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CARBON PAPER HOLDER AND FEEDER

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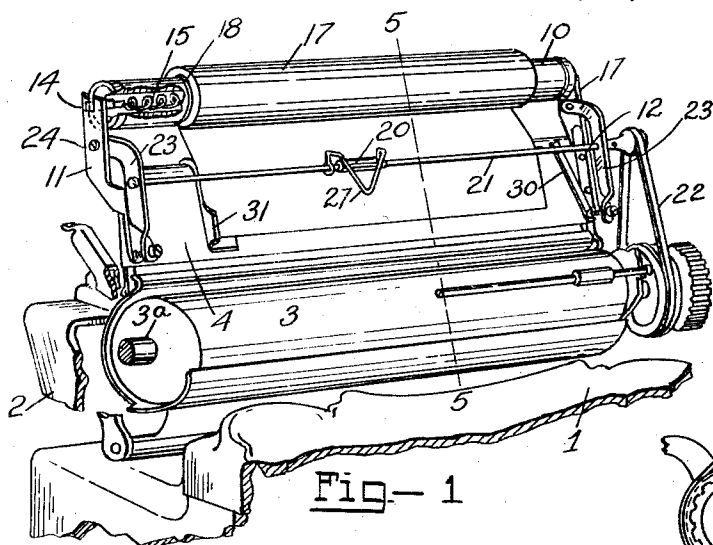


Fig- 1

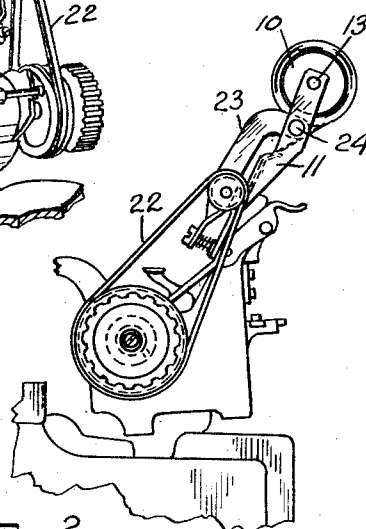


Fig- 2

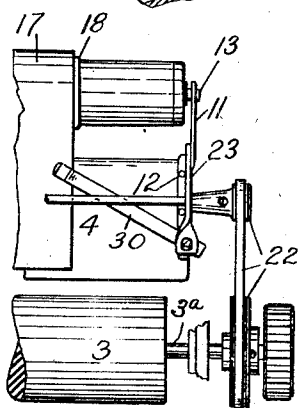


Fig- 3

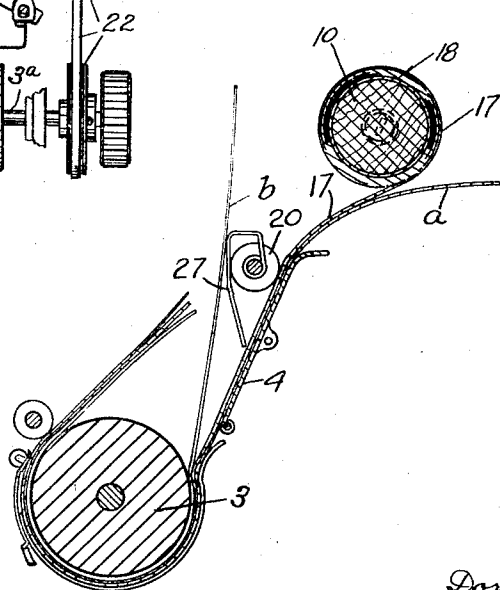


Fig- 5

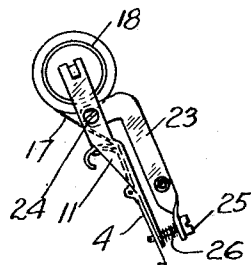


Fig- 4

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CARBON PAPER HOLDER AND FEEDER

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7 Claims. (Cl. 197—131)

This invention relates to carbon paper holding and feeding devices for use particularly in connection with typewriters.

The primary object of the invention is the provision of novel, simple and efficient means of this character, which is capable of easy attachment to a typewriter and is adapted to hold a roll of carbon paper in convenient position for use, if desired, and is operable by a turning of the platen to properly feed the carbon paper therefrom into the machine with original and copy sheets when positioned in the usual manner in the machine preparatory to its use.

Various additional objects and advantages of the invention will be apparent from the following detailed description, and from the accompanying drawing illustrating one embodiment of the invention, in which—

Figure 1 is a fragmentary perspective view of the paper feed parts of a typewriter, with parts broken away and with the attachment embodying the invention operatively associated therewith; Fig. 2 is an end elevation thereof, with parts broken away; Fig. 3 is a front elevation of the right hand end portion of the parts shown in Fig. 1; Fig. 4 is a left hand end view of the back plate of the typewriter, with the attachment comprising the invention mounted thereon, and Fig. 5 is an enlarged section on the line 5—5 in Fig. 1, with parts removed.

