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Tröing

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[54] DEVICE FOR COMPOSING TEXT PORTIONS ON A BLANK SHEET IN ACCORDANCE WITH A LAY-OUT

[76] Inventor: **Ola Peter Tröing**, Slagelsegade 3, 2100 Copenhagen, Denmark

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[51] **Int. Cl.**.....**B41j 11/44**

[58] **Field of Search**....197/181.1, 181.2, 190, 133 R, 197/DIG. 9, 1, 127 R

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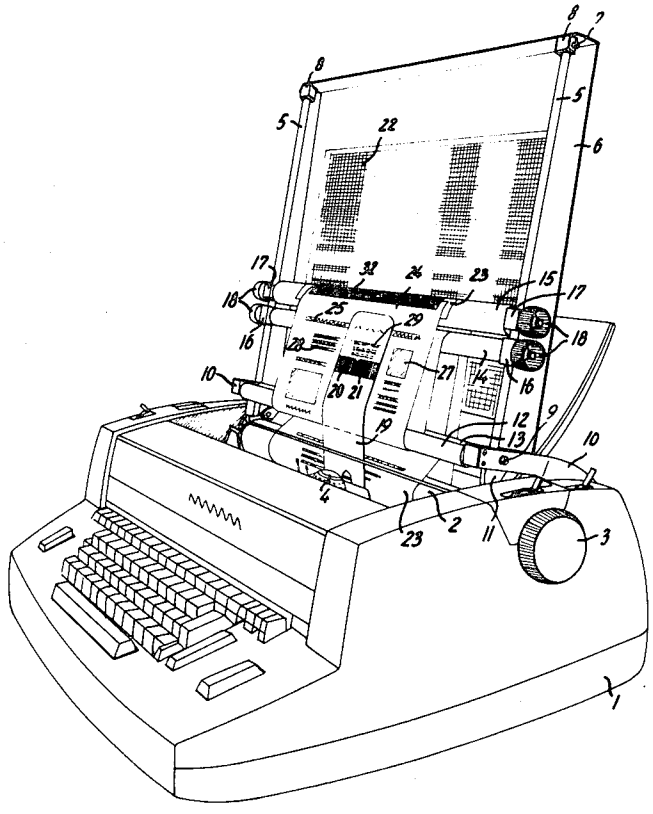
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Primary Examiner—Edgar S. Burr
Assistant Examiner—R. E. Suter
Attorney—Stevens, Davis, Miller & Mosher

[57] **ABSTRACT**

A device for use in connection with a typewriter to compose text portions on a blank sheet in accordance with a prepared lay-out. The device comprises a frame which can be mounted on the typewriter and in which one or more guide rollers are rotatably supported in parallel and adjustable relationship to the typewriter platen. The blank and lay-out sheets are temporarily connected together at their lower and upper edge, respectively, and the composite sheet thus formed is tracked over the platen and the guide roller or rollers. An indicator member connected to the typewriter in a predetermined relationship to its point of stroke or printing point, marks the location on the lay-out sheet which at any time corresponds to the location on the blank sheet where a type actuated by the opera-tor writes a character.

