

May 6, 1924.

1,492,959

C. H. BROWN

TYPEWRITING MACHINE

Filed Feb. 23, 1922

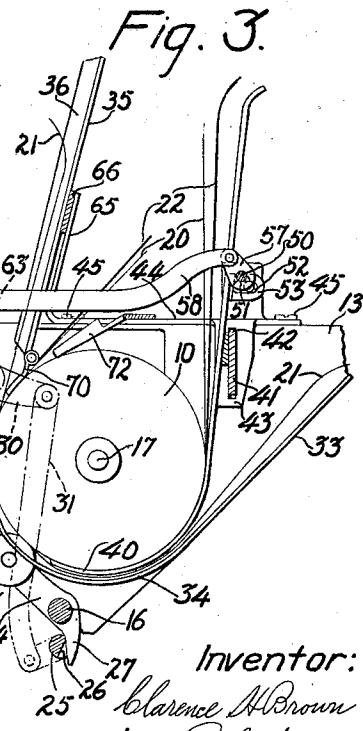
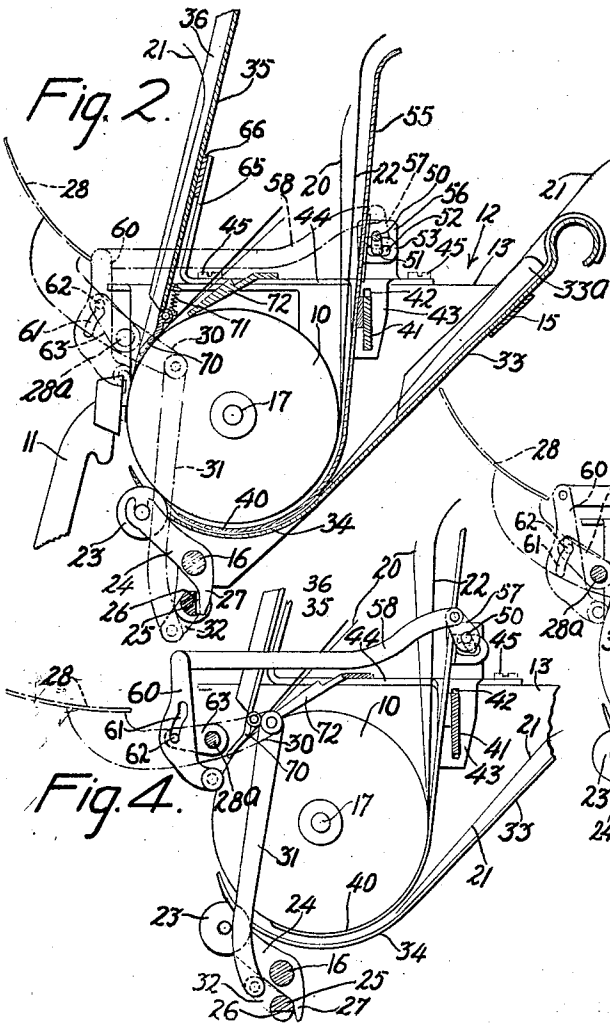
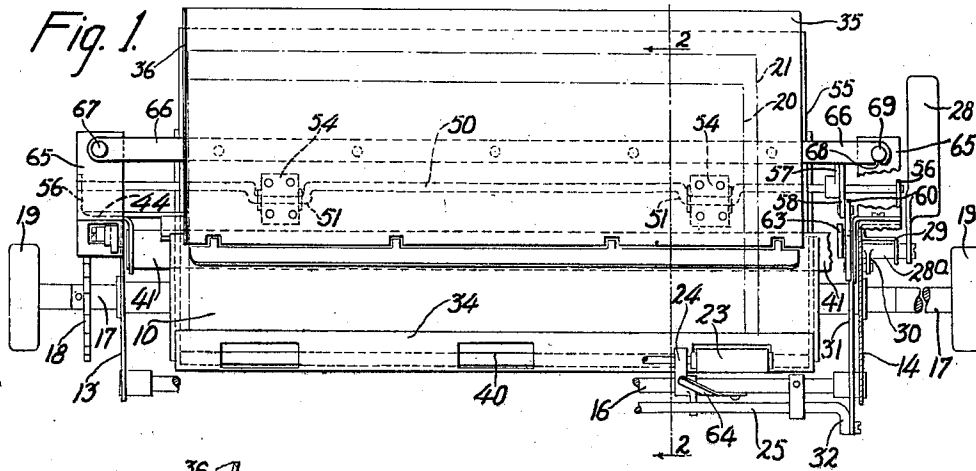


Fig. 4.

