May 12, 1925. 1,537,455

C. H. BROWN

TYPEWRITING MACHINE

Filed May 6, 1922

Fig. 1.

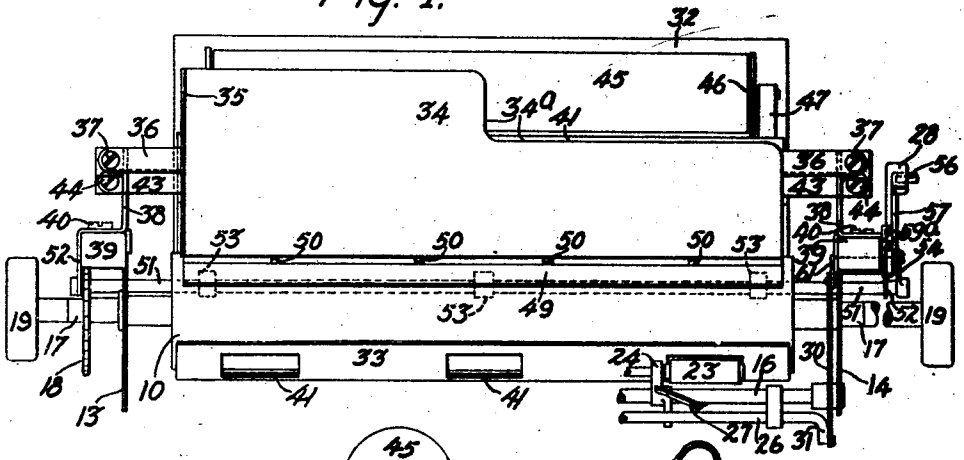


Fig. 2.

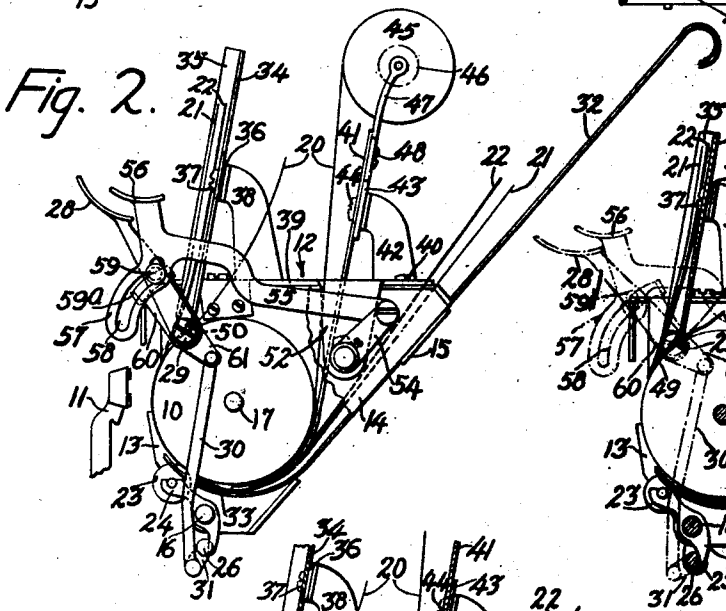


Fig. 3.

