Jan. 17, 1956 W. HASELMEIER 2,731,125

TYPEWRITER FRONT-FEED ATTACHMENT

Filed March 11, 1952

FIG. 1

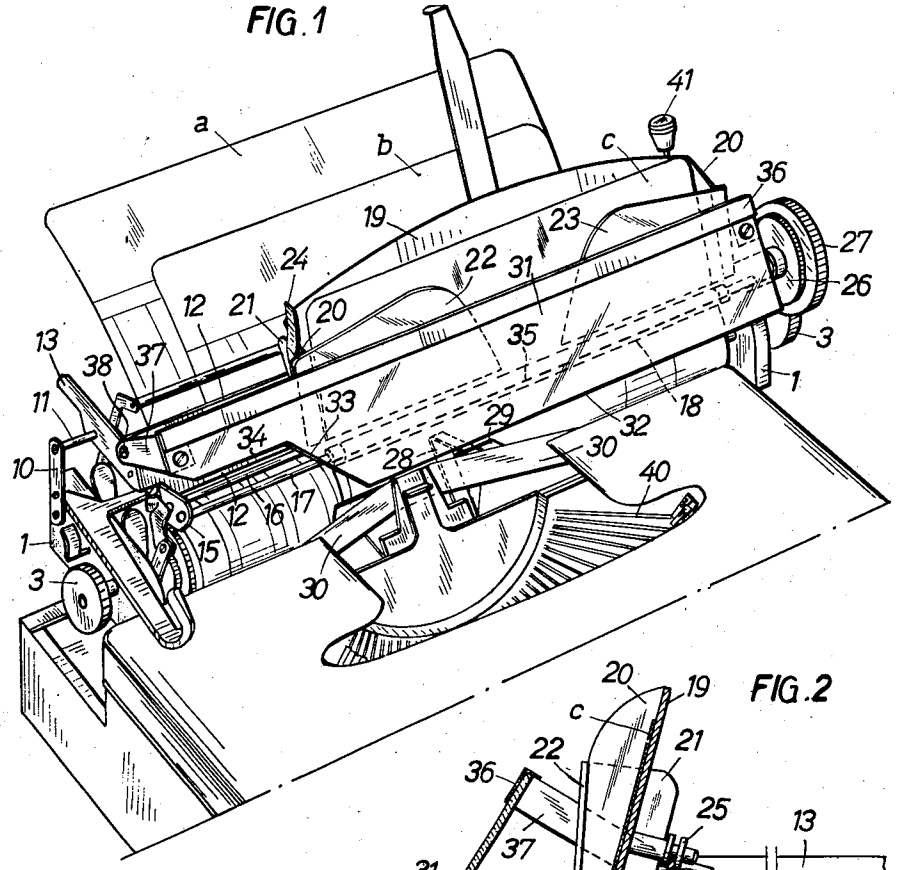


FIG. 2

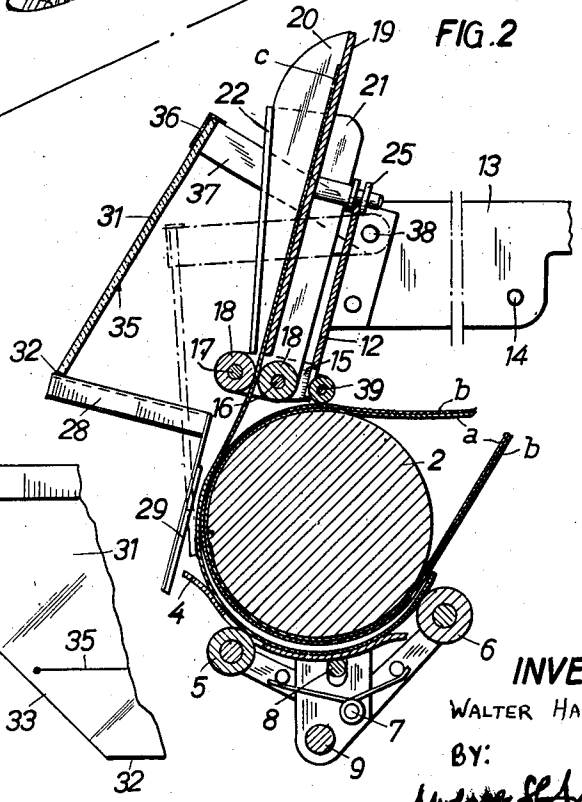
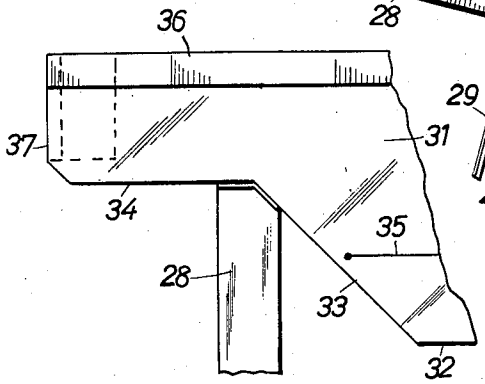


