Aug. 22, 1933. C. RICHARDSON ET AL 1,923,505

ELECTRIC MACHINE FOR RECORDING STENOGRAPHICALLY THE SPOKEN WORD

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Fig. 5.

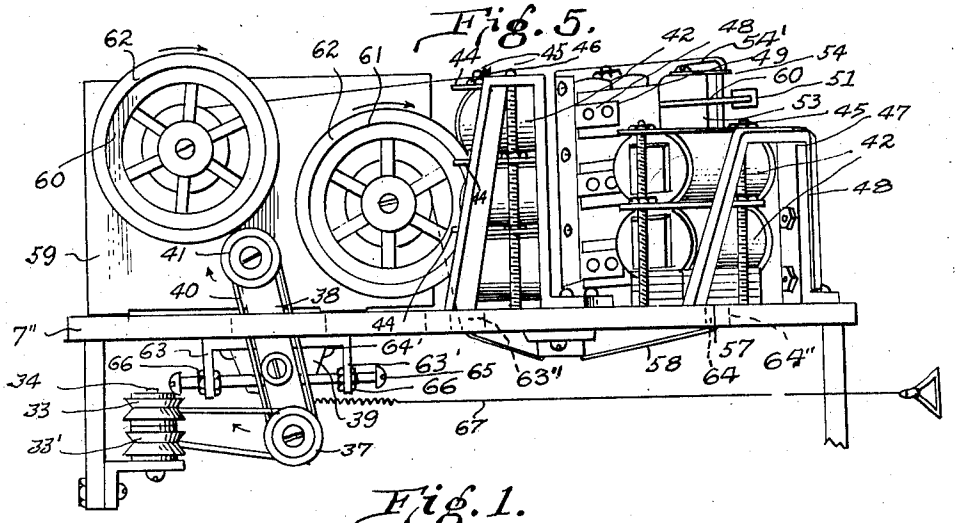


Fig. 1.

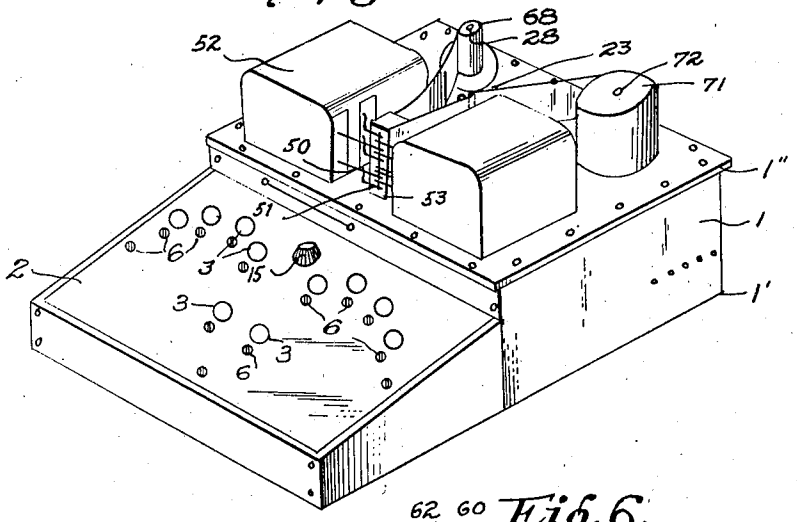
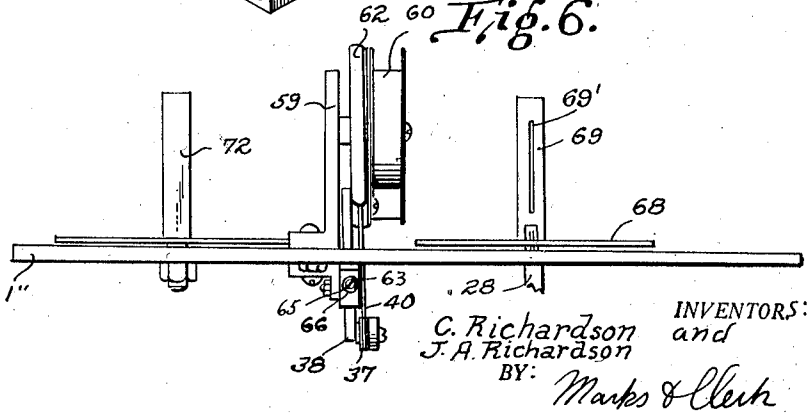


Fig. 6.



