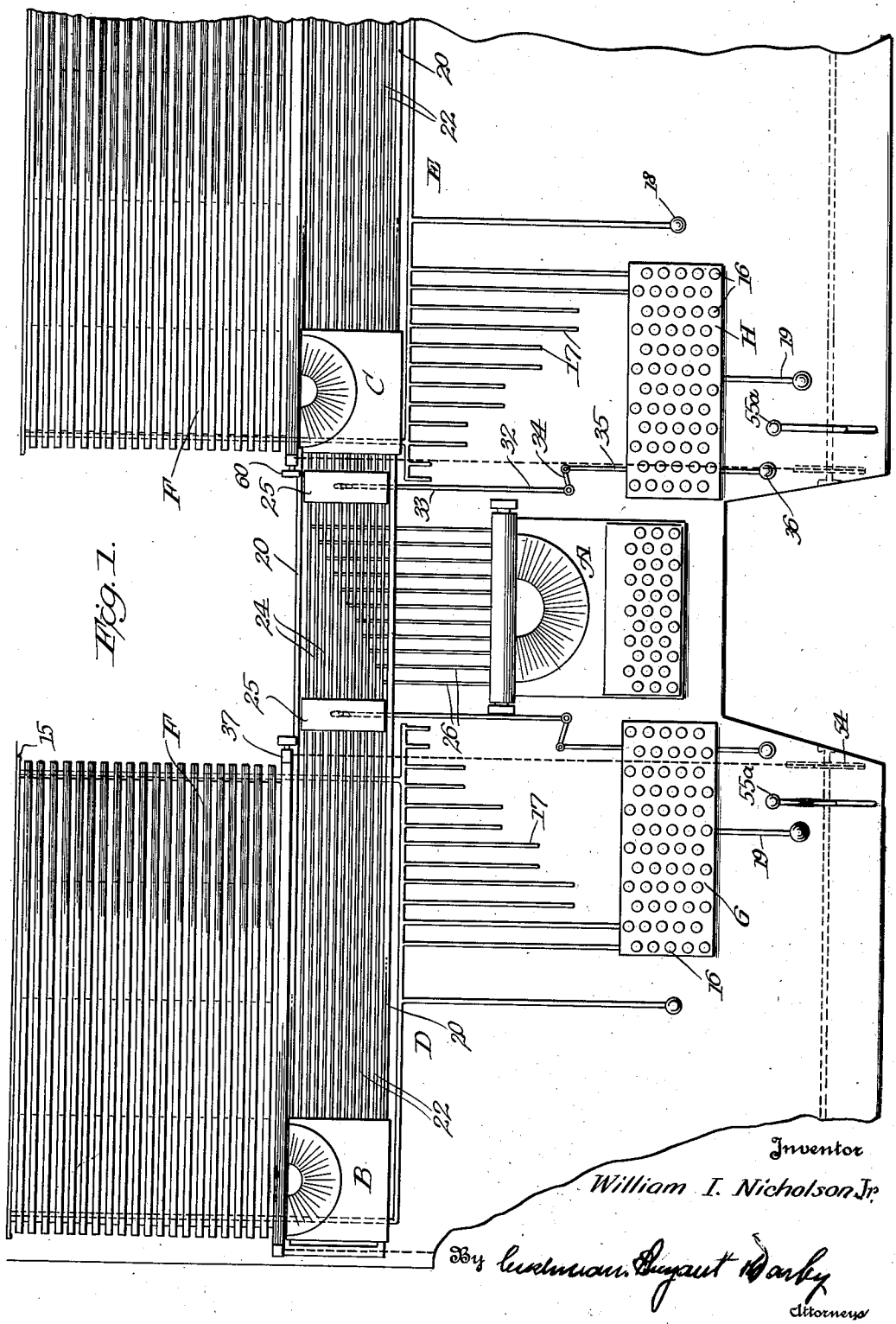
May 18, 1937. W. I. NICHOLSON, JR 2,080,871