4 Claims, 3 Drawing Figures



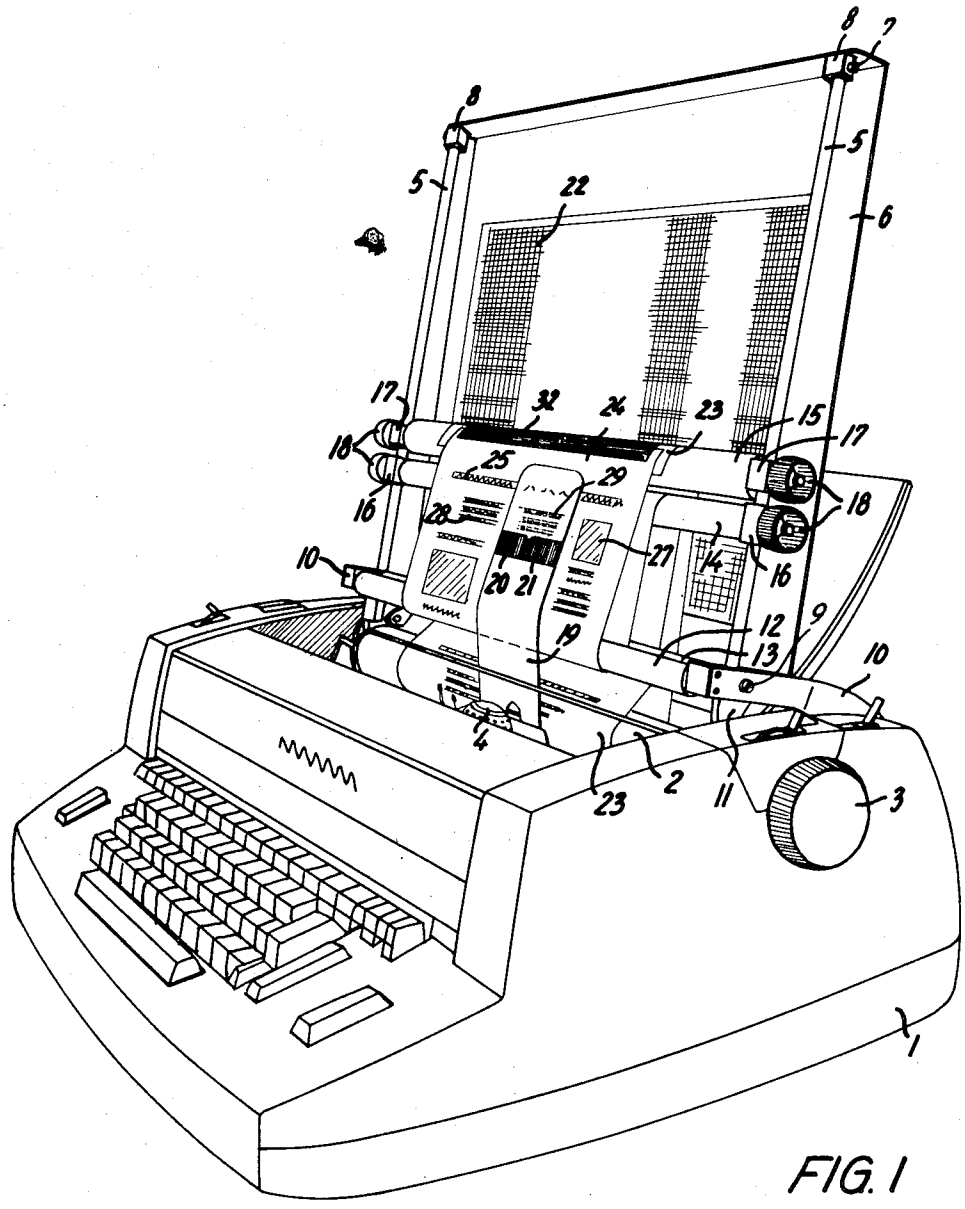


FIG. 1

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BY

ATTORNEY

FIG. 2

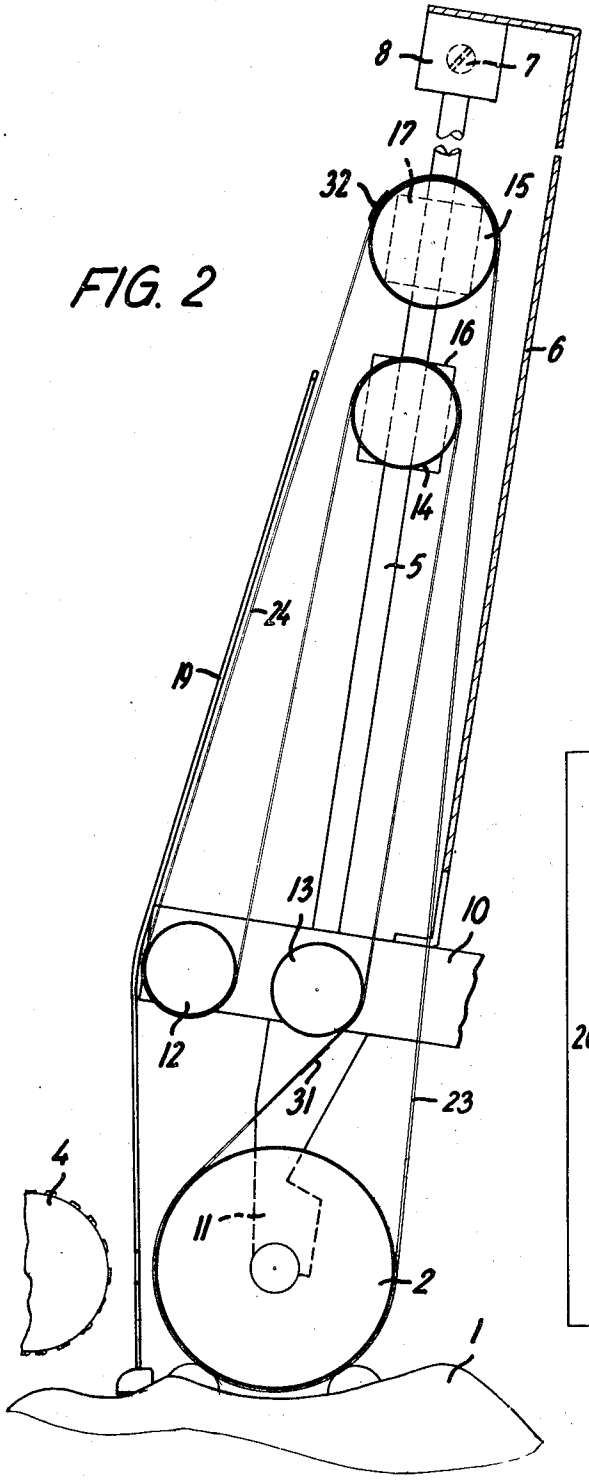
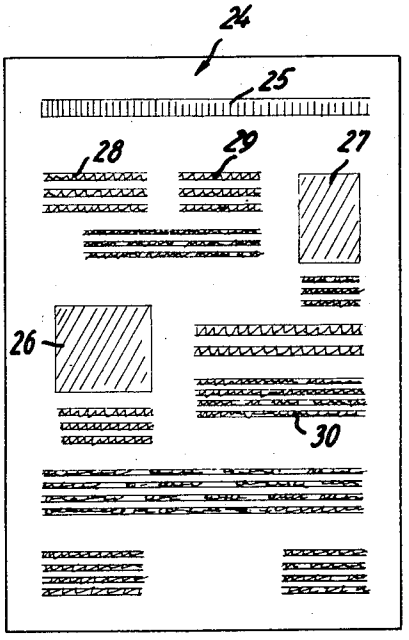


FIG. 3



INVENTOR

BY

ATTORNEY

DEVICE FOR COMPOSING TEXT PORTIONS ON A BLANK SHEET IN ACCORDANCE WITH A LAY-OUT

BACKGROUND OF THE INVENTION

The present invention relates to a device for composing text portions on a blank sheet in accordance with a lay-out sheet.

Printing originals or masters for offset printing and other like typographical jobs often contain illustrations and text portions on the same page, and the text portions may contain different kinds or sizes of type or character. Previously, when the text portions of such originals have been prepared in composing or typewriting machines, the practice has been to first prepare a lay-out, on which the mutual positions of the individual illustration and/or text portions are indicated, whereby the necessary area for the text portion or portions has been calculated on the basis of a manuscript. Based upon the lay-out, the text portions are written out individually with the prescribed print types or characters, whereupon the text portions, if necessary after a make-up operation, are mounted on a transparent sheet together with the illustrations and in the pattern prescribed by the lay-out. Finally the completed page is photographed.

The mounting operation is time-consuming, requiring great care and position in arranging the individual portions and thus calls for specialized labor. In most cases it will also be necessary to carry out a retouching operation after the photographing in order to remove traces of the adhesive used for mounting the text portions.

BRIEF SUMMARY OF THE INVENTION

According to the present invention there is provided a device for composing text portions on a blank sheet in accordance with a lay-out sheet, comprising a frame and means for mounting said frame on a typewriter, support means on said frame for rotatably supporting at least one guide roller with the axis thereof parallel to the axis of the typewriter platen, means for adjusting said support means towards and away from said platen, an indicator member and means for mounting said indicator member on said typewriter in front of said guide roller and in a predetermined relationship with the point of stroke of the typewriter types, and means for temporarily joining a lower edge of said lay-out sheet to an upper edge of said blank sheet, whereby said blank and lay-out sheets may be tracked over said platen and guide roller and behind said indicator member so as to be advanced synchronously in response to a rotation of said platen.

