April 29, 1952 H. C. STRICKLIN 2,595,178

TYPEWRITER PAGE END INDICATOR

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Fig. 1

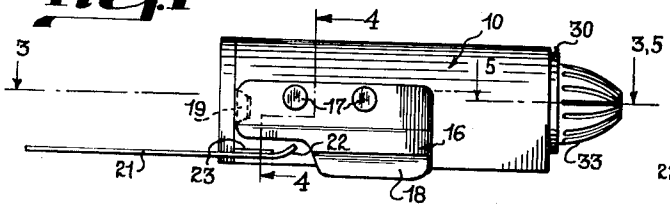


Fig. 2

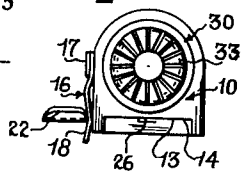
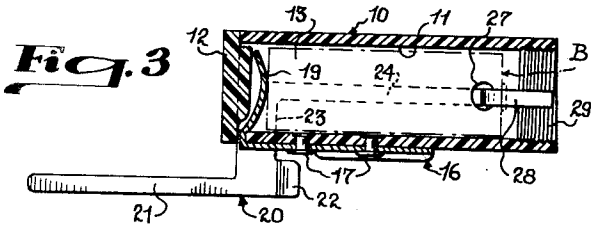


Fig. 3



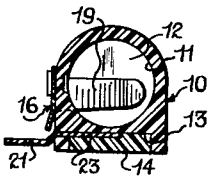


Fig. 4

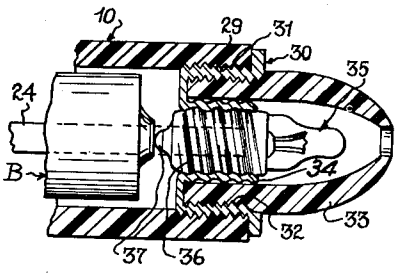
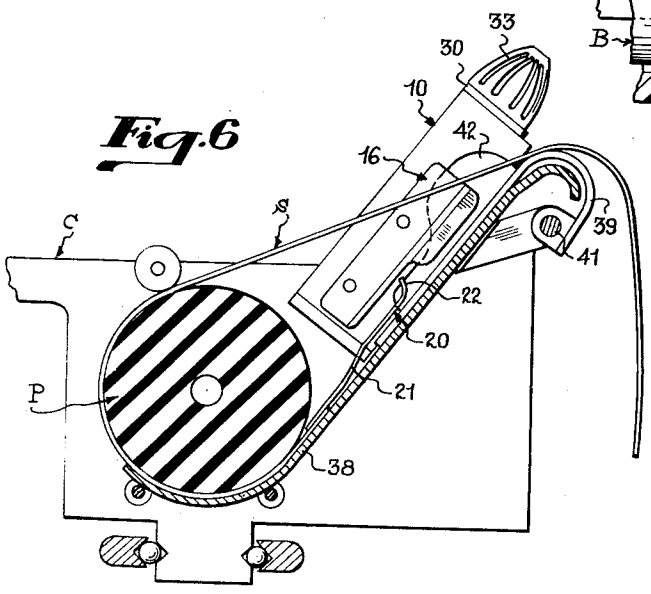


Fig. 5

Fig. 6



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TYPEWRITER PAGE END INDICATOR

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3 Claims. (Cl. 197—189)

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This invention relates to page end indicators for typewriter machines and some types of bookkeeping or adding machines, and more particularly to page end indicators of the type wherein the signal device is electrical, the circuit thereof being interrupted by a sheet of paper passing through the typewriter.

Prior page end indicators of the type to which this invention relates have required modification or adaptation of the typewriting machine, usually by means of the addition of a band of conducting material placed on the platen and special contact means permanently fitted to the typewriter for engaging the conducting band. The installation of such means cannot be made by personnel of the average office or business employing typewriter machines, and would require the services of skilled mechanics for preparing the machine and installing the device, which not only is expensive but also places the machine out of service during the installation period.

A principal object of the present invention is to make possible the installation of an electrical page end indicator without requiring modification or adaptation of the typewriter machine and without requiring the services of skilled mechanics or similar personnel for its installation.

