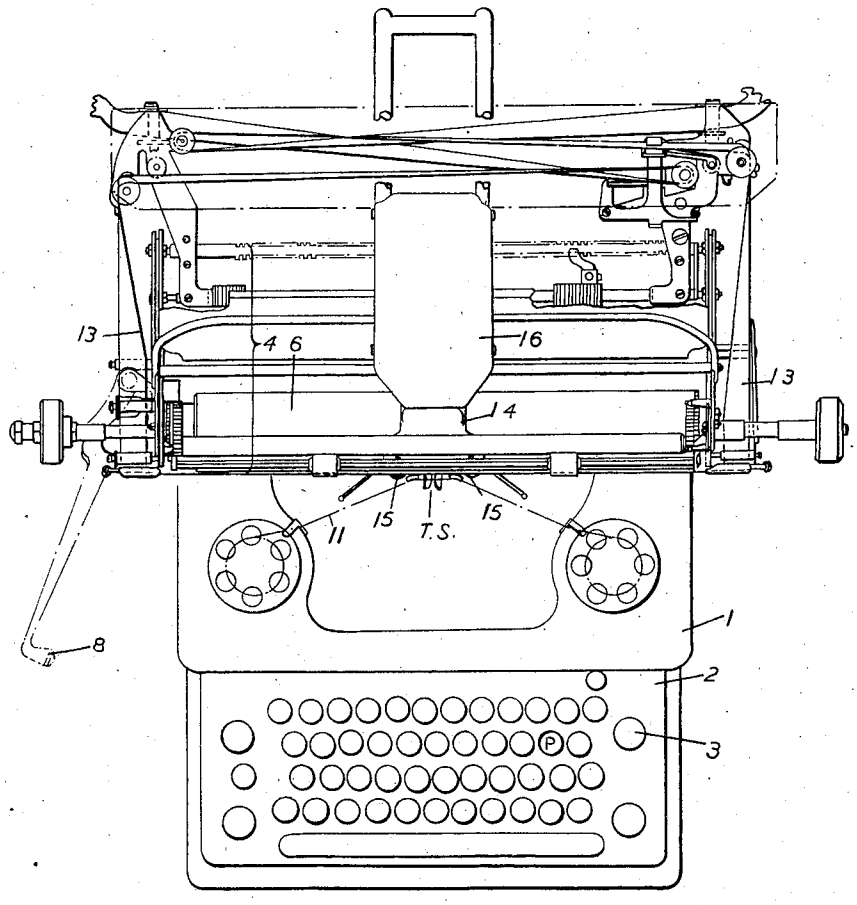
April 19, 1949. C. W. BRUMHILL 2,467,880

GUIDE MEANS FOR TYPEWRITER RIBBONS

Filed Oct. 24, 1945 5 Sheets-Sheet 1

FIG. 1.



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GUIDE MEANS FOR TYPEWRITER RIBBONS