Inventor:
Clarence H. Brown
by B. B. Stickney
Attorney

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UNITED STATES PATENT OFFICE.

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

TYPEWRITING MACHINE.

Application filed February 23, 1922. Serial No. 538,547.

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, and is similar in its general nature and purpose to the invention disclosed in my application No. 538,211, filed February 21, 1922.

An object of the invention is to facilitate the quick insertion and removal of bill-sheets from the machine relatively to a record-sheet which is left in the machine.

In carrying out the invention, there is provided means for holding the record-sheet against the platen so as not to disturb the position of said record-sheet when the feed-rolls are released prior to the removal of a finished bill-sheet and the insertion of a new bill-sheet. The record-sheet holding means may comprise a clamp element extending into the throat formed by the platen and the regular paper-table over which the bill-sheets are fed; said clamp element being operable during the initial part of the movement of the feed-roll release handle, a further movement of said handle being effective to cast off the feed-rolls. A collating table is provided at the front of the platen to adjust a new bill-sheet relatively to the record-sheet after the latter has been clamped to the platen.

To keep the throat behind the platen open so as to permit free insertion of a new bill-sheet without interfering with the record-sheet, there is provided an auxiliary rear paper table, above the usual rear paper table or shelf, which keeps the rear end of the record-sheet from falling against the regular paper-table.

Extending this auxiliary paper-table forward around the platen makes it possible to clamp a record-sheet in writing position for the insertion of one of the short bill-sheets, even when the line of writing is near the bottom of the record-sheet. The auxiliary paper-table also serves to guide the bill-sheets to the outside of the record-sheet in the lower writing positions of the record-sheet, by keeping the record and bill sheets separated up to a point near the line of writing,

so that there is no danger of the leading edge of the bill-sheet catching upon the rear edge of the record-sheet.

The invention is in the nature of an attachment which may readily be applied to any Underwood standard typewriting machine without altering said machine. It will be understood, however, that the invention is not limited to Underwood typewriting machines.

Other features and advantages will hereinafter appear.

In the accompanying drawings,

Figure 1 is a front elevation of the carriage and shows the invention applied thereto.

Figure 2 is a sectional side elevation taken substantially on the line 2—2 of Figure 1, showing the parts in their normal positions.

Figure 3 is a side view, similar to Figure 2, showing the record-sheet clamp operated before the feed-rolls are released.

Figure 4 is a view similar to Figure 3 and shows the feed-roll release handle fully depressed to release the feed-rolls.

The platen 10 of an Underwood standard typewriting machine, against which type-bars 11 print, is supported in a frame 12, comprising two end plates 13 and 14 connected by a rectangular bar 15 and a rod 16 under the platen. The platen is revolvably mounted by means of a shaft 17 supported in the end plates of the platen-frame 12, and is provided with the regular line-space wheel 18 and finger-wheels 19 by which it may be rotated to feed the work-sheets, including an inner or record-sheet 20 and an outer or bill-sheet 21 with an interleaved carbon 22, around the platen. To assist in feeding the work-sheets around the platen, feed-rolls 23 may be provided which are supported on bell-crank elements 24 pivotally mounted on the rod 16 and which may be released through the medium of a rock-shaft or feed-roll release shaft 25, said rock-shaft being provided with cams 26 to engage arms 27 of the bell-crank members 24 to release the feed-rolls 23. The rock-shaft 25 may be operated by a release handle or lever 28, which may be depressed to rock a stub-shaft 28^a supported on the end plate 14 and a bracket 29. The stub-shaft 28^a is provided with an arm 30 to pull upwardly a link 31 connected to an arm 32 rigidly secured to the feed-roll release shaft 25. The usual

paper-table 33 is provided, behind the platen, over which the bill-sheets may be passed to a paper-apron 34 forming a continuation of the table 33 and to the feed-rolls 23 beneath the platen. The bill-sheets 21, as they are successively passed around the platen, may be positioned relatively to the printing point and relatively to the record-sheet 20 by means of a sheet-positioning or collating table 35 at the front of the platen, said table being provided with a side-edge gage 36, in addition to the usual side gage 33^a on the paper-table 33, by which the bill-sheets may be positioned lengthwise of the platen.