BOOKKEEPING MACHINE

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BOOKKEEPING MACHINE

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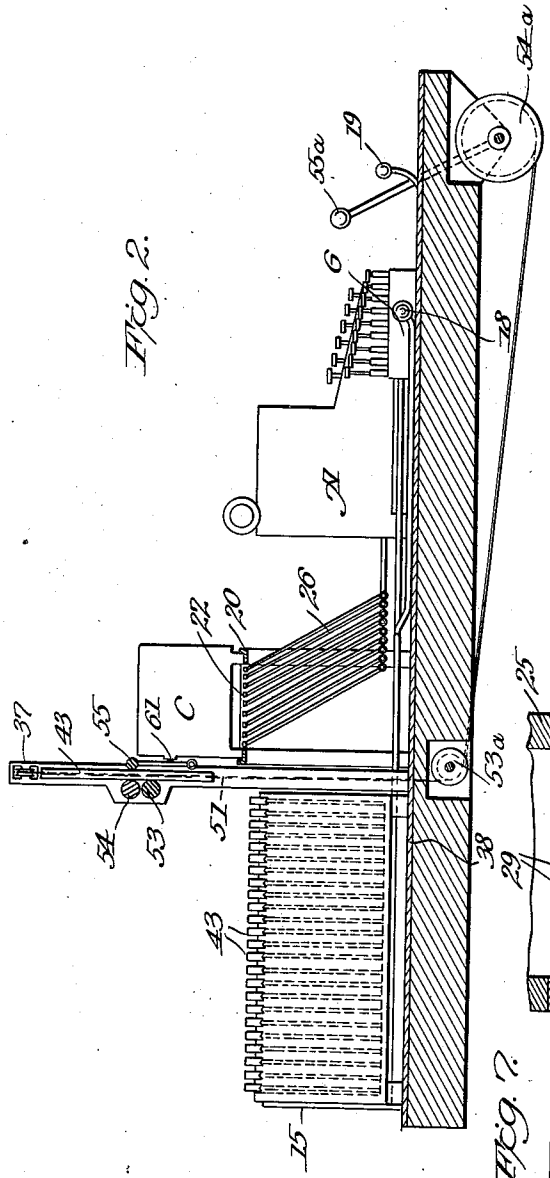


Fig. 2.

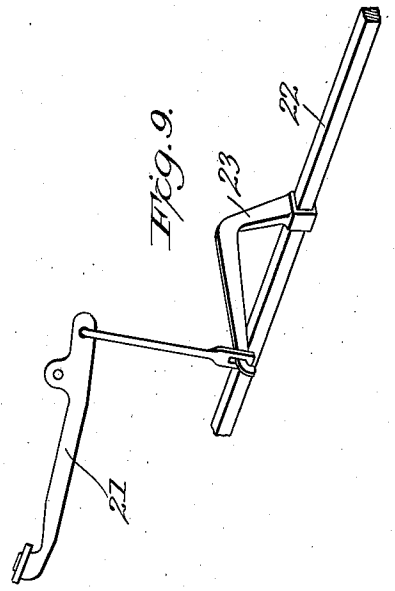


Fig. 9.

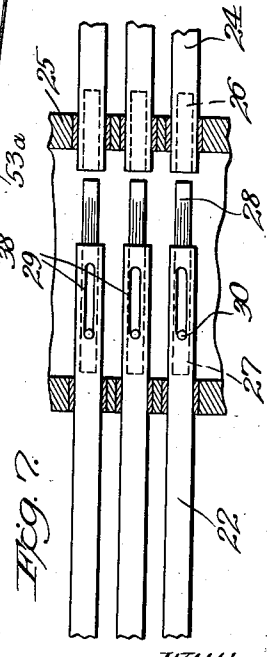


Fig. 7.

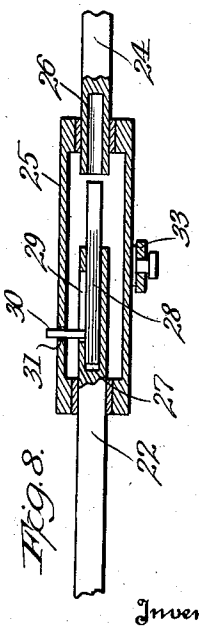


Fig. 8.

