Jan. 21, 1930. J. A. B. SMITH 1,744,512

TYPEWRITING MACHINE

Filed Oct. 2, 1926

Fig. 2.

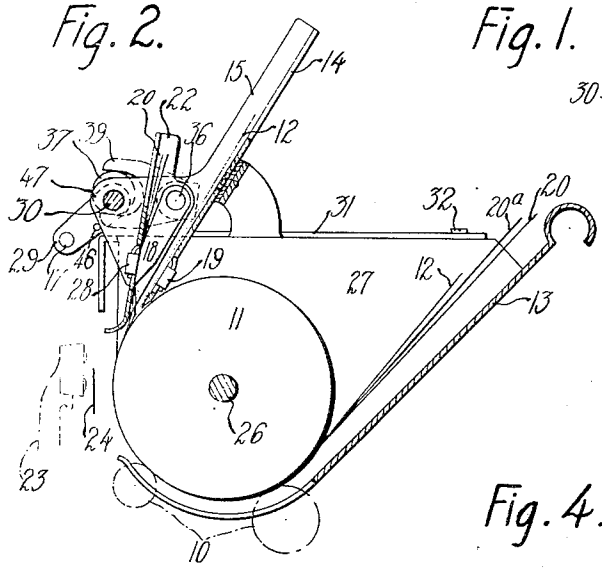


Fig. 1.

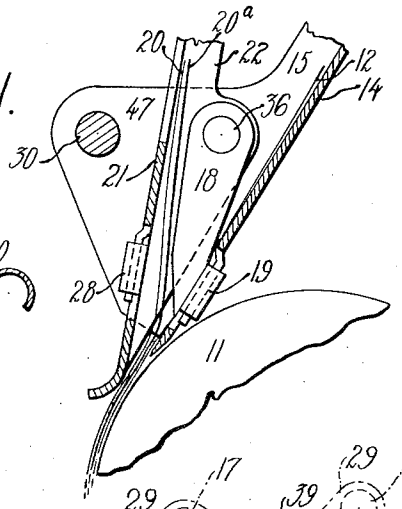


Fig. 4.

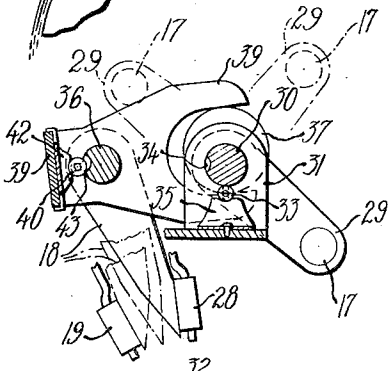


Fig. 5.

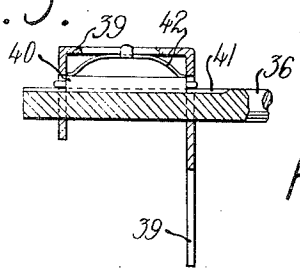


Fig. 3.



Inventor:
Jesse A. B. Smith
by R. B. Stuckney
Attorney.

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# UNITED STATES PATENT OFFICE

JESSE A. B. SMITH, OF STAMFORD, CONNECTICUT, ASSIGNOR TO UNDERWOOD ELLIOTT FISHER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE

## TYPEWRITING MACHINE

Application filed October 2, 1926. Serial No. 139,029.

This invention relates to work sheet handling devices for typewriting machines and more particularly to means for collating a pair of work sheets and for holding either of the sheets in undisturbed registration while the other sheet is removed and replaced.

It has been usual to clamp a rear or record sheet in registration while removing and replacing a statement sheet in front thereof. By means of this invention, it is possible not only to hold the record sheet as heretofore, but also to hold the statement sheet in registration while the record sheet is replaced. In addition, this invention enables the operative simultaneously to release both sheets to permit line feeding thereof.

According to certain features of this invention, there is provided a pair of positioning tables having side gages for laterally positioning the respective work sheets. These tables are mounted at the delivery side of the platen. The vertical location of the work sheets is obtained by reference to the wing scales and to the last line of typing upon the sheets.