Referring to the drawing, 1 designates the body or stationary frame of a typewriter of one well-known make, 2 the platen carriage, 3 the platen roll mounted therein, and 4 the customary back plate attached to the carriage and disposed on an incline at the rear of and above the platen to serve as a back plate 4 for paper sheets which are being fed to the platen. The attachment comprising the invention is preferably attached to the back plate 4, and while the form and manner of mounting the carriage, platen and back plate may change for different kinds of typewriters, the manner of mounting, construction and operation of the attachment remain substantially the same.

The attachment includes a spring roll 10 mounted on standards 11 which are detachably fixed to the respective end portions of the back plate 4. In the present instance, each standard 11 has a foot portion which laps the front side of the back plate at an end thereof, and is secured thereto in any suitable manner, as by screws or bolts 12. One standard, the right in the present case, is provided at its upper end with a hole 13 for receiving a pivot stud 13 on one end of the

roll 10, while the other standard is provided at its upper end with a vertically disposed top notch for receiving the flat spring held stem 14 of the roll in the manner of a spring curtain roll mounting. The roll 10 is free to turn in either direction and is normally held in neutral position by the action of a spring 15 connecting the roll and its stem 14. It is thus apparent that upon a turning of the roll from neutral position, the stem 14 will remain stationary, thus causing a tensioning of the spring 15, so that when the turning pressure is released the roll will return to its neutral position.

The carbon paper 17 is in roll-form and wound on a cylindrical tube 18, being preferably fixed at its inner end to the tube. The tube is of a size to have a friction fit on the roll 10, whereby it is normally caused to turn with the roll, but may be circumferentially or axially adjusted thereon for the purpose hereinafter described. The carbon sheet 17, when in position for use, has its free end hanging down over the front of the back plate 4 slightly above the platen 3, as shown in Fig. 1. The carbon sheet, when in this position, does not interfere with the placing of the original writing sheet *a* and copy sheet *b* into the typewriter in the usual manner, except that the original sheet is inserted into the typewriter between the back plate 4 and carbon sheet 17, and the copy sheet *b* is placed in front of the carbon sheet.

The initial feed of the carbon paper into the machine between the writing sheets is effected by the turning of a small feed roll 20 carried by a shaft 21 that has belt and pulley connection 22 at one end with the platen shaft 3, the connection being such as to cause the circumferential feeding movements of the platen 3 and feed roll 20 to be uniform. The shaft 21 is mounted at its ends in respective bearing arms 23 carried by the standards 11. Each arm 23 is of L-form, with its short arm disposed uppermost and pivoted at its free end to the respective standard 11, as at 24, thence projecting forward and downward to near the lower end of the back plate 4 where it is adjustably connected to the lower end of the standard 24 by a screw 25 and interposed spring 26. The lower end of the arm 23 is apertured to loosely receive the shank of the screw 25 and the spring 26 yieldingly holds the arm against the head of the screw and away from the standard 11, as best shown in Fig. 4. The back plate 4 serves as the opposing feed pressure means for the roll 20, and the adjustment of the pressure of the feed roll should be such that a

feeding of the carbon will not be effected when the platen is turned, except when a writing sheet *a* is positioned in the machine between the back plate 4 and carbon sheet. It is important to have the feed pressure of the roll 20 adjusted for this purpose, as otherwise any turning of the platen when an original sheet *a* is not disposed in the machine would effect either a back turning or forward turning of the carbon sheet, which is not desirable.

The copy sheet *b* is held away from the feed roll 20 and is also prevented from passing up between the feed roll and carbon sheet upon a back turning of the platen by a guard 27 pivotally carried by the shaft 21. This guard, in its present embodiment, comprises a length of wire bent into substantially V-form, with the free ends of the leg portions thereof angularly bent to extend rearwardly and then downwardly into loose embracing relation to the shaft at each side of the feed roll 20. The apex of the V hangs downward and rests loosely by gravity against the carbon sheet below the feed roll, as best shown in Fig. 5.

If it is not desired to use the carbon paper in the operation of the machine, for instance when a single sheet is being written or envelopes are being addressed, the carbon sheet may be clamped to the back plate 4 by a clamping finger 30 which is pivoted at one end to one of the adjusting screws 25 at the lower end of the spring 26. This finger may either be placed in inoperative upright position alongside of the standard 11 or it may be swung lengthwise of the back plate 4 over the adjacent portion of the carbon paper 17 to yieldingly press the latter to the back plate, as shown in Fig. 3.