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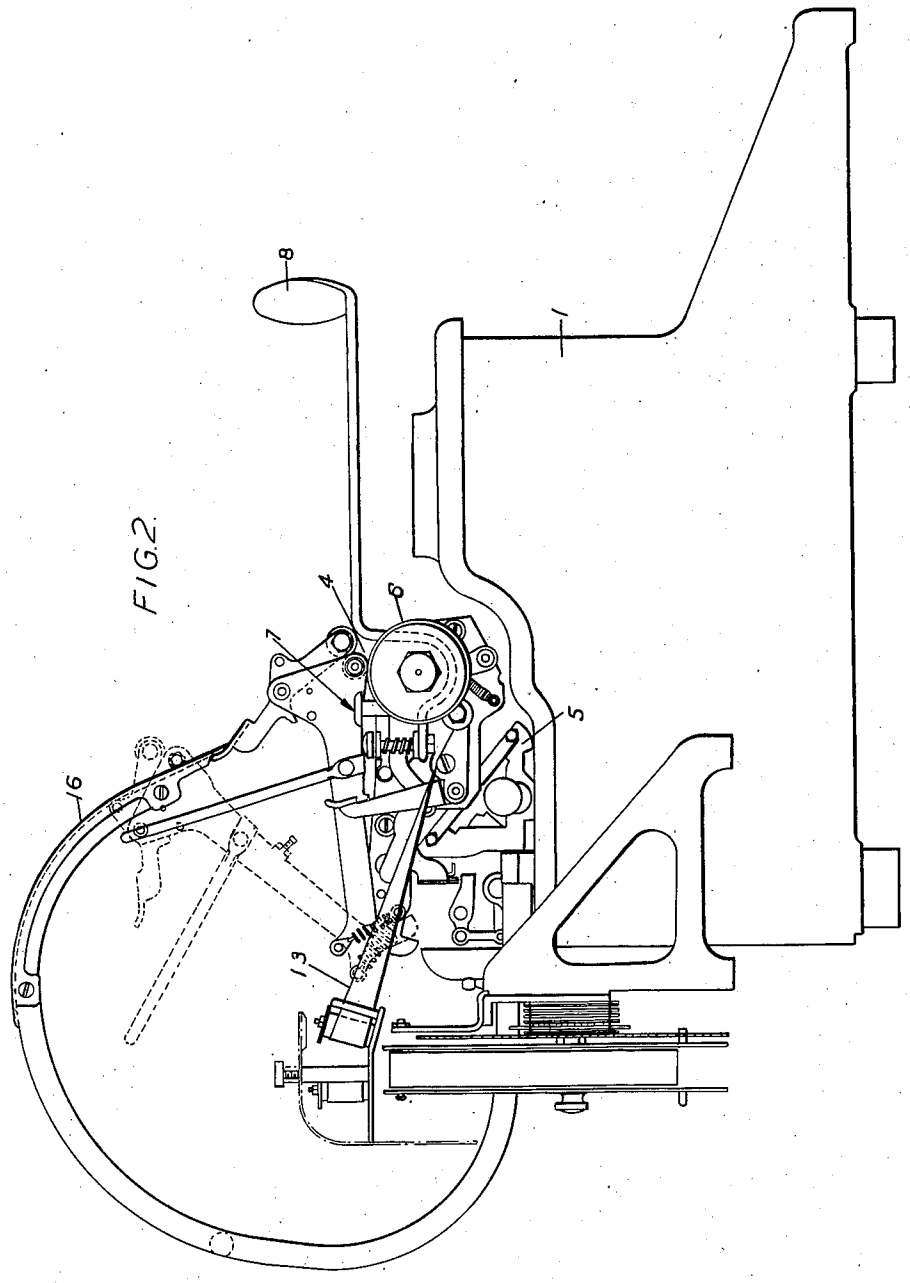


FIG 2

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GUIDE MEANS FOR TYPEWRITER RIBBONS