FIG. 3



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TYPEWRITER FRONT-FEED ATTACHMENT

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Claims priority, application Switzerland May 2, 1951

12 Claims. (Cl. 197—128)

My present invention relates to an auxiliary front feed attachment for typewriting business machines, and is primarily intended for carrying out book-keeping operations. The main object of my present invention is to provide means permitting of properly introducing, in a comparatively simple manner, a front sheet which is to be written on.

I attain this and related objects with the aid of the typewriter book-keeping attachment shown, by way of example, in the accompanying drawing, in which—

Fig. 1 shows a perspective view of a portion of typewriter, known per se, provided with the attachment,

Fig. 2 drawn to a larger scale represents a cross-section through the upper paper guide, and

Fig. 3 shows a portion of the guide plate in coaction with a fixed stop.

The carriage **1**, which is movably guided on the typewriter frame, carries the platen **2** which is rotatable by means of two knobs **3**, the sheet guide **4** (Fig. 2) associated with the lower platen zone, and the sheet-engaging and sheet-feeding rollers **5** and **6**. As known in the art, the latter through spring-loaded arms are supported on a common axle pin **7** and are swingable via an auxiliary arm (not shown) which is fixed to the shaft **8** and connected to an operating lever. The sheet guide **4** is guided vertically movably (not shown) on a rod **9**.

An upright **10** is rigidly secured to both ends of the carriage **1**, only the left-hand upright being visible in Fig. 1. Each upright **10** carries a horizontal pin **11** to receive a supporting cross bar which comprises a center piece **12** which through its bent-off end pieces is riveted to two arms 13. The latter, of which only one is visible in Fig. 1, serve for detachably connecting the cross bar **12**, **13** to the said two horizontal pins **11**. For such purpose, the arm **13** shown has a hole **14** (Fig. 2) for engaging the pin **11**, whilst the second arm **13** (not shown) is recessed for engaging the second pin **11** (not shown) and has a pawl to be engaged with said pin in a notch provided thereon.

The web **12** of the cross bar has a lower portion which is bent-off forwardly so as to form two supporting lugs **15** of which only the left-hand one is visible in Fig. 1. Two parallel rods **16**, **17** are mounted in the two lugs **15** in parallel relation to the platen **2**. On each of the rods **16**, **17** a feed roller **18** is mounted axially movable but non-rotatable. The numeral **19** designates a rear wall of that sheet-guide portion which is movable longitudinally of platen **2**, being guided on the rods **16**, **17** through brackets **21** which are secured to its side-walls **20**. Between the two brackets **21** are disposed the two rollers **18** which are of suitable length and which thus partake of the movements of slide **19—21**. The latter comprises moreover two front wall portions **22**, **23** made of transparent material. Between these two portions a central space is left free, and the portions in a downward direction approach the rear wall **19**. To the left-hand bracket **21** (Fig. 1) is rigidly secured an upwardly projecting grip **24** which serves for moving the slide **19—21**. The latter is braced on the upper edge of the cross bar web **12**

by means of a top roller **25** (Fig. 2). To the right-hand ends (Fig. 1) of the rods **16**, **17** are secured toothed wheels (not shown) which mesh with each other. The toothed wheel of the front rod **17** also meshes with a drive pinion **26** to which is secured a knob **27** by means of which the two feed rollers **18** may be simultaneously rotated.

