Sept. 8, 1931. F. BECKER 1,821,922

TYPEWRITING MACHINE

Filed Nov. 14, 1927 2 Sheets-Sheet 1

Fig. 3.

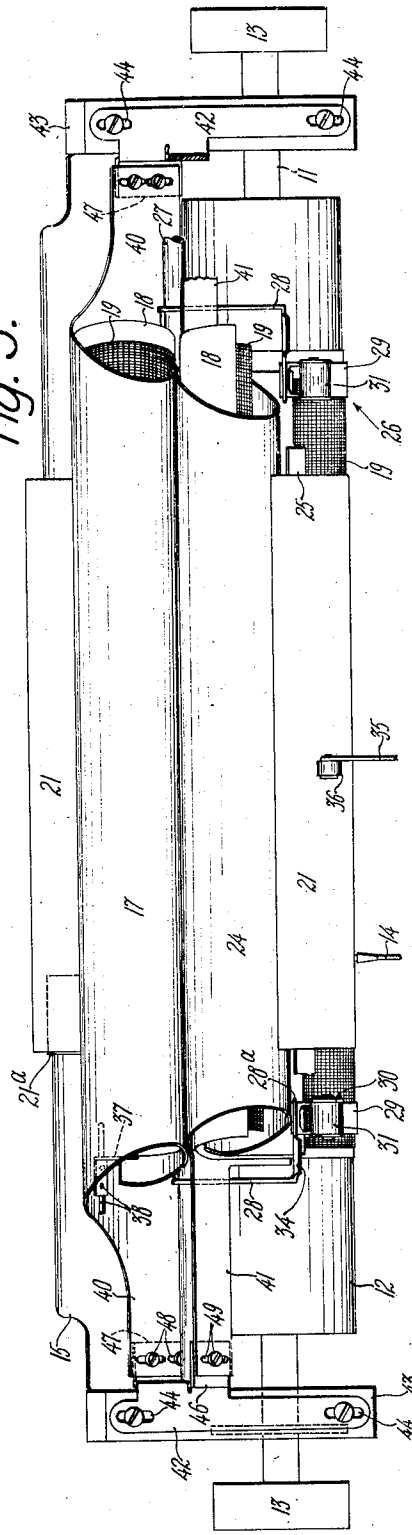


Fig. 1.

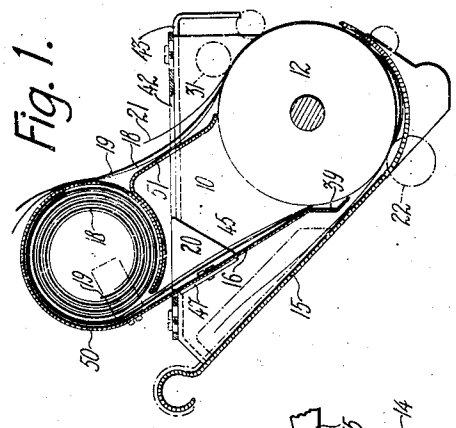
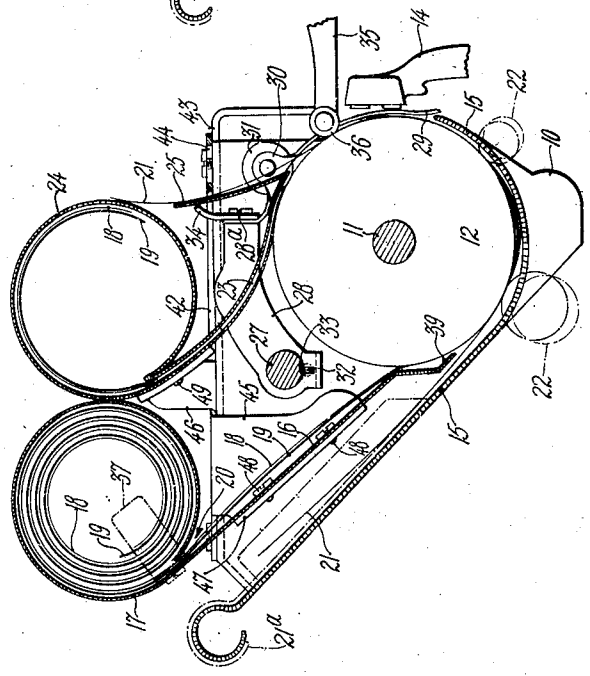


Fig. 2.



