

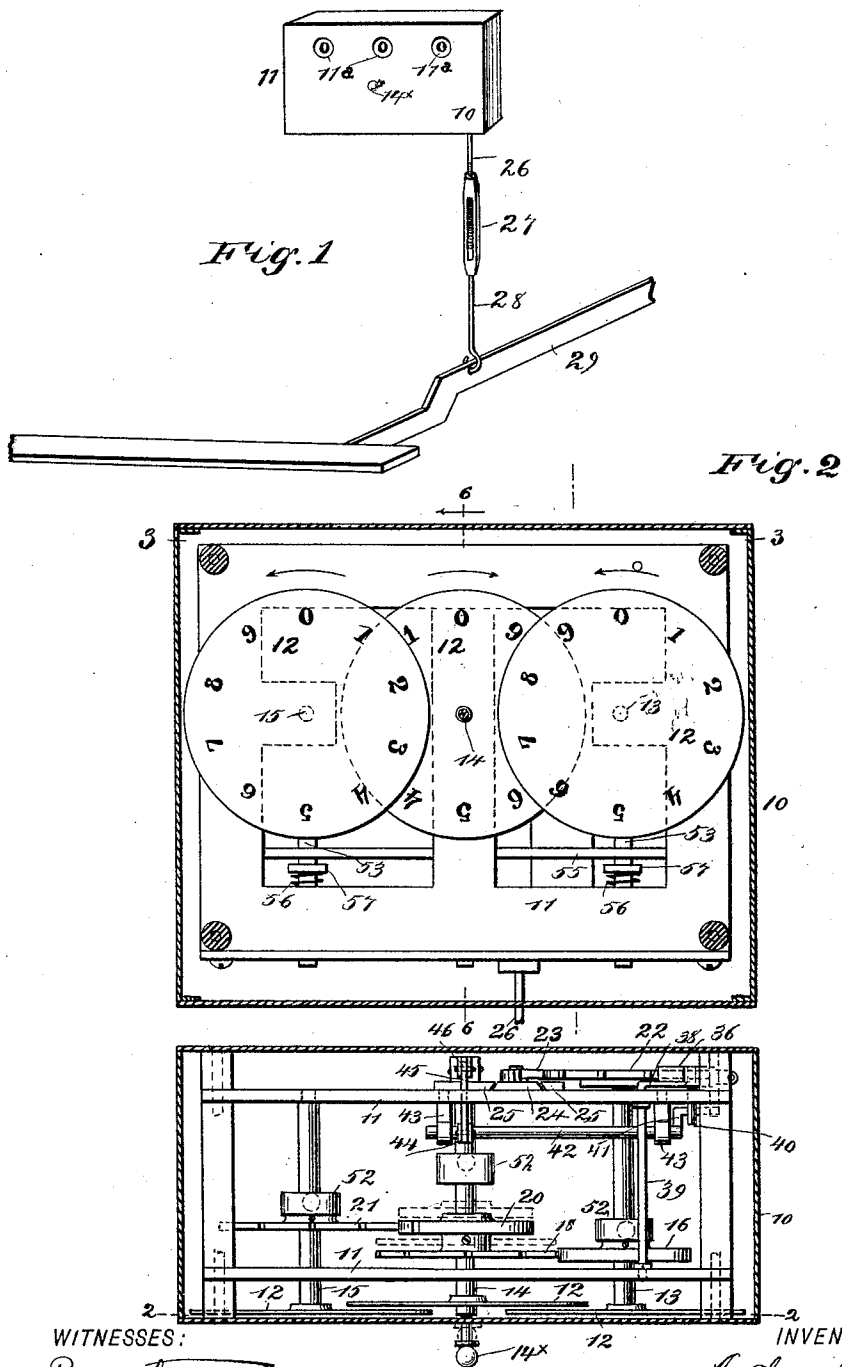
(No Model.)

2 Sheets—Sheet 1.

A. V. GEARHART.
COUNTER FOR TYPE WRITERS.

No. 519,180.

Patented May 1, 1894.



WITNESSES:
J. A. Bergstrom
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Fig. 3

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ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 4

