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FOOT MARGIN REGULATOR AND INDICATOR ATTACHMENT FOR TYPEWRITING MACHINES.

APPLICATION FILED NOV. 3, 1919.

1,407,071. Patented Feb. 21, 1922.

3 SHEETS—SHEET 1.

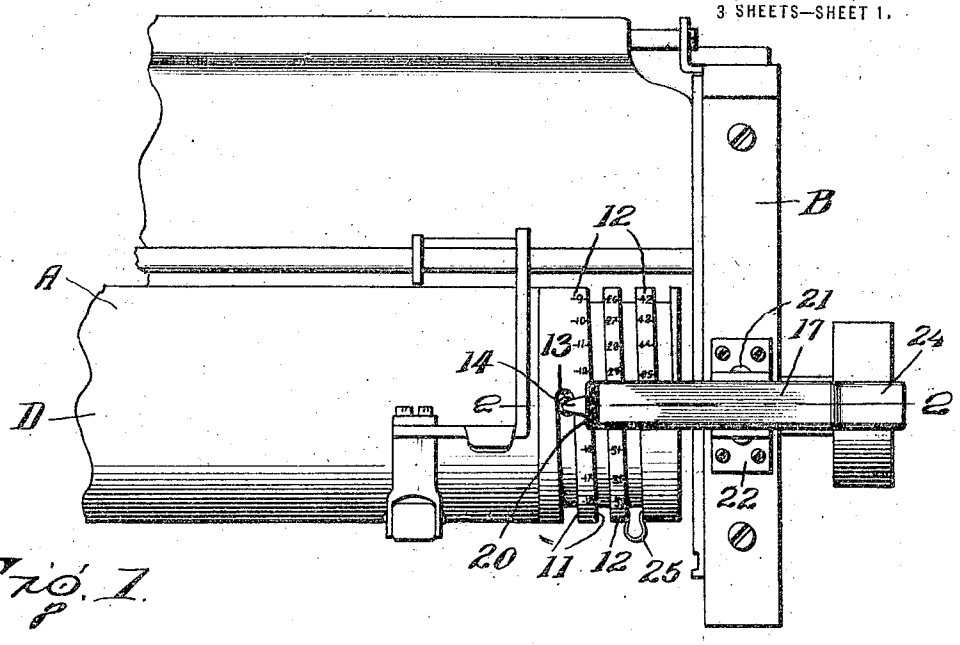


FIG. 1.

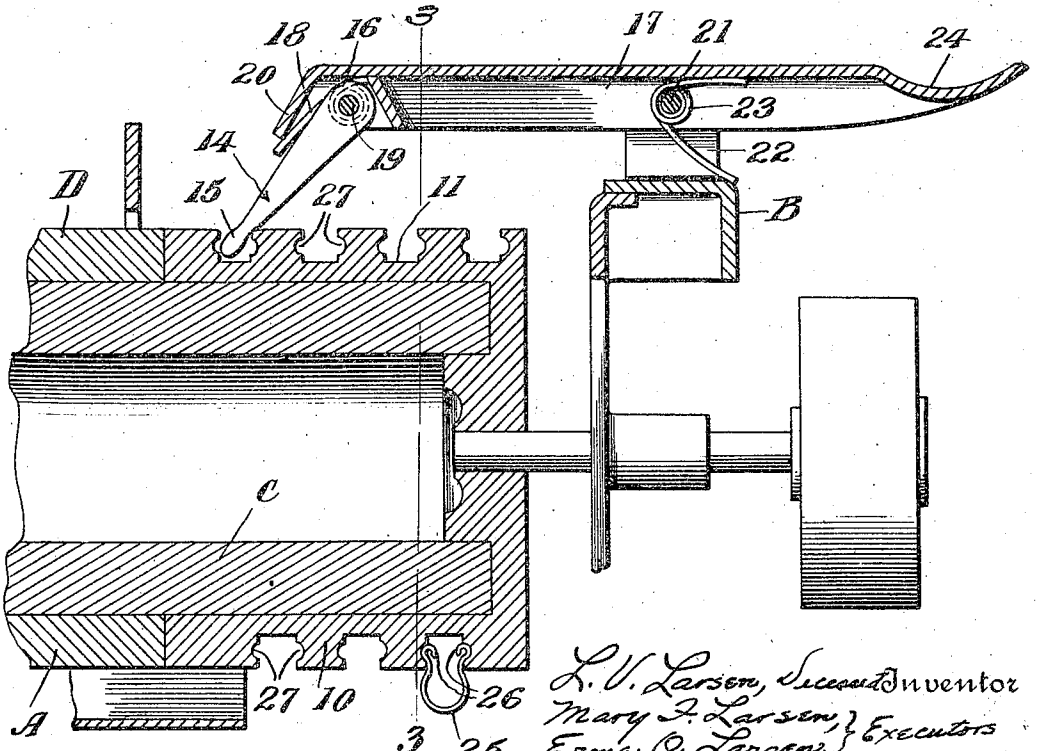


FIG. 2.

