

H. I. WATTS.
WORD METER.

APPLICATION FILED MAR. 27, 1909.

935,178.

Patented Sept. 28, 1909.

2 SHEETS—SHEET 1.

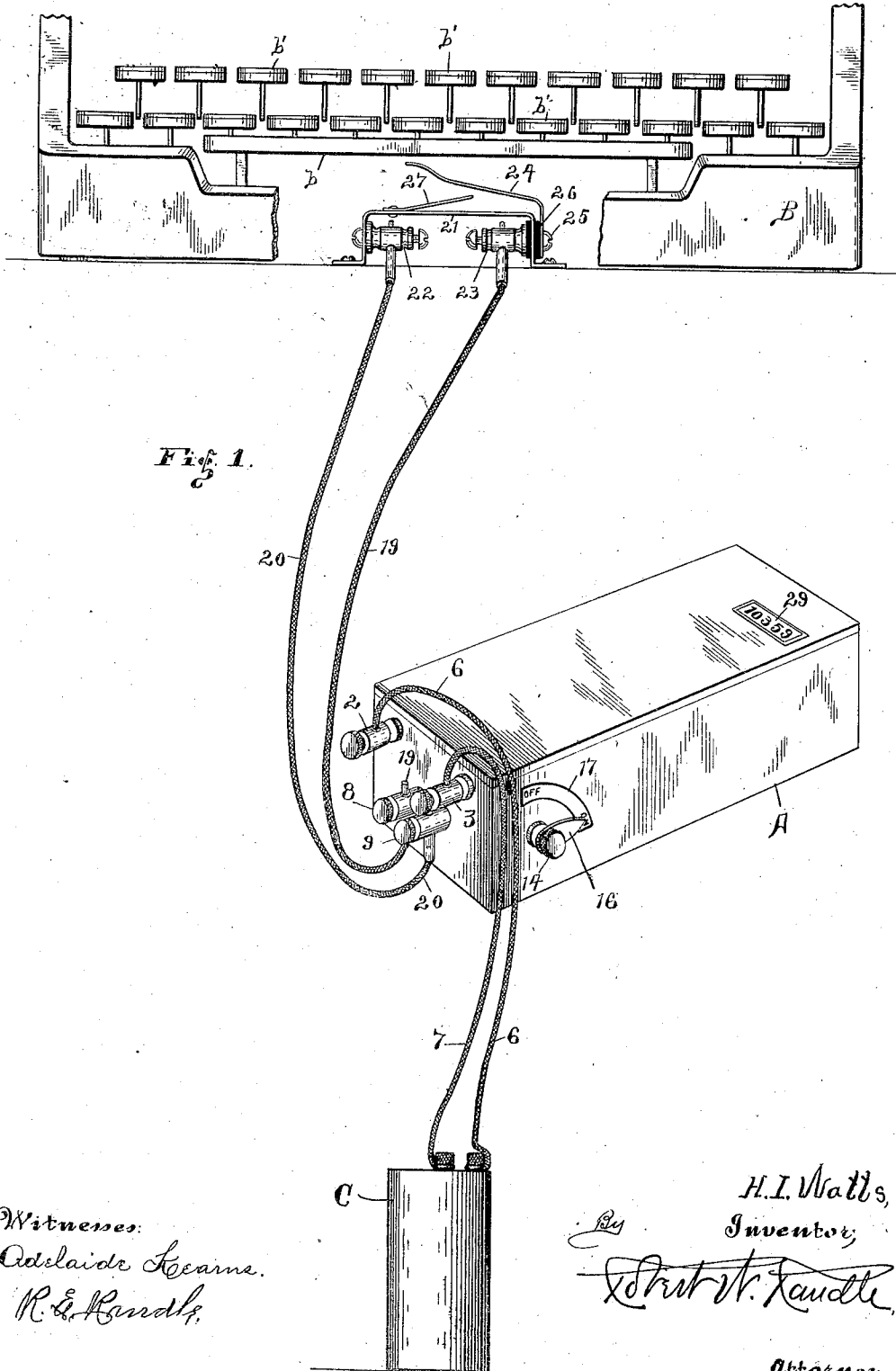


Fig. 1.