Inventor:
Fred Becker
by D. C. Fitzpatrick
Attorney.

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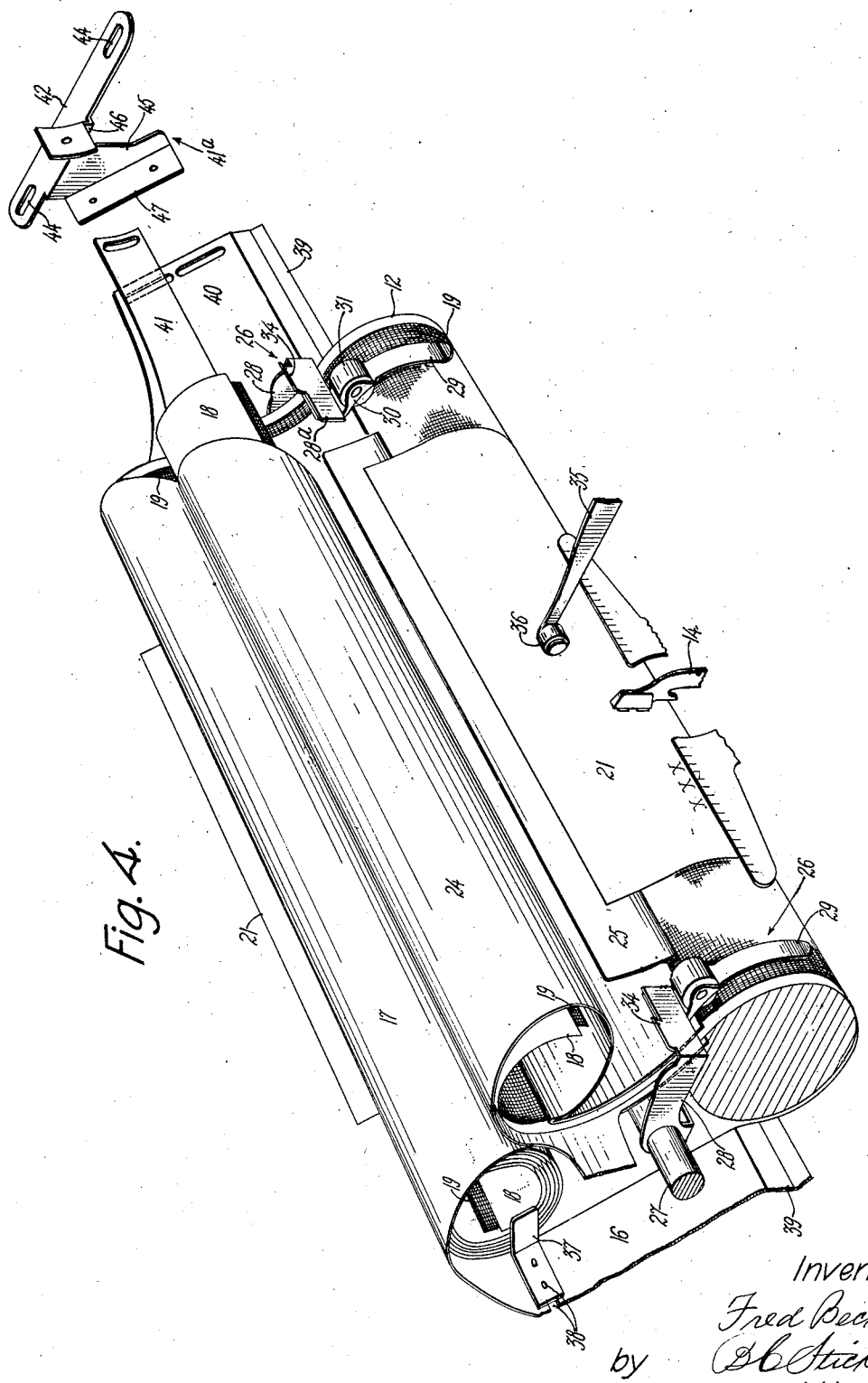


Fig. 4.

