-carriage capable of being shifted into different columnar positions with relation to the printing mechanism, a polychrome strip adapted to be inserted between the printing mechanism and paper carriage, means for changing the item-printing color-position of the polychrome strip in different columnar positions of the paper carriage, and means for changing the color-position of the polychrome strip for the total in any column.

38. In an adding machine, the combination of, printing type, a paper carriage movable transversely with relation thereto into different columnar positions, a polychrome strip adapted to be introduced between said type and carriage, and means for automatically changing the item-printing color-position of the polychrome strip by the movement of the paper carriage from one columnar position to another.

39. In an adding machine, the combination of, printing type, a paper carriage movable transversely with relation thereto into different columnar positions, a polychrome strip adapted to be introduced between said type and carriage, means for automatically changing the item-printing color-position of the polychrome strip by the movement of the paper-carriage and for shifting the polychrome strip color-wise in any position of the carriage.

40. In an adding machine, the combination, with recording means and means for predetermining the action thereof, of a

paper-carriage, means for associating the paper carriage and recording mechanism in different columnar relations, a polychrome strip coöperating with said recording mechanism, means for bringing different portions of said polychrome strip into active position, and two means for determining the operation of the said shifting means, whereby the item-printing color-position may be changed in different columnar positions of the paper-carriage and the total-printing color-position may be changed in any columnar relation of the carriage.

41. In an adding machine, the combination, with printing mechanism and means for predetermining the action thereof, of a paper carriage movable into different columnar positions with relation to the printing mechanism, a polychrome strip adapted to coöperate with said printing mechanism, and means for automatically shifting the polychrome strip colorwise by the paper carriage for both item-printing and total-printing whereby the items of different columns may be in contrasting colors and the totals of the columns may be in a color contrasting with the items of their columns.

42. In an adding machine, the combination, with recording mechanism and number-keys for predetermining the operation thereof, of a paper carriage movable into different columnar positions with relation to the recording means, a polychrome strip adapted to coöperate with the recording mechanism, a carriage for said strip movable with relation to the recording mechanism to bring differently colored portions of said polychrome strip into active position with relation to the recording means, a rock-shaft connected to said carriage, a two-arm lever carried by said rock-shaft, an operating handle for operating the predetermined recording mechanism, intermediate connections between said operating handle and the two-arm lever, said intermediate connections consisting in part of a link adapted to engage either end of the two-arm lever, and means for shifting said link with relation to the two-arm lever.

43. In an adding machine, the combination, with recording mechanism and number-keys for predetermining the operation thereof, of a paper-carriage movable into different columnar positions with relation to the recording means, a polychrome strip adapted to coöperate with the recording mechanism, a carriage for said strip movable with relation to the recording mechanism to bring differently colored portions of said polychrome strip into active position with relation to the recording means, a rock-shaft connected to said carriage, a two-arm lever carried by said rock-shaft, an operating handle for operating the predetermined recording mechanism, intermediate connections

between said operating handle and the two-arm lever, said intermediate connections consisting in part of a link adapted to engage either end of the two-arm lever, means for shifting said link with relation to the two-arm lever, and manually operated means for rendering the connection between the operating lever and the two-arm lever effective or ineffective.

44. In an adding machine having a longitudinally movable paper carriage, a device coöperating with the paper carriage for determining the different columnar positions thereof and adjustably mounted for movement longitudinally with the paper carriage.

45. In an adding machine having a longitudinally movable paper carriage, a device having detaining means coöperating with the paper carriage, said device being rotarily adjustable to provide different spacings in the columnar positions.

46. In an adding machine having a longitudinally movable paper carriage, a device having detaining means coöperating with the paper carriage, said device being longitudinally adjustable to adjust the carriage longitudinally and also rotarily adjustable to provide different spacings in the columnar positions.

47. In an adding machine, the combination, with printing mechanism, and means for predetermining the action thereof, of a paper-carriage movable transversely with relation to said printing mechanism to different columnar positions, retaining means for said paper-carriage consisting of a rotatable drum carrying a plurality of series of retaining means adapted to coöperate with a portion of the paper-carriage to hold the same in different columnar positions, and means for holding said drum in any one of its angular positions.

48. In an adding machine, the combination, with printing mechanism, means for predetermining the action thereof, and a paper-carriage movable transversely with relation to said printing mechanism to different columnar positions, of means for holding said carriage in different columnar positions which means consists of a plurality of series of means adapted to coöperate with a portion of the carriage, and means for holding any one of said series of means in operating position.

49. In an adding machine, the combination, with printing mechanism, means for predetermining the action thereof, and a paper-carriage movable transversely with relation to said printing mechanism to different columnar positions, of means for holding said carriage in different columnar positions, which means consists of a plurality of series of means adapted to coöperate with a portion of the carriage, means

for holding any one of said series of means in operative position, and means for shifting said holding means axially with relation to the printing mechanism and holding the same in any desired position of adjustment.

50. In an adding machine, the combination, with printing mechanism, means for predetermining the action thereof, and a paper-carriage movable transversely with relation to said printing mechanism to different columnar positions, of retaining means for said paper-carriage consisting of a rotatable drum carrying a plurality of series of retaining means adapted to cooperate with a portion of the paper-carriage to hold the same in different columnar positions, means for holding said drum in any one of its angular positions, and means for shifting said holding means axially with relation to the printing mechanism, and holding the same in any desired position of adjustment.

51. In an adding machine, the combination, with printing mechanism, means for predetermining the action thereof, and a paper-carriage movable transversely with relation to said printing mechanism to different columnar positions, of means for holding said carriage in different columnar positions, and means for shifting said holding means axially with relation to the printing mechanism and holding the same in any desired position of adjustment.

52. In a machine of the character described, the combination of operating mechanism, manipulative-controlling devices, printing mechanism, polychrome means, and means for effecting adjustment thereof by the said operating mechanism, as determined by manipulation of said controlling devices.

53. In a machine of the character described, the combination of operating mechanism, manipulative-controlling devices, printing mechanism, shiftable polychrome means, and means for effecting adjustment thereof by the said operating mechanism, as determined by manipulation of said controlling devices.

54. In a machine of the character described, the combination of an accumulator, actuating means therefor, printing mechanism, manipulative amount-determining means, totaling devices, polychrome means, and means for adjusting the same automatically as controlled by manipulation of amount determining means and the totaling devices.

In witness whereof, I have hereunto set my hand and seal at Indianapolis, Indiana, this 24th day of September, A. D. one thousand nine hundred and four.

HEBER C. PETERS. [L. s.]

Witnesses:

ARTHUR M. HOOD,
JAMES A. WALSH.