Aug. 14, 1962 R. FONDILLER 3,049,212

PAGE-END SIGNAL DEVICE

Filed March 15, 1960 2 Sheets-Sheet 1

FIG. 1

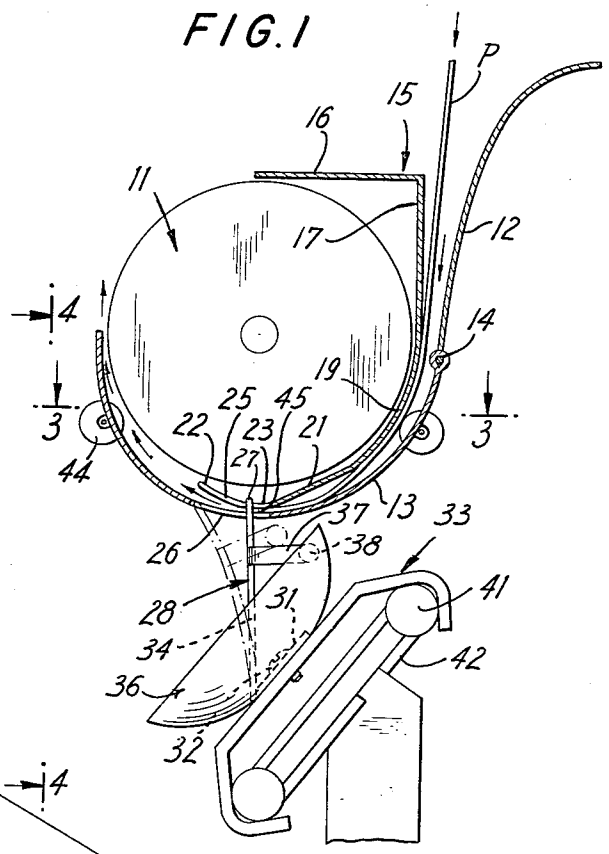
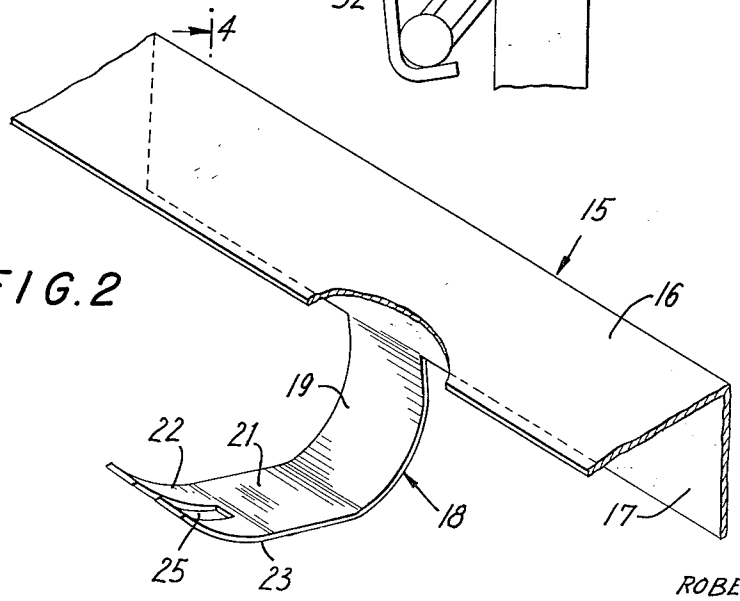


FIG. 2



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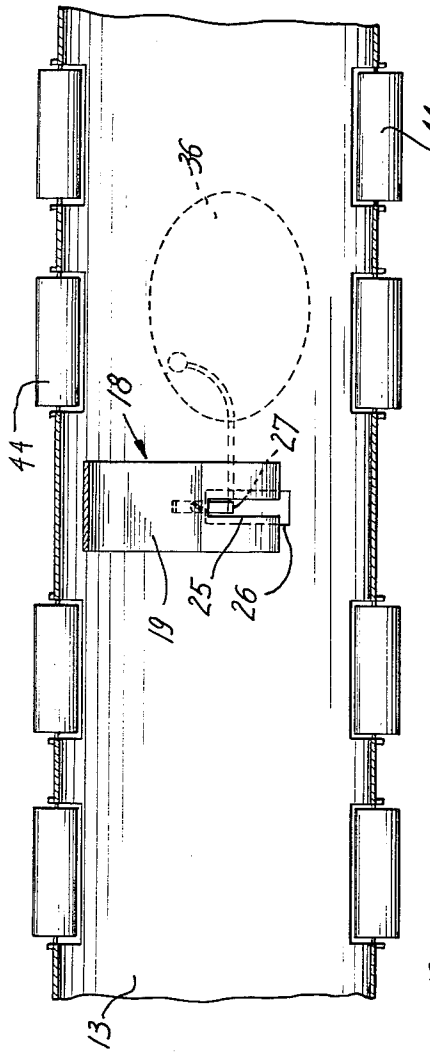


