May 6, 1924. 1,492,670

C. H. BROWN

TYPEWRITING MACHINE

Filed Feb. 21, 1922

Fig. 1.

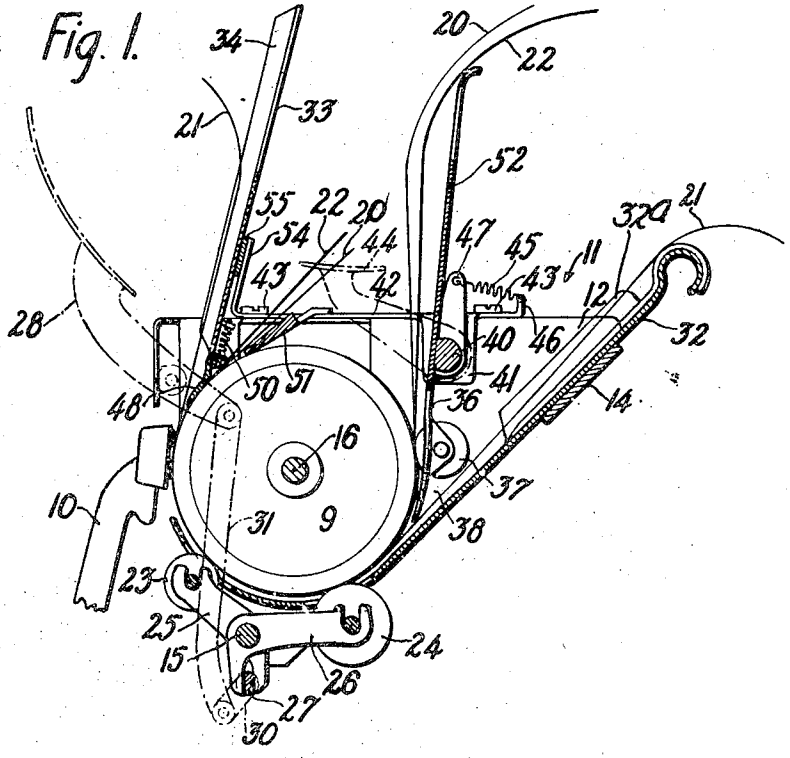


Fig. 2.

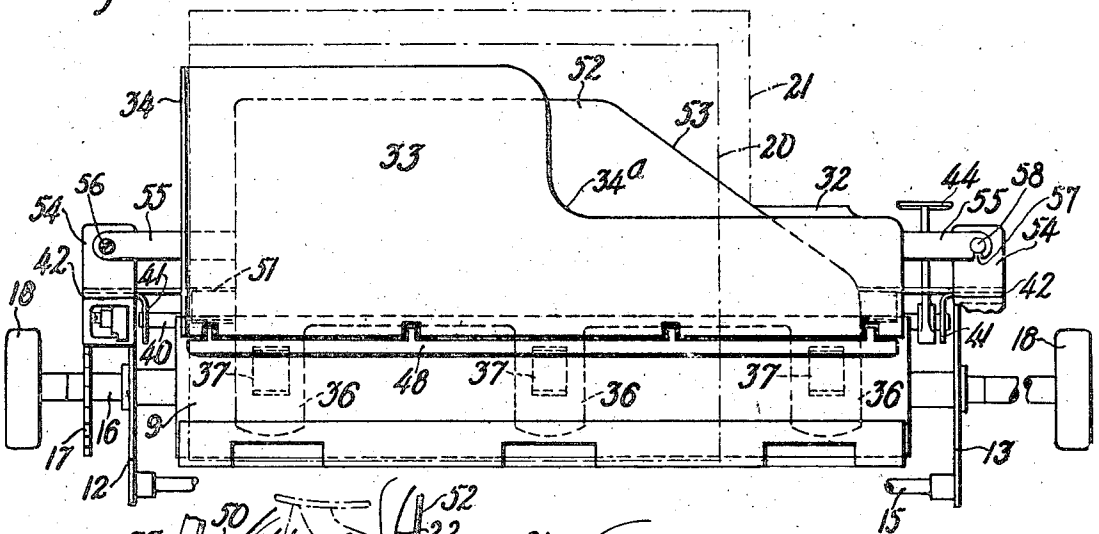
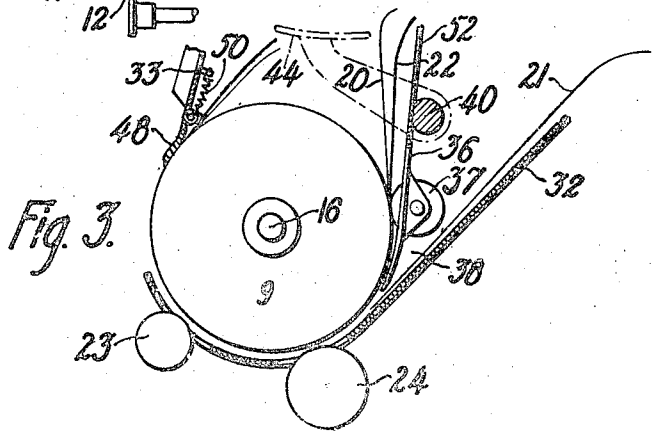