The use of the attachment comprising the invention is as follows: The attachment being mounted on the back plate 4, and a roll of carbon paper 17 being properly mounted on the spring roll 10, the carbon is slightly unwound from the roll to permit its free end to be placed over the back plate 4 in substantially the position shown. When in this position, the spring roll should be in neutral untensioned position, and this is accomplished by turning the carbon roll and its tube 18 on the spring roll 10 until the paper hangs in the position shown without any tensioning of the roll spring. The frictional fitting of the carbon roll tube on the spring roll is not only important for this purpose, but also to enable the carbon roll to be shifted axially on the spring roll to suit the desired position of feed of the carbon into the machine. In this connection, the left hand edge of the carbon sheet should be substantially in register with the adjustable paper stop 31 which, in the present instance, is adjustably mounted on the back plate 4. Original and copy sheets *a* and *b* may now be placed in the machine in the usual manner, except that the original sheet *a* is inserted between the back plate 4 and carbon sheet. When the lower edges of the sheets *a* and *b* are in engagement with the platen, a turning of the platen effects a winding of the sheets therearound in the usual manner, and also imparts rotation to the feed roll 20 through the drive connection 22 and causes a downward feeding of the carbon sheet with and between the writing sheets. This feeding action of the carbon sheet causes a turning of the spring roll 10 and a tensioning of its spring, so that upon any back turning movement of the platen, the carbon sheet will be back wound to take up any slack. If the machine is to be used for writing on a single sheet or for addressing envelopes, or the like, the clamp-

ing finger 30 may be swung down into holding engagement with the carbon paper, thus holding it against movement and in proper position for subsequent use during any turning of the platen.

It is apparent that the attachment may be easily and quickly attached to the back plate of any typewriter or some other convenient portion of the typewriter carriage and is not restricted to use in connection with a typewriter of the type illustrated. It is also apparent that the carbon paper when worn may be easily replaced on the roll 10 by simply removing the roll from the attachment and placing a fresh roll of carbon paper thereon.

We wish it understood that our invention is not limited to any specific construction, arrangement or form of the parts, as it is capable of numerous modifications and changes without departing from the spirit of the claims.

Having thus described our invention, what we claim as new, and desire to secure by United States Letters Patent, is:

1. In combination with the platen and back plate of a typewriter, of a spring roll mounted above and in operative relation to the platen, carbon paper wound on said roll and adapted to feed therefrom in advance of the back plate and around the platen, and means operable by a turning of the platen to effect a feeding of the carbon paper, said means being inoperative except when a writing sheet is between the back plate and carbon paper.

2. The combination with a typewriter carriage, back plate and platen, of a carbon paper holding and feeding attachment therefor mounted for movements with the carriage and comprising a spring roll, a length of carbon paper wound thereon and adapted to feed therefrom in advance of the back plate and toward the platen, the roll being substantially free of spring tension when the carbon sheet is disposed a predetermined distance over the back plate but short of the platen, and means operable by a turning of the platen to cause a feeding of the carbon paper with a writing sheet when in position between the back plate and carbon paper.

3. The combination with a typewriter back plate and platen, of standards attached to and rising from the opposite end portions of said back plate, a spring roll supported above the back plate by said standards, a roll of carbon paper on said spring roll adapted to feed therefrom in advance of the back plate and around the platen, the free end of said carbon paper normally hanging a distance over the back plate and free of winding tension of the spring roll, feed means actuated by a turning of the platen and cooperating with a writing sheet between the back plate and carbon paper to effect a feeding of the carbon paper into the machine and a tensioning of the spring roll by such feeding action, and means for adjusting the feeding pressure of the feed means with respect to the carbon paper.

4. The combination with a typewriter back plate and platen, of a carbon paper holding and feed attachment connected to the back plate and including a spring roll mounted for spring tensioning movements in either direction from neutral position, a length of carbon paper wound on said roll and adapted to have its free end hanging a distance down over the back plate when the spring roll is in neutral position, a feed roll engaging the front side of the carbon paper in opposition to the back plate and being substantially free of feeding engagement with the

paper except when a writing sheet is disposed between the back plate and carbon paper, means mounting said feed roll for feed pressure adjustment, and means connecting the platen and feed roll to drive one from the other.

5 5. The combination with a typewriter back plate and platen, of a spring roll mounted above the back plate and adapted to have a length of carbon paper wound thereon for turning movements therewith, the free end of the carbon paper
10 being adapted to feed over the front of the back plate and around the platen, means actuated by the turning of the platen and operable in opposition to the back plate to impart feeding movements to the carbon paper, and a guard mounted
15 in front of the back plate at the front side of the carbon paper to prevent engagement of a copy sheet with the feed means when turned into or out of the typewriter.

20 6. The combination with a typewriter back plate and platen, of a spring roll mounted above the back plate and having a length of carbon paper wound thereon and adapted to feed there-

from down in front of the back plate, a feed roll mounted in advance of the carbon paper in opposition to the back plate, a shaft carrying said roll, means supporting said shaft, means for connecting said shaft and platen for driving one
5 from the other, and a guard mounted on said shaft and having loose engagement with the front surface of the carbon paper to prevent a copy sheet from passing between the carbon paper and feed roll.

7. The combination with a typewriter, back
10 plate and platen, of a spring roll mounted above the back plate, a length of carbon paper wound thereon and adapted to have its free end extend in front of the back plate and to then feed around
15 the platen, and means operable by a turning of the platen to cause a feeding of the carbon paper with a writing sheet when in position between the back plate and carbon paper, said means including
20 a feed roll acting against the carbon paper and writing sheet in opposition to the back plate.

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