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COPYING ATTACHMENT FOR TYPEWRITERS

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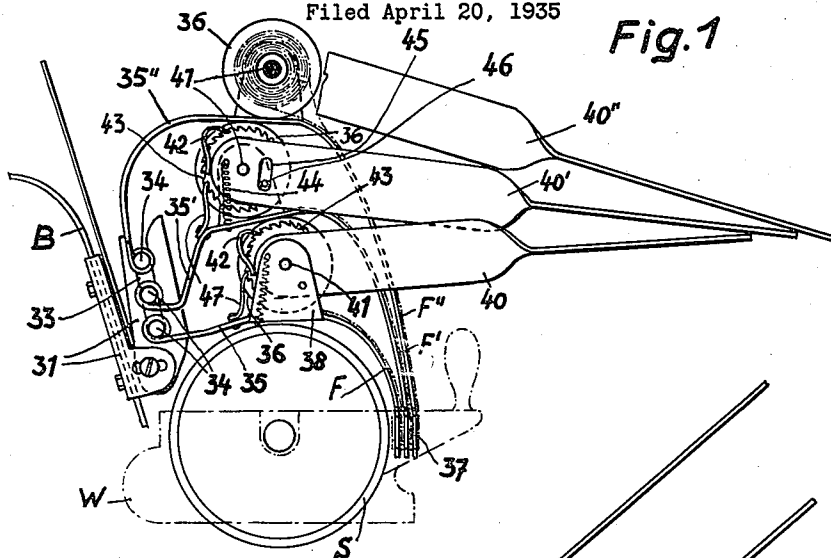


Fig. 1

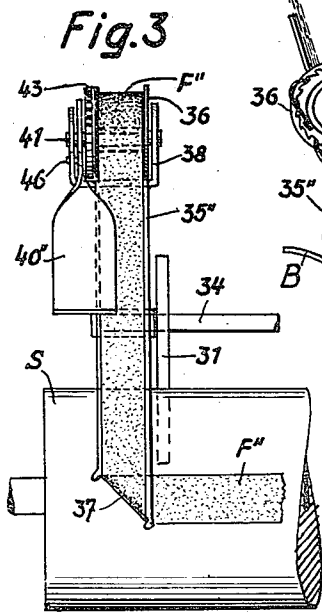


Fig. 3

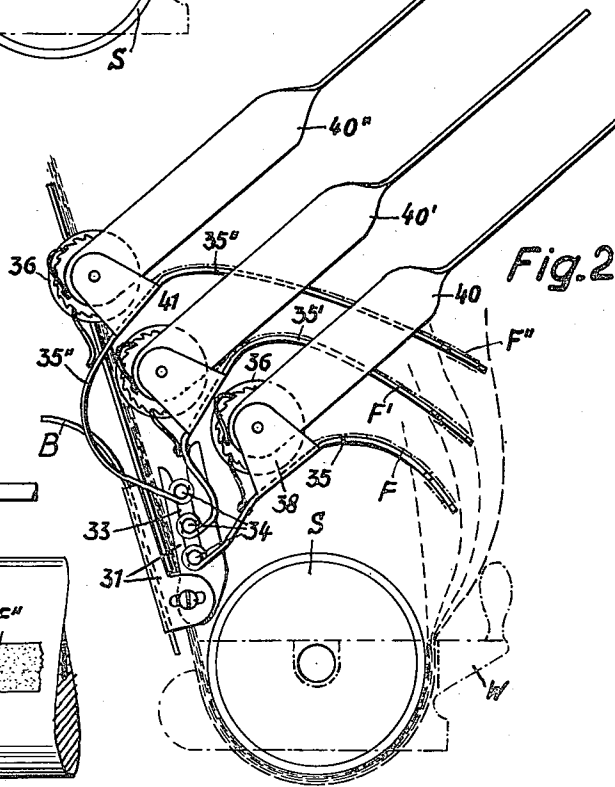


Fig. 2

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COPYING ATTACHMENT FOR TYPEWRITERS

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4 Claims. (Cl. 197—153)

This invention relates to copying attachments for typewriters, of the type employing auxiliary ink ribbons for insertion between the leaves on which the copies are to be made. It is already known, for the purpose of making simultaneous or transfer copies with a typewriter, to provide an attachment for the typewriter carrying one or more auxiliary ink ribbons which are wound onto spools at both ends of the attachment, and which are disposed in the operative position closely parallel to the roller of the typewriter in register with the writing line. The hitherto known attachments of this nature have the disadvantage, however, that they necessitate the use of complicated and expensive structural additions to the typewriter, which prevents their general application to different types of typewriters and restricts their applicability; moreover, with the hitherto known attachments, the insertion of the auxiliary ink ribbons between the leaves can only be effected with considerable difficulty.

In accordance with the present invention these drawbacks are obviated in a simple and effective manner by pivoting the carriers of the auxiliary ink ribbons together with the spools and ribbons mounted thereon, in the framework of the typewriter, about an axis parallel to the axis of the roller, in such a manner that they can be hinged or swung upwards and backwards on the typewriter. It is also particularly advantageous to pivot the copying ribbon carriers individually and to mount the same, in such a manner as to be readily detachable by movement in an upward direction, in side shields which are simply attached to the usual paper guard of the typewriter.

The device according to the invention can be attached in a very simple manner to any make of typewriter. The insertion of the auxiliary ink ribbons between the leaves presents no difficulty, and a very considerable saving of time is effected by eliminating the operations involved in the use of carbon paper when writing on single sheets with a varying number of copies. The attachment according to the invention is particularly serviceable when long continuous lengths of paper are used instead of single sheets, since in this case the insertion of carbon paper for the production of copies is attended with very great difficulty.

