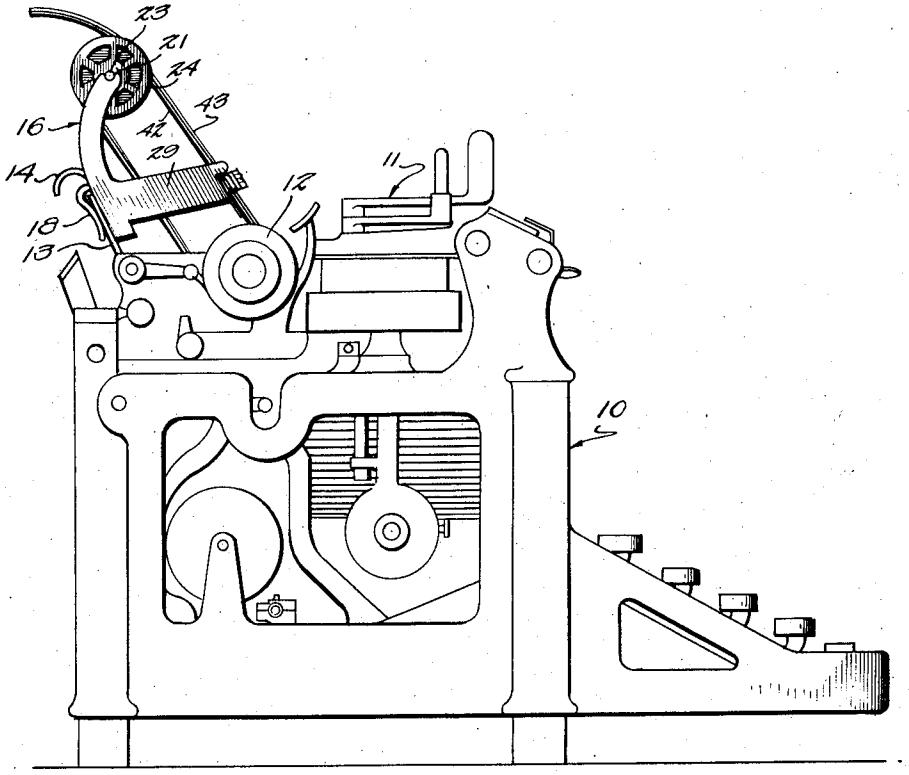
March 26, 1929. W. H. HARRIS 1,706,666

METHOD AND APPARATUS FOR DUPLICATING TYPEWRITING

Original Filed Feb. 25, 1926 2 Sheets-Sheet 1

Fig. 1.



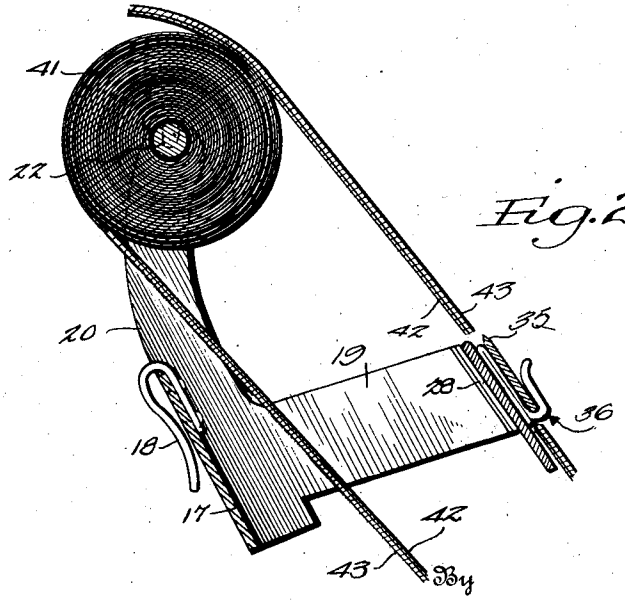


Fig. 2.

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METHOD AND APPARATUS FOR DUPLICATING TYPEWRITING

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Fig. 3.