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Fig. 3.

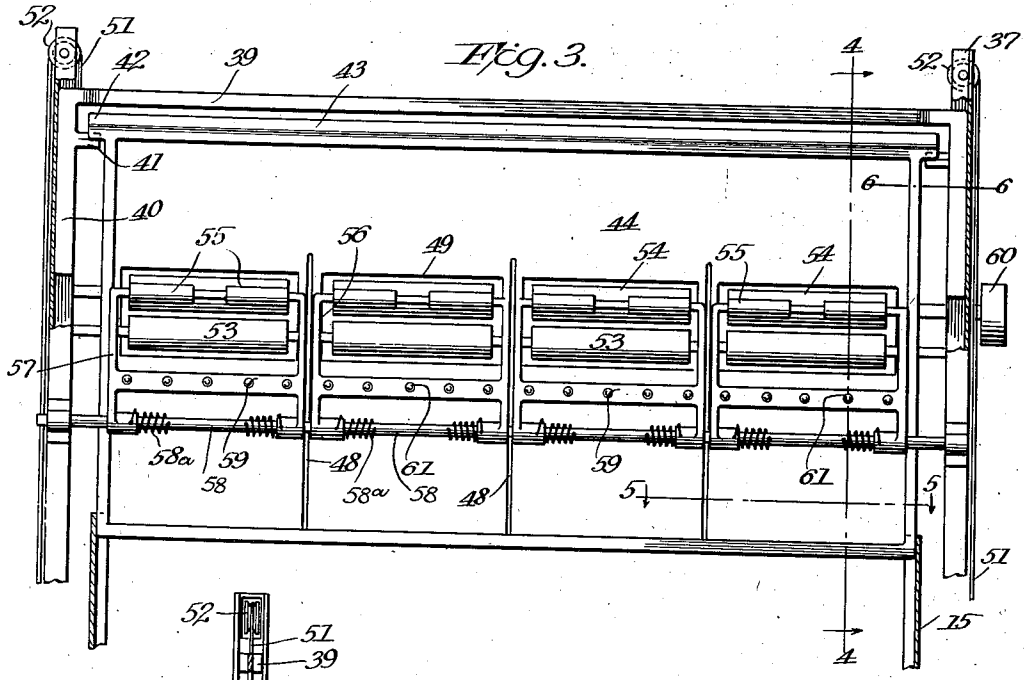



Fig. 5.

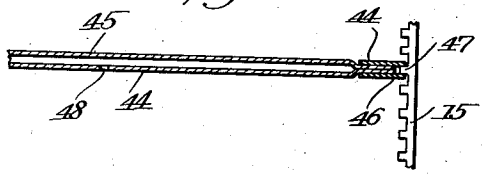



Fig. 4.

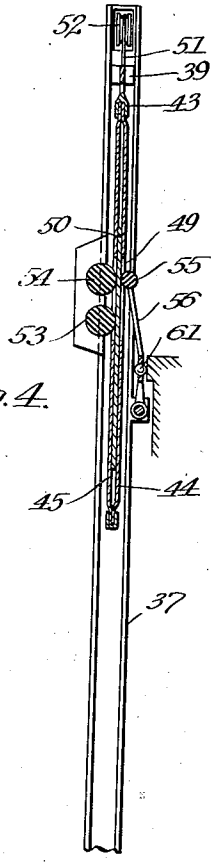
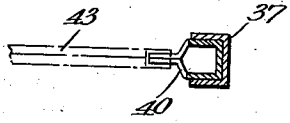



Fig. 6.




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# UNITED STATES PATENT OFFICE

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## BOOKKEEPING MACHINE

William I. Nicholson, Jr., Tulsa, Okla.

Application May 21, 1934, Serial No. 726,817

10 Claims. (Cl. 197—1)

This invention relates to new and useful improvements in bookkeeping machines and is a continuation in part of my co-pending application of the same title, Ser. No. 164,594, filed January 29, 1927, now Patent 1,963,445, issued June 19, 1934.