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Fig. 2.

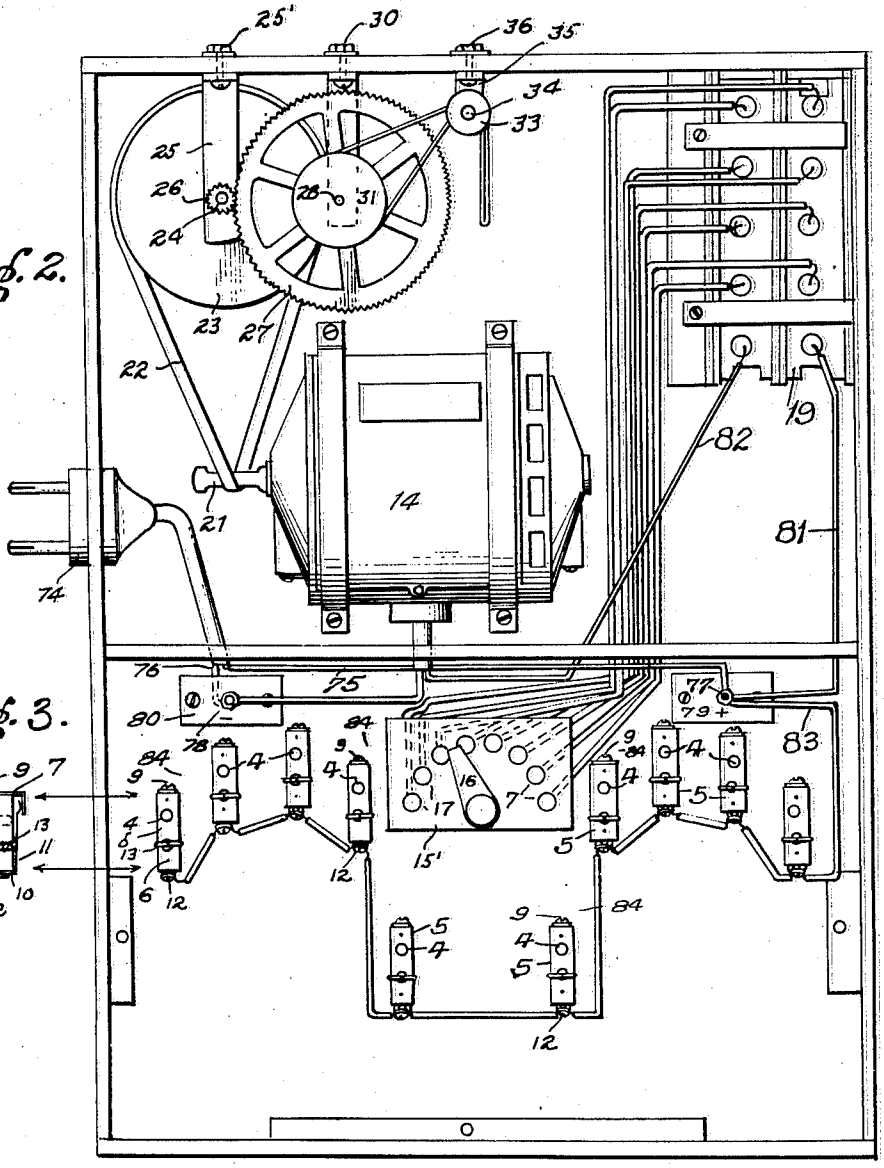


Fig. 3.