The back sheet is preferably located first, and then the same is clamped in position while the front sheet is collated. Prior to collating the sheets, however, the feed rolls are released so that the sheets may be freely slid around the platen. The sheets may be secured to their associated tables by means of manually operable clamps. There may be provided one set of clamps coacting with either table, since the two sheets need never be clamped at the same time. After positioning the sheets, the feed rolls are again rendered operative and the sheets are released by moving the clamps to their ineffective positions.

It will be understood that the positioning tables may be made in sections to permit lateral adjustment thereof to correspond to the widths of the various work sheets. Preferably, however, the back sheet is made wider so that the same may be moved to the printing line by reference to some indication on the margin of the sheet which is visible even though the front sheet is first inserted in the machine.

Other features and advantages will hereinafter appear.

In the accompanying drawings,

Figure 1 is an enlarged cross-sectional view showing the clamp in a position to grip the record sheet against the back table while the statement sheet is being replaced.

Figure 2 is a cross-sectional view showing the clamp in a position to grip the statement sheet against the front table.

Figure 3 is a perspective view showing the invention applied to the platen frame of an Underwood typewriting machine, the position of the clamps being the same as in Figure 2.

Figure 4 is an enlarged cross-sectional view showing the construction of the clamp and its operating handle.

Figure 5 is a detail showing the resilient connection between the clamp-operating shaft and the shaft-operating arm.

The feed rolls 10, which normally run on the under side of a platen 11, are first released, and then a record sheet 12 is inserted over a rear table 13, under and around the platen, past the printing point and the sheet is finally positioned to the printing line by means of a table 14 mounted at the delivery side of the platen. This sheet is laterally positioned between edge gages 15 which may form an integral part of the table 14. In order to position the sheet in line space direction, reference may be had to the last line of typing which is usually typed upon the margin of the sheet. This line of typing is gaged relatively to wing scales 16. The sheet is then clamped against the table by swinging upwardly handles 17 which are effective to operate a pair of clamps 18 to the position shown in Figure 1. The clamps bear upon the sheet and prevent displacement thereof by forcing the back of the sheet against rubber pads 19 secured to the table.

After having positioned the record sheet to the printing position, a statement sheet 20 is assembled with an associated carbon sheet $20^a$ and the two sheets are inserted between the record sheet and the rear table.

These sheets are forced under and around the platen and are collated relatively to the previously inserted sheet by means of a front table 21 which is provided with rearwardly turned edges 22 serving as lateral gages. These sheets are positioned relatively to the printing line and to the last line of typing thereon, and then the feed rolls are cast on and the clamps 18 are released, that is, are moved to neutral position by means of the handles 17.

Typing may now proceed, by means of type bars 23 and a ribbon 24, and all the sheets may be simultaneously line-spaced by means of a line-spacing mechanism 25, mounted upon a platen axle 26 which is journalled in end plates 27.

It sometimes happens that the back or record sheet must be replaced while leaving the front or statement sheet in registration, so that a portion of the data to be typed upon the latter may be copied upon another record sheet. In order to do this it is only necessary to swing the handle 17 downwardly to the position shown in Figure 3. This is effective to swing the clamps toward the front table 21, which clamps will grip the statement sheet against rubber pads 28. Then, while the sheet is held in place, the feed rolls are released and the record sheet is replaced.

The construction of the clamps 18 and associated mechanism is such that the clamps may be moved to ineffective position to thus permit the simultaneous line-feeding of the two sheets. To this end, the handles 17 are mounted at the ends of arms 29 fast to a rock shaft 30 carried by brackets 31 which may be secured to the end plates 27 by means of screws 32. The shaft 30 is normally held in its central position by a retaining roller 33 which is held in engagement with a groove 34, cut longitudinally in the shaft 30, by means of a spring 35. This position of the shaft 30 is effective to hold the clamps in their ineffective or normal position to permit line-feeding of the sheets. The connection between said shaft 30 and a pair of short shafts 36 carrying the clamps 18 may be obtained by means of eccentric rollers 37, fast to the shaft 30 by means of pins 38. The eccentric rollers are straddled by forked plates 39 resiliently mounted on the shafts 36. The resilient connection between the plates 39 and the shafts 36 may include rollers 40 which are forced into a groove 41 by means of springs 42. It will be noted by referring to Figure 4 that the movement of the plates 39 is radially greater than the possible radial movement of the shafts 36, this being in order that the roller may actuate on the edge 43 of the groove 41 and hold the clamp under tension.