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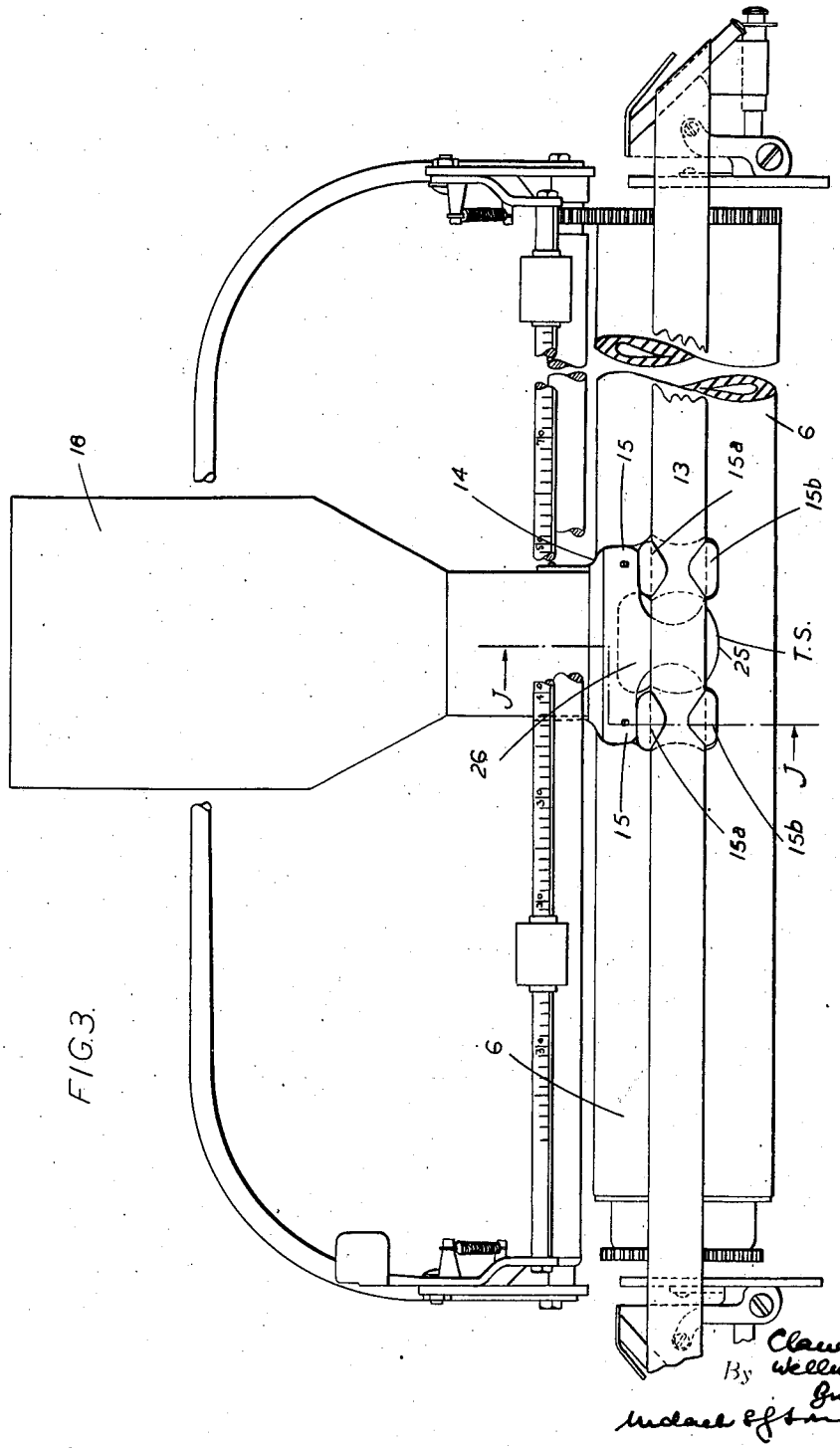


FIG. 3.

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GUIDE MEANS FOR TYPEWRITER RIBBONS

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FIG. 5.

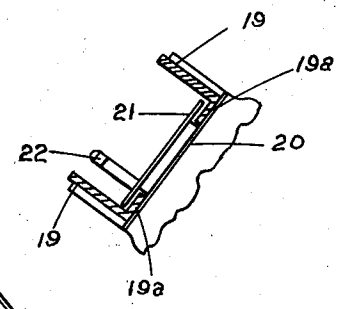


FIG. 4.

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GUIDE MEANS FOR TYPEWRITER RIBBONS

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FIG.6.