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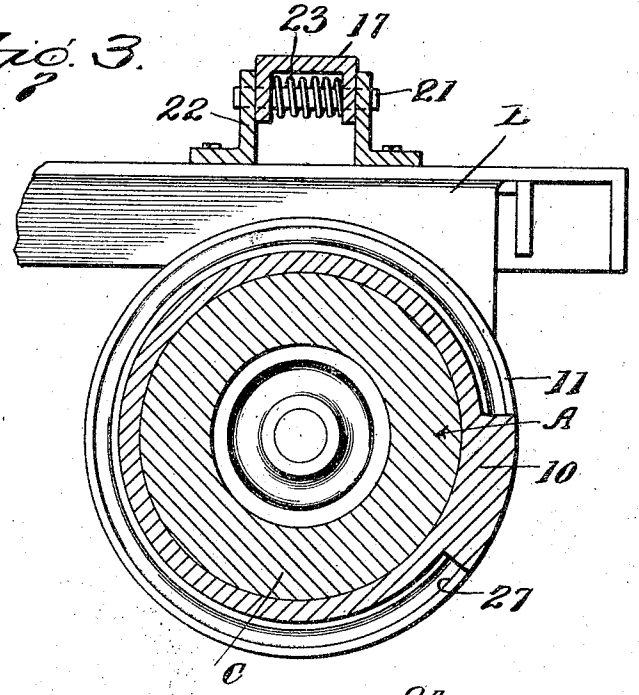
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3 SHEETS—SHEET 2.

Fig. 3.



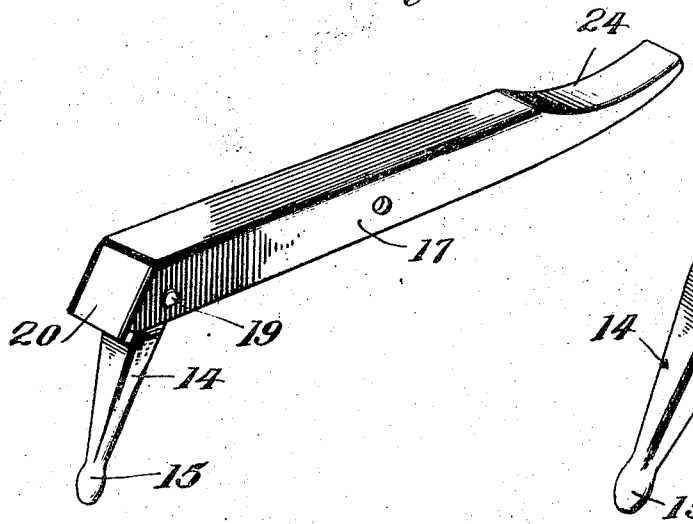


Fig. 4.

Fig. 5.

Witnesses:

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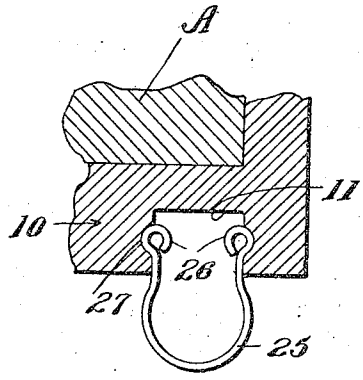


Fig. 6.

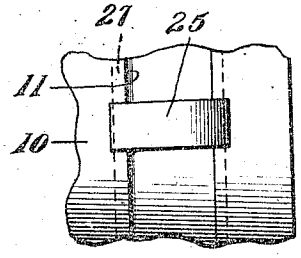


Fig. 7.