Inventor:
Fred Becker
by B. C. Strickney
Attorney.

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1,821,922

UNITED STATES PATENT OFFICE

FRED BECKER, OF BUFFALO, NEW YORK, ASSIGNOR TO UNDERWOOD ELLIOTT FISHER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE

TYPEWRITING MACHINE

Application filed November 14, 1927. Serial No. 233,057.

This invention relates to paper-handling devices on typewriting machines, and particularly to improvements on paper-tables such as are being used on standard machines for the purpose of feeding superimposed work-sheets from independent sources, said tables being employed concurrently, and the sheets from one table being superimposed at or near the platen upon the sheet or sheets from the other table.

The occasion for such independent feed of work-sheets to the platen arises, for instance, where it is desired to use and to retain in the machine a record-sheet on which to accumulate the entries made on a succession of individual bill or statement sheets. To this end, two tables, one in back of the other and downwardly converging towards the platen, are provided at the rear of the platen. A relatively wide and long record-sheet assembled with a carbon from the forward table, and an individual narrower and shorter statement-sheet from the rearmost table, are positioned and fed around the platen for writing. After passing the typing line, the sheets may be separately delivered by suitable means.

A usual set of pressure feed-rolls may be released in order to remove a written statement, while other means are effective to independently hold the combined record-sheet and carbon in place, i. e., securely hugged around the platen, so that another statement-sheet may be inserted at the rear, and freely positioned for another entry upon the record-sheet.

With normal construction of the paper-tables the large ends of the record-sheet will rearwardly overhang the paper-tables, and are liable to interfere with convenient and quick insertion of the small statement-sheets, and to cause the record-sheet to be torn or soiled. It furthermore is troublesome to insert properly a plurality of sheets having a length as great as said record-sheet.

To overcome these objections a feature of the invention provides, in conjunction with the conventional paper-guides extending in back and around the lower part of the platen, a second or auxiliary paper-table which carries at the top a receptacle or tube-member to receive therein a rolled-up record-sheet, which, through a slit-like opening, may be led downwardly upon the table, and, together with the statement-sheet, or the like, supplied from the rear paper-guide, be fed around the platen, as indicated above. Evidently, this compact arrangement will not only allow convenient and unobstructed insertion of the individual statement-sheets at the rear, and offer full protection to the record-sheet, but, due to the record-roll being easily positioned within the tube relatively to the platen, it will expedite the proper insertion of its leading edges under the platen.

Another feature takes care of the delivery end of the record-sheet by leading the same upwardly and rearwardly through a narrow chute from adjacent the typing line tangentially into another tubular-shaped container. The rotating platen, therefore, will draw the paper from the rearward tube, causing it to unroll, while pushing the leading edge through said chute into the second or front tube and into roll-form again. The statement-sheet, however, may be caused to separate from the record-sheet when the former is being brought to pass a special deflector-plate or collating table in front of said chute.

In the preferred embodiment of the invention, the rear as well as the front tubular member are endwise combined upon brackets to make them a unit shaped for ready attachment to standard machines. Each of said record-holding parts again is preferably bent out of a single piece of sheet-metal and mounted upon said brackets by screw-and-slot connections for proper adjustment relatively to and for co-operation with the platen.

Other features and advantages will hereinafter appear.

In the accompanying drawings,

Figure 1 is a cross-sectional elevation, showing the novel auxiliary table being attached to the carriage-frame of an Underwood machine and being formed with a tubular record-sheet-holder integral with a forward collating table for paper-delivery.

Figure 2 shows, in addition to said auxil-

iary table of Figure 1, a similar tubular sheet-metal structure to receive the delivery end of the record-sheet.