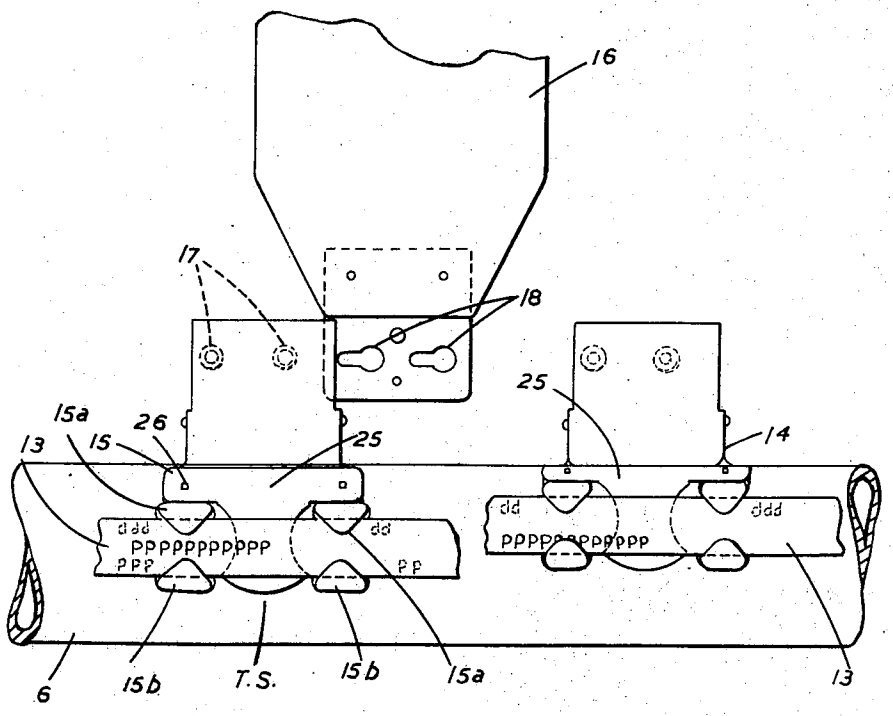
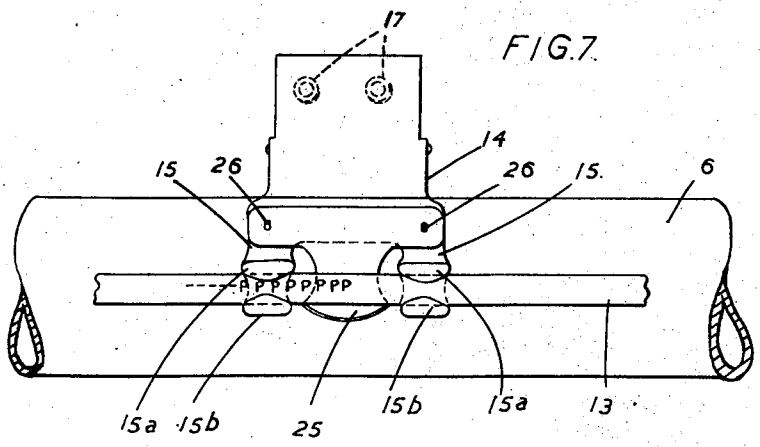


FIG.7.



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Patented Apr. 19, 1949 2,467,880

UNITED STATES PATENT OFFICE

2,467,880

GUIDE MEANS FOR TYPEWRITER RIBBONS

Claude Wellington Brumhill, Leicester, England, assignor to The Imperial Typewriter Company Limited, Leicester, England

Application October 24, 1945, Serial No. 624,159
In Great Britain June 7, 1945

2 Claims. (Cl. 197—170)

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This invention concerns typewriting and like machines of the kind (commonly known as hectograph machines) wherein the type impressions are produced in reverse on the back of a master sheet, of paper or the like, by feeding a ribbon at the typing station between said sheet and a support surface such as a platen. This master sheet is subsequently employed for the production of a multiplicity of copies of the master sheet by a hectograph duplicating process.

In order that the duplicate copies of the master sheet shall be clear and legible, it is very essential that a completely new surface of transfer material, on the ribbon, be presented to each type impression made on the master sheet. It is therefore very important that the hectograph ribbon be accurately directed at the point of printing, so that no overlapping of impressions can occur.

It has previously been proposed to employ a hectograph ribbon wide enough to admit of several longitudinal typing tracks or zones. The difficulty however, is to accurately direct the ribbon past the printing point so that no vertical misalignment of the said zones can take place. This displacement of the ribbon often occurs when the master sheet is being positioned in the machine for typing, and also when the master sheet is moved in the action of line-spacing. The sheet is gripped by the pressure of both top and bottom feed rolls against the platen, and when line spacing, the ribbon tends to be carried out of its horizontal position by the adhesion of the platen to the master sheet—it being understood that the ribbon is located lengthwise between the platen and the master sheet, with the hectograph coated side facing away from the platen.

