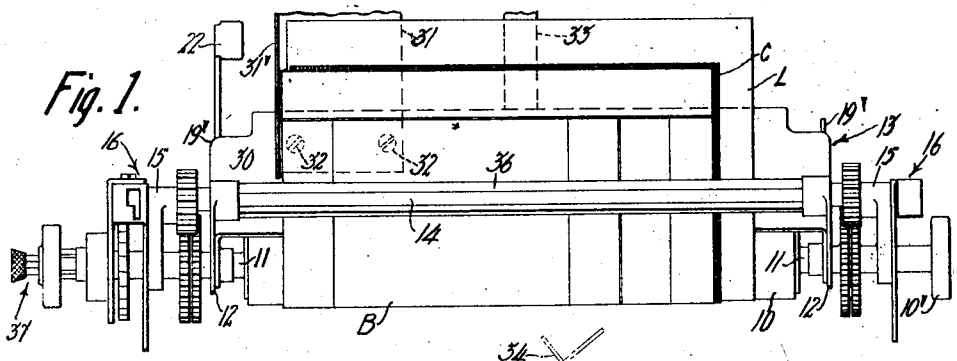
Sept. 13, 1927. 1,642,271

J. A. B. SMITH

TYPEWRITING MACHINE

Filed Aug. 21, 1924

Fig. 1.



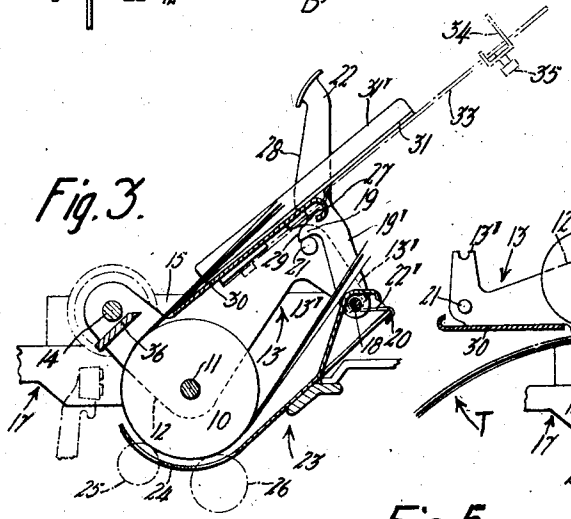


Fig. 3.

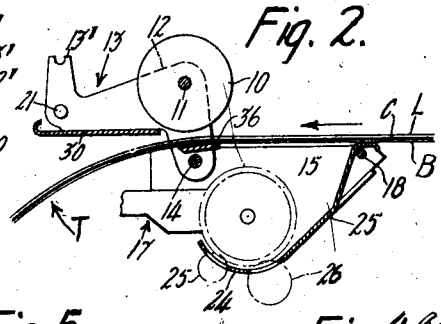


Fig. 2.

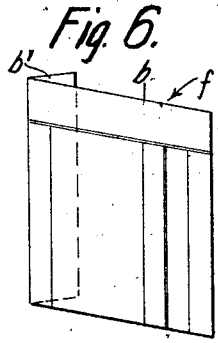


Fig. 6.

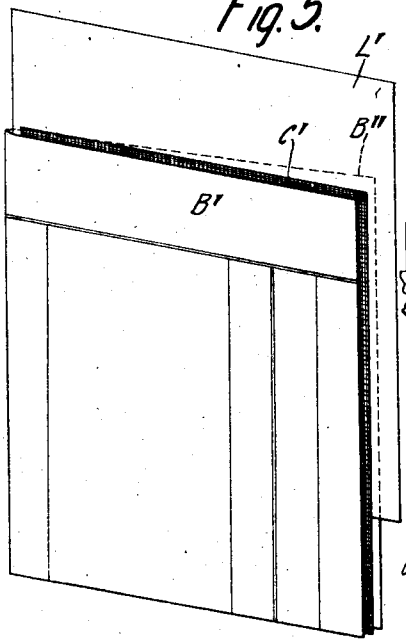


Fig. 5.