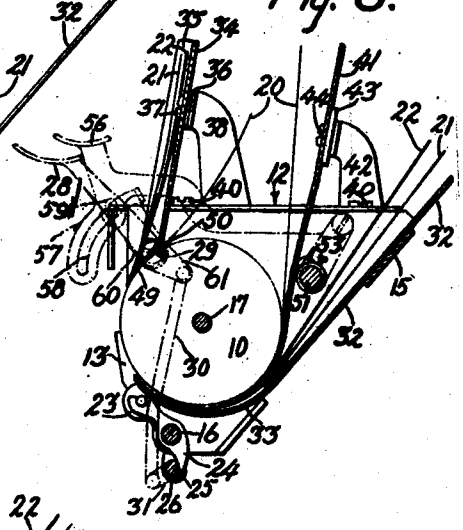
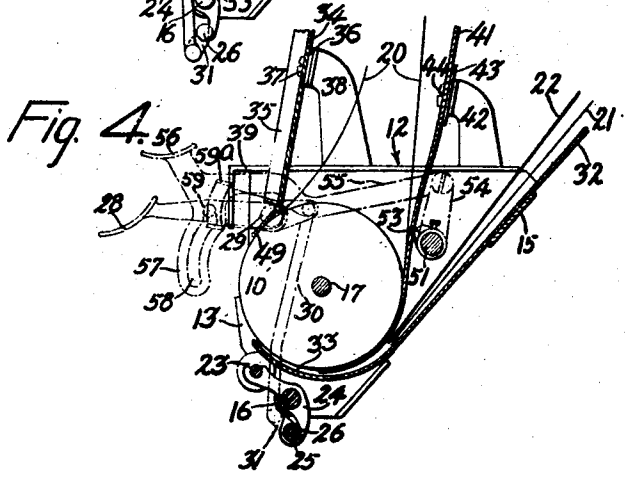


Fig. 4.



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UNITED STATES PATENT OFFICE.

CLARENCE H. BROWN, OF CEDAR RAPIDS, IOWA, ASSIGNOR TO UNDERWOOD TYPEWRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

TYPEWRITING MACHINE.

Application filed May 6, 1922. Serial No. 558,860.

To all whom it may concern:

Be it known that I, CLARENCE H. BROWN, a citizen of the United States, residing in Cedar Rapids, in the county of Linn and State of Iowa, have invented certain new and useful Improvements in Typewriting Machines, of which the following is a specification.

This invention relates to sheet-collating means for typewriting machines of the same general type as those disclosed in my application No. 538,211, filed February 21, 1922 (now Patent No. 1,492,670, dated May 6, 1924), and my application No. 538,547, filed February 23, 1922 (now Patent No. 1,492,959, dated May 6, 1924).

The main object of the invention is to provide improved means to permit the quick insertion and removal of bill-sheets, while maintaining a record-sheet in position in the machine.

According to the present invention, provision is made of the usual rear paper-table over which a bill-sheet and associated carbon-sheet are passed around the platen on the outside of a record-sheet, and of a collating table at the delivery side of the platen for use in adjusting the newly-inserted bill-sheet relatively to the record-sheet. Inasmuch as it is desirable to keep the throat formed by the platen and the rear paper-table open, so as to permit the free insertion of the bill-sheet without interfering with the record-sheet, provision is made of an intermediate table disposed between the usual rear paper-table and the collating table and slightly behind the platen, and over which the record-sheet is passed to the platen. The intermediate table prevents the record-sheet from falling back against the rear paper-table, thus eliminating the necessity of raising the record-sheet from the rear paper-table at each insertion of a new bill. Preferably the record-sheet is drawn from a roll, which is supported by brackets forming substantially extensions of the intermediate table. The record-sheet at the delivery side of the platen is passed between the collating table and the platen.

When a bill and an associated carbon-sheet are to be inserted, the feed-rolls cooperating with the platen at the bottom thereof are cast off by means of the usual finger-piece. It is desirable at this time to hold the record-sheet in position on the platen, and this may be done by pressing the intermediate table against the lower rear portion of the platen. The intermediate paper-table is supported at the points above the ends of the platen-frame by brackets projecting upwardly from said ends, and the clamping of the intermediate table against the platen is effected by means engaging the intermediate table adjacent the platen and forcing the same against the platen to grip the record-sheet against the latter. Preferably the means for pressing the intermediate table against the platen comprises a shaft extending across the platen-frame behind the intermediate table, and having cams thereon to engage the rear face of the intermediate table to press the latter against the platen when the shaft is rocked in the proper direction. To rock the clamping shaft, provision is made of an arm extending upwardly therefrom, and of a link pivoted to the upper end of said arm and extending forwardly to position a handle or finger-piece at the forward end thereof adjacent the handle or finger-piece by which the casting off of the feed-rolls is effected.