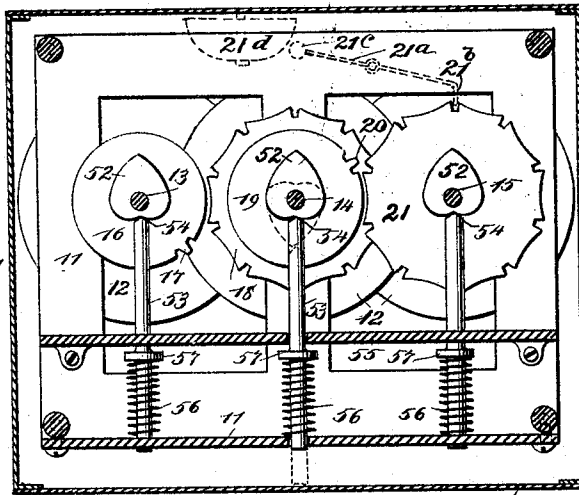


Fig. 5

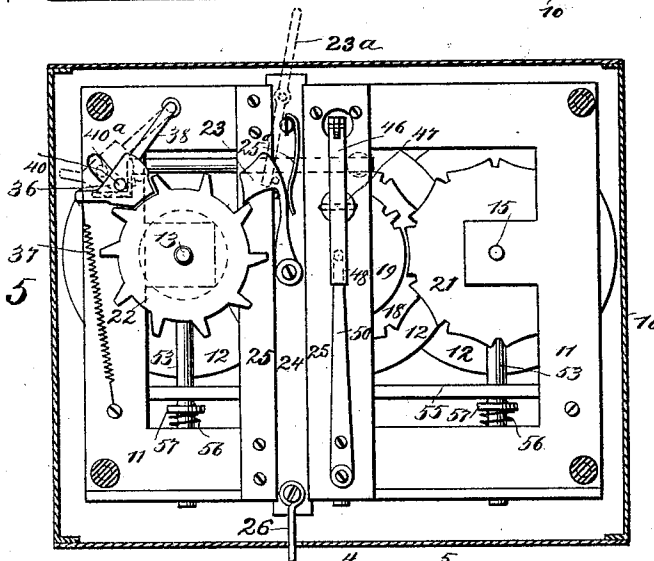


Fig. 7

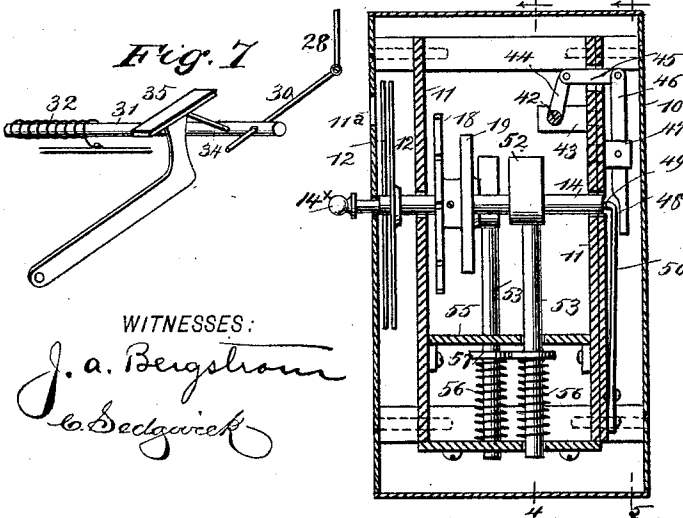


Fig. 6

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ALFRED VINTON GEARHART, OF WAUSAU, WISCONSIN.

COUNTER FOR TYPE-WRITERS.

SPECIFICATION forming part of Letters Patent No. 519,180, dated May 1, 1894.

Application filed June 15, 1893. Serial No. 477,699. (No model.)

To all whom it may concern:

Be it known that I, ALFRED VINTON GEARHART, of Wausau, in the county of Marathon and State of Wisconsin, have invented a new and Improved Counter for Type-Writers, of which the following is a full, clear, and exact description.

My invention relates to improvements in that class of devices which are adapted to be applied to typewriting machines to automatically count the words printed by the machine.

The object of my invention is to produce an extremely simple, durable, and efficient device of this kind which may be applied to any common typewriting machine without changing the machine in any way, which will automatically count and indicate the number of words within certain limits, which is adapted to operate by the movement of the space key of the machine, and which by a simple pressure of the finger returns the counting disks to normal or zero position.

A counter of this kind may be applied to a type writing machine used in any ordinary way, but it is particularly valuable on typewriting machines which are operated to print the words received on a telegraph receiver, as it is a common practice for an operator to write out the words from sound and it is a matter of some difficulty to keep the count.

To these ends my invention consists of certain features of construction and combinations of parts, as will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a broken perspective view, showing the exterior of the counter and illustrating one form of its connection with a typewriter space key. Fig. 2 is a sectional elevation on the line 2—2 in Fig. 3. Fig. 3 is a sectional plan on the line 3—3 in Fig. 2. Fig. 4 is a sectional elevation on the line 4—4 in Fig. 6. Fig. 5 is a sectional elevation on the line 5—5 in Fig. 6. Fig. 6 is a vertical cross section on the line 6—6 in Fig. 2; and Fig. 7 is a broken detail perspective view of another means of connecting the counter with the

space key of a typewriter, this form being particularly adapted for connection with the caligraph.