FIG. 3

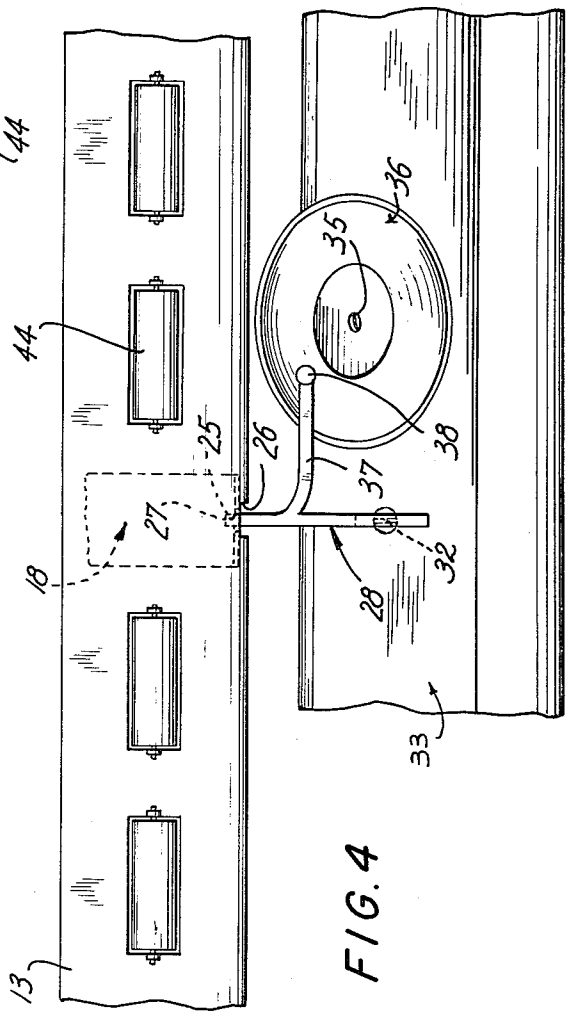


FIG. 4

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3,049,212

PAGE-END SIGNAL DEVICE

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6 Claims. (Cl. 197—189)

This invention relates to the art of signal devices, and more particularly to a device for use on a typewriter or similar machine to indicate when the typist is approaching the end of the page.

As conducive to an understanding of the invention, it is noted that when a typist is using a typewriter, it is important that she be aware when she is approaching the end of a page, to eliminate typing too closely thereto, which in many cases would necessitate retyping of the entire page.

Where the carbon paper utilized with the typewriter has line indications along one edge to be inspected by the typist during the course of her work so that she can determine when she is approaching the end of the page, due to the fact that the typist is concentrating upon the work being done, she often fails to observe the line indications on the carbon, with the result that typing too close to the end of the page is often done.

Where a dial is used on the platen, which is set with respect to the page, since this also requires a reading of the dial to determine the number of lines to the bottom of the page, the problem above pointed out is still present.

Where gear systems are used which signal after a preset longitudinal travel of the paper has occurred, not only are these devices complex and expensive in construction, but they are limited to a paper of a given length and would have to be re-set each time the paper length was changed. Since this operation requires a manual adjustment by the typist, it might be inadvertently omitted, with the result that no accurate signal would be given.

Where a sensing finger is used that is engaged by the paper, and a groove is provided in the platen of the typewriter into which the sensing finger falls after the passage of the end of the page, such groove prevents typing on the platen at the location of such groove, thereby limiting the effective typing surface of the platen.