On the typewriter frame is provided a fixed stop **28** formed by an angle and situated within the range of a part **29**, which carries the conventional line scale, one leg of the angle stop **28** being rigidly secured to said part **29** or another part. In Fig. 1, the numeral **30** designates the ribbon close to the operating range of which the stop **28** is disposed. The free end of the latter, which is turned away from the platen **2**, coacts with the lower longitudinal edge of a paper guide plate **31** which is elongated in the direction of the platen. The said lower longitudinal edge of paper guide plate **31** comprises a straight portion **32** (Fig. 3) which via an inclined portion **33** is connected to a portion **34**. The latter is set back from and much shorter than the portion **32** and extends parallel thereto. The angle enclosed by the two marginal portions **33**, **34** is equal to that enclosed by the two legs of the angle stop **28**. The guide plate **31** which on its rear side has a line mark or control line **35**, through its upper longitudinal margin is secured to a central piece **36** which, together with two side arms **37**, forms a swing bracket. The arms **37** of the latter are pivoted on screws **38** to the arms **13** of the cross bar **12**, **13**.

Fig. 2 shows, in solid lines, that position of the swingable guide plate in which the plate **31** is supported on the stop **28** through its lower marginal portion **32**, and in dash-and-dot lines that position of the guide plate in which the plate **31** is supported on the stop **28** through its lower marginal portion **34**. In the first position, the lower edge of the plate **31** is spaced a considerable distance from the platen **2**, but in the second position, only a little space is left between the guide plate and platen, so that at this point only a gap is left, namely an entrance for passing the sheet therethrough. The cross bar **12**, **13** as shown in Fig. 2 is supported on the platen **2** through a roller **39** which is rotatably mounted on the rear side of the web **12**.

Two superposed book-keeping sheets *a* and *b* are applied to the platen **2**, as shown in Fig. 2, of which *a* represents for example a journal sheet, and *b* an account sheet. These two sheets pass underneath the supporting roller **39**. Within the range of platen **2**, the sheets *a* and *b* are blanketed by a front account sheet *c* which bears on the rear wall **19** of slide **19—21** which serves as a guide for the sheet *c* on introducing the same and also afterward, and passes between the two feed rollers **18**. For copying purposes, carbon sheets (not shown) are disposed between the three book-keeping sheets *a—c*. To introduce the front sheet *c*, the guide plate **31** has to occupy the position shown in Fig. 2 in dash-and-dot lines in which its lower marginal portion **32** is disposed close to the adjacent front margin of the lower sheet guide **4**, which facilitates the proper introduction of the sheet *c*. Such position of the guide plate **31** is automatically given when the carriage **1** occupies a corresponding position in its track so that the plate **31** through its set-back lower margin **34** is seated on the stop **28**. Such is the case in the right-hand terminal position (Fig. 1) of carriage **1**. In this position, the plate **31** in the zone of its lower margin **34** leaves free a typing field for the type-levers **40**. Within the range of such field, the left-hand margin of the base or journal sheet *a* and also of the account sheet *b* of which the margin is set back from that of sheet *a* may be typed upon by the type-levers.

When the carriage **2** is moved from the initial position with respect to Fig. 1 to the left, the inclined

marginal portion 33 of plate 31 abuts against the fixed stop 28 so that the plate 31 and its swing bracket 36, 37 is swung from the lower position shown in dash-and-dot lines in Fig. 2 to the upper position shown in solid lines. In such latter position, the plate is ineffective, and its lower margin is situated entirely outside the track of the type-levers 40.

The slide 19, 21 movable on the carrier cross bar 12, 13 may be set, longitudinally of web 12, alternatively to either of two relative positions, according to which setting position, with respect to its column, is desired for the front book-keeping sheet *c* relatively to the columns of the two other book-keeping sheets *b* and *a*. Such setting allows of performing book-keeping operations according to a particular system. For the purpose of alternatively setting the slide 19—21 in the sense described, a hinged spacing rod (not shown) is disposed on the rear side of web 12. Said spacing rod contains notches for engaging the free end of the pin which carries the guide roller 25 (Fig. 2). By depressing a knob 41 shown in Fig. 1, said spacing rod may be swung downwardly so as to disengage the said pin therefrom, whereupon the slide 19—21 through a tension spring is moved from one setting position to the other. The slide 19—21 by means of grip 24 provided thereon, may be moved in a direction opposite to the direction of said movement.