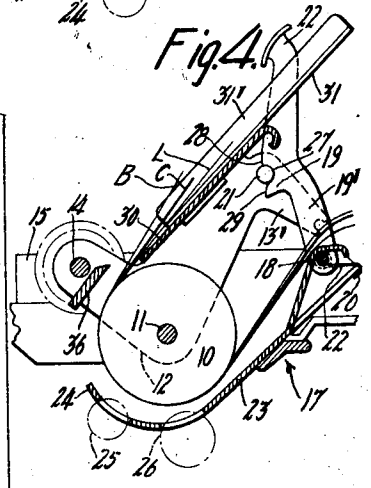


Fig. 4.

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Patented Sept. 13, 1927. 1,642,271

UNITED STATES PATENT OFFICE.

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

TYPEWRITING MACHINE.

Application filed August 21, 1924. Serial No. 733,284.

This invention relates to typewriting machines, and especially to a machine arranged to be used, at will, for either "continuous billing" and ledger posting, or typing entries upon interleaved billing forms or entry sheets. These work-sheets may comprise a statement-sheet, a ledger-sheet and carbon-paper between the statement and ledger.

It is a decided advantage to be able to perform both classes of work upon one machine, this being especially the case where the amount of business carried on by a mercantile establishment does not warrant the installation of separate machines to handle each class of work.

In the patent to Wernery & Smith, No. 1,132,055, granted March 16, 1915, there is shown a machine for continuous billing and ledger posting. In practice such a machine is used for typing bills or the like and simultaneously making carbon copies thereof on continuous plies or sheets in superposed relation and joined at their edges to form a web, such, for example, as a fan-fold web. After such typing of a bill, the used portions of the web are severed along transverse lines from the unused portion by means of a tearing-off knife.

One feature of my invention is the provision of means for holding the platen of the machine slightly above the feed-rolls, so that when the web has been disconnected and thrown out of use, a plurality of interleaved work-sheets may be introduced between the tearing-off knife and the platen, and properly collated while in the machine, prior to lowering the platen against the feed-rolls for typing. The space thus provided between the platen and the feed-rolls forms a collating throat in which the work-pieces may be freely adjusted while the platen is only slightly above the feed-rolls. By reason of this arrangement the platen needs to be moved only a very short distance to grip the work-pieces against the feed-rolls, thereby obviating any chance of their slipping out of adjustment, such as would be likely to occur were it necessary to move the platen through an appreciable distance.

Generally the sheets, to be printed upon, comprise single page billing forms, stacked one above the other, and with transfer paper between the sheets, but they may take the form of a typing page having suitable item designations thereon, and having a tab or leaf on the left of the page, the tab being folded back so as to underlie the page, thus forming, in effect, a folder. Into this folder the left side of the ledger is inserted, and the typing page of the folder and ledger are then collated into writing position while out of the machine, and a carbon-paper placed therebetween. With the platen of the machine raised, the folder and its contents are inserted as a unit face downwardly from the rear of the machine between the platen cylinder and the tearing-off knife, the left edge of the folder being squared against a position guide carried by a collating table mounted upon the paper-table of the machine. Then with the folder held against the paper-table by means of the hands, the platen is lowered against the feed-rolls, and the variable line-spacer may then be used to bring the folder and its contents as a unit into position to be typed upon.

Other features and advantages will hereinafter appear.

In the accompanying drawings,

Figure 1 is a plan view of a platen-frame and some of the associated parts of a typewriting machine, showing the invention as applied thereto.

Figure 2 is a transverse cross-section of the platen-frame, adjacent one end thereof, and represents the introduction of a plurality of interleaved work-sheets into the machine.

Figure 3 is a view showing the platen lowered and the sheets run into position to be typed upon, the means for holding the platen above the feed-rolls being in inoperative position.

Figure 4 is a view similar to Figure 3, except that the means for holding the platen raised is shown in effective position.

Figure 5 is a view of a form of billing unit which may be typed in the machine.

Figure 6 is a view of a form of statement page having a short tab.

A platen 10 is journaled by means of a shaft 11 in the ends 12 of a platen-displacing frame 13, the frame 13 being mounted to swing about a pivot-shaft 14 journaled in the ends 15 of a platen-frame 16 forming part of a traveling carriage 17. The platen may be rotated by means of a hand-wheel 10′ fixed to one end of the shaft 11. Normally the free ends 13′ of the frame 13 rest

upon a rod 18 mounted in the ends 15 of the platen-frame 16 and are held in such position by means of hooks 19 carried by detents 19′ mounted on the rod 18 at both ends of the platen-frame 16, and normally engaging pins or lugs 21 projecting from the sides of the frame 13. One of the detents 19′, preferably the one at the left of the machine, is provided with a handle or finger-piece 22 by means of which said detents may be swung rearwardly to release the platen-displacing frame 13, against the action of a coiled spring 22′ encircling the rod 18 and having one end bent around a portion of the platen-frame, as shown at 20, and the other end caught in a perforation in the lower portion of one of the detents in the customary manner of attaching such springs.

