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TYPEWRITER PAGE END SIGNAL

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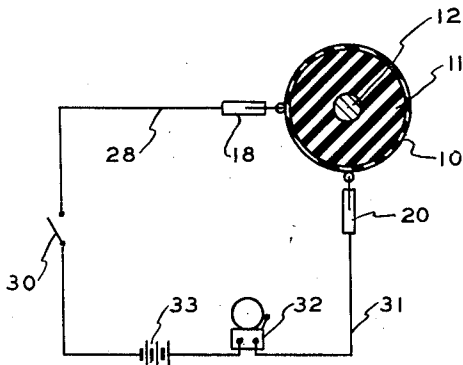


Fig. 1

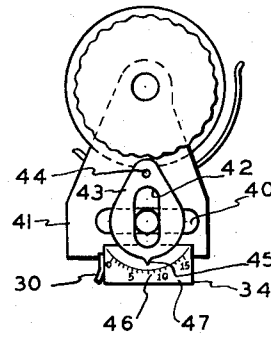


Fig. 5

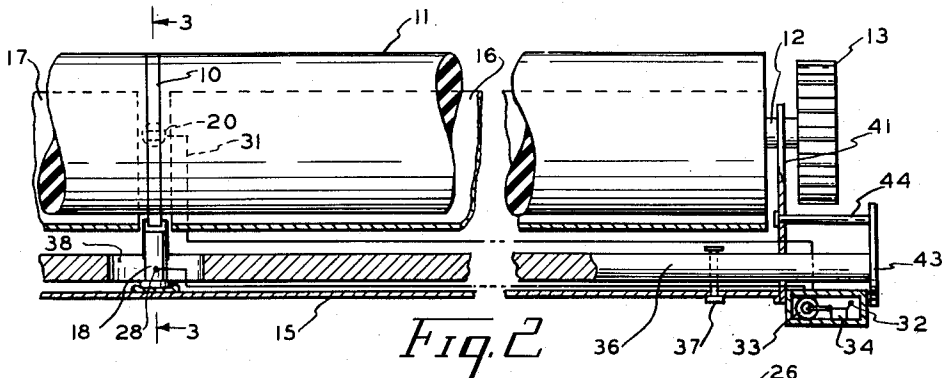


Fig. 2

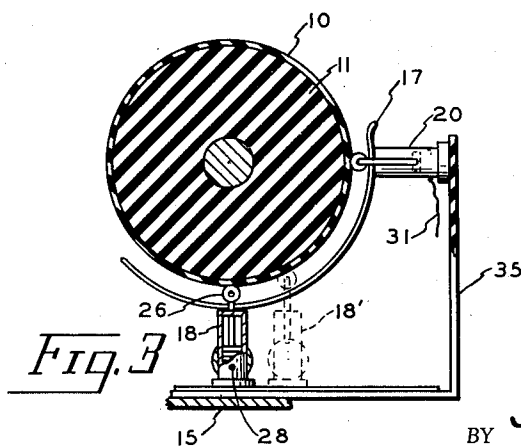


Fig. 3

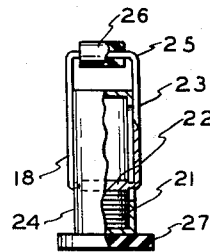


Fig. 4

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TYPEWRITER PAGE END SIGNAL

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5 Claims. (Cl. 197-189)

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This invention relates to a typewriter page end signal and has for an object to provide means for signalling to a typist that the page she is typing on is a certain number of spaces from the end of the sheet.

A further object of this invention is to provide a typewriter page end signal that may be adjusted to a desired number of spaces from the end of the sheet, anywhere from one space up to about sixteen spaces, more or less, to thus inform the typist when this adjusted distance from the end of the page has been reached.

A further object of this invention is to provide a typewriter page end signal that may be added to any existing typewriter, or that may be installed as original equipment in any kind of typewriter yet to be manufactured.