The attachment described may be mounted not only on existing typewriters but also on other business machines adapted for typewriting operations. The attachment may be readily removed when not used.

The details of the attachment may be modified, of course. In certain cases, only the vertically movable guide plate 31 may be used, which co-acts with the fixed stop 28.

What I claim as new and desire to secure by Letters Patent, is:

1. In a typewriter having a frame, a shiftable carriage and a rotatable platen mounted on the carriage for movement therewith, in combination, support means mounted on the carriage; an elongated sheet guide plate pivotally mounted on said support means for turning about an axis parallel to the axis of the platen, said sheet guide plate being arranged in front of the platen spaced therefrom and extending in the direction of the length thereof, said guide plate being turnable about its pivot axis between a raised inoperative position with its lower edge spaced from said platen and a lowered operative position with its lower edge closely adjacent to the platen for guiding the bottom edge of a sheet placed between said guide plate and the platen against and under the same so as to slide the sheet into writing position, the lower edge of said sheet guide plate being of stepped form and including a lower bottom edge portion, a higher bottom edge portion and a connecting edge portion extending between said bottom edge portions and arranged at obtuse angles thereto; and an elongated member fixed relative to the typewriter frame arranged below and in contact with said stepped lower edge of said sheet guide plate and coacting therewith for turning said sheet guide plate about its pivot axis automatically between the operative and inoperative positions thereof during movement of said sheet guide plate with the carriage while the latter is being shifted.

2. In a typewriter having a frame, a shiftable carriage and a rotatable platen mounted on the carriage for movement therewith, in combination, support means mounted on the carriage; elongated sheet guide means pivotally mounted on said support means for turning about an axis parallel to the axis of the platen, said sheet guide means being arranged in front of the platen spaced therefrom and extending in the direction of the length thereof, said guide means being turnable about its pivot axis between a raised inoperative position with its lower edge spaced from said platen and a lowered operative position with its lower edge closely adjacent to the platen for guiding the bottom edge of a sheet placed between said guide means and the platen against and under the same so as to slide the sheet into writing position; first actuating means on said sheet guide means movable therewith; second actuating means fixed relative to the typewriter frame coacting with said first actuating means on said sheet guide means for turning said sheet guide means about its pivot axis automatically between the operative and inoperative positions thereof during movement of said sheet guide means with the carriage while the latter is being shifted; and sheet carrier means mounted on said suport means above the platen rearward of said sheet guide means for carrying the upper portion of a sheet having its bottom edge placed between said sheet guide means and the platen.

3. In a typewriter having a frame, a shiftable carriage and a rotatable platen mounted on the carriage for movement therewith, in combination, support means mounted on the carriage; elongated sheet guide means pivotally mounted on said support means for turning about an axis parallel to the axis of the platen, said sheet guide means being arranged in front of the platen spaced therefrom and extending in the direction of the length thereof, said guide means being turnable about its pivot axis between a raised inoperative position with its lower edge spaced from said platen and a lowered operative position with its lower edge closely adjacent to the platen for guiding the bottom edge of a sheet placed between said guide means and the platen against and under the same so as to slide the sheet into writing position; first actuating means on said sheet guide means movable therewith; second actuating means fixed relative to the typewriter frame coacting with said first actuating means on said sheet guide means for turning said sheet guide means about its pivot axis automatically between the operative and inoperative positions thereof during movement of said sheet guide means with the carriage while the latter is being shifted; and sheet carrier means mounted on said support means above the platen rearward of said sheet guide means for carrying the upper portion of a sheet having its bottom edge placed between said sheet guide means and the platen, said carrier means being axially movable along the length of the platen for arranging a sheet adapted to be carried thereby in different writing positions axially spaced along the platen.