An important object of the present invention is to provide a machine of the type disclosed in my above named co-pending application but having increased capacity to conveniently handle a larger number of records or accounts by reason of the fact that a plurality of records or accounts are associated with a common holder, the holders arranged in two separate series or groups, each group being associated with a separate recorder and being movable with respect thereto for selecting the particular holder carrying the record to be recorded on and positioned in cooperative relation with the recorder, and the provision of means for obtaining relative movability between each recorder and a selected holder whereby any one of the plurality of records associated with each holder may receive entries or impressions from the recorder.

Another important object of the invention is to provide master and auxiliary recorders operatively connected for simultaneous operation for the entry of corresponding data on two separate records, with provision for disconnecting the auxiliary recorder from the master at will whereby individual entries may be made upon the record associated with the master recorder to the exclusion of the record associated with the auxiliary recorder.

Another object of the invention is to provide the same general selector and advancer mechanisms for the present improvements as are provided in the co-pending application but which are adapted to operate upon two separate groups of records or record holders rather than only one group as disclosed in the pending application from which holders are extracted from opposite sides thereof for cooperative positioning with respect to the two auxiliary recorders.

Other objects and advantages of the invention will become apparent during the course of the following description.

In the accompanying drawings forming a part of the descriptive matter and wherein like numerals are employed to designate like parts throughout the several views,

Figure 1 is a top plan of the machine;

Figure 2 is a vertical longitudinal section of the same;

Figure 3 is an enlarged front plan of the means for elevating a selected holder from its respective group and positioning the same to receive impressions from its respective auxiliary recorder and showing one of the record holders in elevated position;

Figure 4 is a vertical transverse section of the same taken on the line 4—4 of Figure 3;

Figure 5 is a horizontal transverse section of the record holder taken on the line 5—5 of Figure 3;

Figure 6 is an enlarged fragmentary transverse horizontal section taken on the line 6—6 of Figure 3;

Figure 7 is an enlarged fragmentary section of a portion of the device for rendering an auxiliary recorder inoperative from actuation by the master recorder;

Figure 8 is a similar view taken in a vertical plane of one of the coupling devices; and

Figure 9 is an enlarged perspective view of a portion of the common type key actuator bars coupling the two auxiliary recorders and actuated from the master recorder.

In order that the present improvements may be more readily understood without specific reference to my aforesaid patent, I will preface the detailed description with a general description of the machine and the functions it is adapted to accomplish.

Referring to Figure 1 of the present drawings, a typewriter A of any well known construction, which I will term the master recorder, is mounted upon a suitable support or desk top and has its type lever actuating mechanisms connected to the type lever actuating mechanisms of a pair of auxiliary typewriters B and C, which I will designate auxiliary recorders, located at either side of the central or master typewriter A and slightly to the rear thereof. These auxiliary recorders are located at the forward ends of two separate ways or tracks D and E and are connected to the master recorder A whereby actuation of the latter will simultaneously actuate corresponding type levers of the auxiliary typewriters B and C.

In each way or track D and E and to the rear of each auxiliary typewriter, is located a group F of records, in the present instance, and taken as an illustration of one use of the machine, individual ledger accounts; in contra-distinction to the arrangement disclosed in my co-pending application, each of the groups F of record holders is individually bodily movable with respect to its respective auxiliary recorder so as to bring the selected holder in proper position to be operatively associated with the auxiliary recorder, whereby a selected record may receive impressions

therefrom. Each record or account consists of the usual ledger sheet, movable into cooperative relation with the auxiliary recorder B to receive the debit entries, and into similar relation with the auxiliary recorder C to receive the credit entries simultaneously with the posting of entries made by the master recorder A on the journal sheet.

A selector mechanism is provided for each auxiliary recorder or typewriter to assure proper positioning of the selected records in cooperative relation with the auxiliary recorders, and includes a selective index G for the auxiliary recorder B and a selective index H for the auxiliary recorder C. In this particular illustration of the invention, the auxiliary recorder B is employed for recording "accounts receivable" and the auxiliary recorder C is employed for recording "sales", while, of course, the master recorder A is employed for posting both items as well as remarks upon a loose leaf of the journal.