A form of construction embodying the invention is shown, by way of example, in the accompanying drawing, in which:

Fig. 1 is a side elevation of the attachment

according to the invention in the operative position, all parts of the typewriter not essential for the understanding of the nature and operation of this attachment being omitted.

Fig. 2 is a similar elevational view, with the auxiliary ribbon carriers in the hinged or swung out position.

Fig. 3 is a front elevation of the left-hand half of a copying ribbon carrier showing the manner in which the ribbon is guided.

Referring to the drawing, there is screwed to the paper guard B which is provided on every typewriter of normal construction, a bearing plate 31 which projects beyond the guard at both ends and is bent over towards the front at each end. These bent over ends are provided with slots 33 into which the end portions of the spindles 34 of the copying ribbon carriers can be inserted from above, so that these spindles become seated in these slots in such a manner as to be freely rotatable therein. These spindles 34 interconnect the two ends of the copying ribbon carriers 35 consisting of curved sheet metal strips which are rigidly attached by one end to the spindle 34, for instance by being doubled round the latter, and which overlie the roller (in the case of the lowermost carrier) or the next lower carrier (in the case of the remaining carriers) and terminate on a level with the writing line. On each of the carriers, of which there are three 35, 35', and 35'' in the constructional example shown, there is mounted a ribbon spool 36 from which the ribbon F is taken over the front surface of the curved carrier to the deflecting guide 37, whence it passes along the writing line, and is finally taken over the deflecting guide and carrier to the spool provided in a similar manner at the other end. One of the spools for each ribbon is provided with a feed device which permits of the intermittent winding of the ribbon on to the one spool and its unwinding from the other spool, by hand.

In the example shown, each of the feed devices is equipped with a lever 40, 40', 40'', respectively, which projects out to the front, and which is pivoted coaxially with the spool at 41. Each of these levers is provided with a spring dog 42 adapted to engage in a ratchet wheel 43 which is coupled for rotation with the appropriate ribbon spool 36. The forward ends of all three levers 40, 40', 40'' rest one upon the other, in the operative position of the attachment, that pressure exerted upon the uppermost causes the other two to be simultaneously depressed, thereby effecting the moving on of the ratchet wheels 55

and consequent feeding forward of the ribbon spools which are then held in their new position by a spring pawl 47. Springs 44 are provided for restoring the levers into their initial positions. For the purpose of limiting the movement of the levers in actuating the ribbon feed devices there is provided a slot 45 engaged by a pin 46 attached to the journal plate 38.

The mode of operation of the described copying attachment is as follows:—

The pivoted copying ribbon carriers 35 mounted in the slot in the bearing plate 31 are initially in the raised position shown in Fig. 2. It is then a simple matter to insert the copying ribbons one by one into their right places between the individual leaves which are spread apart for this purpose by the fingers of one hand while the other hand depresses the ribbon carriers with their ribbons one by one into the position for writing. After simultaneous depression of the levers 40, 40', 40'' by pressure applied to the uppermost thereof, to effect the feeding forward of the auxiliary ribbons, the typing can be begun.

After the removal of the leaves, the auxiliary ribbon carriers 35 are brought into the raised position shown in Fig. 2 by upward tilting of the lowermost lever 40 which thereby moves the other two levers 40' and 40'' into the raised position; and are then ready to be used again in the manner described above. When long lengths of paper are used, as in using rolls of endless forms, the copying ribbons remain in position to the end of the rolls.

In order to keep the copying ribbons constantly tensioned to the required extent provision is made for braking the movement of the spools from which the ribbons are unwound. These means may take the form for example of springs bearing against these spools and resiliently checking their movement to the requisite extent.

I claim:

1. In a duplicating attachment for typewriters at least two additional ink ribbons for insertion in front of copying leaves, carriers at both sides

of the roller of the typewriter for the retention of the said ribbons in register with the writing line of the typewriter, and spools on the said carriers, each of the said carriers being individually pivoted about a separate axis lying parallel to the axis of the roller of the typewriter and adapted to be swung upwards and backwards relatively to the said roller.

2. In a duplicating attachment for typewriters at least two additional ink ribbons for insertion in front of copying leaves, carriers at both sides of the roller of the typewriter for the retention of the said ribbons in register with the writing line of the typewriter, and spools for the said ribbons on the said carriers, a spindle interconnecting each associated pair of carriers, the said spindles being disposed parallel to the axis of the roller of the typewriter, a bearing plate attached to the typewriter at each side, a slot in the said bearing plate open at the top, the said spindles adapted to be inserted in the slots of the said bearing plates for rotation about an axis lying parallel to the axis of the roller of the typewriter and to be readily removable in an upward direction.

3. A duplicating attachment as claimed in claim 1, further comprising a ratchet wheel attached to each of the said spools, a lever projecting to the front and rotatably mounted coaxially with each of the said spools, a dog attached to the said lever and adapted to engage in the said ratchet wheel and to rotate the same on the depression of the said lever.

4. A duplicating attachment as claimed in claim 1 further comprising a ratchet wheel attached to each of the said spools, a lever projecting to the front and rotatably mounted coaxially with each of the said spools, a dog attached to the said lever and adapted to engage in the said ratchet wheel and to rotate the same on the depression of the said lever, the said levers being contiguously superposed in the operative position so that they are simultaneously operated on the depression of the uppermost thereof.

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