Yet a further object of this invention is to provide a typewriter page end signal which may be added to any existing conventional typewriter, or to an electrically operated typewriter, both as original equipment and as extra equipment to an already manufactured typewriter of either type.

Still a further object of this invention is to provide a typewriter page end signal wherein the typist may readily adjust the distance from the end of the page that the signal will operate and including an electric signal circuit having a switch located in close proximity to the space adjustment control means, and both of these features located at a convenient place for ready use by the typist.

Still a further object of this invention is to provide a typewriter page end signal which is operated by an electric circuit which preferably avoids using the body of the typewriter as part of the circuit, thereby avoiding the possibility of high humidity or dampness short-circuiting the signal through the frame and thus ruining the battery when a battery is used as the source of electricity for the circuit.

Yet a further object of this invention is to provide a circuit conductive band countersunk in the rubber platen of the typewriter, wherein the circuit conductive band will have the same physical characteristics as the rubber platen, thus permitting the circuit conductive band to be placed anywhere along the length of the platen without interfering with the normal typing use of the platen, as contrasted with a metal conductive band having different physical characteristics than the rubber platen and thus limiting the placing of the paper about the platen in the normal manner.

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Still a further object of this invention is to provide a signal circuit for a typewriter page end signal which circuit includes a source of electricity, an alarm and a circuit interrupting switch, all conveniently located in a readily accessible box for attachment to the carriage of a typewriter, and leads to roller contact members and through a conductive rubber band countersunk in the rubber platen of the typewriter to thereby complete the circuit after the platen has moved the paper beyond the roller contacts.

With the foregoing and other objects in view, this invention comprises the combination, construction and arrangement of parts hereinafter set forth, claimed and disclosed in the accompanying drawings, wherein:

Fig. 1 is a schematic view of the circuit of this invention;

Fig. 2 is an elevational view partly in section of the invention as mounted on a typewriter carriage;

Fig. 3 is a sectional view on line 3-3 of Fig. 2; Fig. 4 is a partly sectional elevational view of a contact member; and

Fig. 5 is an end view of a typewriter carriage to which this invention has been added.

There is shown at 10 a conductive rubber band countersunk in and encircling the rubber platen or roller 11 mounted in the usual manner, by means of its axle 12 and control knob 13 on a stanchion 14 mounted in the conventional manner on the typewriter carriage 15.

The outer surface of the conductive rubber band 10 coincides with the outer surface of the rubber platen 11 and has the same physical properties as the rubber platen 11, hence it will not affect the quality of any typing done on paper placed about this part of the roller platen.

The conductive rubber band 10 may be made of any suitable conductive rubber material, synthetic or otherwise, and now conventionally available. Because of the fact that the mechanical properties of the rubber band 10 will be the same as that of the rubber platen 11, such band 10 may be placed anywhere along the surface of the platen 11 as convenient without interfering in any way with the normal use of the platen surface, as contrasted with a metal conductive band which does interfere with the normal use of the platen and hence is usually placed at one end thereof, thus shortening the effective length of the platen. As here shown the band 10 is placed about the center of the platen 11 because of the fact that in the illustration used, there

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are two platen bed plates 16 and 17 normally spaced apart slightly at the center, and this spacing between the two platen bed plates 16 and 17, slightly enlarged if necessary, provides a very convenient space for the contact members 18 and 20 to be mounted so as to complete the circuit through the band 10 after the sheet of typing paper has been rotated by the platen 11 to beyond both contact members 18 and 20.

As shown, both contact members 18 and 20 each have a yieldable spring 21 enclosed within a cylindrical base and biased against the bottom of a disk 22 having arms 23 integrally extending therefrom through suitable slots in the sides of the spring enclosing cylinder 24 and turned inwardly at 25 to thereby provide an axle for a contact roller 26. The spring, disk, arms and roller are all of conductive material, preferably metal, and may be lubricated with graphite to insure the conductivity. The cylinder 24 may be mounted on an insulating base 27. An electric lead or bus bar 28 covered with a suitable insulating sheath serves to electrically connect one contact member 18 to the circuit interrupting switch 30 and another similar insulated lead or bus bar 31 connects the other contact member 20 to the signal alarm bell or buzzer 32.