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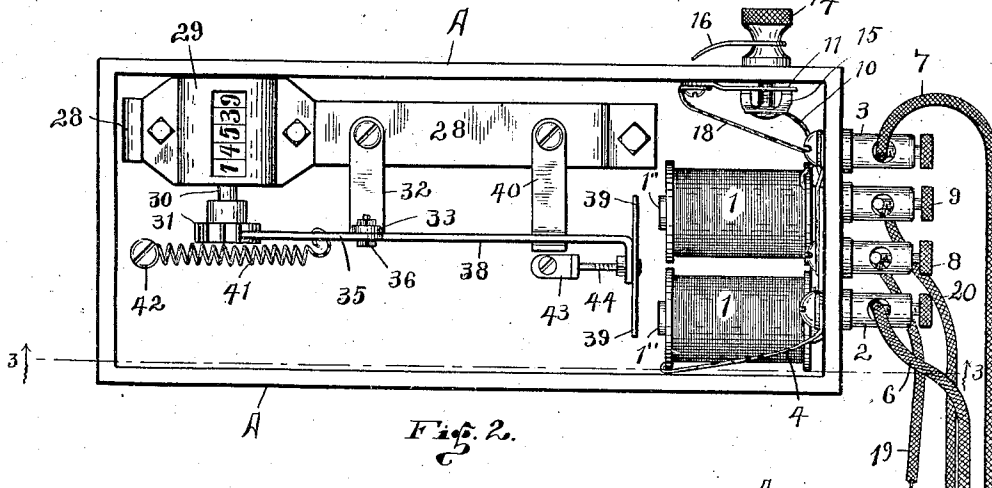


Fig. 2.

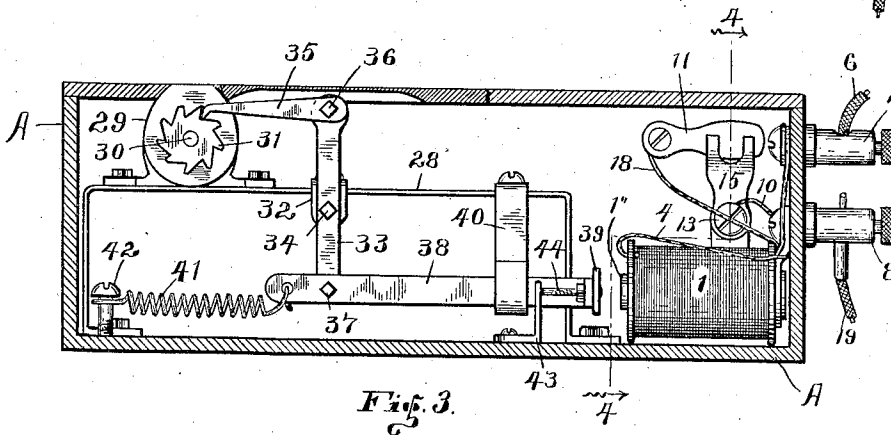


Fig. 3.

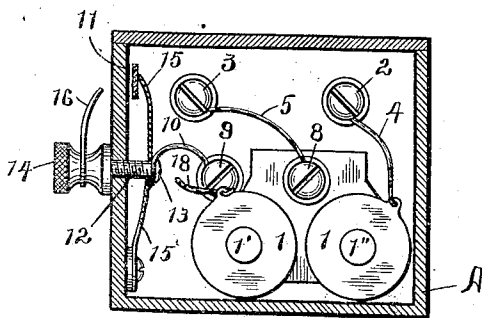


Fig. 4.

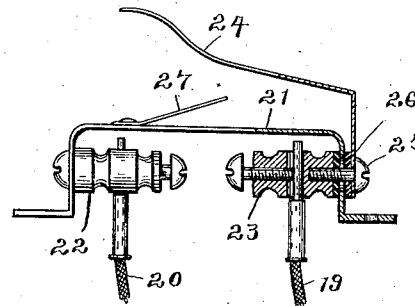


Fig. 5.

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UNITED STATES PATENT OFFICE.

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WORD-METER.

935,178.

Specification of Letters Patent. Patented Sept. 28, 1909.

Application filed March 27, 1909. Serial No. 486,096.

To all whom it may concern:

Be it known that I, HERBERT I. WATTS, a citizen of the United States, residing in Winchester, in the county of Randolph and State of Indiana, have invented a new and useful construction which is denominated a Word-Meter, of which the following is a full, clear, and accurate specification, being such as will enable others to make and use the same with absolute exactitude.

My invention relates to an electric word meter adapted to be employed in connection with type writing machines or the like.

The object of my present invention, broadly speaking, is the provision of an electric word-meter which may be easily operated and controlled, will be neat and attractive in appearance, strong and durable in construction, positive and accurate in action, and which can be manufactured and sold at a comparatively low price.

A further object, broadly stated, is to provide a word meter which may be automatically operated by the operation of a type writing machine, and which may be unconsciously actuated by the operator thereof.

More specifically stated my object is to provide means for recording the number of words written by a type writing machine, and means for switching said means into and out of commission at the will of the operator.

In operating type writing machines it is usually desirable that the words written thereby during any given period may be counted and a record retained thereof,—to automatically accomplish this and exhibit the total at the end of a given time or upon the completion of a certain document is the desideratum to which this invention is directed.

Other objects and particular advantages of my invention will suggest themselves in the course of the following description, and that which is new will be correlated in the appended claims.