In order that operation of the cast-off finger-piece may effect casting off of the feed-rolls only, and operation of the special handle or finger-piece at the front end of the link may both cast off the feed-rolls and press the intermediate paper-table against the platen, the link is provided at its forward end with a portion having a slot therein substantially concentric with the pivot of the cast-off finger-piece when the link is in its normal position, so that upon depression of the cast-off finger-piece a pin extending therefrom through the slot may be moved along the latter without effecting a movement of the shaft carrying the cams. The portion of the link containing the slot is, however, provided at the upper end of the slot with an extension of the latter which is substantially vertical, so that upon depression of the special finger-piece the pin projecting from the cast-off lever or finger-piece will be engaged by the upper end of the normally vertical portion of the slot, and, upon further movement of the finger-piece connected to the link, the cast-off finger-piece will be actuated to cast off the feed-rolls, and at the same time the intermediate paper-table will be pressed against the platen. The parts are so constructed

and arranged that the intermediate paper-table will be pressed against the platen before the feed-rolls are released.

The collating table and the intermediate table are preferably supported on brackets, all of which project upwardly from the inner edges of plates secured to the upper parts of the ends of the platen-frame. Each of these plates is also provided with a downwardly-extending bracket, in which is journaled the adjacent end of the cam-shaft for controlling the intermediate table. Obviously the invention may be applied readily to a standard typewriting machine, since the plates carrying the brackets for the collating table and the brackets for the cam-shaft form parts of plates secured to the ends of the platen-frame. To remove the novel mechanism from the machine, all that is necessary is to release the bracket-carrying plates from the ends of the platen, to release the connection between the two finger-pieces, and to remove the cam-shaft, whereupon the main part of the attachment may be lifted from the platen-frame. The invention is in the nature of an attachment which may readily be applied to an Underwood standard typewriting machine. It should be understood, however, that the attachment may readily be applied to machines of other makes.

Other features and advantages will hereinafter appear.

In the accompanying drawings,

Figure 1 is a front elevation of a portion of a typewriter carriage having the invention applied thereto.

Figure 2 is a sectional side view, showing the parts in their normal positions.

Figure 3 is a view similar to Figure 2, showing the record-sheet clamped before the feed-rolls are drawn off.

Figure 4 is a view similar to Figure 3, but showing the feed-rolls cast off by further depression of the special finger-piece after the intermediate paper-table has been clamped against the platen.

The platen 10 of an Underwood standard typewriting machine, against which the type-bars 11 print, is supported in a frame 12, comprising ends 13 and 14 connected by a bar 15 at the rear and a rod 16 beneath the platen. The platen is revolubly mounted by means of an axle 17 supported in the ends of the platen-frame 12, and is provided with a regular line-space wheel 18 and finger-wheels 19, by which it may be rotated to feed work-sheets, including an inner or record-sheet 20, an outer or bill-sheet 21 and an interleaved carbon 22, around the platen. To assist in feeding the work-sheets around the platen, provision may be made of feed-rolls 23 supported on bell-crank elements 24 pivotally mounted on the rod 16 and in engagement with cams or flats 25 on a rock-shaft or feed-roll release-shaft 26, whereby, upon operation of the rock-shaft 26, the members 24 will be moved against the resistance of springs 27 to withdraw the rolls 23 from the platen. The release of the feed-rolls 23 may be effected by depression of a usual finger-piece 28 pivoted by means of a stub shaft 29 on the end 14 of the platen-frame, and having a lost-motion connection, to be described hereinafter, with a link 30 pivoted to an arm 31 fixed on the rock-shaft 26.