It is accordingly among the objects of the invention to provide a page-end signal device which is simple in construction, having but few parts that may readily be fabricated at low cost and readily assembled in conjunction with any conventional typewriter, which is not likely to become deranged even after long use and requires no prior setting or visual inspection by the typist, and which will automatically and dependably provide a suitable signal, such as a visual or audible signal, as desired, when the end of the page being typed is approaching the striking position of the type faces, without in any way limiting the effective typing surface of the platen.

According to the invention, these objects are accomplished by the arrangement and combination of elements hereinafter described and more particularly recited in the claims.

In the accompanying drawings in which is shown one of various possible embodiments of the several features of the invention,

FIG. 1 is a transverse sectional view of the platen and carriage structure of a typewriter, showing the invention,

FIG. 2 is a perspective view of the paper pressure member,

FIG. 3 is a sectional view taken along line 3—3 of FIG, 1, and

FIG. 4 is a fragmentary front elevation view taken along line 4—4 of FIG. 1.

Referring now to the drawings, the page-end signal

device is shown incorporated in a typewriter of any conventional type, only the parts of which are essential to an understanding of the invention being shown.

As shown in FIG. 1, the platen 11 of the typewriter has associated therewith the conventional paper table 12 and paper pan 13, the upper edge of which may be connected to the lower edge of the paper table in conventional manner as at 14.

Positioned between the paper table 12 and paper pan 13 and the platen 11 is a paper pressure member 15, which may comprise an elongated strip of substantially rigid material such as shown in FIG. 2, which has a ledge 16 extending at substantially right angles from a depending portion 17, said ledge serving as a backing member for the paper when the paper has passed under, around and over the platen to facilitate erasures by the typist or writing on the paper.

The depending portion 17 has a finger 18 centrally located thereon and depending from its lower edge, said finger having a curved portion 19 corresponding to the curvature of the platen and an additional portion 21 at the extremity of the curved portion which extends away from the platen, as shown in FIG. 1. The outer end of the portion 21 is then curved inwardly as at 22, the junction between portions 21 and 22 forming a surface 23 which is closely adjacent to the paper pan 13 as shown in FIG. 1, or may engage the latter when no paper is positioned therebetween.

As shown in FIGS. 1 and 2, the curved end 22 of the finger 18 has a longitudinal slot 25 extending centrally therethrough, which is aligned with a correspoding aperture 26 in the paper pan 13 to accommodate the end 27 of the sensing finger 28.

As shown in FIGS. 1 and 4, the sensing finger comprises a strip of very flexible material, such as spring steel, which has a lip 31 at its lower end adapted to be secured as by rivets or screws 32 to the conventional carriage base 33 of the typewriter midway between its ends, the body portion 34 of the finger 28 normally rising substantially vertically as shown in FIG. 1 when in the rest position. Also secured to the carriage base as by a screw or rivet 35 laterally displaced from the finger is a bell 36. The body portion 34 of the finger 28 has an arm 37 desirably formed integral therewith and extending therefrom near the top thereof below the paper pan 13, said arm 37 at its end carrying a clapper 38, illustratively a metal ball. In normal position, in the embodiment illustratively shown in FIG. 1, the metal ball 38 is positioned in the concavity of the bell 36, slightly spaced from the wall thereof, and the body portion 34 of the finger is adapted to be stressed in the manner to be described, so that the ball 38 will be moved away from the wall of the bell to the position shown in broken lines in FIG. 1.

The pressure member 15 may be supported in any suitable manner, for example, on the paper table 12, to be retained in substantially fixed position, the various elements shown in FIG. 1, i.e., the platen 11, the paper table 12 and paper pan 13, and the carriage base 33 with the bell 36 and sensing finger 28 thereon, being movable in unison in conventional manner, as the carriage base 33 is slidably mounted by suitable ball bearings 41, for example, on a support 42 therefor, rigid with the typewriter frame.

In the operation of the typewriter, the page P of paper to be typed is introduced in conventional manner by being placed between the paper table 12 and the pressure member 15 and pushed downwardly and around, between the platen 11 and conventional feed rollers 44, so that upon rotation of the platen 11 in conventional manner, the paper P will be advanced to be presented to the typing position.