The preferred manner for carrying out my invention in a practical manner, and that which in practice has been found to be the most desirable, is shown most clearly in the accompanying drawings, in which—

Figure 1 is a diagrammatical elevation, partly in perspective, showing my invention in operative position as applied to a type writing machine. Fig. 2 is an introspective plan

view, the top being removed, showing a plan of the mechanism contained in the case. Fig. 3 is a side elevation of the mechanism contained in the case. Fig. 4 is a cross sectional view taken near the forward end of the case and showing certain of the mechanism contained therein. And Fig. 5 is a detail elevation of the contact mechanism, partly in section.

Similar indices denote like parts throughout the several views.

In order that the invention and its operation may be the more readily understood and comprehended I will now take up a detail description thereof in which I will set forth the invention as fully and as comprehensively as I may.

The letter A denotes the case containing certain of the mechanism hereinafter referred to.

Letter B denotes a portion of a type-writing machine, same having the space key *b*, and a plurality of character keys *b'*. And letter C denotes an electric battery having the usual positive and negative poles, or the battery may be formed in multiple.

Numeral 1 denotes a double electro-magnet of the usual construction, which is secured to the inner face of the front end of the case A and is located to one side near the bottom thereof as indicated, the rear termini of the cores forming the contact faces 1' and 1''.

Extending through the front end of the case and projecting outward therefrom are the two binding-posts 2 and 3, to which one of the terminals of the winding of the electro-magnet is connected as by the wire 4, as indicated in Fig. 4, the other post being connected to the cores of the magnet as by the wire 5. Connected to the post 2 is the wire 6, and connected to the post 3 is the wire 7; said wires 6 and 7 lead to negative and the positive poles of the battery C as shown in Fig. 1.

Located below the posts 2 and 3 are the binding posts 8 and 9 which also extend through the end of the case. The post 8 is connected directly to the electro magnet, or to the frame thereof, as indicated in Fig. 4; and the post 9 is connected by the wire 10 to the switch which will hereinafter be described. Said switch is located at the side of the case, near its forward end, and opposite the electro magnet as indicated in Fig. 2, and is described as follows: Numeral 11

denotes a spring contact plate secured on the inner face of the side of the case as indicated in Fig. 3. Located below said plate is a screw stem 12 which terminates in the binding screw 13 located on its inner end. Threaded on the outwardly projecting end of the stem 12 is the nut 14 adapted to be operated by hand. Numeral 15 denotes a spring contact arm which is secured at its lower end near the inside of the bottom of the case and it projects upward and is adapted to contact with the plate 11,—a quarter turn of the nut 14 being sufficient to cause said arm 15 to contact with or to be removed from contact with the plate 11. A pointer 16 is carried by the nut 14, said pointer being adapted to travel over the segmental dial 17 the upper end of which contains the word "Off" and the lower end the word "On" thereby indicating when the arm 15 is in or out of contact with the plate 11. One terminal of the magnet is connected to the arm 15 by the wire 18, and the post 9 is connected to arm 15 by the wire 10.

Extending outward from the posts 8 and 9 are the wires 19 and 20, respectively. Said wires 19 and 20 extend to the actuator which will be described. The actuator comprises the body 21 which is formed of a strip of metal so configured as to form the U-shaped body having legs spaced a considerable distance apart, comparatively, and terminating in feet which are adapted to receive screws therethrough providing means whereby it may be secured to a surface, as a desk or type writing machine base. Projecting centerward from the two vertical portions of said body are the binding posts 22 and 23 in which are secured the upper ends of the respective wires 20 and 19. Extending upward and then to the left over the top of the body 21 and connected to the binding post 23 is the long tongue 24, which is formed of a very thin and flexible spring material. The tongue 24 and the post 23 are connected by the screw 25. The screw 25, the tongue 24, and the post 23 are electrically connected together but they are all insulated from the body 21 by the insulation 26, as indicated in Fig. 5.

Secured on top of the body 21 and immediately below the tongue 24 is the small tongue 27 which projects upwardly and to the right at an angle. The tongues 24 and 27 being, normally, out of contact with each other, but when connected they form electrical contact. If, now, the switch be turned on, that is to say,—with the pointer at "On", I may establish an electrical current by simply pressing the tongue 24 into contact with the tongue 27, which circuit will eventuate in magnetizing the magnet 1, the utilization of which I will now describe: Numeral 28 denotes a bracket extending along near one side of the interior of the case, having legs

extending down and feet, integral therewith, whereby it may be secured to the bottom of the case, with the major or horizontal portion of the bracket located in the upper portion of the case, all substantially as indicated in Fig. 3. Secured on the top of the rear portion of said bracket is the cyclometer 29, which is of common construction immaterial to this invention, same having a shaft 30 which on being revolved is adapted to change the sum appearing on the face of the cyclometer from "1" up indefinitely. A ratchet wheel 31 is secured on the projecting end of said shaft whereby the shaft may be rotated step-by-step progressively.