When typing is to be effected on the bill-sheet 21, the latter is inserted at the rear of the machine over a rear paper-table 32 and guided around to the delivery side of the platen by means of a lower portion of the paper-table 32, which lower portion constitutes in effect a paper-apron 33. At the delivery side of the platen, the leading end of the bill-sheet is placed upon a collating table 34 and brought to the proper position transversely of the machine by means of the side-edge gage 35. The leading edge of the bill-sheet may be gaged by any suitable means, such, for example, as graduation marks (not shown, but well known in the art). To enable the bill-sheet 21 to be grasped readily by the typist, especially when removing it from the machine, the collating table 34 is cut away at its upper right-hand corner, as indicated at 34ª. The collating table 34 is supported by means of a bar 36 extending along its rear face, the bar being secured at its ends by screws 37 to the upper ends of brackets 38 which extend upwardly and forwardly from the inner edges of plates 39 secured on the upper edges of the ends 13 and 14 of the platen-frame by means of screws 40.

The plates 39 are also utilized to support an intermediate paper-table 41, which serves to direct the record-sheet 20 to the platen and is positioned between the latter and the rear paper-table 32. For this purpose, the plates 39 are provided with brackets 42 at their inner edges and adjacent the rear of the platen-frame. The paper-table 41 is supported on a bar 43 which is secured by means of screws 44 to the upper ends of the brackets 42. At its lower end, the paper-table or guide 41 is curved around the platen and extends substantially to the bottom of the latter between the same and the paper-apron 33.

Preferably, the record-sheet 20 is drawn from a roll 45 carried by a core 46 pivotally supported by brackets 47 secured by means of screws 48 to the intermediate paper-table 41 near its upper edge. From the roll 45 the record-sheet 20 is passed between the paper-table 41 and the platen around to the delivery side thereof, and then is passed between the lower end of the collating table 34 and the platen, so as to extend between the

collating table 34 and the intermediate table 41. Preferably, the record-sheet is held close to the platen adjacent the lower edge of the collating table 34 by means of a plate 49 pivoted at 50 to the lower edge of the collating table 34.

When a bill-sheet is to be withdrawn or inserted, the feed-rolls 23 are cast off by means of the finger-piece 28. Obviously, it is desirable to prevent movement of the record-sheet 20 while said removal or insertion is being effected. For this purpose, provision is made of a shaft 51 extending across the machine and journaled in the lower ends of brackets 52 extending downwardly from the upper edges of the plates 39, the shaft 51 being held against longitudinal movement in said brackets by any suitable means. Mounted on the shaft 51 are cams or fingers 53, and, when the shaft is rocked in a counterclockwise direction, Figure 3, the table or guide 41 will be flexed, so as to be pressed against the platen 10 to clamp the record-sheet 20 against the latter.

To actuate the shaft 51, an arm 54 is secured thereto at its right-hand end, and to the upper end of arm 54 is pivoted the rear end of a link 55 provided at its forward end with a finger-piece 56. At its forward end the link 55 is provided with a downwardly-extending arm 57 having therein an arcuate slot 58, through which extends a headed stud or pin 59. The slot 58 is so shaped that when the link 55 is in its normal position, the slot will be concentric with the stub-shaft 29 about which the finger-piece 28 swings, thereby permitting the finger-piece 28 to be actuated without actuating the link 55. At the upper end of the slot 58, provision is made of an extension which is substantially vertical when the link 55 is in its normal position. When, therefore, the finger-piece 56 is depressed against the action of a spring, not shown, until the upper wall of the vertical extension of the slot 58 engages the pin 59, an operative connection will be established between the finger-piece 56 and the finger-piece 28. Further depression of finger-piece 56 will cause finger-piece 28 to swing forwardly and to draw forwardly on the link 55 to rock the shaft 51.

To permit the intermediate paper-table 41 to be clamped against the platen before releasing or casting off the feed-rolls 23, provision is made of a lost-motion connection, as hereinbefore stated, between the finger-piece 28 and the link 30. The finger-piece 28 is loosely mounted on the stub shaft 29 and can actuate the same only when swung into contact with one of two lugs 59^a on opposite sides thereof and carried by an arm 60 fixed on the stub shaft 29 to which is also fixedly connected an arm 61 pivoted to the upper end of the link 30.

Variations may be resorted to within the scope of the invention, and portions of the improvements may be used without others.