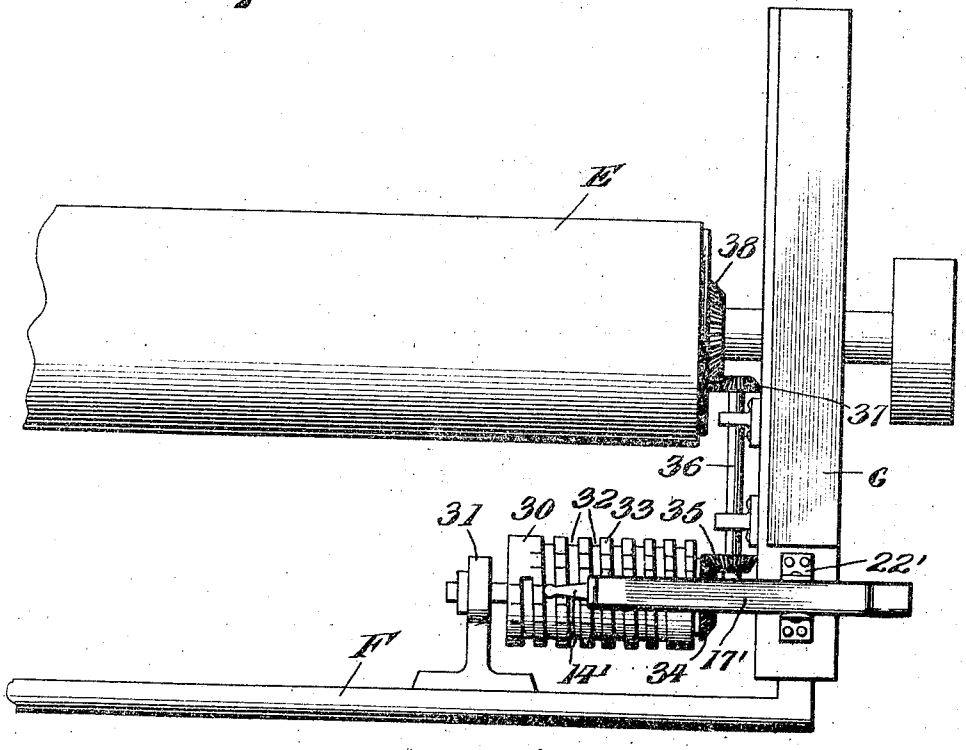


Fig. 8.

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UNITED STATES PATENT OFFICE.

LEON V. LARSEN, DECEASED, LATE OF PARIS, TEXAS, BY MAY FUREY LARSEN, OF PARIS, TEXAS, AND ERMA ORVILLE LARSEN, OF CHICAGO, ILLINOIS, EXECUTORS.

FOOT-MARGIN REGULATOR AND INDICATOR ATTACHMENT FOR TYPEWRITING MACHINES.

1,407,071. Specification of Letters Patent. Patented Feb. 21, 1922.

Application filed November 3, 1919. Serial No. 335,462.

To all whom it may concern:

Be it known that LEON V. LARSEN, deceased, late of Paris, in the county of Lamar and State of Texas, did invent a certain new and useful Foot-Margin Regulator and Indicator Attachment for Typewriting Machines, of which the following is a specification.

This invention relates to an attachment for typewriting machines, of any standard or approved make, which attachment may be conveniently adapted to the typewriting machine in connection with the cylindrical platen thereof, in such manner that the mechanism of the said attachment will reciprocate with the action of the platen in its movement, and revolution, for indicating, as well as regulating and controlling, the number of line spaces that have been negotiated by the platen, thereby permitting the automatic checking or stopping of the movement of revolutions of the platen at any line, or whenever a predetermined number of line spaces have been accomplished, thus permitting the preserving of any desired margin at the foot of a sheet of paper, used in the typewriter.

It is an object of this invention to provide a foot margin regulator and indicator attachment for typewriting machines by means of which the typist may determine at any place on the paper sheet being written, the number of lines which have been written or transcribed.

Other objects of the invention will appear in the following detailed description taken in connection with the accompanying drawings, forming a part of this specification and in which drawings:

Figure 1 is a top plan of the improved foot margin regulator and indicator attachment showing it applied to a fragment of the carriage of the typewriter.

Figure 2 is a longitudinal section through the attachment taken on the line 2—2 of Figure 1.

Figure 3 is a cross section through the attachment taken on the line 3—3 of Figure 2.

Figure 4 is a detail perspective view of the movable indicator of the attachment.

Figure 5 is a detail perspective view of the pawl or finger of the attachment.

Figure 6 is a side elevation of the removable resilient stop which is adapted for attachment at any desired position to the graduated indicator of the attachment to permit the arresting of rotation of the platen when such point is reached.

Figure 7 is a top plan of the removable resilient stop, and

Figure 8 is a top plan of a modified form of the attachment showing it applied to a fragment of the typewriting machine.