After records or accounts in the two groups F have been selected by the indices G and H and moved up into cooperative relation with the two auxiliary recorders B and C by mechanisms which will be described hereinafter, and a loose leaf of the journal has been inserted in a master recorder A, it will be seen that simultaneous posting in the journal and on the two accounts associated with the auxiliary recorders will be accomplished by actuation of the master recorder A. When it it desired to enter items on the journal sheet in the master recorder to the exclusion of such entries on either or both ledger sheets associated with auxiliary recorders, means are provided for rendering either or both of the auxiliary recorders unaffected by the master recorder, while the latter is operated individually to post the said items on the journal sheet.

The record holders of each group F are arranged in vertical positions, one behind the other, in a suitable partitioned or grooved drawer or rack 15 slidable horizontally in its respective way D or E, adjacent to its respective auxiliary recorder B or C. In order to select any desired record or account for positioning the same in position to be brought into cooperative relation with its respective auxiliary recorder, the selective indices G and H are provided, each including as many indexed abutment keys or buttons 16 as there are individual accounts or records in each group F. These indices G and H are identical with those disclosed in my co-pending application so that no further specific description of them is necessary other than to reiterate that the stem of each button 16 is slidably mounted in a suitable frame work so that when in depressed position, the lower end of the stem will be arranged in the path of movement of one of the stepped abutment rods 17 carried by the movable racks or drawers 15 to form an abutment therewith for the purpose of limiting the forward movement of the rack 15 whereby the holder containing the records selected by the particular depressed selector button will be in position to be arranged in cooperative relation with respect to its respective auxiliary recorder B or C. These abutment rods 17 are the same as provided in my co-pending application and are moved forwardly along with their respective movable racks 15 by pulling upon an actuator rod 18 which projects forwardly of the machine to a point readily accessible to the operator. Each of the selective indices G and H is provided with a reset mechanism similar to that disclosed in my co-pending application for restoring the buttons 16 to their normal positions and is actuated by means of a restoring lever 19 like that disclosed in my co-pending application, so that a further detailed description of this phase of the device is not necessary.

The auxiliary typewriters or recorders B and C are mounted for movement transversely of the apparatus upon an elevated track 20 which extends transversely of the fronts of the drawers or racks 15 of the two groups of records F whereby the auxiliary recorders can be moved relative to the individual records carried by each holder to make impressions upon the selected record. It will be understood that the two auxiliary typewriters or recorders are interconnected with respect to their individual type levers 21 (Figure 9) by series of rods 22 extending parallel to the track 20. These rods are each of polygonal cross section at each end for an extent equal to the width of the account holders to slidably receive the type lever actuating arms 23 so that the group of arms 23 of each auxiliary typewriter may slide along the actuating rods 22 as the auxiliary typewriters B and C are moved opposite the selected records or accounts, or when these auxiliary typewriters letter-space during their normal operation. The auxiliary recorders or typewriters B and C are operatively connected by suitable mechanisms with the master typewriter or recorder whereby each time the spacer bar of the master recorder is actuated to move its carriage and platen, an equal degree of bodily movement will be imparted to the auxiliary recorders connected thereto for simultaneous operation. The rods 22 are each made in three separate sections, the intermediate sections 24 of which have their opposite ends oscillatably mounted in bearings in coupler casings 25 and are oscillated by means of rods 26 connected to the type bar actuating mechanism of the master typewriter A. It will be understood that there are as many rods 22, 24, and 26 as there are keys on the usual typewriter so that actuation of any of the keys on the master typewriter A will simultaneously operate corresponding keys of the auxiliary typewriters B and C. The means for rocking shafts 22 fom the keys of the main container are preferably the same as disclosed in my above mentioned patent.