The counter is preferably provided with a case 10 which incloses its operative mechanism, and this case may be secured in any convenient way to the frame 11 of the typewriting machine, and in the front of it are sight holes 11^a through which the figures on the counting disks may be seen. These disks 12 are arranged in series in a way common to registering and counting machines, as shown in Fig. 2, and the numbers from 0 to 9 are produced in regular spaces upon them, near their circumferences so that when the disks are rotated the numbers will appear successively in the sight holes and the total count may be read from left to right in the usual way. The disk at the right indicates units, the next one tens, and the next one hundreds, so that the three disks are adapted to count up to nine hundred and ninety-nine, but it will be understood that the arrangement may be carried out to any necessary extent, so that they may count up as high as desired.

The disks 12 are carried by parallel shafts 13, 14, and 15, which are journaled in the frame 11 of the counter, the shaft 13 carrying the units disk having thereon a gear wheel 16 with a single tooth 17, see Fig. 4, which is adapted to engage one of the ten notches in the gear wheel 18, which wheel is secured to the tens shaft 14, and this shaft is also provided with a gear wheel 19 having a single tooth 20 to engage one of the ten notches in a gear wheel 21, which is secured to the hundreds shaft 15, consequently when the units shaft makes one rotation it will turn the gear wheel 18 a distance of one notch so as to advance the disk 12 on the tens shaft one space, and when the disk on the tens shaft has made a complete rotation, the gear wheel on the hundreds shaft will be advanced one tooth so as to turn the hundreds disk one space. This arrangement is not claimed as novel and any other equivalent means for turning the counting disks may be employed without affecting the principle of my invention. A lever 21^a shown by dotted lines in Fig. 4, rides on the wheel 21 and has at one end a flange 21^b to drop into the notches of

the wheel and at its other end a hammer 21^c to strike a gong 21^a in the top of the case 10. This arrangement causes the hammer to vibrate and ring the gong at every notch or one hundred words, thus forming an accurate indicator.

The disks are all moved from the units shaft 13, to which a rotary motion is imparted by means of a ratchet wheel 22 having ten teeth thereon, which teeth are adapted to be engaged successively by a pawl 23, see Fig. 5, which is carried by the slide 24, moving vertically in a slideway 25 on the frame 11 of the machine, and the pawl is pressed normally into engagement with the teeth of the ratchet wheel by a spring 25^a. The slide 24 is worked up and down by means of its connection 26, 28 with a space key 29 to be described presently, and every downward movement of the slide and pawl 23 causes the pawl to engage a tooth of the ratchet wheel 22 so as to turn the wheel and shaft 13 and thus start the counting mechanism and count "1."

If it is desired to throw the counting mechanism out of gear, the pawl 23 may be removed from the wheel 22 by the lever 23^a shown by dotted lines in Fig. 5.

The slide 24 has at its lower end a rod 26 which projects downward through the case 10 and is provided with an ordinary turn buckle 27 connecting it with a rod 28 which is coupled either directly to a space key 29 of a typewriter or indirectly, as described presently, so that the rod will be pulled down whenever the space key is depressed.

It will be seen that when the key 29 is depressed the rods 28 and 26 will be pulled down, these forming practically a continuous rod, and the pawl 23 will be pulled down so as to work the counter, and when the space key 29 springs back in the usual way, the pawl 23 will rise so as to again engage the ratchet wheel.

For connecting with the caligraph, the arrangement shown in Fig. 7 is preferably employed, and here the rod 28 connects with an arm 30 on an oscillating shaft 31 which may be journaled in any suitable way on the typewriting machine and which is pressed by a spring 32 so as to normally raise the arm 30 and rod 28. The shaft 31 connects by a rod 34 with a space key 35, so that when the latter is depressed the shaft 31 will be oscillated and the rod 28 raised. It will be seen, however, that any convenient arrangement may be employed for working the rod 26 by the movement of the space key of the typewriter, without affecting the principle of my invention.

To prevent the ratchet wheel 22 from turning backward, I employ a weighted pawl 36 (Fig. 5) which engages it; and, to aid in thus holding the pawl pressed against the wheel, I attach a spring, 37, to a projecting arm of the pawl, as shown. In other words, the gravity of the pawl is supplemented by the tension of the spring. The pawl is carried by