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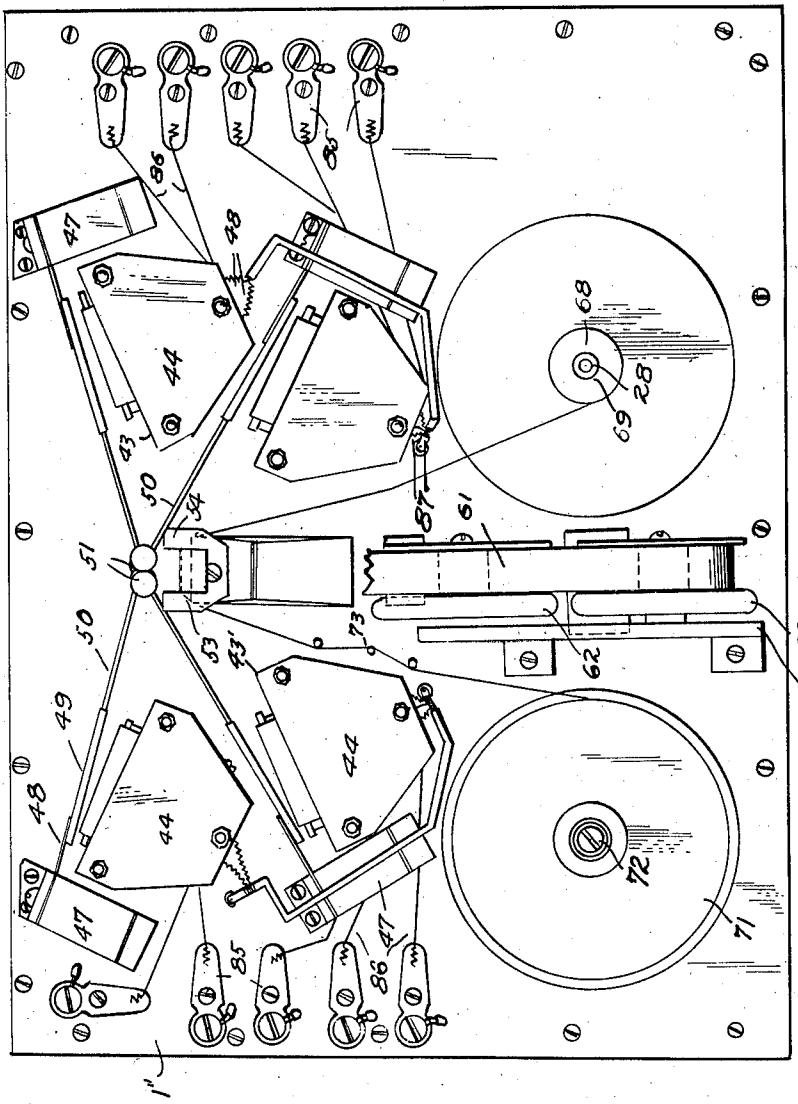


Fig. 4.

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UNITED STATES PATENT OFFICE

1,923,505

ELECTRIC MACHINE FOR RECORDING STENOGRAPHICALLY THE SPOKEN WORD

Carlos Richardson and Juan Arturo Richardson, Montevideo, Uruguay

Application November 17, 1930, Serial No. 496,240, and in Uruguay February 27, 1930

2 Claims. (Cl. 197—9)

This invention refers to a new electric machine for recording stenographically the spoken word.

In order that our invention may be clearly understood and carried into practice, we have illustrated it in the following drawings in which

Fig. 1 is a perspective view of the machine, not showing the ribbon mechanism.

Fig. 2 as a plan view of a machine, the cover removed.

Fig. 3 is a side view of one of the switch boxes.

Fig. 4 is a plan view of the paper and ribbon mechanism.

Fig. 5 is a rear elevation of the machine with the casing removed.

Fig. 6 is a rear elevation of the roller feeding mechanism.

In all these figures the same numbers indicate similar parts.