By reason of the portion 21 of the finger 18 of the

pressure member **15**, the central portion of the paper P will be moved downwardly to space the latter from the platen **11** so that the leading edge **45** of the paper P, as it is advanced upon rotation of the platen **11**, will abut against the side of the protruding end **27** of the sensing finger **28**.

Thus, upon further rotation of the platen **11**, advance of the paper P will cause the sensing finger **28** to be deflected to the left, as shown in FIG. 1, thereby stressing such resilient finger and moving the ball **38** away from the bell **36**. As the paper is longitudinally advanced with rotation of the platen, it will continue to react against the protruding end **27** of the finger **28**, retaining such finger in stressed position. As the sensing finger **28** is of extremely resilient material, and purposefully relatively wide, it will only press very lightly against the paper, thereby not causing any lines to be transmitted through the carbon paper normally used to make several copies, nor tear the leading edge of the paper or papers.

When the end of the paper P is reached, it will pass the deflected protruding end **27** of the sensing finger **28**, releasing the latter so that due to the stress previously imparted thereto it will spring back to the right, as shown in FIG. 1, and the momentum thus created will cause arm **37** and the ball **38** of the finger **28** to over-travel their initial positions so that the ball **38** will strike the bell **36** to provide an audible indication to the typist that she has approached to a predetermined distance from the end of the page P, depending upon the location of the sensing finger **28**.

It is of course apparent that instead of using a bell **36** and a clapper or ball **38**, the return movement of the sensing finger, after the end of the page P has passed the end **27** of the latter, could effect closure of a switch which, through any conventional circuit, could provide either an audible or visual indication to the typist that the end of the page is being approached.

It is also within the scope of the invention to use a conductive rubber platen or photoelectric sensing means, or the like, to sense passage of the trailing edge of the paper P.

With the construction above described, there is no need for any setting of the paper, or of dials or the like, nor is there need for the use of carbon paper having line indications thereon, nor is there need for visual inspection by the typist to determine whether she is approaching the end of the page, nor of any effort or attention whatsoever. The page-end signal device above described is completely automatic in operation, and as it has relatively few parts is not likely to become deranged, even after long use, and adds but little to the over-all cost of the typewriter.

As many changes could be made in the above equipment and many apparently widely different embodiments of this invention could be made without departing from the scope of the claims, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. In a typewriter or similar device having a platen, a paper table, a paper pan and a slidably mounted carriage base carrying the same, a page-end signal device comprising a resilient sensing finger affixed at one end to said carriage base and rising therefrom, said paper pan having an aperture through which the free end of said finger protrudes, said free end of said finger being adapted to be engaged by the leading edge of a page positioned between the platen and the paper pan, to be deflected by such page as the latter is advanced by rotation of the platen, and means controlled by the return of said resilient finger from its deflected position, when the trailing edge of the page has passed the latter, to effect an indication.

2. The combination set forth in claim 1 in which said indication is an audible alarm.

3. The combination set forth in claim 1 in which said indication effecting means comprises a sound-producing means secured to said carriage base and movable therewith and a clapper carried by said finger, adapted to strike said sound-producing means upon return of said finger from deflected position.

4. The combination set forth in claim 1 in which means are provided to space said page from said platen in the vicinity of said protruding end of said sensing finger to insure abutment of the leading edge of said page against the protruding portion of said sensing finger, positively to deflect the latter.

5. The combination set forth in claim 4 in which said spacing means comprises a pressure member positioned between the platen and the paper pan, said pressure member having a portion extending at right angles to the axis of said platen between the ends thereof and having a portion positioned adjacent the paper pan and spaced from the platen, whereby when the page is inserted between the pressure member and the paper pan its leading edge will abut against the protruding portion of said finger.

6. In a typewriter or similar device having a platen and a carriage base, a page-end signal device comprising a resilient sensing finger affixed at one end to said carriage base, the free end of said finger being adapted to engage a paper positioned by said platen, means to space said page away from said platen in the vicinity of the engagement of said finger whereby said finger is deflected by the leading edge of said page as the latter is advanced by the rotation of the platen, and means controlled by the return of said resilient finger from its deflected position, when the trailing edge of said page has passed said finger to effect an indication.

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