(No Model.) 3 Sheets—Sheet 1.

T. I. DANIEL.

WORD COUNTER FOR TYPE WRITING MACHINES.

No. 342,337. Patented May 25, 1886.

Fig. 1

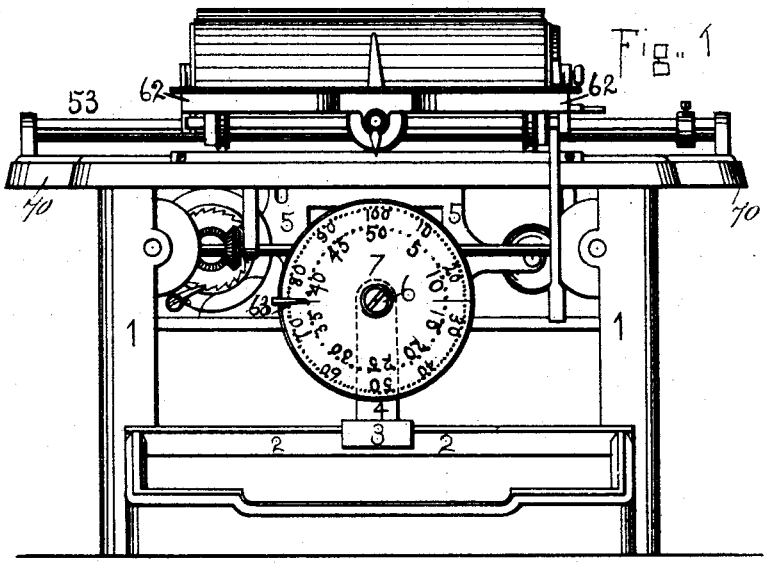
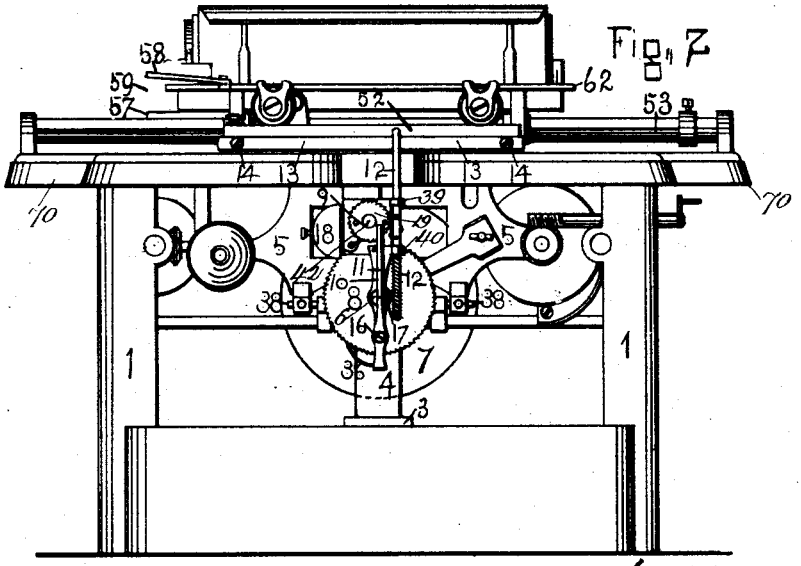


Fig. 2



WITNESSES.

Harry L Wilton

Sprague & Lester

INVENTOR.

Thomas I. Daniel

by G. P. Stoddard

Atty

(No Model.) 3 Sheets—Sheet 2.