The work-sheet 20, upon which may be recorded various items of several bill-sheets 21, remains in the machine while the feed-rolls 23 are released to remove a finished bill-sheet 21 and insert a new or fresh bill-sheet. To prevent accidental displacement of the record-sheet 20 during the changing of the bill-sheets, there is provided holding means for the record-sheet, which may comprise a clamp in the form of an auxiliary apron 40 disposed between the platen and the usual paper-apron 34. The record-sheet is passed between the platen and the auxiliary apron where it may be conveniently clamped against the platen by the actuation of said auxiliary apron. The auxiliary apron is carried by a cross-bar 41, the ends of which form lateral extensions of said apron, said ends being received in slots 42 of downwardly-extending ears 43 of end pieces 44 secured to the end plates 13 and 14 by screws 45.

To move the auxiliary apron 40 to clamp the record-sheet 20 against the platen, there is provided a crank-shaft or cam-shaft 50, having cranks 51 to engage in slots 52 formed in ears 53 of U-shaped brackets 54 secured to an upward extension 55 of the paper-apron 40, to draw said apron against the platen. The crank-shaft 50 is pivotally supported in upright ears 56 on the end pieces 44, and has secured thereto near one end an arm 57, so that the cam-shaft may be operated through the medium of a forwardly-extending link 58, connected to said arm, and an intermediate cam-lever 60, having a slot 61 into which projects a pin 62 from an arm 63 secured to the stub-shaft 28^a, so that the lever 60 can be operated by the feed-roll release lever 28. The slot in the cam-lever 60 is so constructed that said cam-lever is operated during the initial downward movement of the feed-roll release lever 28 to draw the link 58 forward to operate the auxiliary paper-apron 40 to clamp the record-sheet 20 against the platen (Figure 3). Lost motion is provided in the connection between the feed-roll release handle and the feed-rolls, and is herein shown between cams 26 on the feed-roll release shaft 25 and the arms 27 on the feed-roll supporting elements 24, so that the feed-roll release lever may have the necessary initial movement to clamp the record-sheet before the feed-rolls are released. After the record-sheet has been clamped, a further movement of said handle is effective to actuate the feed-roll supporting elements to release the feed-rolls 23 (Figure 4). It will be understood that, in restoring the parts to their normal positions, the feed-rolls are first thrown on by the usual return springs 64 by the return of the feed-roll release handle to grip the record-sheet and bill-sheet, and the clamp or auxiliary apron is then thrown off to release the record-sheet for movement around the platen.

To facilitate the quick insertion of new bill-sheets into the throat behind the platen, it is desirable to keep said throat open or, in other words, prevent the rear end of the record-sheet from falling against the rear paper-table and thus avoid the necessity of having to lift said record-sheet away from said table at each insertion of a new bill. For this purpose, the upward extension 55 of the apron 40 is in the nature of a table disposed behind the collating table 35, and is disposed in front of the regular paper-table 33, and which extends upwardly sufficiently to hold the record-sheet clear of the paper-table.

The end pieces 44 have upturned portions 65 at their forward ends, and on the left-hand one is pivotally mounted a cross-bar 66 at one end by means of a screw 67. The cross-bar supports the collating table 35, and is provided at its other end with a notch 68, so that it may be snapped over a headed stud 69 on the upturned portion 65 of the right-hand end piece. With this arrangement, the collating table may be swung away from the platen when it is desired to align or square the record-sheet, which may be done by bringing its leading edge against the lower edge of a bar 72 arranged close to the platen.