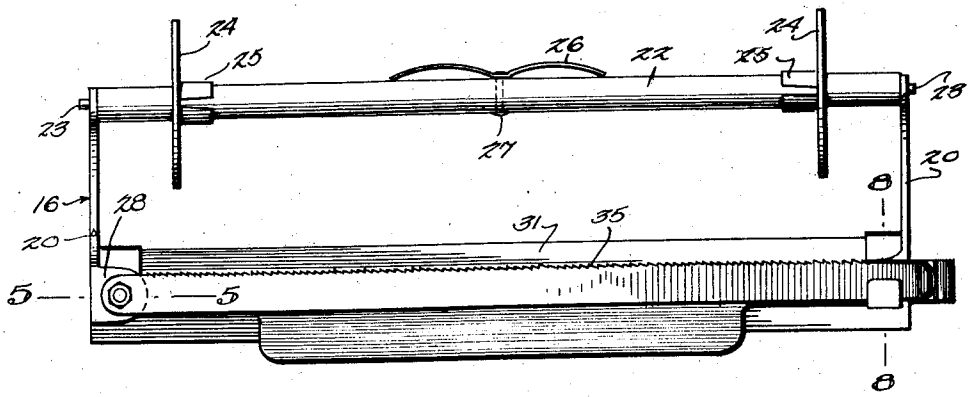


Fig. 4.

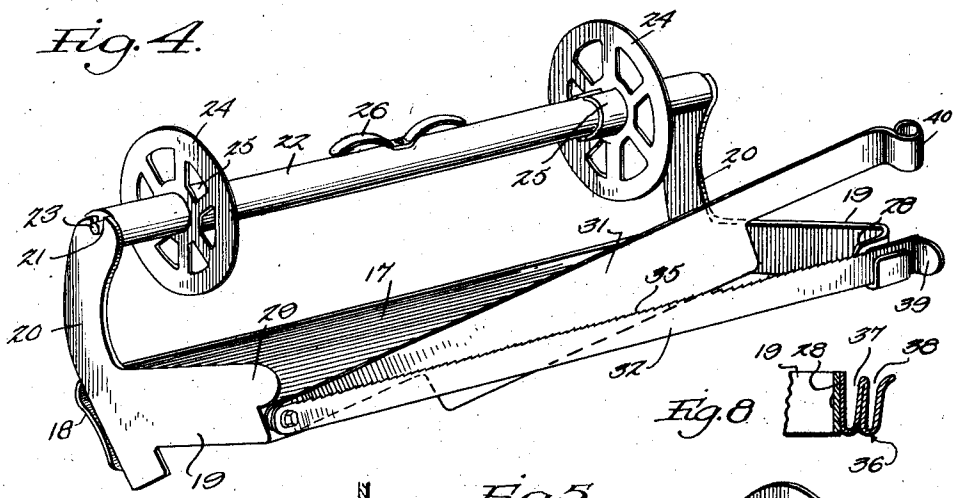


Fig. 8

Fig. 5

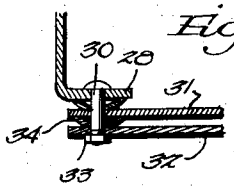


Fig. 6

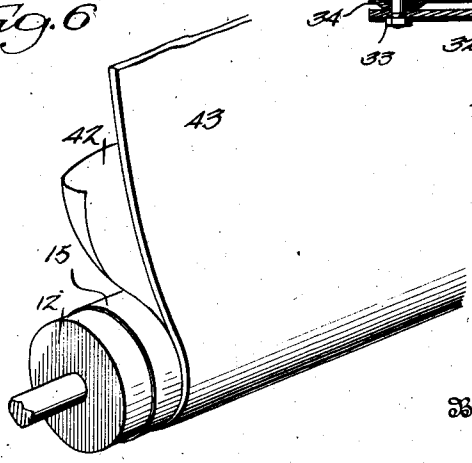
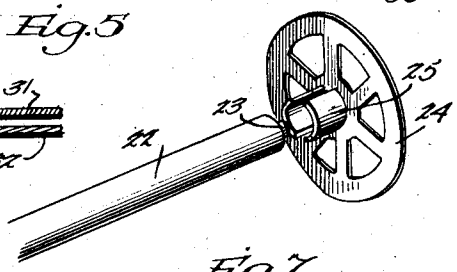


Fig. 7.