T. I. DANIEL.

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Fig. 3

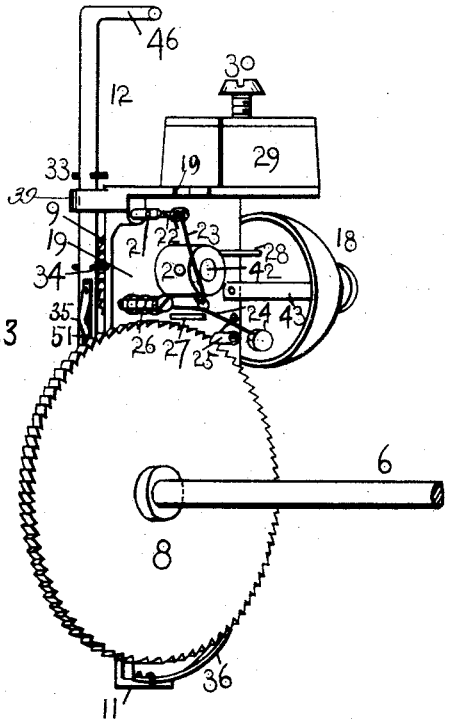
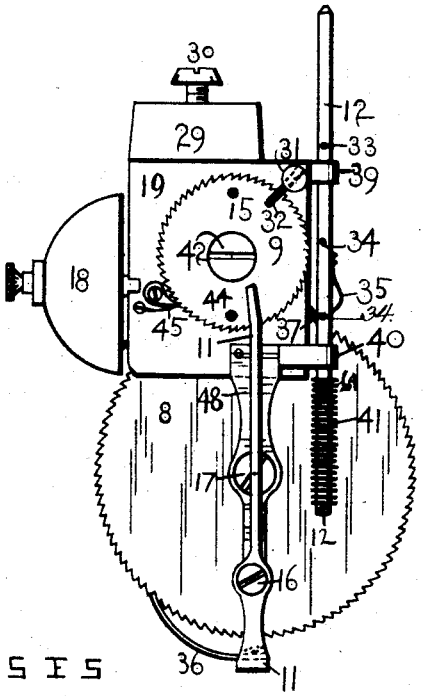


Fig. 4



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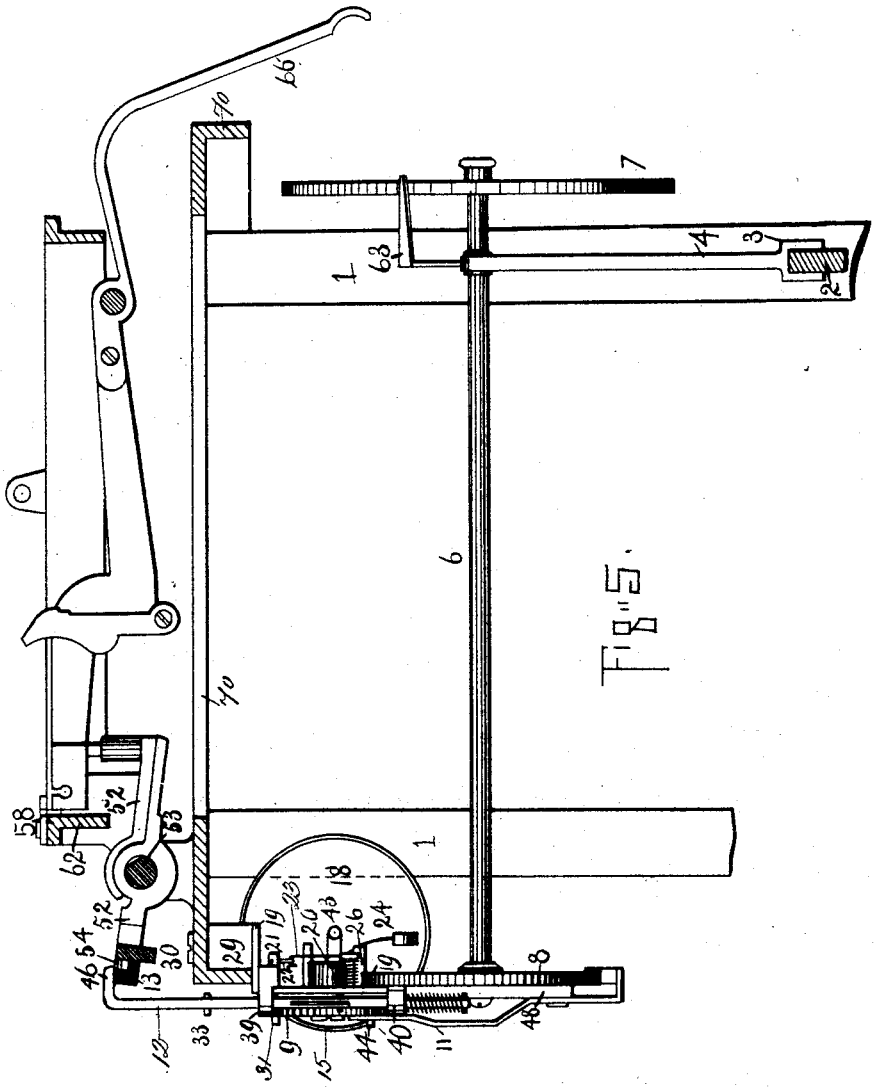