Another object resides in producing a page end indicator of the type referred to which is extremely simple and economical in its construction, and which is small in size so as to avoid interference with the normal operation of the typewriting machine.

These objects and advantages are all accomplished by my invention, which is in the form of a small attachment clipped to the marginal paper guide usually supplied with all typewriters. The mounting clip forms one ground connection and the spring finger completes the circuit to a signal device and current source unless a sheet of paper is disposed underneath the finger. The parts are arranged so that when the paper is withdrawn from under the finger, the signal device is energized signalling to the operator that the bottom of the sheet of paper is approaching the typing zone of the platen. In the preferred embodiment of the invention the attachment includes a hollow body of insulating material carrying a flashlight cell and bulb as well as the spring finger for resiliently engaging the paper support adjacent the platen.

The manner in which these and other objects of the invention may be attained will be apparent from the following detailed description of a preferred embodiment thereof.

In the drawings:

Fig. 1 is a side elevation of the attachment;

Fig. 2 is a front elevation thereof;

Figs. 3 and 4 are sections taken as indicated on Fig. 1;

Fig. 5 is an enlarged fragmentary section of the bulb mounting means taken as indicated on Fig. 1; and,

Fig. 6 shows how the device may be installed on a typical typewriter carriage.

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Referring to the drawings, a device made in accordance with the preferred embodiment of the invention comprises a body 10 of non-conducting material such as hard rubber, Bakelite, Lucite, Vinylite, or the like. The body is formed with a hollow or bore 11 for reception of a flashlight cell, the parts preferably being arranged so that the small or penlight size of cell is accommodated by the body. One end of the body is closed by a disc 12 permanently attached to the body, and the underside of the body, which is preferably made flat, is grooved as at 13 to receive an insert or plate 14.

A pair of spring contacts preferably composed of brass, stainless steel or other corrosion resistant metal are attached to the body, one for attaching and grounding the device to the typewriter and the other for completing the circuit as a sheet of paper withdraws from under it. One of the contacts is in the form of a spring clip 16 riveted to the body as at 17 and having a bent edge 18 to facilitate passage of the clip over the marginal paper guide of the typewriter. As best seen in Fig. 3 the clip contact 16 has an extension 19 passing through a suitable aperture in the wall of the body and arranged for engaging one end of the flashlight cell. The other clip 20 has an elongated finger 21 for engaging the paper support 38 adjacent the platen, the upper end thereof being bent upwardly as at 22 to facilitate insertion of the paper underneath the contact arm.

An extension 23 of contact 20 passes through the body wall and between the bottom of groove 13 and the insert 14 as best seen in Fig. 4. Extension 24 of the contact 20 continues from part 23 along the body passing through a groove 26 formed in the insert 14, this groove being best shown in Fig. 2. Of course the groove 26 could also be formed in the body 10. An aperture 27 is formed in the bottom wall of the body through which end portion 28 of the extension 24 emerges and lies along the bottom of bore 11. The end of the bore is threaded as at 29 and strip end 28 may be recessed into the threads so as to not interfere with the passage of the bulb mounting means in the threads 29. However, the recess is not deep enough to prevent portion 28 from contacting the bulb mounting means that engages threads 29.

The bulb mounting means is best shown in Fig. 5, and includes a metallic thimble 30 having threads 31 engaging body threads 29 and internal threads 32 for receiving a transparent cap member 33 that protects the flashlight bulb. Thimble 30 includes a re-curved threaded sleeve 34 mounting the bulb 35 by means of its metallic base 36. The tip contact 37 of the bulb is arranged for engaging one end of battery B when the thimble 30 is threaded to its innermost posi-

tion in the body 10. This contact may be broken by rotation of the thimble 30 and cap 33 to withdraw the bulb from the battery, thus the bulb mounting assembly serves as a switch.

The installation of the device will be apparent from Fig. 6 wherein only enough of the typewriter is shown to make clear to those skilled in the art how such installation is effected. The typewriter carriage C includes the usual platen P about which a sheet of paper S is passed during operation of the machine. A sheet metal plate member 38 is provided which will be termed a paper support, this member being present on all standard typewriters and serving as a support for the paper before it passes between the platen and the lower rollers. Slidable along the paper support 38 is a paper guide member 39 mounted on a rod 41 or the like, and having a flange 42 serving as a marginal paper guide.