Figure 3 is a top view of the paper-feeding and guiding elements, substantially taken from Figure 2.

Figure 4 is a fractional perspective of detached parts, showing the record-handling elements, and more clearly constructive details.

A carriage-frame of an Underwood typewriter includes side plates 10, which carry journaled therein the shaft 11 of a platen 12, said shaft terminating in usual finger-wheels 13 for platen-rotation. A type-bar 14 in printing position, indicates the front of the platen. The side plates are shown to be connected by a usual paper-guide or apron 15 extending back of the platen and around the lower part thereof. For special operation of the machine, such as herein intended, the apron will serve to feed a succession of individual statement-sheets or bills to the platen, which are to be duplicated upon a continuous strip or record-sheet, which may be individually fed to the platen by means of an auxiliary paper-table 16, which extends in front of said apron 15 and also at the rear of the platen. The auxiliary table is made from sheet-metal, its upper end being curved to form a tubular section 17, which is to receive a rolled-up record-sheet 18, together with an assembled carbon-sheet 19. The circular curve of the tubular section 17 does not close up entirely against the auxiliary table, but leaves a clearance 20 to permit the record-sheet and carbon to be passed downwardly upon the table to join for combined feed around the platen, a statement-sheet 21 coming down from the rearward table, upon which it may be positioned by a usual side gage 21a. The pack of sheets is advanced by means of usual feed-rolls 22 co-operating with the rotating platen, and, after leaving the guidance of the apron 15, is passed across the typing line under the control of further guiding means presently to be described.

The delivery end of the record sheet or sheets is thus guided from the apron across the typing line to enter a narrow chute 23 thereabove, said chute being made of sheet-metal to tangentially join into a record-receiving sheet-metal tube 24 with which it may be integrally built. In the course of operation, the record-sheet is pushed through said chute upwardly into said receiving chute to be loosely rolled up again, while the individual statement-sheet is separated from the record-sheet at the chute-intake when it is forwardly deflected by a deflector-plate or collating table 25, the latter preferably also formed integral with the sheet-metal chute. The above-mentioned means to guide the paper across the typing line includes a mechanism 26 having movable paper-fingers, as usually found in the Underwood machine and shown effective in Figure 2 of the drawings. A rod 27, longitudinally of the platen-axis and a suitable distance rearwardly upwardly from the platen, is mounted in the side plates 10. Two arms 28 are swingably as well as longitudinally-slidably mounted upon said rod. Each arm has at its forward end a laterally-bent-over tab 28a to carry screwed thereon a paper-finger 29. The paper-finger, substantially following the curvature of the platen-circumference, extends forwardly and downwardly to proximity with the forward edge of the apron and slightly overlaps the same. The paper-finger, adjacent its upper part, has turned-up lateral ears 30 to carry journaled therein a guide-roll 31, which, through an opening in the paper-finger, contacts with the platen-surface to aid in properly conducting the paper thereon, and is resiliently held in effective position by a detent pin or member 32 provided in the rear end of said arm, said detent-member engaging in a groove 33 extending in and along the lower side of said rod 27. The tab 28a of said arm 28 may be formed with a curved part 34, to serve as a finger-piece for upward, swinging movement of the paper-fingers, that is, for movement to ineffective position (not indicated), thereby urging the detent-pin out of said groove. The paper-fingers are laterally slidable upon said rod and set for marginal engagement of the relatively-wide record-sheet. At the center part of the platen is fractionally indicated an arm 35, also known from the Underwood machine as being resiliently mounted upon the carriage-frame, and at its free end carrying a roller 36 to engage the platen for paper-guidance slightly above the typing line. This roller-carrying arm, which, in general, is also swingable away from the platen, serves, in the present operation of the machine, to locate the narrower statement-sheet, which is not gripped by the paper-fingers on its way beyond the typing line.