A source of electricity 33, which may be a small fountain pen size flashlight battery or a small battery such as conventionally used in a hearing aid is provided connecting the switch 30 to the alarm signal 32. For convenience, the switch 30 is mounted through the side of a small box 34, which box 34 contains therewithin the battery 33 and the alarm signal 32 and may be attached as shown at one end of the carriage 15 so that it remains fixed relative to the carriage and moves with the carriage. Contact member 20 is mounted in a relatively fixed position about the band 10 and platen 11 by being mounted on an insulating arm 35 extending from the carriage 15. The other contact member 18 is adjustably mounted so that its roller contact 26 may be brought relatively close to the roller contact of contact member 20, or may be spaced the maximum distance therefrom, it being apparent that the distance apart the roller contacts of the contact members are about the platen 11 determines the distance that the signal will operate from the bottom of the page being typed. Inasmuch as the platen 11 rotates clockwise as viewed in Fig. 3 as the paper is progressing through the typewriter, the further to the left that contact member 18 is adjusted the nearer the bottom of the page will be reached before the alarm is sounded and vice versa, the further to the right that contact member 18 is adjusted, as shown at 18' for instance, the greater the amount of space at the bottom of the page when the alarm 32 is operated. In order to selectively adjust the contact member 18 to any desired position, it is so mounted that it may ride along the bottom arm of the insulating support 35 mounted on carriage 15. An insulating rod 36 pivoted at 37 to the carriage 15 has a slot 38 suitably located for moving contact member 18 along the trackway provided on the lower arm of insulating support 35. The other end of the rod 36 extends through a horizontal slot 40 in a supporting plate 41 and through a vertical slot in a control handle 43 pivoted at 44 to the supporting plate 41 and provided at its lower end with an indicating pointer 45. The indicating pointer 45 cooperates with space indicating indicia provided on an end 47 of the box 34, and as will be apparent, moving

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the control handle 43 will cause corresponding movement of the rod 36 about its pivot 37 and thus adjustably position the contact member 18, the movement of the contact member 18 being much greater than the movement of the control handle end of rod 36 due to the positioning of the pivot 37.

In operation, when the typist inserts the typing paper between the platen 11 and the platen bed plates 16 and 17, she will decide how many spaces from the end of the paper she wishes to be warned, and will adjust control handle 43 accordingly so that its pointer 45 cooperating with the indicia 46 will indicate the number of spaces she wishes to remain at the bottom of the paper, and at the same time, and in the same convenient location she will depress the control switch 30 so as to place the signal ready for operation. Then as the page is being typed and the bottom of the page is approached, the bottom of the page will first pass beyond the contact member 20 and then, according to the desired number of spaces, will pass beyond the contact member 18. As soon as both contact members 18 and 20 are free of the paper, a circuit will be completed between the contact members through the conductive band 10 and thus operate the alarm, bell or buzzer 32, thus warning the typist that the paper has reached the desired position and that it should be removed and a new page should be started.

As shown, two contacts are provided and the circuit is completely insulated from the body of the typewriter. This is the preferred form because of the fact that humidity or moisture could short circuit the battery if the typewriter body is made part of the circuit. However, it is, of course, possible that under certain working conditions that there would be no possibility of humidity being present, and if so desired, one of the contact members could be grounded through the typewriter body instead of providing an insulated lead therefrom in the circuit.

While the device has been shown and the structure described in detail, it is obvious that this invention is not to be considered as being limited to the exact form disclosed, and that changes in detail and construction may be made therein within the scope of what is claimed, without departing from the spirit of this invention.