The device of the invention is shown attached to the left-hand marginal guide in the drawings, which is the most convenient place for such attachment. The contact 16, the external portion of which is formed as a clip, is readily slipped over the flange 42 which simultaneously mounts the device on the margin guide and grounds the contact. This operation is performed so as to dispose the tip of spring finger 21 in resilient engagement with the paper support 38 adjacent the platen P, but the contact 20 is arranged so that it does not make contact with the marginal guide to which the device is attached. When paper is inserted in the machine the marginal guide is adjusted so that the paper passes under the bent portion 22 of clip 20 and passes under spring finger 21 thereby insulating contact 20 from the paper support 38.

With the arrangement as shown the end of the paper sheet S will clear the end of spring finger 21 before the end of the paper reaches the typing zone of the platen. When this occurs spring finger 21 makes a ground connection with the paper support 38 and if the bulb mounting means is screwed to its inward position, the circuit is completed through the bulb and battery signalling to the operator that the bottom of the page will soon reach the platen typing zone. If a new sheet is not to be inserted immediately, or if the operator so desires, the signal may be de-energized by manipulation of the transparent plastic cap 33 and thimble 30.

Having completed a detailed description of the invention it will be apparent that I have disclosed a page end signalling device which is extremely simple and economical to manufacture, which is small in size, and which may be readily attached to a conventional typewriting machine by office or business personnel without special adaptation of the machine. The small size cells employed in the device are inexpensive and are readily replaced by unscrewing the bulb mounting means 30 by means of the cap 33.

The device may be inserted into and removed from the typewriter in a few seconds. A typical device which has been built and tested by applicant is three inches long, exclusive of the spring finger 21 which extends about one or one and one-half inches past the lower end of the body. The body itself is about three-quarters of an inch wide and is formed to accommodate a flashlight cell of approximately two inches long and one-half inch in diameter.

It will be apparent to those skilled in the art that in its broader aspects the invention is not limited to the preferred embodiment wherein the battery and bulb are attached directly to the typewriting machine. The basic mode of operation of the spring finger contact arrangement adjacent the platen that makes a contact with the paper support member when the paper passes from between these parts would be obtained if the other signal elements were mounted elsewhere and formed as either A. C. or D. C. operated bulb or bell signal means.

Although the preferred embodiment of my invention has been described in detail so that those skilled in the art can practice the same, it is apparent that modification thereof may be made without departing from the spirit of the invention as defined in the appended claims.

What is claimed is:

1. A page-end signal device for attachment to a typewriting machine comprising a hollow body of non-conducting material arranged to receive a flashlight cell, a bulb in said body disposed for contact with one terminal of the cell, a contact on said body for electrical connection with said bulb and another contact on said body for connection to the other terminal of said cell, one of said contacts including means for making a ground connection with the typewriter frame, the other contact having a spring finger for engaging the paper support of the typewriter adjacent the platen.

2. A page-end signal device for attachment to a typewriting machine including a marginal paper guide, said device comprising a hollow body of non-conducting material arranged to receive a flashlight cell, a bulb in said body disposed for contact with one terminal of the cell, a contact on said body connected to said bulb and another contact on said body for connection to the other terminal of said cell, one of said contacts including a spring clip external of said body for simultaneously mounting said device on the marginal paper guide of the typewriter and making a ground connection with the typewriter frame, the other contact having a spring finger for making resilient grounded engagement with the paper support of the typewriter adjacent the platen.

3. A page-end signal device for attachment to a typewriting machine having a marginal paper guide, said device comprising a hollow body of non-conducting material arranged to receive a flashlight cell, metallic bulb mounting means threaded in one end of said body, a bulb in said mounting means disposed for contact with one end of the cell, a spring clip mounted externally of said body for clipping said device to the marginal paper guide of the typewriter, an extension of said clip passing into the hollow of said body at the other end thereof for engaging the other end of the cell, a spring finger external of said body for making resilient grounded engagement with the paper support of the typewriter adjacent the platen, and an extension of said finger passing along said body and disposed for engagement with said bulb mounting means.

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