Following more closely the path of the work-sheets, it will be noted that the rolled-up record-sheet is located within the tube by a side gage 37, which, by screw-and-slot connection 38, is adjustably mounted thereon. The ends of the tubes are beveled, so that the ends of the record-sheet may partly project out of the tube-ends to allow the operator to watch the rolling and unrolling of the sheets and to conveniently handle the same. The lower end of the auxiliary table is formed with a lip 39 extending into close proximity with the rear of the platen and effective to exert a permanent drag upon the record-sheet as the same is advanced upon the rotating platen, and to support the record-sheet out of the path of the sheet on the rearmost table. This lip 39 at the rear, in conjunction with the paper-fingers in front of the platen, serves to keep the record-sheet closely hugged

around a large part of the platen-circumference. Therefore, when the lower feed-rolls are released, the record-sheet will not shift upon the platen nor interfere with a statement-sheet when the same is loosely inserted and aligned after a written statement is removed. It will also be understood that, with proper construction of the tubes, the record-sheet, except for a certain amount of friction which may be kept within proper limits, is not subjected to any injurious strain when moving through the machine, this being due to the absence of moving masses, as spools, or the like, connected to the paper.

Essential for proper operation of the novel record-holding device is its adjustable mounting upon the platen-carriage. From Figure 3 it will be seen that both tube-members have longitudinal extension-straps (40 and 41 respectively) at either end, by means of which they are endwise combined and mounted upon brackets 41ª of sheet-metal, both tube-members thus becoming a unit, which may be readily attached and adjusted to standard machines, as will be presently seen. Each bracket includes a body-strap 42, which is flatly mounted on a horizontal flange 43 at the top of the side plate 10. Each strap has a slot 44 at either end, and screws passing therethrough and threading into said flange of the side plate, so as to be adjustable transversely to the platen-axis. Each strap, furthermore, is integrally formed with a depending arm 45 and a rising arm 46, to support the rear and front tube-members respectively. The depending arm has a flange 47, which offers a forwardly and downwardly inclined surface, upon which to support the rear tube-member or auxiliary paper-table 16 by a double slot-and-screw connection 48, which allows adjustment of said auxiliary paper-table upwardly or downwardly on the slope, in such a manner as to control the clearance between the lip 39 and the platen-surface, according to varying thicknesses of the record sheet or sheets. The front tube-member or chute is supported in a similar way, that is, by a single slot-and-screw connection 49 upon said rising member 46.

Figure 1, as a modification, shows the principle of the novel device by only providing one paper-holding tube 50 upon the auxiliary paper-table, said tube being integrally formed with a plate 51 to serve as a collating table or shelf for the delivery end of the sheets.

It will be noted that the two web-containers are an assembled unit to be secured to the carriage-ends as a unit of mechanism; that the supply-roll container 17 is open at both ends, has a web-protecting wall at the rear thereof, and one or both front corners of the container are cut off or beveled forwardly to expose the edges of the web and disclose at a glance the amount of web remaining in the supply-container; that the web-receiving container is similarly beveled off at one or both corners to afford a finger-hold for gripping the rolled-up typed web and its carbon, for withdrawing the typed web from its container; that the supply-roll may be inserted through one open end of the container 17 and thrust therethrough against the web-locating stop 37 at the opposite end of the container by the pressure of the finger against the exposed edge of the roll; that the narrow chute 23 extends without interruption between the face of the platen and the container 24; that the chute 23 is open at both ends; that the two parallel walls of the chute prevent buckling of the platen-fed web between the platen and the container, which renders the web self-winding within the container; that the chute is arranged tangent to both platen and container to maintain a substantially straight line of thrust between them; and that the open ends of the container 24 and the open ends of the chute 23 provide for the endwise withdrawal of the typed rolled-up web as soon as the last line thereof is typed.

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, the combination with a revoluble platen and releasable feed-rolls for feeding around the platen a continuous tally-strip or record-sheet and a succession of individual original work-sheets to be copied upon said strip, of a tubular housing above and at the rear of the platen and in rigid relation to the platen-axis, said housing to receive the loosely rolled-up tally-strip to supply the same to the platen, means to conduct the tally-strip down to the platen, a table back of said tally-strip to independently supply said original work-sheets down to the platen to join the tally-strip for combined travel upon the platen, and means to independently hold said tally-strip in position upon the platen while the feed-rolls are released to allow an original work-sheet to be loosely positioned upon said tally-strip.