The record-sheet 20 with the superposed carbon 22 may be guided behind the collating table 35 as they are fed from the printing point, so as not to obstruct the graduation marks (not shown) which may be provided, however, on the face of the collating table to assist in adjusting the bill-sheets. To do this, and also prevent the carbon and record-sheet from bulging at the printing line, there is pivotally mounted at the lower edge of the collating table a bar 70, which is held lightly against the platen by means of a contractile spring 71. The bar 72 is secured to the end pieces 44 and serves also to prevent the leading edges of the record-sheet and carbon-sheet from passing around the platen.

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:

5 1. In a typewriting machine for typing entries upon a succession of short work-sheets and for simultaneously recording the entries typed on all of the short work-sheets upon a common record-sheet, a revoluble
10 platen, a rear paper-table for guiding the short work-sheets to the platen, an auxiliary rear paper-table for guiding the record-sheet to the platen and for supporting the rear end of the record-sheet out of the
15 way of the short work-sheets, a resilient paper-apron forming an extension of the auxiliary rear paper-table and extending partway around the lower side of the platen, said paper-apron being normally ineffective
20 to clamp the record-sheet, and means for moving the auxiliary paper-table to press the apron against the platen to hold the record-sheet stationary during the insertion, adjustment or removal of a short-work-sheet.

2. In a typewriting machine for typing entries upon a succession of short work-sheets and for simultaneously recording the entries typed on all of the short work-sheets upon a common record-sheet, a revoluble
30 platen, feed-rolls beneath the platen and normally co-operating therewith, a rear paper-table for guiding the short work-sheets to the platen, an auxiliary rear paper-table for guiding the record-sheet to the
35 platen and for supporting the rear end of the record-sheet out of the way of the short work-sheets, said auxiliary paper-table being resilient at its lower end and extending partway around the lower side of the platen
40 to form a clamp for the record-sheet, and being normally ineffective to clamp the record-sheet, and means for casting off the feed-rolls and moving the auxiliary paper-table to clamp the record-sheet to the platen, and
45 for compelling said auxiliary paper-table to clamp the record-sheet before the feed-rolls have been cast off.

3. In a typewriting machine for typing entries upon a succession of short work-sheets and for simultaneously recording the entries typed on all of the short work-sheets upon a common record-sheet, a revoluble
50 platen, feed-rolls beneath the platen and normally co-operating therewith, a rear paper-table for guiding the short work-sheets to the platen, an auxiliary rear paper-table for guiding the record-sheet to the
55 platen and for supporting the rear end of the record-sheet out of the way of the short work-sheets, said auxiliary paper-table being resilient at its lower end and extending partway around the lower side of the platen to form a clamp for the record-sheet, and being
60 normally ineffective to clamp the record-

sheet, and means for moving the auxiliary paper-table to record-sheet-clamping position and for then casting off the feed-rolls.

4. In a typewriting machine for typing entries upon a succession of short work-sheets and for simultaneously recording the entries typed on all of the short work-sheets upon a common record-sheet, a revoluble
70 platen, a paper-table at the introductory side of the platen for guiding the short work-sheets to the platen, an auxiliary paper-table above the first for guiding the record-sheet to the platen and for holding the rear end of the record-sheet out of the
75 way of the short work-sheets, said auxiliary paper-table having a portion extending beneath the platen and conforming to the contour thereof, means comprising a cam-shaft to move said portion of the paper-table toward the platen to clamp the record-sheet
80 against the platen, fixed slotted guides, and means comprising extensions on the auxiliary paper-table engaging in said slotted guides to guide said auxiliary table.

5. In a typewriting machine, the combination of a cylindrical platen, a platen frame comprising end plates to support said platen, a paper-table behind said platen, said table
90 having at its lower end a curved portion extending under said platen, a detachable frame comprising two end pieces joined by a cross-bar, the end pieces being securable to the end plates of the platen frame, and an
95 actuatable cam-rod supported by said end pieces and by which the paper-table may be operated to cause the curved portion of the paper-table to clamp a work-sheet against the platen.