Having thus described my invention, I claim:

1. In a typewriting machine, in combination, a platen, a rear paper-table to direct a work-sheet or bill around the bottom of the platen, a flexible intermediate paper-table to hold a record-sheet above the rear paper-table and extending around the lower rear portion of the platen between the latter and the rear paper-table, a support, above and to the rear of the platen, to which the intermediate paper-table is fixed, a collating table at the delivery side of the platen to assist in adjusting the bill and between which and the platen the record-sheet passes, and means for flexing said intermediate paper-table and clamping the record-sheet against the platen.

2. In a typewriting machine, in combination, a platen, a rear paper-table to direct a work-sheet or bill around the bottom of the platen, a flexible intermediate paper-table to hold a record-sheet above the rear paper-table and extending around the lower rear portion of the platen between the latter and the rear paper-table, a support, above and to the rear of the platen, to which the intermediate paper-table is fixed, a collating table at the delivery side of the platen to assist in adjusting the bill and between which and the platen the record-sheet passes, and means for flexing said intermediate paper-table and clamping the record-sheet against the platen, said flexing means comprising a shaft back of the intermediate paper-table and having fingers to engage the latter and force it against the platen when the shaft is rocked.

3. In a typewriting machine, in combination, a platen, a rear paper-table to direct a work-sheet or bill around the bottom of the platen, a flexible intermediate paper-table to hold a record-sheet above the rear paper-table and extending around the lower rear portion of the platen between the latter and the rear paper-table, a support, above and to the rear of the platen, to which the intermediate paper-table is fixed, a collating table at the delivery side of the platen to assist in adjusting the bill and between which and the platen the record-sheet passes, means for flexing said intermediate paper-table and clamping the record-sheet against the platen, and a record-sheet roll supported at the upper edge of said intermediate paper-table.

4. In a typewriting machine, in combination, a platen, feed-rolls to run on the bottom thereof, a finger-piece to cast off said feed-rolls, a rear paper-table by which bills may be directed to the bottom of the platen, a guide to direct a record-sheet around the lower rear portion of the platen between the latter and the rear paper-table, a collating table at the delivery side of the platen on which a bill may be adjusted and between

which and the platen the record-sheet passes, a finger-piece for pressing said guide against the platen to clamp the record-sheet against the latter, and a connection between said finger-pieces whereby actuation of the first-mentioned finger-piece will have no effect on the second-mentioned finger-piece, but actuation of the latter will first clamp the record-sheet and then actuate the first-mentioned finger-piece to cast off the feed-rolls.

5. In a typewriting machine, in combination, a platen, a rear paper-table to direct a statement-sheet around the bottom of the platen, a collating table at the delivery side of the platen for positioning the statement-sheet, a flexible intermediate paper-table to direct a record-sheet to the lower rear portion of the platen and maintain the record-sheet above the rear paper-table, means to rigidly and immovably support the upper end of the intermediate paper-table, a supply-roll for the record-sheet supported by the upper end of the intermediate paper-table, and means to move the lower portion of the flexible intermediate paper-table toward the platen to clamp said record-sheet against movement during the insertion and removal of the statement-sheet.

6. In a typewriting machine, in combination, a platen, feed-rolls to run on the bottom of the platen, cast-off means for said feed-rolls, comprising a stub-shaft and a finger-piece mounted thereon so as to have lost motion with respect thereto, a rear paper-table by which statement-sheets may be directed around the bottom of the platen, an intermediate table to guide a record-sheet around the lower rear portion of the platen between the latter and the rear paper-table, a collating table at the delivery side of the platen, means for clamping said intermediate table against the platen to hold the record-sheet against the latter, said clamping means comprising a rock-shaft, an arm fixed on said rock-shaft, a link pivoted at its rear end to said arm and having at its forward end a finger-piece and a slot concentric with said stub-shaft and having a substantially vertical extension at its upper end, and a pin projecting from the cast-off finger-piece through said slot whereby actuation of the cast-off finger-piece will be idle with respect to the clamping finger-piece, but, upon actuation of the clamping finger-piece, the cast-off finger-piece will be connected with said link upon entry of said pin into the extension of said slot, and, as the cast-off finger-piece swings forward, it will draw said link forward to clamp the record-sheet, and, upon taking up the lost motion between the cast-off finger-piece and the stub-shaft, to cast off said feed-rolls.