4. In a typewriter having a frame, a shiftable carriage and a rotatable platen mounted on the carriage for movement therewith, in combination, support means mounted on the carriage; elongated sheet guide means pivotally mounted on said support means for turning about an axis parallel to the axis of the platen, said sheet guide means being arranged in front of the platen spaced therefrom and extending in the direction of the length thereof, said guide means being turnable about its pivot axis between a raised inoperative position with its lower edge spaced from said platen and a lowered operative position with its lower edge closely adjacent to the platen for guiding the bottom edge of a sheet placed between said guide means and the platen against and under the same so as to slide the sheet into writing position; first actuating means on said sheet guide means movable therewith; second actuating means fixed relative to the typewriter frame coacting with said first actuating means on said sheet guide means for turning said sheet guide means about its pivot axis automatically between the operative and inoperative positions thereof during movement of said sheet guide means with the carriage while the latter is being shifted; sheet carrier means mounted on said support means above the platen rearward of said sheet guide means for carrying the upper portion of a sheet having its bottom edge placed between said sheet guide means and the platen, the bottom edge of said carrier means being disposed adjacent the upper front portion of the platen; and sheet feed means mounted on said support means arranged adjacent and extending along the bottom edge of said sheet carrier means for conducting the sheet

adapted to be carried by said carrier means between the platen and said sheet guide means.

5. In a typewriter having a frame, a shiftable carriage and a rotatable platen mounted on the carriage for movement therewith, in combination, support means mounted on the carriage; elongated sheet guide means pivotally mounted on said support means for turning about an axis parallel to the axis of the platen, said sheet guide means being arranged in front of the platen spaced therefrom and extending in the direction of the length thereof, said guide means being turnable about its pivot axis between a raised inoperative position with its lower edge spaced from said platen and a lowered operative position with its lower edge closely adjacent to the platen for guiding the bottom edge of a sheet placed between said guide means and the platen against and under the same so as to slide the sheet into writing position; first actuating means on said sheet guide means movable therewith; second actuating means fixed relative to the typewriter frame coacting with said first actuating means on said sheet guide means for turning said sheet guide means about its pivot axis automatically between the operative and inoperative positions thereof during movement of said sheet guide means with the carriage while the latter is being shifted; sheet carrier means mounted on said support means above the platen rearward of said sheet guide means for carrying the upper portion of a sheet having its bottom edge placed between said sheet guide means and the platen, said carrier means being axially movable along the length of the platen for arranging a sheet adapted to be carried thereby in different writing positions axially spaced along the platen, the bottom edge of said carrier means being disposed adjacent the upper front portion of the platen; and sheet feed means mounted on said support means arranged adjacent and extending along the bottom edge of said sheet carrier means for conducting the sheet adapted to be carried by said carrier means between the platen and said sheet guide means.

6. In a typewriter having a frame, a shiftable carriage and a rotatable platen mounted on the carriage for movement therewith, in combination, support means mounted on the carriage; elongated sheet guide means pivotally mounted on said support means for turning about an axis parallel to the axis of the platen, said sheet guide means being arranged in front of the platen spaced therefrom and extending in the direction of the length thereof, said guide means being turnable about its pivot axis between a raised inoperative position with its lower edge spaced from said platen and a lowered operative position with its lower edge closely adjacent to the platen for guiding the bottom edge of a sheet placed between said guide means and the platen against and under the same so as to slide the sheet into writing position; first actuating means on said sheet guide means movable therewith; second actuating means fixed relative to the typewriter frame coacting with said first actuating means on said sheet guide means for turning said sheet guide means about its pivot axis automatically between the operative and inoperative positions thereof during movement of said sheet guide means with the carriage while the latter is being shifted; sheet carrier means mounted on said support means above the platen rearward of said sheet guide means for carrying the upper portion of a sheet having its bottom edge placed between said sheet guide means and the platen, the bottom edge of said carrier means being disposed adjacent the upper front portion of the platen; and sheet feed means comprising a pair of adjacent elongated roller members mounted on said support means arranged adjacent and extending along the bottom edge of said sheet carrier means for conducting the sheet adapted to be carried by said carrier means between the platen and said sheet guide means.