The invention makes it possible to write or compose the text portions directly onto the blank sheet in the predetermined pattern provided by the lay-out, since during the typewriting operation the lay-out sheet is moved through the typewriter and the composing device mounted thereon together with the blank sheet. Before the writing starts, the operator adjusts the device so that the vertical distance between the indicator member and the point of stroke of the typewriter corresponds to the vertical distance between any arbitrary point of the lay-out and the corresponding point of the text portion which is to be written upon the blank sheet. When the operator then lets the indicator member follow the text pattern on the lay-out during the typewriting, this pattern will automatically be reproduced or copied directly onto the blank sheet by a kind of scanning of the outlines of the pattern. Consequently no mounting of finished text portions on the printing original is required, which saves the time previously employed for the mounting and subsequent retouching operations, and it becomes possible to use less specialized labor for preparing the printing original, since nothing more than a simple copying of a manuscript is required for this operation. Since the lay-out and blank sheets are joined together end to end during the typewriting, it is possible to utilize the full platen length of the typewriter for the writing and, irrespective of whether the typewriter has a stationary platen and a travelling type carrier, or whether the platen is mounted on a travelling carriage, it is possible, in both cases, to mount the indicator member in place of the normal card-holder or shield on the type carrier or the carriage, respectively, indicating the point of stroke.

In a preferred embodiment of the invention, there are at least two additional parallel guide rollers in the frame between the above mentioned guide roller and the typewriter platen, which additional rollers in conjunction with the first-mentioned roller and the platen determine a zigzag-shaped path for the blank and lay-out sheets through the device. Hereby it is achieved that the indicator member can be placed at a relatively short distance above the point of stroke, so that the person operating the typewriter can watch or overlook the blank and lay-out sheets without unduly large movements of his head. Furthermore the constructional height of the device may be kept relatively low.

At least one of the additional rollers may be adjustable towards and away from the typewriter platen which permits the operator to adjust the working hight of the lay-out according to his desires or need irrespective of the sheet size. A similar favorable effect may be obtained by making the indicator member vertically adjustable relative to the point of stroke of the typewriter.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 shows a perspective view of an embodiment of the device according to the invention mounted on a typewriter,

FIG. 2 shows a vertical section on a larger scale through the composing device proper, and

FIG. 3 shows a plan view of the lay-out sheet of which a part is seen in FIG. 1.

DETAILED DESCRIPTION

In FIG. 1, there is illustrated a typewriter 1 of the kind having a stationary platen or roller 2 and a travelling type carrier 4 of substantially spherical form. FIG. 1 shows a part of the platen 2 with the associated knob 3 for manually turning the platen, as well as the travelling type carrier 4 of the typewriter. As known, the function of such a typewriter implies that the sheet remains stationary while a line is being written on it while the type carrier 4 is shifted stepwise from one end of the line to the other subsequent to each stroke of the type carrier, whereupon the type carrier travels back to the beginning of the next line when the sheet is advanced one line by rotating the platen 2.

On the typewriter 1, there is mounted a device according to the present invention, which has a frame comprising two parallel cylindrical guide rods 5 that are rigidly connected by means of a rigid back or rear plate 6. At its upper end in FIG. 1, each rod 5 is secured in a block 8 by means of a screw 7, which block, in turn, is secured to the forwardly angled edge portion of the rear plate 6. At their lower ends, the rods 5 are secured in rearwardly extending arms 10 by means of screws 9, and the rear plate 6 is also secured to the arms 10 in a manner not shown in detail. At their rearmost ends, the arms 10 rest against the frame or cover plate of the typewriter 1. Each arm 10 is integral with a downwardly extending arm 11 having at its lower end a semi-circular recess resting against a hub on the typewriter which is coaxial with the platen 2. In the operating position of the device shown in FIG. 1, its rear plate 6 and guide rods 5 slope slightly to the rear.

Two rollers 12 and 13 are, at their ends, rotatably supported in the two arms 10. Two additional rollers 14 and 15, of which the topmost roller 15 has a larger diameter than the roller 14, are, at their ends, rotatably supported in bearing blocks 16 and 17, which are displaceable along the rods 5 and which can be locked or fixed individually in a desired position by means of a clamping screw 18 at each end. All the rollers 12–15 are parallel to each other and parallel to the typewriter platen 2 when the device is mounted on the typewriter.