Fig. 5.

WITNESSES

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UNITED STATES PATENT OFFICE.

THOMAS I. DANIEL, OF JACKSON, MICHIGAN.

WORD-COUNTER FOR TYPE-WRITING MACHINES.

SPECIFICATION forming part of Letters Patent No. 342,337, dated May 25, 1886.

Application filed December 18, 1885. Serial No. 186,042. (No model.)

To all whom it may concern:

Be it known that I, THOMAS I. DANIEL, a citizen of the United States, residing at Jackson, in the county of Jackson, in the State of Michigan, have invented a new and useful Word-Counter for Type-Writing Machines, of which the following is a specification.

My invention relates to word-counters for type-writers.

The object of my improvements are to provide an attachment to type-writing machines, which, first, shall notify the operator when the sheet he is printing is full or the bottom of the same has been reached; second, shall indicate or tally the number of pages that have been printed on the machine. I attain these objects by the means illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of a type-writing machine with my page-counting and alarm mechanism attached. The keys, type-hammers, and their connecting-wires are removed. Fig. 2 is a rear elevation of a type-writing machine arranged as in Fig. 1. Fig. 3 is an orthographic projection of the portion of my page-alarm and page-counting mechanism that is attached to the rear of the top plate of the machine. The corner is turned toward the observer, and that side of the mechanism is shown that is toward the center of the machine when the mechanism is in its position. Fig. 4 is an elevation of the portion of my improved mechanism that is shown in Fig. 3, showing the side opposite to that shown in said figure. Fig. 5 is a transverse section of a type-writing machine with the paper-feeding mechanism and platen removed, with my improved page-alarm and page-counting mechanism attached.

Similar figures refer to similar parts throughout the several views.

My improved page-alarm and page-counting attachment consists of the mechanism illustrated in Figs. 3 and 4, connected by a shaft, 6, with the index-bearing plate 7, and the pointer 63 arranged and adjusted to a type-writing machine, as hereinafter particularly described.

1 1 are the standards of the machine; 2 2, the bar fastened to the front standards of the machine 1 1, Fig. 1, and extending across the machine over the type-keys.

5 5 is the hanger supporting the letter-space ratchet-rocking frame, and 3 8, Fig. 2, is the rocking-bar of said frame.

52, Fig. 5, is the rocking frame which bears the rack, into the teeth of which the letter-space ratchet works.

62, Figs. 1, 2, and 5, is the frame of the paper-carriage.

53 is the hinge-bar, about which the rocking frame 52 and the paper-carriage turn.

57 is the thumb-piece, by which the frame 52 is vibrated.

19 is a metal plate, which, with the projections 29 and 48 therefrom, forms a hanger, into which one end of the shaft 6 and the arbors of the various ratchet-wheels bear. Said plate is bent at right angles, as shown in Fig. 3, one portion being vertical and the other horizontal when the mechanism is secured in its position on the machine. From the horizontal portion of the plate 19 rises the nearly-rectangular projection 29, which is of such a size and form as to fit snugly against the downwardly-extending flange of the top plate of the machine, where said flange is bent upward, to leave room for the letter-space ratchet without interfering with said ratchet.

8 is a ratchet-wheel provided with one hundred teeth and rigidly secured to the shaft 6.

25, Fig. 3, is a pawl or click pivoted to the inside of the plate 19, and working in the teeth of the wheel 8, to prevent the same from turning backward.