Fig. 3.



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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 February 21, 1922. Serial No. 538,211.

To all whom it may concern:

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

This invention relates to typewriting machines, and more particularly to sheet-collating means therefor.

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

In carrying out the invention, there is provided a collating table at the delivery side of the platen for adjusting the ledger-sheets laterally and longitudinally with reference to the record-sheet. Clamping means are provided for holding the record-sheet stationary against the platen, so as not to disturb its position while the usual feed-rolls are released, such clamping means comprising rolls which are located at the introductory side of the platen where there is room for them to be positioned between the ledger and record sheets and within the bounds of the ledger-sheets and which are therefore capable of acting upon a record-sheet which is either narrower or wider than the ledger-sheets.

It is desirable to keep the throat behind the platen open so as to permit free insertion of the ledger-sheets without interfering with the record-sheet in the machine. For this purpose an intermediate table is disposed between the regular paper-table and the collating table and slightly behind the platen over which the record-sheet is passed to the platen, and prevents said record-sheet from falling back against the regular paper-table, thus eliminating the objection of having to raise the record-sheet away from the regular paper-table at each insertion of a new ledger-sheet.

To simplify the construction the intermediate paper-table and the record-sheet holding devices compose a single unit which may be pivotally supported and swung against the tension of a return spring by means of a release handle to enable a fresh record-sheet to be passed freely around the platen and adjusted relatively thereto.

The record-sheet may be fed behind the collating table, so as not to interfere with the positioning of the ledger-sheet on said table. To this end the collating table is provided at its lower end with a spring-pressed bar, here shown pivotally supported so that it may be swung away from the platen against the tension of a suitable return spring to provide a space for the passage of the record-sheet. A suitable guide or guard is provided above the platen to prevent the leading edge of the record-sheet, as it is led behind the collating table, from passing around the platen.

The collating table is mounted on a horizontal bar, which is hinged at one side of the field of the record-sheet, and is adapted to be swung to carry it to one side of the record-sheet to render said sheet accessible for making erasures thereon.

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 should 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 sectional side elevation of an Underwood typewriter carriage showing the invention applied thereto.

Figure 2 is a front elevation of the parts shown in Figure 1.

Figure 3 is a diagrammatic side view showing the feed-rolls released to enable the insertion of a new ledger-sheet while the record-sheet with a superposed carbon-sheet is held against displacement on the platen.

The platen 9, of an Underwood standard typewriting machine, against which type-bars 10 strike, is supported in a frame 11 comprising two end plates 12 and 13 connected by a rectangular bar 14 and a rod 15 under the platen. The platen is revolubly mounted by means of a shaft 16 supported in the end plates of the frame 11 and is provided with the regular line-space wheel 17 and finger-wheels 18 by which it may be rotated to feed the work-sheets, including a record-sheet 20 and a ledger-sheet 21 with an interleaved carbon 22, around the platen. To assist in feeding said work-sheets around the platen, the usual feed-rolls 23 and 24 may be provided, said feed-rolls be-