As shown in detail in Figures 7 and 8, the ends of each rod 24 are journaled in bearings in the coupler casings 25 in alignment with their respective sections 22 which are journaled in the opposite sides of the coupler casings. The ends of each rod 24 which project into the two coupler casings 25 are provided with axially extending polygonal sockets 26 and the ends of the rods 22 which project into these casings are likewise equipped with axially extending polygonal recesses 27 in alignment with the recesses 26 for slidably mounting a coupling bar 28 having a cross section corresponding with the cross section of the recesses 26 and 27 to fit the same and couple the rods 22 and 24. The recessed ends of the rods 22 are equipped with longitudinally extending slots 29 through which a pin 30 carried by the coupling bar 28 projects. This pin 30 also extends through an elongated slot 31 in the coupler casing 25 so that upon movement of the casing to the right of Figure 8, the coupler bar 28 will be moved to the right of the figure and project its end into the socket 26 of the rod 24 whereby the rods 22 and 24 are coupled. When the coupler casing 25 is moved to the left of Figure 8, it will be evident that the coupler bar 28 will be withdrawn from the socket 26 so as to un-

couple the rods 22 extending to the auxiliary typewriter. In this manner, either auxiliary typewriter or both may be disconnected from the master typewriter.

As stated previously, a pair of these coupler casings 25 are provided, one for each end of the intermediate rod sections 24 whereby either auxiliary typewriter may be temporarily disconnected from the master typewriter. It will also be evident that all of the rods 22 of each auxiliary typewriter extend into its respective coupler casing 25, as shown in Figure 1, and that each of these rods is equipped with a coupling bar 28 having a pin 30 operating in a slot 31 of the coupler casing so that upon sliding these casings upon the sectional rods, the actuating rods 22 of the type levers of auxiliary typewriters may be connected to or disconnected from the actuating rods 24 operated by the master typewriter. Each coupler casing 25 is moved by means of a bell crank 32 having a long arm 33 connected to the coupler casing by a pin and slot connection; the shorter arm 34 of the bell crank being pivotally connected to a rectilinearly movable actuator rod 35 extending forwardly of the machine and terminating in a handle 36 disposed conveniently to the reach of the operator. It will be understood that one of these coupler casing actuator mechanisms is provided on each side of the master typewriter A so that either or both auxiliary typewriters may be disconnected from the master typewriter in order that individual postings can be entered upon the journal sheet in the master typewriter to the exclusion of the ledger sheets associated with the auxiliary typewriters.

The mechanism for transferring any selected record holder from each group consists in an elevating mechanism located at the forward end of each way D and E and directly to the rear of the rearmost track 20 as best appreciated from Figure 2. Since the elevating mechanism for both groups of record holders is identically the same, a description of one will suffice for both. A pair of spaced channel uprights 37 are secured to the support 38 upon which the machine is installed at opposite sides of each way D or E. Slidably mounted in the channels of these uprights is an inverted U-shaped frame 39 preferably formed of sheet material as shown in detail in Figure 6. The side arms 40 of this frame are slidably received within the channels of the uprights 37 and each, adjacent its upper end and extending inwardly from the inner side thereof is provided with a shoulder or lug 41 adapted to engage laterally extending shoulders 42 of a record holder 43.

This record holder is composed of a substantially rectangular frame carrying front and rear transparent plates 44 and 45 respectively of celluloid or the like, the edges of which are bound in the metallic binding material constituting the frame 43. This binding frame has its two upright sides grooved or rabbeted as at 46 to slidably mount the holder upon oppositely facing ribs 47 provided in the upright side walls of the drawer 15 carrying the group of the holders F. The front plate 44 is provided at intervals with a plurality of vertical slits 48 extending from the lower edge to divide the holder into a number of pockets, each of which is designed for retaining a record or ledger sheet therein. These slits 48 provide mouths for the various pockets or compartments through which the record may be inserted. The front and rear plates 44 and 45 of the holder are provided with aligned rectangular openings 49 by which the record 50 in the pocket is exposed at its front and rear faces as shown best in Figure 4.

The means for raising and lowering the frame 40 comprises cables 51 secured to the top of the frame at opposite ends thereof and trained about pulleys 52 journaled on the upper ends of the uprights 37. From here, the cables 51 are directed downwardly and beneath pulleys 53a journaled in the support 38 from where they are directed around and secured to pulleys 54a having ratchet mechanism operated by a lever 55a so that the frames 40 may be retained in elevated position for receiving impressions from the auxiliary typewriters.