7. In a typewriting machine, in combination, a platen, feed-rolls to run on the bottom thereof, a pivoted cast-off finger-piece having lost-motion connections with said feed-rolls, a rear paper-table to feed statement-sheets to the bottom of the platen, a secondary paper-table to direct a record-sheet to the lower rear portion of the platen between the latter and the rear paper-table, and means to clamp said secondary table against the platen to hold the record-sheet against movement during the insertion and removal of the statement-sheets, said clamping means including a link extending to the front of the machine and provided at its forward end with a finger-piece, and provisions on said link and cast-off finger-piece whereby, upon depression of the finger-piece on said link, the link will be connected with the cast-off finger-piece, and, upon movement of the latter, due to depression of the other finger-piece, the link will be drawn forward to clamp the record-sheet, and, upon movement of the cast-off finger-piece sufficient to take up the lost motion between the same and the feed-rolls, the latter will be cast off.

8. In a typewriting machine, in combination, a platen, a platen-frame comprising end members, a rear paper-table, plates to rest on the top of said end members and to be secured thereto, a front bracket and a rear bracket on each of said plates and extending upwardly therefrom, a collating table at the delivery side of the platen and secured on the front brackets, and an intermediate paper-table secured to the rear brackets and extending downwardly to and around the lower rear portion of the platen for inserting a record-sheet and maintaining it above the rear paper-table.

9. In a typewriting machine, in combination, a platen, a platen-frame comprising end members, a rear paper-table, plates to rest on the top of said end members and to be secured thereto, a front bracket and a rear bracket on each of said plates and extending upwardly therefrom, a collating table at the delivery side of the platen and secured on the front brackets, an intermediate paper-table secured to the rear brackets and extending downwardly to and around the lower rear portion of the platen for inserting a record-sheet and maintaining it above the rear paper-table, and means for supporting a record-sheet roll on the upper part of the intermediate table.

10. In a typewriting machine, in combination, a platen, a platen-frame comprising end members, a rear paper-table, plates to rest on the top of said end members and to be secured thereto, a front bracket and a rear bracket on each of said plates and extending upwardly therefrom, a collating table at the delivery side of the platen and secured on the front brackets, an intermediate paper-table secured to the rear brackets and extending downwardly to and around the lower rear portion of the platen

for inserting a record-sheet and maintaining it above the rear paper-table, a rock-shaft at the rear of the intermediate paper-table and journaled in brackets extending downwardly from said plates, and means whereby rocking said shaft will clamp the intermediate paper-table against the platen.

11. In a typewriting machine, in combination, a platen, feed-rolls to run on the platen, a rear paper-table to guide work-sheets thereto, a collating table for positioning the work-sheets, an intermediate paper-table to guide a record-sheet between the platen and the rear paper-table and to support it above the latter, a finger-piece to clamp the intermediate paper-table against the platen to hold the record-sheet against movement during insertion and withdrawal of the work-sheets, a finger-piece to cast off said feed-rolls, and means including a pin-and-slot connection whereby actuation of the last-mentioned finger-piece will not effect clamping of the intermediate paper-table against the platen, but actuation of the first-mentioned finger piece will clamp said record-sheet against movement and then cast off the feed-rolls.

12. A device to adapt a typewriting machine, having a revoluble platen, for typing entries upon a succession of ledger-sheets and at the same time making a record of all of the entries on a continuous record-sheet, comprising a rear paper-table, a roll of record-paper supported at the introductory side of the platen and having its free end extending down between the table and the platen, a front paper-table for correctly locating the ledger-sheets, and means for clamping the record-sheet against the platen at the introductory side thereof during adjustment of the ledger-sheets, the entire device being constructed for attachment as a unit to the machine.

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Witnesses:
E. T. Riley,
Geo. J. Kohl.