ing held on bell-crank-like supporting arms 25 and 26 pivotally mounted on the rod 15. The feed-rolls may be released in the usual way through the medium of a rock-shaft 27 supported on the platen-frame 11 and operable by means of a release lever 28 pivoted on the right-hand end plate 13 and connected to an arm 30 on said rock-shaft by means of a link 31. The usual springs, not shown, may co-operate with the bell-crank arms 25 and 26 to return them to normal position to press the feed rolls 23 and 24 against the platen. The usual paper-table 32 is provided to assist in guiding the ledger-sheets around the platen while the feed-rolls are released, and to the front of the platen where they may be adjusted relatively to the record-sheet 20 (hereinafter described) by means of a sheet-collating table 33, in addition to the usual adjustable side gage 32^a on the paper-table 32. Said table 33 is provided with a side-edge gage 34 against which the ledger-sheet 21 may be moved to position it lengthwise of the platen and relatively to the record-sheet. The front face of the collating table may be provided with numbered graduation marks (not shown but well known in the art) to assist in positioning the ledger-sheet in the direction of its length about the platen. To enable the ledger-sheets to be grasped more readily by the typist, especially when removing them from the machine, the collating table 33 is cut away at its upper right-hand corner, as indicated at 34^a.

The record-sheet 20, which is the one nearest to the platen, remains in the machine while a finished ledger-sheet is removed and a new ledger-sheet is inserted, and receives records of several ledger-sheets. To enable the quick removal of the typed ledger-sheet and the insertion of a fresh one, the feed-rolls 23 and 24 are cast off or released. It is desirable at this time to prevent accidental displacement of the record-sheet. To this end there is provided record-sheet holding means which may comprise one or more guide-fingers 36 provided with auxiliary rolls 37 to bear against the platen, and disposed in the throat 38 formed by the platen and the paper-table 32. The feed-rolls 37 not only cooperate with the platen to hold the record-sheet stationary but in addition they form with the platen a feeding couple whereby the record-sheet may be line-spaced when the main feed-rolls 23, 24 are cast off, to provide an extra line-space on the record-sheet between the entries of successive ledger or bill sheets. The rolls 37 may be maintained in effective position, moreover, throughout the typing since they assist, rather than retard, the feeding of the work. The guide-fingers 36 may be secured to a rock-shaft 40 pivotally supported in downwardly-extending ears 41 of end pieces 42 secured to the top of end plates 12 and 13 by screws 43. The rock-shaft 40 may be operated by a finger-piece 44 against the tension of a return spring 45 which may be connected to an upturned ear 46 on the left-hand end piece 42 and an arm 47 on said rock-shaft, to throw off the auxiliary rolls when a fresh record-sheet is to be inserted.

The record-sheet 20, with the superposed carbon-sheet 22 may be guided behind the collating table 33, as they are fed from the printing point, so as not to obstruct the graduation marks which may be provided on the front face of the collating table. To do this, and to prevent the record and carbon sheets from bulging at the printing line, there is pivotally mounted at the lower edge of the collating table 33 a bar 48 which is held lightly against the platen by means of a contractile spring 50, and may be raised against the tension of said spring to enable the record-sheet with the carbon-sheet to be inserted behind the collating table. A guide-bar 51 is provided behind the collating table and secured to the end pieces 42, to prevent the leading edges of the record-sheet and the carbon-sheet from passing around the platen. It will be understood that, since the holding means for the record-sheet comprises feed-rolls, said record-sheet may be fed about the platen thereby, if so desired, when the regular feed-rolls are released.

To further enable the quick insertion of new ledger-sheets into the throat behind the platen, it is desirable to keep the throat 38 open to prevent obstruction to the ledger-sheet by the rear end of the record-sheet 20 which has a tendency to fall against the rear paper-table 32 and would necessitate the lifting of said rear end away from said table at each insertion of a new ledger-sheet which would consume considerable time. For this purpose, there is provided an intermediate table 52 which is disposed behind the collating table 33 and in front of the regular paper-table 32 and extends sufficiently upward to hold the end of the record-sheet clear of the paper-table 32. The intermediate table 52 and the holding means comprising the guide-fingers 36 are made of one piece of material which adds to the simplicity of the device. The upper right-hand corner of the intermediate paper-table 52 may also be cut away as at 53, so as not to obstruct the hand of the typist while inserting a ledger-sheet. The provision of the rolls 37 at the introductory side of the platen is important because the rolls, so positioned, may be located within the bounds of both the inside and outside work-sheets to act only on the inside sheet, and this without interference with the writing instrumentalities or with the collating function of the collating table. The inside

sheet, therefore, need not be any wider than the outside sheet.