The platens for the various records are a plurality of rolls 53 carried by a shaft having its ends journaled in uprights 37. There are as many rolls 53 as there are records in a record holder and each is positioned rearwardly of the opening 49 in the rear plate 45 and is of such length as to project through this opening and bear against the record within the holder to hold the record in position to receive impacts from the type levers of the auxiliary recorders. Above each platen roll is a feed roll 54 which is adapted to engage the rear face of each record through the opening 49. The rolls 54 are mounted upon a shaft the ends of which are journaled in the uprights 37. This shaft is provided at one end with a knurled nut 60 whereby the operator may turn the feed rolls 54 for line spacing the records.

Cooperating with each feed roll 54 are a pair of smaller feed or pressure rolls 55 rotatably mounted upon the bridge portion of a U-shaped frame 56, the two parallel side arms 57 of which are pivotally mounted upon a cross piece 58 which bridges the two uprights 37 and is secured thereto at opposite ends as shown. Each feed roll frame 56 is provided with a bridge piece 59 connecting the two arms thereof and this bridge piece, as best appreciated from Figures 3 and 4, is provided with a set of ball bearings 61, which are arranged in the path of movement of the auxiliary recorders B and C. Accordingly, when the auxiliary typewriter is moved to a point in front of the record upon which it is desired to make entries, the frame of the auxiliary typewriter will engage the ball bearings of the feed roll frame 56 arranged in front of the selected record and move this frame with its pair of feed rolls 55 rearwardly until the rolls engage the front face of the record 50 as shown in Figure 4, the frame 56 being normally yieldingly held forwardly by the springs 58a. Then, by turning the knurled nut 60, the feed rolls 54 are rotated and since they engage the record at a point opposite where the rolls 55 engage the same, the record 50 will be vertically adjusted within the holder for line spacing. However, when the feed rolls 55 are normally free of contact with their respective records, as when the auxiliary recorders are disengaged from the feed roll frames 56, rotation of the feed rolls 54 has no effect upon line spacing of the records.

The operation of the device is as follows:—

Corresponding ledger sheets for any one account in the two groups F are selected by depressing the proper buttons 16 of the two selector mechanisms G and H. This places an abutment in the path of movement of one of the rods 17 so that when the handle 18 of each mechanism on each side of the master recorder A is pulled forward, it moves the entire group or drawer full

of account holders 43 forwardly on its respective track out under the transfer mechanism and auxiliary typewriter until the rod 17 engages the depressed stem of the actuated button 16. This will place the holder containing the selected account beneath the transfer frame 39 with the lugs 41 of the latter arranged beneath the shoulders 42 of the transfer frame. The lever 55a is then pushed rearwardly of the machine to cause the cable 51 to elevate the frame 39 and carry with it the selected record holder 43, the lugs 41 coming up under the shoulders 42. This record holder will be drawn up between the feed rolls 54 and 55 until they engage the exposed portion of the record 50, when the transfer frame will be retained in its elevated position by means of the ratchet mechanism hereinbefore described.

Since each record holder contains four different records, the auxiliary typewriters are moved to the right or left so as to bring them opposite the record upon which the entries are to be made. This positioning of the auxiliary typewriters with respect to these records moves the feed rolls 55 inwardly into engagement with the selected record so that the latter may be line-spaced as hereinbefore described. When it is desired to post entries on the two sets of records contained in the two groups, simultaneously with the posting of entries in the journal sheet mounted in the master recorder A, the coupling pins 28 are actuated by means of the levers 36 to form a coupling between the rods 24 and the two sets of rods 22, so that upon actuation of the master recorder, corresponding action of the auxiliary recorders will be caused, thereby posting entries in triplicate on three different records. On the other hand, should it be desired to only post an entry with the master recorder and only one of the auxiliary recorders, the coupling housings 25 are moved so as to couple the rods 24 with one set of rods 22 leading to that auxiliary recorder which it is desired to operate simultaneously with the master recorder. On the other hand, should it be desired to post individual entries in the journal by means of the master recorder, the coupling devices 25 can be placed in neutral positions so that two sets of auxiliary type lever actuating rods 22 are disconnected from the central set of actuating rods 24.