In the construction selected to illustrate this invention, the shafts 36 are journalled in bushings 44 which support the front table 21, and are held against lateral displacement by means of collars 45. The movement of the handle 17 may be limited by pins 46 which strike the edge of ears 47 which form an integral part of the back table 14.

It may be noted that the back table 14, which is supported upon a cross-bar 48 forming an integral part of the brackets 31, is secured to the bar by a pair of screws 49—49 countersunk in such a manner as to be flush with the surface of the table.

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. The combination with a typewriting machine, having a carriage, a revoluble platen thereon and feed-rolls, of means for positioning and clamping a pair of work-sheets so that either sheet may be held in position while the other sheet is replaced, including a movable clamping member disposed between said sheets and alternately engageable with the same, and distinct means upon said carriage to co-operate with said clamping member at the delivery side of the platen.

2. The combination, with a typewriting machine, having a revoluble platen and feed rolls therefor, of means for positioning and clamping a pair of work sheets so that either sheet may be held in registration while the other sheet is replaced, said means including a pair of superposed and spaced collating tables between which said sheets are inserted, and intermediate means for selectively clamping either of the sheets at will against its corresponding table.

3. The combination, in a typewriting machine, of a revoluble platen, feed rolls therefore, means for positioning and clamping a pair of work sheets so that either sheet may be held in registration while the other sheet is replaced, said means including a pair of tables, each having means for laterally positioning its associated sheet, and clamping means controlled by a handle, said clamping means being effective to grip either sheet against its associated table to thereby prevent displacement thereof when manipulating the other sheet.

4. The combination with a typewriting machine, having a revoluble platen and feed rolls therefor, of a pair of collating tables at the delivery side of the platen arranged to accommodate a pair of work-sheets therebetween, each table being effective to laterally position one of said work sheets, and means disposed between said tables and between said sheets for selectively clamping either sheet upon its adjacent table.

5. In a typewriting machine, the combination of a revoluble platen, feed rolls therefor, a pair of collating tables at the delivery side of the platen, each table being effective to laterally position a work sheet, and means for

clamping either sheet upon its associated table, said means being manipulable to permit clamping of either sheet and to release both sheets to permit line-feeding thereof.

6. The combination with a typewriting machine having a platen, of means for collating and holding in collated position either of two sheets to permit replacement of the other sheet, said means including a pair of positioning tables at the delivery side of the platen, clamps arranged between said tables to cooperate with either table, and manually operable means for actuating said clamps.

7. The combination with a typewriting machine, having a carriage and a platen thereon, of means for collating a pair of superposed work-sheets, including a pair of collating tables spaced in front of each other on said carriage adjacent said platen, each table having sheet-positioning edges directed toward the other table and having its work-face opposed to the other table, said sheets being insertable between the spaced work-faces of said tables, and means normally separating said sheets arranged to selectively clamp either sheet against its adjacent table at will.

8. In a typewriting machine, the combination of a revoluble platen, means for collating a pair of superposed work sheets having an intervening carbon, said means including a pair of collating tables having side edges to laterally position each associated sheet, both tables being mounted at the delivery side of the platen, one in front of the other, means for holding either sheet against its associated table to permit replacement of the other sheet, said last-mentioned means including a pair of clamps mounted between said tables, and means controlled by a handle for moving the clamps into engagement with either table.

9. In a typewriting machine, the combination of a platen, a pair of tables at the delivery side thereof for laterally positioning a pair of work sheets relatively to each other, and means for holding either sheet against its associated table to permit replacement of the other sheet, said means including clamps carried by shafts pivotally mounted between the tables, a front cross-shaft, handles for rocking said cross-shaft, and means for operatively connecting said cross-shaft with the handles so that the clamps may be swung to engage either of the tables upon operation of the handle.