7. In a typewriter having a frame, a shiftable carriage and a rotatable platen mounted on the carriage for movement therewith, in combination, support means mounted on the carriage; elongated sheet guide means pivotally mounted on said support means for turning about an axis parallel to the axis of the platen, said sheet guide means being arranged in front of the platen spaced therefrom and extending in the direction of the length thereof, said guide means being turnable about its pivot axis between a raised inoperative position with its lower edge spaced from said platen and a lowered operative position with its lower edge closely adjacent to the platen for guiding the bottom edge of a sheet placed between said guide means and the platen against and under the same so as to slide the sheet into writing position; first actuating means on said sheet guide means movable therewith; second actuating means fixed relative to the typewriter frame coacting with said first actuating means on said sheet guide means for turning said sheet guide means about its pivot axis automatically between the operative and inoperative positions thereof during movement of said sheet guide means with the carriage while the latter is being shifted; sheet carrier means mounted on said support means above the platen rearward of said sheet guide means for carrying the upper portion of a sheet having its bottom edge placed between said sheet guide means and the platen, the bottom edge of said carrier means being disposed adjacent the upper front portion of the platen, said carrier means being axially movable along the length of the platen for arranging a sheet adapted to be carried thereby in different writing positions axially spaced along the platen; and sheet feed means comprising a pair of adjacent elongated roller members mounted on said support means arranged adjacent and extending along the bottom edge of said sheet carrier means for conducting the sheet adapted to be carried by said carrier means between the platen and said sheet guide means.

8. In a typewiter having a frame, a shiftable carriage and a rotatable platen mounted on the carriage for movement therewith, in combination, support means mounted on the carriage; an elongated sheet guide plate pivotally mounted on said support means for turning about an axis parallel to the axis of the platen, said sheet guide plate being arranged in front of the platen spaced therefrom and extending in the direction of the length thereof, said guide plate being turnable about its pivot axis between a raised inoperative position with its lower edge spaced from said platen and a lowered operative position with its lower edge closely adjacent to the platen for guiding the bottom edge of a sheet placed between said guide plate and the platen against and under the same so as to slide the sheet into writing position; cam means on said sheet guide plate movable therewith; actuating means fixed relative to the typewriter frame coacting with said cam means on said sheet guide plate for turning said sheet guide plate about its pivot axis automatically between the operative and inoperative positions thereof during movement of said sheet guide plate with the carriage while the latter is being shifted; and sheet carrier means mounted on said support means above the platen rearward of said sheet guide plate for carrying the upper portion of a sheet having its bottom edge placed between said sheet guide plate and the platen.

9. In a typewriter having a frame, a shiftable carriage and a rotatable platen mounted on the carriage for movement therewith, in combination, support means mounted on the carriage; an elongated sheet guide plate pivotally mounted on said support means for turning about an axis parallel to the axis of the platen, said sheet guide plate being arranged in front of the platen spaced therefrom and extending in the direction of the length thereof, said guide plate being turnable about its pivot axis between a raised inoperative position with its lower edge spaced from said platen and a lowered operative position with its lower edge closely adjacent to the platen for guiding the bottom edge of a sheet placed between said guide plate and the platen against and under the same so as to slide the sheet into writing position, the lower edge of said

sheet guide plate being of stepped form and including a lower bottom edge portion, a higher bottom edge portion and a connecting edge portion extending between said bottom edge portions and arranged at obtuse angles thereto; an elongated member fixed relative to the typewriter frame arranged below and in contact with said stepped lower edge of said sheet guide plate and coacting therewith for turning said sheet guide plate about its pivot axis automatically between the operative and inoperative positions thereof during movement of said sheet guide plate with the carriage while the latter is being shifted; and sheet carrier means mounted on said support means above the platen rearward of said sheet guide plate for carrying the upper portion of a sheet having its bottom edge placed between said sheet guide plate and the platen.