The device also comprises an indicator member 19 which, in the embodiment shown, is made of a transparent rigid material and which is adapted for being mounted on the typewriter 1 in place of the so-called shield or card-holder which, in the normal operation of the typewriter, marks the point of stroke or printing point, of the type carrier 4 on a sheet. The indicator member 19 has, in its topmost part, a marking which, in the embodiment shown, consists of a band or belt 20 which may be colored and which extends across the indicator member. In the belt 20 there is shown a notch 21 which, in the longitudinal direction of the platen 2, lies exactly above the point of stroke of the type carrier 4. As shown a permanent grid 22 of intersecting horizontal and vertical lines may be provided on the rear plate 6 of the device. The grid may, for instance, be produced by silk screen printing and it may be used for adjusting the rollers 14 and 15, the bearing blocks of which can be provided with pointing or marking means, not shown, which may be used in conjunction with the grid, for example, to keep the rollers in their substantially parallel alignment. In addition, the blank sheet and the lay-out sheet may be aligned with the grid when the device is employed as described below. Relevant numerical values may be indicated in conjunction with the grid 22 for the purpose of this adjustment, such as direct millimeter indications, standard sheet sizes or indications according to the typographical point system.

The drawing shows the device used for writing text portions on a blank sheet 23 in conformity with a lay-out 24, also shown in FIG. 3. The lay-out 24 may, as shown, comprise a heading 25 in relatively bold types, illustration portions 26 and 27 and text portions 28, 29 and 30.

To begin with, the uppermost edge of the sheet 23 is joined together with the lowermost edge of the lay-out 24, e.g., as shown by means of an adhesive tape 31. The top edge of the lay-out is thereupon moved down along the rear plate 6 and into the typewriter 1 around its platen 2, in the same way a sheet is normally introduced into the typewriter. By manually rotating the platen 2, the layout is subsequently, as shown in FIG. 2, moved up between the rear side of the roller 13 and the rear plate 6, around the roller 14 and from there downwards to the rear of the roller 12 and upwards at the front part of the device behind the indicator member 19, which has been mounted on the typewriter in advance. Thereafter the top edge of the lay-out 24 is joined together with the bottom edge of the sheet 23 by means of an adhesive tape 32 and, by suitable adjustment of the rollers 14 and 15, if desired with the use of the grid 22 on the plate 6 as mentioned above, the vertical distance between the marking notch 21 in the indicator member 19 and the point of stroke of the type carrier 4 on the sheet 23 is caused to correspond to the distance between two matching or corresponding places of the lay-out and sheet, respectively, for instance, their upper edges.

Following this adjustment, the typewriting of the text portions on the sheet 23 can now start, whereby the notch 21 on the indicator member is caused to follow that part of the lay-out, on which the associated text is marked. During the writing of a line the indicator member 19 moves in unison with the type carrier 4, and when the operator changes to the next line, the lay-out 24 is shifted relative to the indicator member 19 in exact synchronization with the advance of the sheet 23 relative to the type carrier 4. When the writing on the sheet 23 has been completed, the individual text portions are consequently placed in exactly the same pattern as the corresponding or matching portions on the lay-out 24, and the sheet thus produced can, without any additional mounting, be used directly for producing a printing plate, e.g., after superimposition with the illustration portions of the sheet.

The invention is described above in connection with a typewriter having a mobile type-carrier which, inter alia, has the advantage that the type carrier 4 is easily interchangeable, so that it is possible to use different kinds of type in arbitrary combinations without removing the sheet and the lay-out from the device. The invention may, however, readily be utilized also in connection with more conventional typewriters having a stationary type basket with a fixed point of stroke and a travelling carriage, in which case the indicator member of the device is mounted in a like manner in place of the normal indicator means or card-holder of the typewriter which marks the point of stroke. During the typing, it will then be the sheet and the lay-out connected thereto which move in the longitudinal direction of the line past the point of stroke and the stationary indicator member. It will also be understood that the device described could form a permanent or integral part of the typewriter.

It is explained above that the lay-out and the blank sheet are joined together to form an endless strip after insertion into the device by joining the upper edge of the lay-out together with the lower edge of the sheet, but this is not absolutely necessary, particularly if the lay-out is made of relatively rigid material so that it is able to support itself, even when the operator writes on

the bottommost line on the sheet. The adjustability of the guide rollers as shown could be combined with an adjustability of the marking means on the indicator, if desired both in the vertical and in the horizontal direction. It would also be possible to omit the intermediate rollers in the device, particularly when typing on relatively short sheets, but the embodiment shown possesses, inter alia, the advantage that the entire device remains relatively short and compact due to the zig-zag path which the sheet and lay-out follow around the rollers, and that the vertical distance between the point of stroke and the corresponding place on the lay-out can be kept relatively small. It will be realized that with a suitable number of intermediate rollers, any size of paper can be written upon, even very large ones. By adjusting the individual rollers and if possible, also the indicator means in the vertical direction, a relatively large area of the lay-out may become visible on the front part of the device. In addition to the modifications mentioned above, it will also be possible to carry out other modifications in the construction of the device and its mounting on the typewriter within the scope of the invention. It will also be possible to utilize the principle of the invention in photo-composing machines.