Referring more particularly to the drawings, wherein like characters indicate like and corresponding parts throughout the several views, the platen A of the typewriter structure B, is made up in the usual manner, preferably of a wooden cylindrical core C, the outer surface of which has mounted thereon a resilient sleeve D forming the cushioning surface over which the writing paper passes. The foot margin regulator and indicator comprises a metal sleeve 10, which is bored to fit about one end of the core C of the platen A, as clearly shown in Figure 2 of the drawings, and the outer surface of this sleeve 10 is provided with a spiral groove 11, forming substantially square threads thereon, which are graduated as illustrated at 12, to conform to the number of double space lines on paper.

The sizes of writing paper most universally in use are the standard letter size, 8½ by 11 inches, and the standard legal size 8½ by 14 inches. In running letter paper through a typewriter, it requires 33 double-spaces to move the paper from the time it first appears at the "writing line" until the end is reached on the letter size, while the legal size requires 42 double spaces to move it through the typewriter after it first appears at the "writing line" to the end of the sheet. Five double spaces are required to bring the paper in position at the "writing line" on the platen, at which time the writing surface of the paper first becomes visible. For the purpose of taking into account these first five "double spaces" required to bring the paper into proper position for writing, the narrow groove 11 extends back from the first graduation 12 thereon a distance equal to the five double spaces, to its beginning point as indicated at 13.

A pawl 14, is provided with a rounded end 15 which rides in the spiral groove 11, and co-acts with the graduations 12 to indicate the number of lines, or line spaces that

have been passed over the platen A during the operation of the typewriter. The end of the pawl 14 remote from the rounded knob or end 15 is bifurcated to form spaced ears 16 by means of which the pawl is pivotally connected to a pivotally mounted lever 17. A spring 18 is coiled about the pivot end 19 of the pawl 14, and one end of this spring engages the pawl while the other end engages the lever 17, the said spring tending to urge the pawl 14 outwardly, which outward movement is limited by the downturned end 20 of the lever 17. The lever 17 which is substantially an inverted U-shape in cross section is pivotally mounted intermediate its ends, upon a rod 21, which is carried by a suitable bracket 22.

This bracket 22 is attached to the frame of the typewriter carriage B. The spring 23 is coiled about the pin 21 and has one end engaging the lever 17 while the other end engages the typewriter carriage B as clearly shown in Figure 2 of the drawings. This spring 23 tends to urge the inner or pawl carrying end of the lever down toward the axis of the platen A. The outer end of the lever 17 is preferably concaved as shown at 24, so as to provide a finger engaging surface to permit the gradual operation or rocking of the levers 17 to release the pawl 14 to re-set the attachment after a sheet of paper has been moved through the typewriting machine; or to release the platen after its rotation has been arrested by the engagement of the pawl 14 with the stop 25.

The stop 25 is preferably constructed of flat spring metal; is substantially U-shaped in side elevation as shown in Figure 6 of the drawings, having the ends of its legs rolled to form eyes 26. The sides of the groove 11 are recessed, to provide arcuate recesses 27, which receive therein the rolled eyes 26 of the stop 25, for connecting the stop to the groove cylinder 10 at any desired point. During the rotation of the platen A and when the pawl 14 strikes the stop 25, rotation of the platen will be arrested, and this stop 25 may be set alongside any one of the graduations 12, desired to permit the maintaining of any desired margin at the foot of the paper sheet used in the typewriter. In addition to maintaining a uniform foot margin on the successive sheets of paper passed through the typewriting machine, the margin can be varied on the different sheets by simply setting the spring clip or stop at any numeral corresponding to the desired line, and thus a desired or adequate foot margin may be preserved on paper of smaller dimensions than the standard letter or legal size.

The foot margin regulator attachment above described is designed in this instance, with special reference to the Underwood typewriter, model 5. However, the device is adjustable to any standard make of typewriter, with minor changes of design and location of parts to accommodate the particular design of the typewriting machine on which it is to be used, as the principle of its functions and operations apply equally to all approved types of typewriters. In the event that it is desired for any reason to vary or change the manner of application of the principle and the relative position of the device with reference to the platen and carriage, a substitute or secondary cylinder designed in proportion to the size of the platen and containing a graduated spiral scale indicating the line spaces may be used and located parallel to and connected with the platen of the typewriting machine in any suitable manner, such a modified form of the invention being illustrated in Figure 8 of the drawings.

In this modified form illustrated in Figure 8, the cylinder 30 is rotatably supported at one side of and parallel to the platen E of the typewriting machine, the said cylinder being made in the same proportions as the platen E and rotatably supported by a suitable supporting bracket 31, which may be attached to the frame work end of the typewriting structure in any suitable manner.