When the record holder is arranged in position for receiving impressions from the auxiliary recorders, its lower edge as shown in Figure 3 is always disposed within the drawer 15, so that upon completion of an entry, the lever 55a may be operated to release the ratchet mechanism whereby the elevated frame 39 will automatically lower the elevated record holder into its original position within the group F. In lowering, the elevating frame 39 will move downwardly until its pair of lugs 41 disengage from the shoulders 42 of the record holder and are arranged therebelow so that the drawer full of record holders may then be returned to its normal position rearwardly of the elevating mechanism. As the drawer of record holders is again advanced, the laterally extending shoulders 42 pass successively above the lugs 41 until the selector rod 17 stops the forward movement of the drawer by its abutment with the selected depressed button 16 of a selector mechanism.

It is to be understood that various changes in the size, shape, and arrangement of parts may be resorted to without departing from the scope of the appended claims.

I claim:

1. In a machine of the class described, a recorder, means for removing a selected record holder from a group of holders and for moving the same into cooperative relation to the recorder, said group of holders being movable relative to said means for bringing a selected holder into cooperative position relative to said recorder.

2. In a machine of the class described, separate record moving means associated with each of a plurality of records, and a recorder movable relative to said records and automatically engageable with said means of the selected record to render the same operative to the exclusion of the others.

3. In a machine of the class described, separate line spacing means associated with each of a plurality of records, and a recorder movable relative to said records and automatically engageable with said spacing means of the selected record to render the same operative to the exclusion of the other line spacing means.

4. In a machine of the class described, a record holder having a plurality of separate record sheets movably associated therewith, a record sheet moving device for each sheet, and a recorder movable relative to said sheets and automatically engageable with the sheet moving device of the selected sheet to render the same operative.

5. In a machine of the class described, a recorder, a record elevating device arranged in proximity thereto, a group of record holders movable beneath the same and each having a pair of laterally extending shoulders, and means carried by the elevating device and movable beneath said shoulders to engage those of any holder disposed above the same to lift the selected holder into cooperative relation with the recorder to receive impressions therefrom.

6. A record holder comprising front and rear plates between which record sheets are interchangeably receivable, one of said plates having spaced parallel slits through each of which a record sheet is insertable and removable, a plurality of separate record sheets being simultaneously receivable between said plates, one of said plates having openings exposing the respective record sheets to enable the latter to be printed upon.

7. A record holder comprising front and rear plates between which record sheets are interchangeably receivable, one of said sheets having spaced parallel slits through each of which a record sheet is insertable and removable, a plurality of separate record sheets being simultaneously receivable between said plates, one of said plates having openings exposing the respective record sheets to enable the latter to be printed upon, the record sheets between the plates being adjustable relative thereto in parallel relation to said slits.

8. Apparatus of the class described comprising a horizontally movable drawer having pairs of opposed vertical guide means, record holders each having edges guided by a pair of said guide means, mechanism operative to elevate a record holder brought into operative relation to said mechanism by suitable movement of said drawer, the elevating range of said mechanism being insufficient to disengage the holders entirely from said guide means.

9. In apparatus of the class described, a feed roll for line spacing a record sheet, a recorder

for impressing data on a record sheet fed by said roll, said recorder being movable into and out of cooperative position relative to the record sheet, a pressure roll mounted on the opposite side of the sheet from the feed roll for movement toward and away from the latter, and supporting means for the pressure roll engaged by the recorder as the latter moves into cooperative position relative to the sheet to move the pressure roll against the latter.

10. A record holder comprising front and rear plates between which record sheets are interchangeably receivable, one of said plates having an opening through which data may be impressed upon a record sheet between said plates, the record sheet being adjustable between the plates to bring different portions thereof in front of said opening, at least said one of the plates being transparent so that impressed matter, not in front of the opening, on a record sheet in the holder may be read.

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