The platen-frame 16 includes a paper-table 23 raised at its rear edge to overlie the rod 18 and extending beneath the platen to provide a paper-apron 24, through which front and rear feed-rolls 25 and 26 engage the platen when the same is in normal position. A notch 27 is formed in the edge 28 of the finger-piece 22 immediately above the adjacent hook 19, the lower portion of the notch being curved, as indicated at 29, for a purpose later described.

The usual paper-table 30 is secured to the platen-displacing frame 13 and carries upon its outer face a collating table 31 including a paper-guide 31′, the collating table being secured in position upon the paper-table by any convenient means, such as screws 32. A gage-bar 33, indicated in dot-and-dash lines in Figure 3, is also secured to the paper-table 30 and includes a leading-edge gage 34 arranged to be clamped upon the gage-bar at any desired position by means of a set-screw 35.

Various kinds of stacked sheets may be typed simultaneously in the machine, such, for example, as interleaved statement and ledger sheets. In Figure 2, the platen 10 of the machine has been swung by means of the frame 13 to its uppermost position away from the feed-rolls, and, while so swung, the sheets to be typed upon are inserted face downwardly with the top portions T of the sheets leading between the tearing-off knife 36 and the platen. Three sheets are shown; the one outermost from the platen may represent a billing or statement form B, the sheet nearest the platen a ledger-sheet L, and the intermediate line a sheet of carbon-paper C, although any number of sheets may be stacked in this manner and inserted as described. Now when the top portions T of the sheets are held against the paper-table 30 and the platen-displacing frame is swung about its shaft 14 toward the feed-rolls, one of the pins 21, carried by said frame, engages the notch 27 of the finger-piece 22, and the platen is thereby arrested and held in a temporary position slightly above the rolls, thus providing a collating throat, the clearance being sufficient to permit the work-sheets to be adjusted about the platen and squared against the paper-guide and properly collated in the machine. Subsequent pressure upon the platen-displacing frame 13 in a direction toward the rolls causes the corresponding pin 21 to ride out of the notch 27 over the rounded portion 29, and thence downwardly to permit the platen to press the collated sheets against the rolls, and the hooks 19 automatically snap into engagement around their respective pins 21, so as to hold the platen against the rolls.

A variable line-spacing device, indicated generally at 37 and of a construction substantially as disclosed in the patent to W. F. Helmond, No. 1,150,366, granted August 17, 1915, may then be utilized to permit the platen to be revolved fractionally by means of the hand-wheel 10′ for bringing the typing field of the superposed sheets to the printing line of the platen to receive type impressions. After the sheets have been typed, the platen may be unlocked by simply pressing the finger-piece 22 toward the rear of the machine to release the hooks 19, and the sheets may then be removed. Thus it will be seen that, by reason of the described means for holding the platen slightly raised above the feed-rolls, any number of interleaved work-sheets which the machine is capable of handling may be quickly inserted, collated while in the machine, and typed upon. In view of the fact that collating is done entirely while the sheets are in the machine between the platen and rolls, and then quickly clamped by pressure on the platen-displacing frame to cause the platen to meet the rolls, there is no tendency of the sheets to creep or skew out of registration with one another, such as would be likely to occur if the sheets had been collated out of the machine and then run thereinto by turning the platen against the feed-rolls.