This cylinder 30 is provided with a spiral groove 32 forming square threads 33 which are graduated, similar to the graduations 12 and to indicate the various line spaces of paper passed over the platen E. A pawl 14′, rides in the groove 32, and this pawl is pivotally carried by the pivotally mounted lever 17′. The pawl 14′ and lever 17′ are constructed similar to the pawl 14 and lever 17 illustrated in the preferred form of the invention, differing therefrom only in size, when such differences are necessary, to properly proportion them in accordance with the size of the cylinder 30. The lever 17′ is pivotally supported by suitable brackets 22′ upon the frame E of the typewriter. A bevelled gear 34 is carried at the outer end of the cylinder 30 and it meshes with a bevelled gear 35 which is carried by a shaft 36. This shaft 36 is rotatably supported from the frame D and has a bevelled pinion 37 thereon which meshes with the bevelled gear 38 carried by the platen E and thus the cylinder 30 is connected to the platen E for synchronous and proportionate rotation therewith. Spring stops similar to the stops 25 are to be used in connection with the modified form of cylinder 30.

Changes in details may be made without departing from the spirit of this invention, but;

I claim:

1. In a foot margin regulator and indicator attachment for typewriting machines, the combination with line-feed mechanism of automatically operated line-feed indicating means including an indicator pawl, a mov-

able stop adapted for adjustment and engagement with said pawl for arresting movement of the line-feed mechanism at a predetermined point, and manually operable means for moving said pawl out of engagement with said stop to automatically position said pawl in starting position.

2. In a foot margin regulator and indicator attachment for typewriting machines, the combination with a typewriting machine platen, of a cylinder rotatable synchronously with the platen; said cylinder provided with a spiral groove and having graduations thereon alongside the groove to indicate line-feed of the typewriting machine, a pivotally mounted hand lever carried by the typewriting machine, and an indicator pawl pivotally carried by said hand lever and engaging in said groove for co-action with the graduations to indicate the line-feed of the typewriting machine.

3. In a foot margin regulator and indicator attachment for typewriting machines, the combination with a typewriting machine including a frame and a rotatable platen of a cylinder carried at one end of said platen and provided with a spiral groove and with graduations thereon, alongside said groove to indicate the line feed of the platen, a hand lever pivotally carried by the frame of the typewriting machine, an indicator pawl pivotally carried at one end of said hand lever and adapted for engagement in said groove and co-action with said graduations, a spring normally urging said indicator pawl outwardly, the end of said hand lever being downturned to form a stop for limiting the outward movement of the indicator pawl.

4. In a foot margin regulator and indicator attachment for typewriting machines, the combination with a typewriting machine including a frame and a rotatable platen, of a cylinder carried at one end of said platen and provided with a spiral groove and with graduations thereon alongside said groove to indicate the line-feed of the platen, a hand lever pivotally carried by the frame of the typewriting machine, an indicator pawl pivotally carried at one end of said hand lever and adapted for engagement in said groove and co-action with said graduations, a spring normally urging said indicator pawl outwardly, the end of said hand lever being downturned to form a stop for limiting the outward movement of the indicator pawl, a spring stop substantially U-shaped in cross section and adapted to frictionally engage the sides and the groove for connecting the stop and the cylinder at a predetermined position, said pawl adapted to engage said stop for arresting rotation of the platen.

5. In a foot margin regulator and indicator attachment for typewriting machines, the combination with a typewriting machine including a frame and a rotatable platen, of a cylinder carried at one end of said platen and provided with a spiral groove and with graduations thereon alongside said groove to indicate the line-feed of the platen, a hand lever pivotally carried by the frame of the typewriting machine, an indicator pawl pivotally carried at one end of said hand lever and adapted for engagement in said groove and co-action with said graduations, a spring normally urging said indicator pawl outwardly, the end of said hand lever being down turned to form a stop for limiting the outward movement of the indicator pawl, a spring stop substantially U-shaped in cross section, and adapted to frictionally engage the sides and the groove for connecting the stop and the cylinder at a predetermined position, said pawl adapted to engage said stop for arresting rotation of the platen, said hand lever movable for moving said indicator pawl out of said groove, and a spring engaging said hand lever for normally urging it in a pawl returning position.

6. In a foot margin regulator and indicator attachment for typewriting machines, the combination, of a cylinder mounted within the ordinary supporting frame of said typewriter and abutting upon the platen of said typewriter, to lie concentric therewith, the exterior surfaces of said cylinder and platen being in abutting alignment, said cylinder having spiral grooves therein, a pawl mounted upon the frame of said typewriter, and adjustable means positioned within the groove of said cylinder, and adapted for engagement by said pawl to prevent rotation of the platen at a predetermined point.

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