10. In a typewriting machine, the combination of a platen, a pair of tables at the delivery side thereof for laterally positioning a pair of work sheets relatively to each other, and means for holding either sheet against its associated table to permit replacement of the other sheet, said means including clamps carried by shafts pivotally mounted between the tables, a front cross-shaft, handles for rocking said cross-shaft, and means for operatively connecting said cross-shaft with the clamps that the clamps may be swung to engage either of the tables upon operation of the handles, said last-mentioned means including forked plates resiliently mounted on the clamp shafts, and eccentric disks carried by the cross-shaft, said forked plates straddling the eccentric disks.

11. The combination with a typewriting machine having a revoluble platen and feed-rolls therefor, of means for positioning and clamping a pair of work-sheets, so that either sheet may be held in registration while the other sheet is replaced, said means including a pair of collating tables spaced in superposed relation, and between which said sheets are inserted, and shiftable means disposed between said sheets for clamping either of said sheets at will against its corresponding table, said last means being releasable from both of said tables to an ineffective position to free both sheets for line-spacing movements thereof.

12. The combination with a typewriting machine having a platen, of means for collating and holding in collated position either one of two sheets to permit replacement of the other sheet, said means including a pair of spaced collating tables converging toward the delivery side of the platen, clamps arranged between said tables to co-operate with either table, and manually-operable means for actuating said clamps.

13. The combination with a typewriting machine having a platen, of means for collating and holding in collated position either one of two sheets to permit replacement of the other sheet, said means including a pair of spaced collating tables arranged at the delivery side of the platen, and pendent clamps pivotally mounted between said tables and conditioned to swing toward and engage with either table, there being means to swing said clamps and hold the same in either attained position.

14. The combination with a typewriting machine having a platen, of means for collating and holding in collated position either one of two sheets to permit replacement of the other sheet, said means including a pair of collating tables arranged adjacent the platen, shafts rotatably mounted parallel with said tables, clamps resiliently mounted on said shafts in such a manner as to permit said shafts to be moved through a relatively greater arc than said clamps, and means to move said shafts to cause engagement of said clamps with either one of said tables, the latter constituting limit stops for said clamps.

15. The combination with a typewriting machine having a platen, of means for collating and holding in collated position either one of two sheets to permit replacement of the other sheet, said means including a pair of collating tables arranged adjacent the platen, shafts rotatably mounted parallel

with said tables, clamps rotatably mounted on said shafts, means to rotate said shafts through limited arcs, and means operable to cause said clamps to resiliently move with said shafts, including a seat upon each shaft, a movable member slidably mounted on said shaft-rotating means adjacent the seat on each shaft, and a spring urging each of said movable members into engagement with its respective shaft-seat.

16. The combination with a typewriting machine having a platen, of means for collating and holding in collated position either one of two sheets to permit replacement of the other sheet, said means including a pair of collating tables arranged adjacent the platen, shafts mounted parallel to the planes of said tables, clamps mounted upon said shafts, means to partially rotate said shafts to move said clamps against one or the other of said tables, including a main shaft having a handle thereon, supports for said main shaft, means on said main shaft to cause said clamp-shafts to be moved therewith to two extreme positions in order to move said clamps toward either of said tables, and means to resiliently hold said clamps in normal idle position intermediate said tables, including a locking member movably mounted on one of said shaft-supports, a seat on said main shaft engageable by said locking member, and a spring urging said member into engagement with said shaft-seat.

17. In a typewriting machine, having a platen and a paper-table disposed adjacent said platen, the combination with a plurality of pivoted clamp-members swingable to press their extremities against the table in order to clamp a work-sheet against the same, of fixed tongues associated with the table to receive the clamp extremities, and contact pads secured upon said tongues to cushion the contact of the clamps with said table in order to resiliently hold said work-sheet in position upon the table.

JESSE A. B. SMITH.