6. In a typewriting machine for typing entries upon a succession of short work-sheets and for simultaneously recording the entries typed on all of the short work-sheets upon a common record-sheet, a revoluble
105 platen, a front collating table extending tangentially upward from the platen at the delivery side thereof for correctly locating the short work-sheets in the machine, feed-rolls beneath the front of the platen and co-operating therewith, a rear paper-table over
110 which the short work-sheets may be guided to the platen and the feed-rolls, an auxiliary rear paper-table disposed above the first-mentioned rear paper-table, and over which the record-sheet may be guided to the platen and the feed-rolls, one end of the auxiliary
115 table extending around said platen and terminating near the feed-rolls beneath the front part of the platen, means to release said feed-rolls, and means to move the auxiliary rear table toward the platen to hold the record-sheet against the platen to prevent displacement of the record-sheet while a finished
120 short work-sheet is being removed from the machine and a fresh one inserted.

7. The combination of a platen around

which two work-sheets may be fed, feed-rolls beneath the front of the platen and co-operating therewith, a paper-table over which the outer sheet may be guided to the platen and the feed-rolls, an auxiliary table disposed above the paper-table, over which the inner sheet may be guided to the platen and the feed-rolls, one end of the auxiliary table extending around said platen and terminating near the feed-rolls beneath the front part of the platen, means to release said feed-rolls, and means to move said auxiliary table towards the platen to hold the inner sheet against said platen to prevent displacement of the inner sheet while the finished outer sheet is being removed from the machine and a fresh sheet inserted.

8. The combination of a cylindrical platen, a paper-table at the rear of said platen over which bill-sheets may be successively passed about the platen, said paper-table having at its lower end an apron extending around under said platen, an auxiliary paper-table having an auxiliary apron at its lower end extending partway around the platen and disposed above the first-mentioned apron over which a record-sheet may be passed about the platen, and means to move the auxiliary apron bodily against the platen to clamp the record-sheet.

9. The combination of a cylindrical platen, a paper-table at the rear of said platen over which bill-sheets may be successively passed about the platen, said paper-table having at its lower end an apron extending around under said platen, an auxiliary apron disposed above the first-mentioned apron over which a record-sheet may be passed about the platen, and means to move the auxiliary apron bodily against the platen to clamp the record-sheet, said auxiliary apron having an extension to keep the rear end of the record-sheet away from the paper-table so as not to interfere with the insertion of the bill-sheets.

10. The combination of a cylindrical platen, a paper-table at the rear of said platen over which bill-sheets may be successively passed about the platen, said paper-table having at its lower end an apron extending around under said platen, an auxiliary apron disposed above said first-mentioned apron over which a record-sheet may be passed about the platen, feed-rolls to feed

the record-sheet and a bill-sheet about the platen, and means including a single finger-piece to move the auxiliary apron bodily against the platen to clamp the record-sheet and release the feed-rolls.

11. The combination of a cylindrical platen, a paper-table at the rear of said platen over which bill-sheets may be successively passed about the platen, said paper-table having at its lower end an apron extending around under said platen, an auxiliary apron disposed above said first-mentioned apron over which a record-sheet may be passed about the platen, a cam, a cam-shaft connected with said auxiliary apron, a connecting link between the cam and the cam-shaft, a finger-piece connected to actuate said cam to operate said cam-shaft and press the auxiliary apron against the platen to hold the record-sheet, feed-rolls, and a lost-motion connection between the finger-piece and the feed-rolls to allow the auxiliary apron to be operated during the initial movement of the finger-piece, said cam having a dwell to allow the finger-piece to continue in its movement to release the feed-rolls after the auxiliary apron has been rendered effective.

12. In a typewriting machine, a front collating table, an auxiliary paper-apron extending around the lower side of the platen between the platen and the regular paper-apron for clamping a record-sheet against the platen; and means for moving the auxiliary apron into clamping position against the platen.

13. In a typewriting machine, in combination, a platen, a platen-frame comprising end members, a rear paper-table, plates to rest on the tops of said end members and to be secured thereto, a front bracket and a rear bracket on each of said plates, 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.

CLARENCE H. BROWN

Witnesses:

EDITH B. LIBBEY,
JENNIE P. THORNE.