the crank 38 on a cross rod 39, which is journaled transversely in the frame 11, but any suitable pawl may be used. When the counting mechanism is turned to 0, it is of course necessary to release the pawl 36, and the following mechanism is required for the purpose. On the pawl is a stud 40 see Fig. 5 which projects through a slot 40^a in the frame 11 and into the path of a crank 41, Fig. 3 which hangs normally below the stud 40 and which is carried by a shaft 42 extending at right angles to the counter shafts 13, 14 and 15, and turning in suitable supports 43. The shaft 42 is provided, near its inner end, with a second upwardly-extending crank 44 and a pitman or connecting rod 45 is pivoted to the crank Fig. 3 and extends outward through an opening in the frame 11 and is pivoted at its outer end to a vertical lever 46, this being fulcrumed near the center, as shown at 47, and having its lower end 48 flattened and arranged opposite the inner end of the tens shaft 14 and behind the free end of a spring 50, which spring is bent inward at its free end, as shown at 49 in Fig. 6, to adapt it to press against the shaft 14, and hold it normally in the position there shown, yet permitting it to slide lengthwise in its bearings in the frame 11, when required. The front end of the shaft 14 projects through the front of the case 10 and terminates in a button or knob 14^a which, by being pressed, forces the shaft inward against the tension of the spring 50 and throws the gear wheels on the shaft 14 out of engagement with those on the shafts 13 and 15, thus throwing the counting mechanism completely out of gear and breaking all connections between the several shafts, and it also pushes out the lower end of the lever 46, pressing in the upper end, and tilting the crank shaft 42, which movement of the crank shaft causes the crank 41 to be raised against the stud 40, and the pawl 36 is thus released from the ratchet wheel 22 and the several counter-shafts being entirely free may thus be turned to 0, which movement of the shafts is occasioned by the mechanism to be described below.

On each of the shafts 13, 14, and 15, is a heart-shaped cam 52 and the cams are arranged with the relation to the counting disks, so that when the points of the cams are uppermost and the grooves in the cams vertically beneath the points, the 0 marks on the counting disks 12 will appear opposite the sight holes 11^a in the case 10. Beneath each cam is an upwardly pressed shaft 53, which has its upper end hardened and shaped to an edge, as illustrated at 54 in Fig. 4, and this construction enables the rod to turn the cam into its normal position and then lock the cam and its shaft in place, so that it is held there until the shaft is turned by the counting gears when the machine is operated. The locking and returning rods 53 slide through a suitable guide plate 55 and are pressed upward by springs 56 which are coiled around

them and which abut with the bottom of the frame 11 and with the collars 57 on the rods.

It will be seen from the above description that every depression of a space key at the end of a word will cause the pawl 23 to be pulled down so as to turn the ratchet wheel 22 and the connecting counting gears, thus counting the words, which result is exhibited at the sight holes 11^a in the case 10.

When the capacity of the machine is reached the disks will stand at 0 and in position to continue the count, or if it is desired for any reason to return the counting disks to 0 or normal position, the button or knob 14^a is pressed, thus pushing in the shaft 14, disengaging the several shafts 13, 14, and 15 from each other and releasing the locking pawl 36, and the pressure of the returning rods 53 on the several cams 52 causes the cams to slide on the rods until the rods reach those portions of the cams which are nearest the shafts, and this brings the cams into the position shown in Fig. 4, which position coincides with the position of the counting disks 12 when the ciphers of said disks are opposite the sight holes 11^a.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A counter for typewriting machines, comprising a plurality of shafts having number disks thereon, a gear connection between the shafts whereby the disks are caused to turn in regular numerical order, mechanism for throwing the shafts out of gear, a spring actuated device for returning the shafts to normal position, and a slide rod operatively connected with one of the shafts to turn it and adapted to connect with the space key of a typewriting machine, substantially as described.

2. A counter for typewriting machines, comprising a plurality of parallel shafts having the usual number disks thereon, suitable gears connecting the shafts so as to advance

the disks in regular numerical order, a movable slide plate arranged adjacent to the shafts and adapted to be operated by the space key of a typewriting machine, a ratchet connection between the slide and the shaft carrying the units number disk, means for throwing the several shafts out of gear, and a spring-actuated device to return the number disks to normal position, substantially as described.

3. A counter for typewriting machines, comprising a plurality of parallel shafts carrying the usual number disks, a gear connection between the shafts whereby the shafts are turned and the disks advanced in regular numerical order, a slide arranged adjacent to the shafts and adapted to connect with the space key of a typewriter, a ratchet connection between the slide and the units shaft, whereby the movement of the slide will turn the shaft, a locking pawl to engage the ratchet wheel, mechanism for throwing the shafts out of gear and for releasing the locking pawl, and spring-actuated means for returning the number disks to normal position, substantially as described.

4. In a counter for typewriters, the combination, with the parallel number shafts having the usual number disks thereon, of a ratchet mechanism operated by the space key of the typewriter and adapted to turn the units shaft, the frame having bearings in which said shaft is adapted to slide lengthwise, a gear connection between the several shafts whereby the disks are advanced in numerical order, a locking pawl for the ratchet wheel, means for releasing the pawl by the sliding of the tens shaft, and spring-actuated mechanism for returning the disks to normal position, substantially as described.

ALFRED VINTON GEARHART.

Witnesses:

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ELISHA L. BUMP.