In the drawings, the body or casing of the machine is divided into a rear section 1, with a base 1' and cover 1'', and a front section or keyboard 2, the keyboard carrying ten keys 3, which correspond to the same number of letters which, alone or in combination, are used to record stenographically the spoken word, the position of the said keys corresponding, preferably, to the natural open position of the ten fingers, slightly spaced, of the operator. Each one of these keys 3 has a pin 4 which journals in a switch box or cover 5 (Fig. 3) fastened to the inner surface of the keyboard 2 by suitable means 6, preferably screws. Each switch box 5 has on its front part a strip 7 fastened thereto by the screw 9, the said strip 7 having an angular contact 8, parallel to the box 5. Each switch box 5 also carries a strip 10 fastened thereto by screw 12, the said strip 10 having an angular contact 11, parallel to box 5 which overhangs the contact 8, as shown in Fig. 3. 13 is a spring, one end of which is fastened to the upper part of the switch box 5 and the other end to contact 11 so that, normally, this contact 11 does not contact with 8. 15 is the knob of the speed switch 15' of motor 14. This knob 15 which is on the outside surface of keyboard 2, carries on the inner surface of the keyboard 2 a finger 16 which engages, two at a time, a plurality of butts 17, each of which is connected to a wire, which wire is also connected to a resistance 19. The butts 17 on being engaged in couples by the finger 16 gives the motor 14, through the resistance 19, seven different speeds, so that the working speed of the machine may be adapted to the speed of enunciation of the spoken word. The electric motor 14, which is preferably mounted on the rear lower section of the machine, has a shaft 21 which carries a belt 22 which engages a grooved wheel 23 mounted on a shaft 24. One end of the shaft 24 is mounted on the base 1' of the machine and the other end passes through a support 25 fastened to the casing of the machine by a screw or any other suitable means 25'. Mounted on the upper end of the shaft 24 there is a spur wheel 26 which meshes with a spur wheel 27 of larger diameter mounted on a shaft 28, this shaft 28 being carried by a support 29 fastened to the casing of the machine by a screw or any other suitable means 30. This shaft 28 is of a suitable length to permit it to carry the elements for rotating the paper roll described hereinafter. Mounted on the shaft 28 there is a grooved wheel 31 which carries a belt 32. This belt 32 engages the guide wheel 33 and wheel 33' mounted on the shaft 34 which shaft is carried by a support 35 fastened to the casing of the machine by a screw or any other suitable means 36. The belt 32 is also carried by the grooved wheel 37 which is mounted on the lower end of the arm 38 mounted on the support 39. The wheel 37 carries a belt 40 which engages the wheel 41 mounted on the upper end of the arm 38. The wheel 41 moves, by friction, the spool of inked ribbon which is hereinafter described. On the cover 1'' of the rear upper section of the machine there are mounted ten electro-magnets 42, each of them corresponding to a key 3 on the keyboard 2. In the preferred form of construction the ten electro-magnets are divided in four groups, 43 and 43', there being two magnets in the front groups 43 and three magnets in the rear group 43' as shown in Fig. 4.

In these groups the electro-magnets are superimposed as shown in Fig. 5, and are separated and covered by plates 44, and the whole is fastened to cover 1'' by means of bolts 45 and nuts 46, or by any other means. At one side of each one of these groups of electro-magnets there is a support 47 to which are fastened one end of the flexible strips 48, corresponding one strip to each electro-magnet. The other end of each of the strips 48 carries a small plate 49 which in turn carries a bar 50 with a type or sign 51 on its free end. The electro-magnets 42, supports 47, strips 48 and part of the bars 50 are covered by the covers 52 (Fig. 1). Between the groups of electro-magnets and