10. In a typewriter having a frame, a shiftable carriage and a rotatable platen mounted on the carriage for movement therewith, in combination, support means mounted on the carriage; an elongated sheet guide plate pivotally mounted on said support means for turning about an axis parallel to the axis of the platen, said sheet guide plate being arranged in front of the platen spaced therefrom and extending in the direction of the length thereof, said guide plate being turnable about its pivot axis between a raised inoperative position with its lower edge spaced from said platen and a lowered operative position with its lower edge closely adjacent to the platen for guiding the bottom edge of a sheet placed between said guide plate and the platen against and under the same so as to slide the sheet into writing position, the lower edge of said sheet guide plate being of stepped form and including a lower bottom edge portion, a higher bottom edge portion and a connecting edge portion extending between said bottom edge portions and arranged at obtuse angles thereto; an elongated member fixed relative to the typewriter frame arranged below and in contact with said stepped lower edge of said sheet guide plate and coacting therewith for turning said sheet guide plate about its pivot axis automatically between the operative and inoperative positions thereof during movement of said sheet guide plate with the carriage while the latter is being shifted; sheet carrier means mounted on said support means above the platen rearward of said sheet guide plate for carrying the upper portion of a sheet having its bottom edge placed between said sheet guide plate and the platen, the bottom edge of said carrier means being disposed adjacent the upper front portion of the platen, said carrier means being axially movable along the length of the platen for arranging a sheet adapted to be carried thereby in different writing positions axially spaced along the platen; and sheet feed means mounted on said support means arranged adjacent and extending along the bottom edge of said sheet carrier means for conducting the sheet adapted to be carried by said carrier means between the platen and said sheet guide plate.

11. In a typewriter having a frame, a shiftable carriage and a rotatable platen mounted on the carriage for movement therewith, in combination, bracket means detachably secured to the carriage, said bracket means including a cross bar member arranged above and extending along the length of the platen and mounted on the carriage for pivoting about an axis parallel to the axis of the platen, said cross bar member being rollably supported on the platen; elongated sheet guide means pivotally mounted on said cross bar member of said detachable bracket means for turning about an axis parallel to the axis of the platen, said sheet guide means being arranged in front of the platen spaced therefrom and extending in the direction of the length thereof, said guide means being turnable about its pivot axis between a raised inoperative position with its lower edge spaced from said platen and a lowered operative position with its lower edge closely adjacent to the platen for guiding the bottom edge of a sheet placed between said guide means and the platen against and under the same so as to slide the sheet into writing position; first actuating means on said sheet guide means movable therewith; second actuating means fixed relative to the typewriter frame coacting with said first actuating means on said sheet guide means for turning said sheet guide means about its pivot axis automatically between the operative and inoperative positions thereof during movement of said sheet guide means with the carriage while the latter is being shifted; and sheet carrier means mounted on said cross bar member of said detachable bracket means above the platen rearward of said sheet guide means for carrying the upper portion of a sheet having its bottom edge placed between said sheet guide means and the platen.

12. In a typewriter having a frame, a shiftable carriage and a rotatable platen mounted on the carriage for movement therewith, in combination, bracket means detachably secured to the carriage, said bracket means including a cross bar member arranged above and extending along the length of the platen and mounted on the carriage for pivoting about an axis parallel to the axis of the platen, said cross bar member being rollably supported on the platen; elongated sheet guide means pivotally mounted on said cross bar member of said detachable bracket means for turning about an axis parallel to the axis of the platen, said sheet guide means being arranged in front of the platen spaced therefrom and extending in the direction of the length thereof, said guide means being turnable about its pivot axis between a raised inoperative position with its lower edge spaced from said platen and a lowered operative position with its lower edge closely adjacent to the platen for guiding the bottom edge of a sheet placed between said guide means and the platen against and under the same so as to slide the sheet into writing position; first actuating means on said sheet guide means movable therewith; second actuating means fixed relative to the typewriter frame coacting with said first actuating means on said sheet guide means for turning said sheet guide means about its pivot axis automatically between the operative and inoperative positions thereof during movement of said sheet guide means with the carriage while the latter is being shifted; and sheet carrier means mounted on said cross bar member of said detachable bracket means above the platen rearward of said sheet guide means for carrying the upper portion of a sheet having its bottom edge placed between said sheet guide means and the platen, said carrier means being axially movable on said cross bar member along the length of the platen for arranging a sheet adapted to be carried thereby in different writing positions axially spaced along the platen.

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