Having thus set forth and disclosed the nature of this invention, what is claimed is:

1. In a typewriter having a non-conductive rubber platen and a platen carriage, a conductive rubber band countersunk in the surface of the non-conductive rubber platen and insulated thereby from the typewriter body, contact means yieldably urged against said conductive rubber band but held out of contact therewith when a sheet of paper is about the typewriter platen, said contact means being insulatably mounted on the platen carriage, means for adjusting said contact means about the platen, a signal circuit to said contact means arranged to be completed when said contact means is in contact with said conductive rubber band after the sheet of paper has been rotated by the platen to beyond said contact means, said circuit including a circuit switch, a source of electricity and an alarm all mounted for movement with the carriage, said means for adjusting said contact means including a control handle, means connecting said handle to said contact means, and a box mounted on the carriage within which said source of electricity and said alarm are mounted, said switch

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being mounted through one side of said box, and cooperating page space indicating means on said control handle and on a side of said box.

2. In a typewriter having a non-conductive rubber platen and a platen carriage, a conductive rubber band countersunk in the surface of the non-conductive rubber platen and insulated thereby from the typewriter body, a pair of adjustably spaced apart contact members having contacts yieldably urged against said conductive rubber band but held out of contact therewith when a sheet of paper is about the typewriter platen, said contact members being insulatably mounted on the platen carriage, means for adjusting one contact member about the platen relative to the other, and a signal circuit to said contact members arranged to be completed when both contacts are in contact with said conductive rubber band after the sheet of paper has been rotated by the platen to beyond both roller contacts.

3. In a typewriter having a non-conductive rubber platen and a platen carriage, a conductive rubber band countersunk in the surface of the non-conductive rubber platen and insulated thereby from the typewriter body, a pair of adjustably spaced apart contact members having roller contacts yieldably urged against said conductive rubber band but held out of contact therewith when a sheet of paper is about the typewriter platen, said contact members being insulatably mounted on the platen carriage, means for adjusting one contact member about the platen relative to the other, and a circuit to said contact members arranged to be completed when both roller contacts are in contact with said conductive rubber band after the sheet of paper has been rotated by the platen to beyond both roller contacts, said circuit including a circuit switch, a source of electricity and an alarm all mounted for movement with the carriage.

4. In a typewriter having a non-conductive rubber platen and a platen carriage, a conductive rubber band counterunk in the surface of the non-conductive rubber platen and insulated thereby from the typewriter body, a pair of adjustably spaced apart contact members having roller contacts yieldably urged against said conductive rubber band but held out of contact therewith when a sheet of paper is about the typewriter platen, said contact members being insulatably mounted on the platen carriage, a circuit to said contact members arranged to be

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completed when both roller contacts are in contact with said conductive rubber band after the sheet of paper has been rotated by the platen to beyond both roller contacts, said circuit including a circuit switch, a source of electricity and an alarm all mounted for movement with the carriage, and a box mounted on the carriage within which said source of electricity and said alarm are mounted, said switch being mounted through one side of said box.

5. In a typewriter having a non-conductive rubber platen and a platen carriage, a conductive rubber band countersunk in the surface of the non-conductive rubber platen and insulated thereby from the typewriter body, a pair of adjustably spaced apart contact members having roller contacts yieldably urged against said conductive rubber band but held out of contact therewith when a sheet of paper is about the typewriter platen, contact members being insulatably mounted on the platen carriage, means for adjusting one contact member about the platen relative to the other, a signal circuit to said contact members arranged to be completed when both roller contacts are in contact with said conductive rubber band after the sheet of paper has been rotated by the platen to beyond both roller contacts, said circuit including a circuit switch, a source of electricity and an alarm all mounted for movement with the carriage, said means for adjusting the one contact member including a control handle and pivoted lever means connecting said handle to said one contact member, a box mounted on the carriage within which said source of electricity and said alarm are mounted, said switch being mounted through one side of said box, and cooperating page space indicating means on said control handle and on a side of said box.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
815,644	Shea	Mar. 20, 1906
1,071,780	Neidig et al.	Sept. 2, 1913
2,375,271	Ayres	May 8, 1945
2,474,951	McCoy, Jr.	July 5, 1949

FOREIGN PATENTS

Number	Country	Date
437,159	Great Britain	Oct. 24, 1935