2. In a typewriting machine, the combination with a revoluble platen and releasable feed-rolls for feeding around the platen a continuous tally-strip or record-sheet and a succession of individual original work-sheets to be copied upon said strip, of a tube-member above and at the rear of the platen and mounted upon the platen-frame to receive the loosely rolled-up tally-strip to supply the same to the platen, means to conduct the tally-strip down to the platen, a table back of said tally-strip and encircling the lower part of the platen to independently supply said original work-sheets down to the platen to join the tally-strip for combined

travel upon said platen, means to conduct and hold the tally-strip upon the platen beyond the typing line, and an adjustable lip at the rear of the platen, said lip effective to keep the tally-strip out of the path of the individual work-sheet and to hold said tally-strip hugged around the platen, while the feed-rolls are released to allow an original work-sheet to be loosely positioned upon said tally-strip,

3. In a typewriting machine, in combination, a platen revolubly mounted in a platen-frame, releasable feed-rolls for feeding around the platen a continuous tally-strip or record-sheet and a succession of individual original work-sheets to be copied upon said tally-strip, a tubular housing which is located above and at the rear of the platen, and fastened upon said platen-frame and longitudinally of the platen-axis, to receive the loosely rolled-up tally-strip to supply the same to the platen, means to conduct said strip down to the platen, a table back of said tally-strip to independently supply the original work-sheet to the platen to join the tally-strip, means to conduct the combined sheets around the platen and beyond the typing line, means to separate an original work-sheet from the tally-strip after passing the typing line, another tubular housing also fast upon said platen-frame to receive the delivery end of the tally-strip to recoil the same, and means to conduct the tally-strip from adjacent the typing line and in flat condition into said last-mentioned housing, said rotating platen in conjunction with said tubular housing and conducting means effective to unroll the supply end of the strip and to recoil the delivery end thereof.

4. In a typewriting machine, in combination, a platen revolubly mounted in a platen-frame, releasable feed-rolls for feeding around the platen a continuous tally-strip or record-sheet and a succession of individual original work-sheets to be copied upon said tally-strip, a tubular housing which is located above and at the rear of the platen, and fastened upon said platen-frame and longitudinally of the platen-axis, to receive the loosely rolled-up tally-strip to supply the same to the platen, means to conduct said strip down to the platen, a table back of said tally-strip to independently supply the original work-sheet to the platen to join the tally-strip, means to conduct the combined sheets around the platen and beyond the typing line, means to separate an original work-sheet from the tally-strip after passing the typing line, another tubular housing also fast upon said platen-frame to receive the delivery end of the tally-strip to recoil the same, means to conduct the tally-strip from adjacent the typing line and in flat condition into said last-mentioned housing, and means to independently hold said tally-strip in position upon the platen to allow a following original work-sheet to be loosely inserted and aligned thereon.

5. In a typewriting machine, the combination with a platen revolubly mounted in a platen-frame, and releasable feed-rolls to feed around the platen a continuous strip or record-sheet assembled with a carbon, and a succession of individual original work-sheets to be copied upon said strip, of two paper-tables, one spaced forward of the other at the rear of the platen and mounted upon the platen-frame for separately conducting said strip and an individual work-sheet, respectively, to the platen, a tube-member provided at the top of the forward table to receive a loosely-coiled roll of said strip to supply the same down to the platen, means to conduct the sheets around the platen and upwardly beyond the typing line, another tube-member longitudinally of the platen-axis and also fast to the platen-frame, to receive the delivery end of the tally-strip to recoil the same, a narrow chute conducting the strip in flat condition from adjacent the typing line tangentially into said last-mentioned tube-member, a deflector-plate to separate the original sheet from the strip before the strip enters the chute, and means to independently hold said strip in position upon the platen to allow a following original work-sheet to be loosely inserted and aligned thereon.