Figures 5 and 6 illustrate two kinds of billing forms, which may be used in conjunction with duplicate or ledger sheets. With particular reference to Figure 5, it will be noted that the form illustrated consists of a billing page B′ ruled in the customary manner and including a tab B″ on its left edge, the tab being of the same shape and area as the billing page and folded back against the under side of the page to provide a folder F. Into this folder F may be placed one or more forms, such as duplicate or ledger sheets L′, and carbon-paper C′ is interleaved between the sheets. The folder and its contents thus form a unit which is convenient for both

handling and filing. In typing entries on the billing folder F and its contents, the sheets comprising the unit are first properly collated and then the folder is inserted in the machine in a manner similar to that employed in connection with the sheets L, C and B, above described, or from the front of the machine. After the folder has been led between the platen and the rolls and onto the paper-table to be squared against the paper-guide, the platen is swung to its position against the rolls, thus gripping the folder and permitting the same to be run to the printing line to be typed upon. Due to the fact that the ledger sheet L′ and the billing page B′ are securely held together when gripped by the platen, there is no tendency of the sheets to move from their properly collated condition when run to the printing line by the platen, thus contributing to accuracy and neatness when typed upon.

In Figure 6, there is shown a type of billing folder *f* comprising a front page *b* having a short tab *b′*, and the manner of its use is the same as that described in connection with the folder illustrated in Figure 5, the short tab being preferably in some cases in the interest of economy.

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, feed-rolls normally against the platen, a movable collating table, means for releasably holding said platen and the feed-rolls spaced apart to permit work-pieces introduced between the platen and the feed-rolls to be collated on the table, and means operable by motion directly imparted to said table by the hands of the operator, to cause release of the spacing means and thereby permit the platen and the feed-rolls to grip between them the collated work-pieces.

2. In a typewriting machine, in combination, a platen, feed-rolls normally against the platen, a movable collating table, means for releasably holding said platen and the feed-rolls spaced apart to permit work-pieces introduced between the platen and the feed-rolls to be collated on the table, means operable by motion directly imparted to said table by the hands of the operator, to cause release of the spacing means and thereby permit the platen and the feed-rolls to grip between them the collated work-pieces, and a releasable latch for maintaining said platen and the feed-rolls in such work-piece-gripping relation.

3. In a typewriting machine, in combination, a platen, feed-rolls against which the platen normally bears, a collating table mounted for movement with the platen toward and away from the feed-rolls, means for releasably holding said platen and the feed-rolls spaced apart to permit work-pieces introduced between said platen and the feed-rolls to be collated on the table, and means operable by motion directly imparted to said table toward the feed-rolls, to cause release of the spacing means and thereby permit the platen and the feed-rolls to grip between them the collated work-pieces.

4. In a typewriting machine, in combination, a platen, a movable frame in which the platen is mounted, feed rolls against which the platen normally bears, a collating table mounted on said frame for movement with the platen toward and away from the feed-rolls, releasable means for holding said frame in position to space the platen from the feed-rolls to permit work-pieces introduced between said platen and the feed-rolls to be collated on the table, and means operable upon grasping and moving the table toward the feed-rolls, to cause release of the spacing means and thereby permit the collated work-pieces to be gripped between said platen and the feed-rolls.

5. In a type-writing machine, in combination, a platen, feed-rolls, a movable frame in which the platen is mounted, a collating table and a side-gage mounted on said frame for movement with the platen toward and away from the feed-rolls, releasable means for holding said frame in position to space the platen from the feed-rolls to permit work-pieces to be collated on the table and gaged against the side-gage, means operable upon grasping the table and moving the same toward the feed-rolls, to cause release of the spacing means so as to allow the collated work-pieces to be gripped between the platen and the feed-rolls, and a releasable latch for holding said frame in position to maintain said platen and the feed-rolls in such work-piece-gripping relation.

6. In a typewriting machine, in combination, a carriage, a platen-carrying frame on the carriage, a lug carried by the frame, feed-rolls beneath the platen, said frame being displaceable to move the platen to or away from the feed-rolls, and a detent engaging the lug, whereby to hold the platen in normal position against the feed-rolls, said detent including a notch for the reception of said lug, whereby to space the platen slightly above the feed-rolls to permit collation of work-pieces around the platen, said detent also including means for causing said lug to become released from the notch upon pressure being applied to said frame to move the platen in the direction of the feed-rolls.

7. In a typewriting machine, in combination, a carriage, a platen-carrying frame on the carriage, a collating table carried by the frame, feed-rolls beneath the platen, said

frame being displaceable to move the platen to or away from the feed-rolls, a pin mounted on said frame, and a detent engageable with said pin, whereby to hold the platen normally against the feed-rolls, said detent having a recess for the reception of said pin, whereby the frame holds the platen slightly above the feed-rolls to permit free adjustment of work-pieces around the platen for collation on said table, said detent also including means for causing said pin to become released from the recess upon pressure being applied to the table to move the platen in the direction of the feed-rolls, the detent thereafter effecting engagement with the frame to hold the platen in its normal position against the feed-rolls.