The end pieces 42 have upturned portions 54 at their forward ends and on the left-hand one is pivotally mounted a cross-bar 55, at one end, by means of a screw 56. The cross-bar supports the collating table 33, and is provided at its other end with a notch 57, so that it may be snapped over a headed stud 58 on the upturned portion 54 of the right-hand end piece. With this arrangement the collating table may be swung away from the platen at will, as, for example, to give access to the guide-bar 51, the lower edge of which may be used to align or square the record-sheet, the leading edge of the record-sheet engaging the lower edge of said guide-bar. This feature is also important because it renders the record-sheet accessible for the purpose of making erasures.

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 for typing entries on a succession of ledger-sheets and at the same time making a record on a common record-sheet of the entries typed on all of the ledger-sheets, a revoluble platen, a collating table at the delivery side of the platen, means for guiding the record-sheet to the rear of the collating table, a hinged support for said collating table mounted for swinging movement to carry the collating table to an ineffective position away from the platen, and quickly releasable snap-fastening means for normally detaining the collating table in effective position.

2. In a typewriting machine for typing entries on a succession of ledger-sheets and at the same time making a record on a common record-sheet of the entries typed on all of the ledger sheets, a platen, a collating table extending upward from the platen at the delivery side thereof for locating the ledger-sheets with reference to the record-sheet, means at the delivery side of the platen for pressing the record-sheet against the platen and for separating the record and ledger sheets, quickly releasable snap-fastening means for normally detaining the collating table and the record-sheet-pressing means in their effective positions, and means swingable to move both the collating table and the ledger-sheet-pressing means to an ineffective position away from the platen at a single operation.

3. In a typewriting machine for typing entries on a succession of ledger-sheets and at the same time making a record on a common record-sheet of the entries typed on all of the ledger-sheets, a platen, a collating table extending tangentially upward from the platen at the delivery side thereof for locating the ledger-sheets with reference to the record-sheet, the collating table being pivotally mounted so as to be withdrawable to one side of the record and ledger sheets in the machine, means at the delivery side of the platen for detaining the record-sheet against the platen during insertion of the ledger-sheets, said detaining means being in the form of a spring-pressed plate hinged to the collating table at the lower extremity thereof and withdrawable therewith, and snap-fastening means normally unyieldingly detaining the collating table in effective position against the force of the plate pressing against the platen and tending to displace the collating table.

4. In a typewriting machine for typing entries on a succession of ledger-sheets and at the same time making a record on a common record-sheet of the entries typed on all of the ledger-sheets, a revoluble platen, a plane collating table at the delivery side of the platen having a left-edge gage for positioning the ledger-sheets, a record-sheet-detaining plate hinged to the collating table at its lower end for guiding the record-sheet to the rear and pressing it against the platen to hold it against misplacement during ledger-sheet adjustments, a hinged support for said collating table mounted for swinging movement to carry the collating table by movement in the plane of its body to the left side of the record and ledger sheets, the collating table being smooth at its right side to avoid fouling the ledger-sheet in the machine during such swinging movement, and snap-fastening means normally unyieldingly detaining the collating table in effective position.

5. In a typewriting machine for typing entries on a succession of outside ledger-sheets and at the same time making a record on a common inside record-sheet of the entries typed on all of the ledger-sheets, a platen, feed-rolls co-operating with the platen to feed the record and ledger sheets, means for casting off the feed-rolls, a collating table extending tangentially upward from the platen for positioning the ledger-sheets inserted in the machine with reference to the record-sheet, means at the rear of the platen to hold the rear end of the long record-sheet out of the way to prevent interference with the insertion of the ledger-sheets from the rear, and feeding and clamping rolls at the rear of the platen arranged to act solely upon the record-sheet for detaining the record-sheet stationary against the platen while the feed-rolls are cast off.