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UNITED STATES PATENT OFFICE.

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METHOD AND APPARATUS FOR DUPLICATING TYPEWRITING.

Application filed February 25, 1926, Serial No. 90,694. Renewed October 31, 1923.

This invention relates to a method and apparatus for duplicating typewriting.

An important object of the invention is to provide a method of duplicating typewriting wherein the usual carbon duplicating sheet surrounds the typewriter platen to impress the letters or characters of the typewriter against the rear face of a thin transparent sheet of paper arranged rearwardly of the original sheet.

A further object is to provide a supporting device having a spindle adapted to be received in a paper roll comprising a pair of sheets arranged face to face, the platen of the typewriter being provided on its face with a duplicating sheet, one of the sheets of paper being relatively thin and transparent and adapted to pass around the platen and contact with the duplicating sheet thereon.

A still further object is to provide a novel form of paper roll supporting means including a combined sheet guide and severing device to permit the continuous sheet of paper from the roll to be torn into individual sheets after the typewriting thereon is completed.

A still further object is to provide a paper roll supporting device of the above mentioned character including a guide bar and a cutting bar arranged adjacent each other and slightly spaced to permit the passage of paper therebetween, said bars being pivotally connected to the supporting member at one end to permit them to be swung upwardly.

Other objects and advantages of the invention will become apparent during the course of the following description.

In the drawings I have shown one embodiment of the invention. In this showing:

Figure 1 is a side elevation of a typewriter showing the invention applied,

Figure 2 is a detail vertical sectional view through the paper roll and supporting device therefor,

Figure 3 is a front elevation of the attachment,

Figure 4 is a perspective view of the same,

Figure 5 is a detail sectional view on line 5—5 of Figure 3,

Figure 6 is a fragmentary perspective of the platen with portions of the paper sheets passed thereabout,

Figure 7 is a similar view of the paper roll spindle and one of the end flanges thereof, and,

Figure 8 is a detail sectional view on line 8—8 of Figure 3.

Referring to the drawings the numeral 10 designates a typewriter of the usual construction having a carriage 11 and platen 12. The carriage is provided adjacent its rear edge with the usual upstanding paper table 13 having a curled upper edge 14 which terminates at points spaced from the ends of the paper table. The elements just described are parts of the usual standard typewriters and form no part of the present invention.

Referring to Figure 6, the platen 12 is surrounded substantially throughout its length by a duplicating sheet 15. This sheet may be formed of any suitable material, and may be in the form of the usual carbon sheets now interposed between sheets of typewriter paper for impressing duplicates of the typewriter characters upon the second and successive sheets of paper. When carbon paper is used as the duplicating element, the paper may be wrapped about the platen and may be secured thereto in any suitable manner such as by adhesives.

Referring to Figures 1 to 4 inclusive, the numeral 16 designates a paper roll supporting means as a whole including a horizontal rear rail 17 having end portions 18 thereof turned downwardly and rearwardly to form clips, and the end portions 13 of the paper table are adapted to be frictionally received between the clips 18 and the rear face of the rail 17 to support the device in position on the typewriter. It will be obvious that the upper roll supporting device is secured to the carriage of the typewriter to travel therewith. The paper roll supporting device further comprises forwardly extending arms 19 as clearly shown in Figure 4, the forwardly extending portions preferably being formed integral with the rear rail 17. The forwardly extending portions 19 are formed integral with upstanding arms 20 each of which is provided with a notch 21. A spindle 22 is arranged between the arms 20 and is provided at each end with a trunnion 23 adapted to be rotatably received in the notches 21. End flanges 24 surround the spindle as shown, and each flange is provided with a split collar 25 adapted to frictionally engage the spindle. A spring member 26 is arranged intermediate the ends of the

spindle 22 and may be secured thereto in any suitable manner such as by riveting, as shown at 27.