Mounted to the center portion of the bracket 28 and extending inward and downward is the hanger 32.

Numeral 33 denotes a vertically disposed arm which is pivoted slightly below its center to the vertical face of the hanger 32 by means of the bolt 34.

Numeral 35 denotes a pawl which is pivoted at one end, by the bolt 36, to the upper end of the arm 33, its point being adapted to operate over and engage the teeth of the ratchet wheel 31. Pivoted by the bolt 37 to the lower end of the arm 33 is the bar 38, which extends forward therefrom centrally of and near to the faces of the cores of the magnet, and secured across the forward end of said bar 38 is the armature 39 which is adapted to contact with and to be separated from the terminal faces 1' and 1'' of the magnet cores. The forward portion of the bar 38, also the armature, is slidably supported by the hanger 40 which extends downward and then upward forming a loop in which said bar may slide as indicated. Numeral 41 denotes a helical spring having one end thereof secured to the rear end of the bar 38 and then extending rearward, under tension, with its rear end secured to some relatively stationary object, as the screw 42. In order to prevent the spring 41 from drawing the armature too far away from the magnet I provide a bracket 43, which is secured to the bottom of the case, and the elongated stem of the screw 44 is adapted to engage with said bracket 43, said screw also serving to secure the armature to the bar 38 as indicated.

Operation: The mechanism and the several parts being now arranged substantially as shown and described, the operation will be substantially as follows: First, suppose that the switch be turned with the indicator pointing at "On", the type writing machine may be operated in the usual manner, the keys *b'* being operated without in any manner connecting with my invention, but if the space-key *b* be depressed, which is done at the end of each word, it will press the tongue 24 into contact with the tongue 27 thereby establishing an electric circuit which

will magnetize the electro magnet 1, causing it to attract thereto the armature 39, bringing the armature into contact with the faces 1' and 1'' which, manifestly, will move the bar 38 to the right, and by reason of the arrangement of the arm 33 the pawl 35 will be moved endwise to the left, the position of the pivot 34 being such that the forward movement of the armature will be only such as to cause the pawl to turn the ratchet wheel one space or enough to cause the cyclometer to indicate one number higher than before.

When the key *b* is released it is evident that the current will be interrupted thereby allowing the electro magnet to become demagnetized thereby releasing the armature and allowing it to be pulled smartly back to inaction as shown in the drawings, which of course will move the pawl to the right over one of the teeth of the ratchet wheel and ready for a new bight.

It is evident that each repetition of depressing the key *b* will cause the cyclometer to register each depression of the key *b*, or in other words,—record each word written on the type-writing machine. It is also evident that if it should be desired to operate the type writing machine without registering the number of words written thereon then I have only to turn the pointer 16 to "Off", which will break the circuit between the parts 11 and 15, after which although the tongues 24 and 27 be contacted the cyclometer will not be actuated, for the reason that no current will be established to actuate the magnet.

Having now fully shown and described my invention and the best means for its construction and operation to me known at this time, what I claim and desire to secure by Letters Patent of the United States of America, is—

1. A word-meter, comprising in combination with the space-key of a type-writing machine,—an actuator located below the space-key and comprising a body adapted to be secured independent of the type-writing machine, a pair of tongues forming elec-

tric terminals carried by said body and adapted to be contacted by the depression of said key for making and breaking an electric circuit; a case located at a distance from the type-writing machine, a double electro-magnet located in said case, the poles of said magnet being connected to said tongues each by a wire, an electric battery, wires connecting the poles of the battery to the opposite poles of the electro-magnet, a cyclometer carried by said case and adapted to be actuated step-by-step by the electric current which may be instituted by the contact of said tongues when said key is depressed, means for breaking the electric current independent of said tongues, and sight means for denoting the condition of the last named means, all substantially as set forth and for the purposes specified.

2. A word-meter comprising in combination with a type-writing machine having a space-key, the combination: an actuator located below the space-key and comprising a body adapted to be secured independent of the machine, a pair of tongues, one of which is formed of flexible metallic material, the last named tongue being adapted to be pressed into contact with the other tongue by the depression of said key; a case located at a distance from said machine; an electro-magnet located in said case; wires connecting the poles of said magnet to said tongues; a cyclometer carried by said case; a mechanism located in said case and connected to the armature of said magnet and to said cyclometer for operating the cyclometer step-by-step as the electro-magnet is magnetized and demagnetized by the operation of said space-key, and a source of electric energy connected to said electro-magnet and located at a distance therefrom, all substantially as described.

In testimony whereof I have hereunto subscribed my name to this specification in the presence of two subscribing witnesses.

HERBERT I. WATTS.

Witnesses:

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