6. In a typewriting machine for typing entries on a succession of outside ledger-sheets and at the same time making a record on a common inside record-sheet of the entries typed on all of the ledger-sheets,

a revoluble platen, releasable feed-rolls, a rear paper-table for guiding the ledger-sheets to the platen, an auxiliary rear paper-table above the first for guiding the record-sheet to the platen, said auxiliary table holding the record-sheet clear of the first table, whereby the ledger-sheets may be inserted without obstruction, outside of the record-sheet, at the rear of the machine, a collating table at the delivery side of the platen for guiding the inserted ledger-sheets relatively to the record-sheet, and means between the ledger and record sheets, and within the bounds of both of said sheets, at both the front and rear of the platen for pressing the record-sheet against the platen to prevent misplacement thereof during adjustments of the ledger-sheets, said means at the rear of the platen including feeding and clamping rolls and at the front of the platen consisting of a spring-pressed hinged blade or bar pivoted on the lower extremity of the collating table.

7. In a typewriting machine for typing entries on a succession of outside ledger-sheets and at the same time making a record on a common inside record-sheet of the entries typed on all of the ledger-sheets, a revoluble cylindrical platen, feed-rolls cooperating therewith for feeding the ledger and record sheets in unison and releasable to permit insertion, adjustment and withdrawal of the ledger-sheets independently of the record-sheet, and means within the bounds of both the ledger and record sheets at both the front and rear of the platen including feeding and clamping rolls at the rear of the platen for pressing the record-sheet against the platen independently of the ledger-sheets, whereby a large area of the record-sheet is held in frictional engagement with the cylindrical platen to prevent misplacement of the record-sheet during ledger-sheet-adjusting operations.

8. In a typewriting machine for typing entries on a succession of ledger-sheets and at the same time making a record on a common record-sheet of the entries typed on all of the ledger-sheets, a revoluble platen, a rear paper-table for guiding the ledger-sheets to the introductory side of the platen, and an auxiliary rear paper-table above the first for separately guiding the record-sheet to the introductory side of the platen, the auxiliary table extending upward at one side thereof sufficiently to hold the rear end of the record-sheet clear of the first paper-table, and thereby prevent interference with the insertion of the ledger-sheets, and the opposite side of said auxiliary table being cut away to permit the operator to thrust his hand down close to the platen in inserting the ledger-sheets.

9. In a typewriting machine for typing entries on a succession of ledger-sheets and at the same time making a record on a common record-sheet of the entries typed on all of the ledger-sheets, a revoluble platen, a rear paper-table for guiding the ledger-sheets to the introductory side of the platen, and an auxiliary rear paper-table above the first for separately guiding the record-sheet to the introductory side of the platen, the auxiliary table extending upward at one side thereof sufficiently to hold the rear end of the record-sheet clear of the first paper-table, and thereby prevent interference with the insertion of the ledger-sheets, and the opposite side of said auxiliary table being cut away to permit the operator to thrust his hand down close to the platen in inserting the ledger-sheets, the cutaway being on a straight bevel, so that the bending of the record-sheet caused by the operator's hand will take place along a straight line without liability of the record-sheet becoming rumpled or torn.

10. In a typewriting machine for typing entries on a succession of ledger-sheets and at the same time making a record on a common record-sheet of the entries typed on all of the ledger-sheets, a revoluble platen, and a front paper-table at the delivery side of the platen having a side-edge gage extending along one of its sides and a rectangular cut-away portion at its opposite side to permit the operator to jog each inserted ledger-sheet into continuous engagement with the side-edge gage to locate the ledger-sheets similarly with reference to the record-sheet.

11. In a typewriting machine for typing entries on a succession of ledger-sheets and at the same time making a record on a common record-sheet of the entries typed on all of the ledger-sheets, a revoluble platen, a paper-table at the introductory side of the platen for guiding the ledger-sheets to the platen from the rear, an auxiliary paper-table at the introductory side of the platen and above the first paper-table for guiding the record-sheet to the platen and holding it clear of the first paper-table to prevent interference with the insertion of the ledger-sheets, and a front paper-table at the delivery side of the platen for locating the ledger-sheets with reference to the record-sheet, the auxiliary paper-table and the front paper-table being cut away at one side to accommodate the hand and arm of the operator to permit the hand to be moved down close to the platen in inserting the ledger sheets from the rear.