6. In a typewriting machine, the combination with a revoluble platen mounted upon a platen-carriage, and releasable feed-rolls for feeding around the platen a relatively-wide tally-strip and a succession of narrower original work-sheets to be copied upon said strip, of a paper-table fast to the platen-carriage and extending back of the platen and encircling the lower part thereof to conduct said original work-sheets to the platen, a second table in front thereof and converging towards the first-mentioned table and the platen-surface, said second table having a tube at the top to receive a loosely-wound supply-roll of said tally-strip, a lip at the lower end of said second table effective to keep the downwardly-running tally-strip out of the path of the rearward original sheet until they join each other adjacent the platen-surface, said second paper-table as a whole adjustable so as to vary the clearance between said lip and the platen-surface, releasable guiding means normally engaging the exposed margins of the tally-strip to guide the same across the typing line upon the platen, said adjustable lip at the rear and said releasable guiding means at the front of the platen effective to hold the tally-strip closely around the platen while the feed-rolls are released for positioning an original sheet, releasable means to hold the center part of the paper upon the platen beyond the typing line, another tube also fast to the platen-

carriage to receive the delivery end of the tally-strip, and means to tangentially guide into said last-mentioned tube said tally-strip for recoiling the same.

7. In a typewriting machine, the combination with a revoluble platen journaled in a platen-frame, and releasable feed-rolls to feed around the platen a tally-strip and a succession of narrower original work-sheets to be copied upon said strip, of a usual paper-table to handle said original sheets, an attachment to facilitate handling of said tally-strip, said attachment including a slitted tube-member located above and at the rear of the platen and having a downward extension to supply the strip to the platen and out of the way of the original sheet supplied from said paper-table, another tube-member supported upon said platen-frame to receive the delivery end of the tally-strip to recoil the same, a narrow chute tangentially joining said tube-member and depending therefrom to the platen to guide therein the delivery end of said tally-strip, a deflector-plate at the chute-intake and fast thereto, to separate the original sheet from the tally-strip, and a bracket upon either side of the platen-frame to be adjustably mounted thereon, said brackets carrying adjustable thereon said tube-members, so as to make them a unit which is capable of proper co-operation with the platen, means to properly conduct the sheets around the platen and across the typing line, and means to independently hold the tally-strip in position upon the platen when the feed-rolls are released for positioning an original sheet.

8. In a typewriting machine, the combination with a platen-frame and a revoluble platen around which a work-sheet may be fed from the rear, of a container on said frame above said work-sheet for receiving a rolled-up record-sheet and overlying carbon-sheet longer than said work-sheet, said container having an opening through which said record-sheet and carbon-sheet may be conducted to the delivery side of said platen to underlie said work-sheet, a cylindrical, laterally disposed receptacle on said frame above said platen for receiving said record-sheet as it is typed, to prevent it interfering with the feeding of additional work-sheets to said platen while said record-sheet remains in the machine, and means for thrusting said record-sheet and said carbon-sheet together into said container and rerolling the sheets therein, said means including, in combination, two aligned feed-rolls engaging said record-sheet against said platen above the printing line, a chute for said record-sheet, the lower mouth of the chute being tangentially disposed relatively to said platen slightly to the rear of said feed-rolls, said chute having a smooth bottom and a smooth top member spaced apart a distance slightly exceeding the combined thickness of said sheet and carbon-sheet, the upper mouth of said chute being tangentially disposed relatively to the inner periphery of said cylindrical container.

9. A paper-web container mounted upon the platen-carriage of a typewriting machine and including a pair of tubular housings mounted one forwardly of the other over the platen, one tube thereof being adapted to enclose a rolled-up web of paper to be fed around the platen, and the other tube being adapted to receive the same web to be rolled up therein by the sheet-advancing action of the platen, the planes of the ends of the tubes being inclined to the axes thereof and converging forwardly, to expose the side edges of the web rolled up in one housing and to afford a finger-hold upon the rolled-up web in the other housing.

FRED BECKER.