6 is a shaft of a length to correspond with the width of a type-writing machine. The opposite end of said shaft to that which bears in the hanger 48 is supported by a leg, 4, and shoe 3, Fig. 5, and carries rigidly fastened to it the index-plate 7. The plate 7 is provided with two scales. The outer one is divided into one hundred equal parts, and the inner one into fifty equal parts. The pointer 63 is fastened to the upper part of the leg 4 and extends around and over the index-plate 7.

13, Figs. 2 and 5, is a bar of metal attached and held parallel to the rocking frame 52 by sleeves or ferrules 54, at each end of said bar, and the screws 14, which pass through holes in the rod 15 and through the sleeves 54, and screw into the rocking frame 52. The bar 13 is made longer than the width of the frame 52,

so that the rod 12 will be raised by the vibration of said frame when the paper-carriage is at the beginning or end of its travel. If the rod 13 were not longer than the width of the paper-carriage, said rod would pass out from under the horizontal portion of the rod 12 at the beginning and end of the travel of said carriage, as the paper-carriage travels a greater distance than is represented by its width, and therefore the rod 12 would not be raised by the vibration of the frame 52 at said portions of the travel of the paper-carriage. The sleeves 54 are of such length as to hold the bar 13 near the rear edge of the top plate, 70, of the machine.

12 12 is a metal rod bent at right angles at the top, as shown at 46, Figs. 3 and 5, and sliding up and down through holes in the laterally-extending projections 39 and 40 from the plate 19.

41 is a spiral spring bearing against the projection 40 at the top and a pin in the rod 12 at the bottom to restore the rod 12 to its position when raised and allowed to fall. One or both of the holes in the projections 39 and 40 is or are square or of a shape that will prevent the rod 12 from turning therein. A cross-section of the rod 12, where it slides through the holes in the projections 39 and 40, is of the same shape as said holes.

33 and 34 are pins which limit the vertical movement of the rod 12 by striking against 39.

35 is a spring, one end of which is secured to the rod 12 and the other end extends through a slot, 51, made in the rod 12, Fig. 3, and presses against the pallet 37. Said pallet is hinged in the slot 51 at one end, the other end extending out of said slot in position to engage with the teeth of the ratchet-wheel 9. The ratchet-wheel 9 is provided with fifty-six or any convenient number of teeth, and has its axle or arbor 42 bearing in the plate.

20 is an annular projection from the plate 19, surrounding and serving to lengthen the bearing of and steady the arbor 42.

45 is a pawl or click working in the teeth of the wheel 9, and preventing it from turning backward.

15 and 44 are pins extending at right angles from the surface of the wheel 9, near the circumference opposite each other and on the same diameter of said wheel.

21, Figs. 3 and 5, is an oscillating shaft ending on the outside in the head 31. From the head 31 extends the arm 32, over and parallel to the surface of the wheel 9. From the interior end of the shaft 21 extends the arm 22, Figs. 3 and 5.

23 is a wire connecting the arm 22 with the shaft of the bell-hammer 24. The bell-hammer 24 oscillates about the pin 26, and is limited in its motion by the pins 27 and 28.

18 is a bell attached to the plate 19 by the bell-stem 43. 43 is curved to follow the contour of the inside of the bell and allow the hammer-head to vibrate up and down through the center of the hollow of the bell 18.

11 11 is a lever pivoted at 16 to 48. The upper end of the lever 11 extends a short distance over the wheel 9, and the lower end carries the spring 36, which acts as a pallet working in the teeth of the ratchet-wheel 8.

My page-alarm and page-counting mechanism is adjusted to a type-writing machine in the following manner: The projection 29 from the horizontal portion of the plate 19 is set up against the flange of the top plate of the machine where said flange bends outward to leave room for the letter-space ratchet, the top of said projection coming against the under side of the top plate, and the horizontal portion of the plate 19 resting against the under side of the flange. The screw 30 is then passed through a hole in the top plate and screwed into 29 till the head of the screw presses on the top plate of the machine, holding the plate 19 firmly in place. Thus the end of the hook 46 of the rod 12 is brought over the rod 13, Fig. 5. The shoe 3 is then fitted snugly over the center of the rod 2. Thus the mechanism is adjusted firmly in place. The shaft 6 passes between the wires connecting the type-hammers with the keys. In some machines it passes between the rocking bar 38 and the hanger 5. In other machines it passes entirely beneath the hanger 5 and all its attachments.