12. In a typewriting machine for typing entries on a succession of ledger-sheets and at the same time making a record on a common record-sheet of the entries typed on all of the ledger-sheets, a platen, a rear paper-shelf having a left-side gage for guiding the ledger-sheets to the platen, a

front paper-table having a left-side gage for correctly locating the ledger-sheets laterally and longitudinally with reference to the record-sheet as the ledger-sheets are inserted, said front paper-table being cut away at the right to permit the operator to jog an inserted ledger-sheet over against the left-side gage on the front paper-table, means to detain the record-sheet in position on the platen during insertion and adjustment of a ledger-sheet, and a rear paper-table to support the rear end of the record-sheet a sufficient distance above the rear paper-shelf to avoid obstructing the placing of the ledger-sheets on the shelf, the left edge of the rear paper-table being located to the right of the left-side gages and the rear paper-table being cut away at its upper right corner to permit the operator to move his hands down close to the platen in thrusting the ledger-sheets around the platen toward writing position, the rear paper-table being cut away on a straight bevel, whereby likelihood of the record-sheet being rumpled by the operator in inserting the ledger-sheets is avoided.

13. 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 the entries on a common record-sheet, comprising a rear paper-table for supporting the rear end of the record-sheet in a position to avoid interference with the introduction of the ledger-sheets to writing position from the rear of the machine, a front paper-table for correctly locating the ledger-sheets, means for clamping the record-sheet against the platen at both the introductory and delivery sides thereof during adjustment of the ledger-sheets, common supporting means for said two paper-tables and for the record-sheet-clamping means, and means for securing the common support upon the carriage of the typewriting machine, the entire device being constructed for attachment as a unit to the machine.

14. 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 common record-sheet, comprising a rear paper-table for supporting the rear end of the record-sheet in a position to avoid interference with the introduction of the ledger-sheets to writing position from the rear of the machine, a front paper-table for correctly locating the ledger-sheets, means for clamping the record-sheet against the platen, during adjustment of the ledger-sheets, common supporting means for said two paper-tables and for the record-sheet-clamping means, and means for securing the common support upon the carriage of the typewriting machine, the entire device being constructed for attachment as a unit to the machine.

15. The combination with a platen, a frame to support said platen, said frame comprising two end plates, and a paper-table to guide an outer sheet to the platen at the rear thereof, of a table at the front of the platen upon which the outer sheet may be adjusted relatively to an inner sheet, means to hold the inner sheet during such adjustment, a bar to support the adjusting table, two end pieces extending from said bar, said end pieces being detachably mounted on the end plates of the platen-supporting frame, and means on said end pieces to support the inner sheet holding means.

16. The combination with a platen, a frame to support said platen, said frame comprising two end plates, and a paper-table to guide an outer sheet to the platen at the rear thereof, of a table at the front of the platen upon which the outer sheet may be adjusted relatively to an inner sheet, means to hold the inner sheet during such adjustment, means to keep the rear end of the inner sheet raised from the paper-table, a bar to support the adjusting table, two end pieces extending from said bar, said end pieces being detachably mounted on the end plates of the platen-supporting frame, and means on said end pieces to support the inner sheet holding means and the means to keep the rear end of the inner sheet raised.

17. The combination with a platen around which a plurality of work-sheets may be fed, of a collating table at the front of the platen upon which the outer sheet may be adjusted, and a spring-pressed bar hinged to the bottom of said table and which may be swung away from the platen to allow the inner sheet to be fed behind the collating table, said bar being arranged to lie between the inner and outer sheets and press the inner sheet against the front of the platen without interfering with the collating function of the collating table.

18. The combination with a platen around which a plurality of work-sheets may be fed, of a collating table at the front of the platen upon which the outer sheet may be adjusted, a spring-pressed bar hinged to the bottom of said table and which may be swung away from the platen to allow the inner sheet to be fed behind the collating table, and a guide behind said collating table to prevent the leading edge of the inner sheet from passing around the platen after it has been passed behind the collating table.

CLARENCE H. BROWN.

Witnesses:
EDITH B. LIBBEY,
JENNIE P. THORNE.