fastened to the cover 1'' there is a support 53, shown in plan in Fig. 4 and in elevation in Fig. 5. This support carries longitudinally on its front a strip of resilient material 53' on which the types 51 strike, as described hereinafter. This support 53 carries on its upper end a forked shaped piece 54 which serves as a guide for the inked ribbon and for the strip of paper on which the types print their character. In the preferred form of construction the central part of the piece which forms the fork 54 is bent upwards on itself so as to form a rest 54' on which the ribbon 55 slides. On the lower part of the support 53 there is a similar fork as 54 (not shown in the drawings) the central part 57 of which passes underneath the cover 1'' of the machine, to form another means 58 on which the ribbon slides. As will be seen in Fig. 5 the means 58 is lengthened by the addition of a complementary piece. 59 is a plate vertically fastened to the cover 1'' of the machine, which carries two spools 60 and 61 for the working of the inked ribbon. These spools 60 and 61 carry on their peripheries a ring 62 of any suitable material and rotate by friction upon being engaged by wheel 41. In the position shown in Fig. 5, the wheel 41 is engaged with spool 60 and the inked ribbon moves in the direction of the arrows. 63 and 63' are two supports fastened to the under surface of cover 1'' by screws or other suitable means 64 and 64'. In the free arm of each of these supports there is a regulating screw 65 with its nut 66 which serves to regulate the pressure of friction of the wheel 41 when it engages the spool 60 or 61. 67 is a rod for changing the direction of travel of the inked ribbon by moving the wheel 41 in contact with each of the spools 60 or 61. The normal position of engagement of the wheel 41 is with the spool 61. The movement of the inked ribbon 62 is the following: From the spool 61 the ribbon passes downwards through the orifice 63'' in the cover 1'' of the casing, and slides on plate 58, passes upwards through orifice 64'', after passing through the orifice 64'' it slides over the resilient material 53' in the support 53, the rest 54' and is then wound on the spool 60. When the wheel 41 is brought to frictional engagement with the spool 60 by means of the rod 67, the direction of the movement of the inked ribbon is reversed. 28 is the elongated shaft already mentioned. On this shaft 28 a spindle 69 (Fig. 6) is engagedly mounted, this spindle having a longitudinal notch 69' to receive the end of a paper roll on which the types print their characters. 71 is a paper roll freely mounted on the fixed shaft 72. As will be understood, the spindle 69 is made to rotate by the driving power received from the motor 14. The movement of the paper roll is the following: From the spool 71 the paper is placed between the guide posts 73 between the resilient material 53' and the inked ribbon sliding on the support 53, between the guide posts 73' and then is inserted in the notch of the spindle 69.

The machine receives electric power from an external source by means of a plug 74. The positive current wire 75 and the negative current wire 76 are connected to the current distributor terminals 77 and 78 respectively. These terminals are mounted on the plates 79 and 80 fastened to the bottom of the casing. The negative current wire 76 which branches out of the terminal 78 is connected to the motor 14, and the positive current wire 81 which branches out of the terminal 77 is connected to the resistance 19 from which a wire 82 branches out and is connected to the motor. From the terminal 77 a wire 83 branches out and is connected to the switches 5 in their contacts 10. The wires 84 which branch out of the contacts 7 of the switches 5 are connected to the terminals 85 in the upper surface of cover 1'' and the wires 86 which branch out of the terminals 85 are connected to the electromagnets 43 and 43'.

87 are wires which connect the electro-magnets 43 and 43' in a manner well known in the art.

The machine works in the following manner: Once the electric energy is fed to the motor by means of the plug 74, the operator rotates the speed regulating knob 15 which sets the motor running at the speed desired. The motor, by means of the belt 22, wheels 23, 26, 27 and 31, the belt 32, wheels 31 and 31', 37, 41 and belt 40, sets the inked ribbon spool in motion, and by means of the elongated shaft on which the paper roll 68 is mounted, sets the paper roll on which the types are printed also in motion. The operator presses the keys which correspond to the spoken word he hears. The pressure on the keys causes a contact in their corresponding switches 5, the circuits are closed, the electro-magnets are energized and attract the plates 49 which carry the types, thus causing the types to strike on the inked ribbon and mark the letters on the paper.

As will be gathered, the position of the types permits that one, two or the ten types may be printed at the same time.

It is also clearly understood that we do not limit the invention to the parts described and illustrated herein, as the parts of the machine may be subject to constructive modifications without departing from the scope of the invention, and as already stated.

What we claim is:

1. A machine of the class described comprising a plurality of electromagnets, armatures for the magnets having type thereon, a support, a pair of spools, an ink ribbon windable from one spool to another and in the support, a paper strip movable in the support, a keyboard, keys carried by the board, switches in circuit with the electromagnets, a source of electrical energy for the magnets, said keys being adapted to close the circuits through the switches to actuate the armatures and thus the type striking the ribbon, a motor for driving the ribbon and paper strip, a driving roller, means for shifting the roller for selectively engaging a spool to change the travel of the ribbon, and means on the keyboard for controlling the speed of the motor.

2. A machine of the class described, comprising a plurality of electromagnets having their armatures provided with type, a source of electrical energy for the magnets, switches for the magnets, a plurality of keys adapted to be depressed to selectively energize the magnets when closing the switches, a support adjacent the type of each armature, an ink ribbon movable across the support, a paper strip movable across the support and disposed at right angles to the ribbon, means for driving the ribbon and paper strip simultaneously, and means for reversing the travel of the ribbon.

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