To avoid the above difficulties, it has been previously proposed to strain or stretch the ribbon along the whole length of the platen and thus maintain the ribbon sufficiently taut to prevent any vertical deviation from taking place. It has also been proposed that after any displacement which may have taken place when line spacing, an extra tension be applied to the ribbon which would overcome and correct it to its previous alignment.

The present invention provides in or for a typewriter or like machine of the kind specified, a stationary ribbon guide at the typing station for engaging and positioning the ribbon at the back of the sheet. The invention further provides in a typewriting or like machine of the kind specified wherein the ribbon extends substantially lengthwise of the platen, a stationary ribbon guide at the typing station for engaging the ribbon at

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the back of the sheet and for positioning it against displacement in the direction of the paper feed. This guide preferably has ribbon locating means spaced apart in the direction of the length of the ribbon to either side of the type impact area. It is further preferred that the guide shall have ribbon locating means for engaging both longitudinal edges of the ribbon.

The guide may be made to admit of a narrow ribbon capable of admitting one track of impressions, or it may be so constructed that a ribbon of the width admitting a plurality of longitudinal tracks of impressions can be used. In this latter case, means are provided for adjusting the guide to present different areas in the width of the ribbon to the type. Specifically, in the case of a machine equipped with a rotatable platen, the guide may be adjustable circumferentially of the platen. Means may be provided for retaining the guide in either selected one of a plurality of alternative positions.

According to an important subsidiary feature of the invention there is a support for the guide which extends forwards and downwards.

The foregoing and other features of the invention set out in the appended claims are incorporated in the construction which will now be described as an example with reference to the accompanying drawings in which:

Figure 1 is a plan of a typewriter;

Figure 2 is a side elevation thereof;

Figure 3 is a front elevation of the platen and guide;

Figure 4 is a section on a larger scale on the line J—J in Fig. 3;

Figure 5 is a part section looking in the direction of arrow L in Fig. 4;

Figure 6 is a front view of a portion of the platen and guide illustrating the removal of the guide and also illustrating two positions of the adjustment;

Figure 7 shows a guide adapted to accommodate a single-track ribbon.

In the accompanying drawings the invention is illustrated as applied to a typewriter having a main body 1 with keyboard 2 including tabulating key 3, and a carriage indicated generally at 4 which traverses on guides 5 and includes platen 6, rack release lever 7 and a line space lever 8. This machine has the usual paper-feed rollers 9 co-operating with the platen to feed master sheet 10 (Fig. 4) round the platen 6 and past the typing station TS at which the ordinary typing ribbon 11 is traversed in front of it to be struck by the type heads 12.

In addition this machine is equipped with means for feeding a hectograph paper ribbon **13** longitudinally in front of the platen **6** between the latter and the master sheet **10** at the typing station TS. The coated face of this ribbon **13** is presented forward so that at each type impact the ribbon applies a character in reverse to the back of the master sheet.

It will be understood that in the line space movement of the platen **6** (i. e. anti-clockwise rotation Fig. 4) there is a tendency for the ribbon **13** to be displaced upwards. In order to prevent this, the ribbon **13** is engaged at the typing station TS by a stationary guide indicated generally by the reference **14**, which is located at the back of the master sheet **10**, between it and the platen. This guide comprises two thin arms **15** which are spaced apart at either side of the type impact area so that the ribbon **13** runs in front of them. Each arm has an upper lobe **15***a* and a lower lobe **15***b* which respectively overlap the top and bottom edges of the ribbon **13** and restrain it against edgewise displacement.

The guide is mounted on a support member **16** which, as clearly shown in Fig. 2, extends from the back of the machine body **1**, and curves forwards and downwards over the carriage **4** towards the typing station, the front part of this support **16** therefore being located behind the upper portion of the master sheet **10** as shown in Fig. 4. The guide **14** is readily detachable from the support **16**, being provided with headed pins **17** which as illustrated in Fig. 6 engage in key hole slots **18** in the support.