The forwardly extending arms 19 are provided on their forward ends with inturned lips 28, and one of the arms 19 is provided with a lip 29 extending forwardly beyond the adjacent lip 28. The lip 28 adjacent the lip 29 receives a pivot pin 30, as shown in Figure 5. A guide bar 31 and a cutter bar 32 are pivotally connected to the pin 30, the latter being provided with a nut 33 on its outer end contacting with the outer face of the cutter bar 32. A spacing washer 34 is preferably arranged between the bars 31 and 32 to permit the paper sheets to slide freely therebetween, as will be described. The bar 32 may be provided on its upper edge with teeth 35 to permit the paper from the roll to be readily severed into individual sheets.

A supporting clip 36 is secured to the lip 28 at the opposite end of the supporting device, as shown in detail in Figure 8. This clip is preferably formed of a single piece of sheet metal bent to form a pair of channels 37 and 38 to receive the free ends of the bars 31 and 32. The bar 32 is provided with an offest finger piece 39 while the bar 31 is provided with a finger piece 40 arranged adjacent the finger piece 39.

The spindle 22 is adapted to be received in a paper roll 41 as shown in Figure 2, this roll being made up of superimposed sheets 42 and 43. The sheets 43 may be of any desired type of paper such as ordinary typewriter paper, while the sheet 42 is preferably made of relatively thin transparent paper for a purpose to be described.

The operation of the device is as follows:

The bars 31 and 32 are swung upwardly at their free ends until they contact with the lip 29 which limits the movement of the bars. The lip 29 is preferably arranged in such a position that the bars will be permitted to swing a little past vertical position so that they will remain in upstanding position. The ends of the paper of the roll are then inserted beneath the platen and the latter turned manually to pass the paper around the platen. The free ends of the paper are arranged between the bars 31 and 32 which act as guides for the paper. The usual typewriting action then may be performed, the letters and other characters being impressed upon the outer face of the relatively heavy sheet of paper 43, as will be apparent. The paper may be perforated or otherwise marked to indicate letter length or sheets of any desired length, and as a page is completely filled, the paper may be torn by pulling one free edge of the sheet outwardly, the upper edge of the bar 32 serving to sever the individual sheets, as will be apparent. Impression of the characters upon the sheets 43 obviously will impress the thin sheet 42 against the duplicating medium surrounding the platen and thus the characters will be printed upon the rear face of the sheet 42. Since the paper 42 is relatively thin and transparent the characters may be read from the forward face thereof corresponding with the face of the sheet 43 upon which the characters are printed. It will be apparent that I have provided a method of duplicating which consists in arranging a pair of superimposed sheets of paper adjacent the typewriter platen, one of the sheets being transparent and contacting with a duplicating medium surrounding the platen after which the characters are printed upon the outer face of the outer paper sheet, thus duplicating the typed matter upon the transparent sheet. The method and apparatus described permits the elimination of the use of carbon paper in the usual manner which requires the placing of separate sheets with the carbon sheet therebetween. The operation of typing successive sheets may be continuously carried out over as many sheets as desired without the necessity of placing carbon sheets between the paper sheets.

It will be apparent that the paper roll supporting device may be employed for supplying paper for ordinary typewriting purposes without the use of the duplicating medium. The guide and cutter bars may be employed in the manner described for guiding the sheet and permitting it to be severed into separate pages.

It is to be understood that the form of my invention herewith shown and described is to be taken as a preferred example of the same and that various changes in the shape, size and arrangements of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

I claim:

1. An attachment for typewriters comprising a support adapted to be arranged over and secured to the paper table of a typewriter, said support including a pair of upstanding arms, a paper roll spindle rotatably supported by said arms and adapted to be arranged in a paper roll, and a pair of guide bars pivotally supported at one end by said support, said bars being spaced to permit passage therethrough of paper from the roll passing around said platen, and a clip carried by said support and adapted to receive the free ends of said bars.

2. A device constructed in accordance with claim 1 wherein said support is provided with clips adapted to be attached to the paper table of the typewriter.

In testimony whereof I affix my signature.

WALTER HENRY HARRIS.