It may also be mentioned that in the production of books and other printed matter, such as works of translation, it will, in many cases be possible to directly use a page of the original work in the foreign language as the lay-out in the device. In that case, the operator may simply typewrite the translation on the blank sheet in text portions or text captions corresponding to the text captions in the foreign language.

In the preferred embodiment as described above, the blank and lay-out sheets are joined together to form a composite endless strip. This has the additional advantage that the composite strip may be advanced in the same direction through the device more than once, e.g., if a text portion contains two or more columns beside one another or different size or type of characters. In that case the operator may avoid any reverse rotation of the typewriter platen which might cause minor inaccuracies in the alignment of the successively written text parts. It is also possible to utilize relatively rigid lay-out sheets which cannot be bent around a roller or typewriter platen, e.g., sheets of cardboard or plastics. The upper edge of such a rigid sheet may be secured, e.g., by means of an adhesive tape, to a flexible carrier sheet which previously has been joined to the blank sheet and inserted in the device as described above, whereby the rigid sheet is located on the front side of the device between the upper and lower rollers **15, 12** shown in FIG. **1**. This modification is applicable, inter alia, for music-printing, when the printing original is to contain a combination of notes, text and figuration. The notes are first printed on a transparent film which then, by means of an adhesive tape as described above, is secured to a flexible lay-out sheet, on which only the notation staff or lines have been indicated. On the basis of the composite lay-out the figuration and the text are then written on the blank sheet, whereupon the film, on which the notes where printed, is dismounted from the lay-out sheet and superimposed on the sheet containing the figuration and the text, together with which it is copied onto a film or printing plate.

What I claim is:

1. A device for composing text portions on a blank sheet in the same lay-out as text on an original lay-out sheet, comprising:

a frame and means for mounting said frame on a typewriter having a rotatable platen,

a first guide roller and means for rotatably mounting said first guide roller on said frame with the axis of the guide roller above and parallel to the axis of the typewriter platen,

a second guide roller and means for rotatably mounting said second guide roller on said frame with the axis thereof parallel to and at a level between the axis of said first guide roller and said typewriter platen,

a third guide roller and means for rotatably mounting said third guide roller on said frame with the axis thereof extending parallel to and at a level between the axis of said second guide roller and said typewriter platen,

an indicator member and means on said indicator member for indicating the text portion of an original lay-out sheet to be composed at the printing point,

means for mounting said indicator member in front of said first and second guide rollers and with said means for indicating in a predetermined relationship with the printing point of the types associated with said typewriter platen,

an original lay-out sheet between said first guide roller and said means for indicating on said indicator member, a blank sheet tracked over the typewriter platen, means joining the lower edge of said original lay-out sheet to the top edge of said blank sheet and means joining the top edge of said original lay-out sheet to the lower edge of said blank sheet so that said blank sheet and said original lay-out sheet form an endless strip extending in a path exiting from the typewriter platen and passing from there behind and then around said second guide roller, from there behind and around said third guide roller and from the front of said third guide roller passing between said indicating member and said first guide roller, around and behind said first guide roller back to and around said typewriter platen,

and means for adjusting said mounting means for said first and second guide rollers, toward and away from said platen for synchronizing the type in text produced on the blank sheet into locations forming a lay-out on said blank sheet identical to the text lay-out on the original lay-out sheet.

2. A device as claimed in claim **1**, in which said frame includes two guide rods, having parallel axes, on which said means for mounting said first and second guide rollers are mounted for adjustable displacement along said guide rods, and an arm secured to the lower end of each guide rod, said arm having means for mounting and locating said frame on a typewriter.

3. A device as claimed in claim **2**, comprising a back plate secured to said guide rods and to each arm and oriented in a plane parallel to the plane containing the parallel axes of the guide rods and said back plate is provided with a grid of crossing lines with which said blank sheet and said original lay-out sheet may be aligned in said frame.

4. The device of claim 1, additionally comprising a fourth guide roller and means for rotatably mounting said fourth roller in said frame below said first guide roller with the axis of said fourth roller parallel to the platen axis, the path of the sheets passing behind said fourth roller.

* * * * *