The spacing between the upper and lower lobes **15***a* and **15***b* may, as shown in Fig. 7, only be sufficient to accommodate a narrow ribbon for a single track of characters. Alternatively they may be spaced to accommodate a wider ribbon capable of taking a plurality of tracks of characters as illustrated in Fig. 6 and in order to adjust the ribbon edgewise to permit the different tracks to be used (e. g. after the ribbon has been run once through the machine) the operative part of the guide is adjustable circumferentially of the platen. For this purpose the support **16** incorporates spaced side members **19**, Fig. 5, having internal flanges **19***a* curved around the platen surface. These flanges are engaged between the outer face of a curved sheet of metal **20** from which the guide arms **15** depend and a curved plate **21** attached to member **20**. The assembly **20—21** is therefore capable of sliding circumferentially of the platen **6** to adjust the ribbon position and this movement is effected by lever **22** projecting from the plate **21** and accessibly arranged above the top of the platen. Additionally a detent is provided for locating the guide in any selected one of its alternative positions. This detent comprises a spring **23** with a pip **23'** for engaging in any one of a series of holes **24** in the plate **21**.

It is desirable to combine with the guide herein before described, a thin anvil **25** (which forms the subject of co-pending U. S. patent application No. 624,160, now Patent No. 2,452,099, dated October 26, 1948) which is positioned at the typing station between the ribbon **13** and the surface of the platen **6** to take the typing impacts. This anvil consists of a thin sheet of waxed paper, Celluloid or equivalent material and is releasably positioned on the guide by headed pins **26**.

The support **16** affords sufficient room beneath it, at the back of the platen, to permit of the insertion of the master sheet **10**.

The guide **14** may have ribbon-locating means **15***a*, **15***b* at one side only of the type-impact area.

The machine shown may be employed for normal typing by removing ribbon **13** and guide **14**.

I claim:

1. In a typewriting machine for hectograph work, of the kind wherein type impressions are produced, at a typing station, in reverse on the back of a master sheet by feeding a ribbon horizontally along the face of a horizontally-traversing platen and between the latter and the sheet, the latter being fed under the platen from the back and up in front of it and the ribbon, the combination with the horizontal platen, ribbon-feeding means for feeding the ribbon horizontally along the face of it, and sheet-feeding means for feeding the sheet under the platen and up in front of it and the ribbon, of a stationary support extending down towards the typing station to have the sheet rise therefrom in front of it and affording room behind it for the sheet to be inserted, a stationary ribbon guide carried by said support behind the sheet, in the region of the typing station, said guide comprising means for preventing the ribbon from being dragged upwards by the rising sheet, a mounting on the support for adjustment of the guide circuferentially of the platen and for thereby presenting different areas in the width of the ribbon for use, and a manual adjustment means carried by the guide for shifting the guide on its mounting.

2. In a typewriting machine comprising a body, a carriage traversing horizontally thereon and incorporating a horizontal platen rotatable about its own axis, and type for operating at a typing station, the combination with hectograph ribbon feeding means, including ribbon-guiding means disposed on the carriage beyond each end of the platen, for feeding a hectograph ribbon horizontally along the front of the platen for the full length of the latter with an impression-producing face of the ribbon presented forwards away from the platen, and means for feeding a sheet downwards and forwards under the platen and up in front of it and the ribbon, whereby type impressions are obtained in reverse on the back of the sheet, of a stationary support rising from the body at the back of the carriage and extending forwards and downwards towards the typing station to have the sheet rise in front of it and affording room beneath it for the insertion of the sheet, and a stationary ribbon guide supported by said support at a location in the region of the typing station and at the back of the rising sheet which guide comprises means for sliding engagement by the ribbon as the latter is traversed and for preventing upward displacement of the ribbon by the rising sheet.

CLAUDE WELLINGTON BRUMHILL.

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