The mode of operation of my page-alarm and page-counting attachment is as follows: When the vibrating frame 52 is raised by the handle 66 to bring the paper-carriage back to commence a new line, the bar 13 lifts the horizontal portion 46 of the rod 12, raising said rod till the pallet 37 engages with a tooth of the wheel 9 and moves said wheel along one tooth. As the wheel 9 turns, the pins 15 and 44 strike successively against the arm 32, raising it in passing, and vibrating the shaft 21. As 21 turns, the arm 22 is raised, raising the hammer-shaft 24. When the pin 15 or 44 has passed the arm 32, said arm is allowed to fall back to its first position, allowing the arm 22 and the hammer 24 to fall with it. The hammer-head striking in falling, the bell 18 sounds the alarm and notifies the operator that twenty-eight lines, the usual number of lines to a page, (and the number of teeth of the wheel 9 between the pins,) has been printed. As the pins 15 and 44 pass the end of the lever 11, they strike against said lever and cause it to oscillate, pushing the wheel 8 along one tooth by means of the pallet 36. When the pin has passed, the lever is returned to its vertical position by the elasticity of the pallet 36, and limited in its motion by the stop-pin 67. The turning of the wheel 8 turns by means of the shaft 6 the index-plate, each division of the outer scale of said plate corresponding to a movement of one tooth of the wheel 8. As there are twenty-eight lines on an ordinary page, or fifty-six close lines, each sounding of the bell in the first case and every second sounding of the bell in the second case will indicate the end of a page; and where there are twenty-eight lines to a page,

one movement of the wheel 8 turning the index-plate 7, one division of the outer scale will count one page, and where there are fifty-six lines to a page two movements of the wheel 8, corresponding to a movement of the index-plate of one division of the inner scale, will count one page. Thus the operator will have before him the number of pages he has written.

If it is wished to use the machine without continuing the counting, the rod 12 is raised until the hole 64 comes above the projection 40 and a pin is inserted in said hole, thus holding the horizontal portion 46 of the rod 12 above the field of vibration of the bar 13.

Having fully described my invention, what I wish to claim, and secure by Letters Patent, is—

1. In a type-writing machine, the combination of the vibrating frame 52, provided with a bar, 13, extending a short distance beyond the frame 52 on each side, the hooked rod 12, adapted to be raised by the oscillation of the vibrating frame 52 and carrying a pallet, 37, the ratchet-wheel 9, having pins 44 and 15, the vibrating shaft 21, having arms 32 and 22, the hammer 24, and bell 18, substantially as shown and described.

2. In a type-writing machine, the combination of the vibrating frame 52, provided with a bar, 13, extending a short distance beyond the frame 52 on each side, the hooked rod adapted to be raised by the oscillation of the vibrating frame 52 and carrying a pallet, 37, the ratchet-wheel 9, having pins 44 and 15, the lever 11, carrying a pallet, 36, the ratchet-wheel 8, shaft 6, index-plate 7, and pointer 63, substantially as shown and described.

3. In a type-writing machine, the combination of the vibrating frame 52, provided with a bar, 13, extending a short distance beyond the frame 52 on each side, the hooked rod 12, adapted to be raised by oscillation of the vibrating frame 52, and carrying a pallet, 37, the ratchet-wheel 9, having pins 44 and 15, the vibrating shaft 21, with arms 32 and 22, the hammer 24, and bell 18, the lever 11, carrying a pallet, 36, the ratchet-wheel 8, shaft 6, index-plate 7, and pointer 63, substantially as shown and described.

4. The means of attaching the herein-described page-alarm and page-counting mechanism to a type-writing machine, consisting of the leg 4 and shoe 3, and the hanger 19, having the projection 29, adapted to be fitted against the flange of the top plate of the machine and screwed to said top plate, substantially as shown and described.

THOMAS I. DANIEL.

Witnesses:
CHAS. E. SNOW,
BYRON S. ASTLEY.