8. In a typewriting machine, in combination, a carriage, a platen-carrying frame on the carriage, feed-rolls beneath the platen, said frame being displaceable to move the platen to or away from the feed-rolls, a collating table carried by the frame, a side-gage carried by said collating table, a pin mounted upon said frame, and a detent normally engaging around said pin to hold the platen against the feed-rolls, said detent including a notch disposed above the normal position of the pin, the notch being effective to intercept and detain the pin during movement of the frame to normal typing position, whereby said detent supports the frame, so as to hold the platen slightly above the feed-rolls and thereby permit work-pieces to be collated on the table and brought to position against the side-gage, said detent also including means for causing said pin to become automatically released from the notch upon pressure being applied to the table to move the platen in the direction of the feed-rolls.

9. In a typewriting machine, in combination, a carriage, a platen-carrying frame on the carriage, a collating table carried by the frame, feed-rolls beneath the platen, said frame being displaceable to move the platen to or away from the feed-rolls, a pin mounted on said frame, a releasable detent, and resilient means urging said detent toward the path of the pin, whereby said detent engages said pin to hold the platen against the feed-rolls, said detent including a notch for engagement by said pin, whereby the frame is releasably held in position with the platen slightly separated from the feed-rolls, so that work-pieces may be adjusted around the platen and collated on said table, the detent also including means for causing the pin to become released from the notch against the action of said resilient means, upon pressure being applied to the frame to move the platen in the direction of the feed-rolls, the detent becoming effective thereafter to engage the pin to hold the platen against said feed-rolls.

10. In a typewriting machine, in combination, a carriage, a platen-carrying frame swingable on the carriage, feed-rolls, a pin on the platen-carrying frame, a finger-piece pivoted upon the carriage and having a notch and a hooked portion, and resilient means for holding said finger-piece in such position that, when said platen-carrying frame is swung toward the feed-rolls, said pin engages the notch to hold the platen slightly above the rolls, and, upon pressure applied to the platen in the direction of the rolls, the pin causes the finger-piece to automatically release the frame so as to permit the platen to meet the rolls and the hooked portion of said finger to engage around the pin.

11. In a typewriting machine, in combination, a carriage, a platen-carrying frame swingable on the carriage, feed-rolls, a pin carried by the platen-frame, a finger-piece pivoted upon the carriage adjacent one end thereof and having a notch with a rounded lower edge and a hooked portion beneath the notch, and releasable means for yieldingly holding said finger-piece in such position that, when said platen-carrying frame is swung toward the feed-rolls, said pin engages the notch to hold the platen slightly above the rolls, and, upon pressure applied to the frame in the direction of the rolls, the pin rides over the rounded lower edge of the notch and releases the frame so as to permit the platen to reach the feed-rolls and the hooked portion of the finger-piece to engage around the pin.

12. In a sheet-collating and typing machine, the combination with a platen and a platen-frame, of a collating table at the delivery side of the platen, said collating table depressibly mounted on the platen-frame, and means called into action by the depression of said table for clamping the sheets when collated.

13. In a sheet-collating and typing machine, the combination with a platen and a platen-frame, of a collating table at the delivery side of the platen, said collating table depressibly mounted on the platen-frame, and means called into action by the depression of said table for clamping the collated sheets against the platen.

14. In a sheet-collating and typing machine, the combination with a platen and a platen-frame, of a collating table at the delivery side of the platen, said collating table depressibly mounted on the platen-frame, means called into action by the depression of said table for clamping the sheets when collated, and releasable means for detaining the clamping means in effective position.

15. In a front-strike sheet-collating and typing machine, the combination with a platen and a platen-frame, of a hinged intermediate frame whereby said platen is

movably supported upon said platen-frame, a collating table movable with said hinged frame, means to hold the collated work-sheets upon the platen, and releasable means for holding said platen either in position for coaction with said work-holding means or away therefrom, the collating table being effective when moved from one position to another, to operate said releasable means to release said platen from its position away from said work-holding means to position for coaction therewith.

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