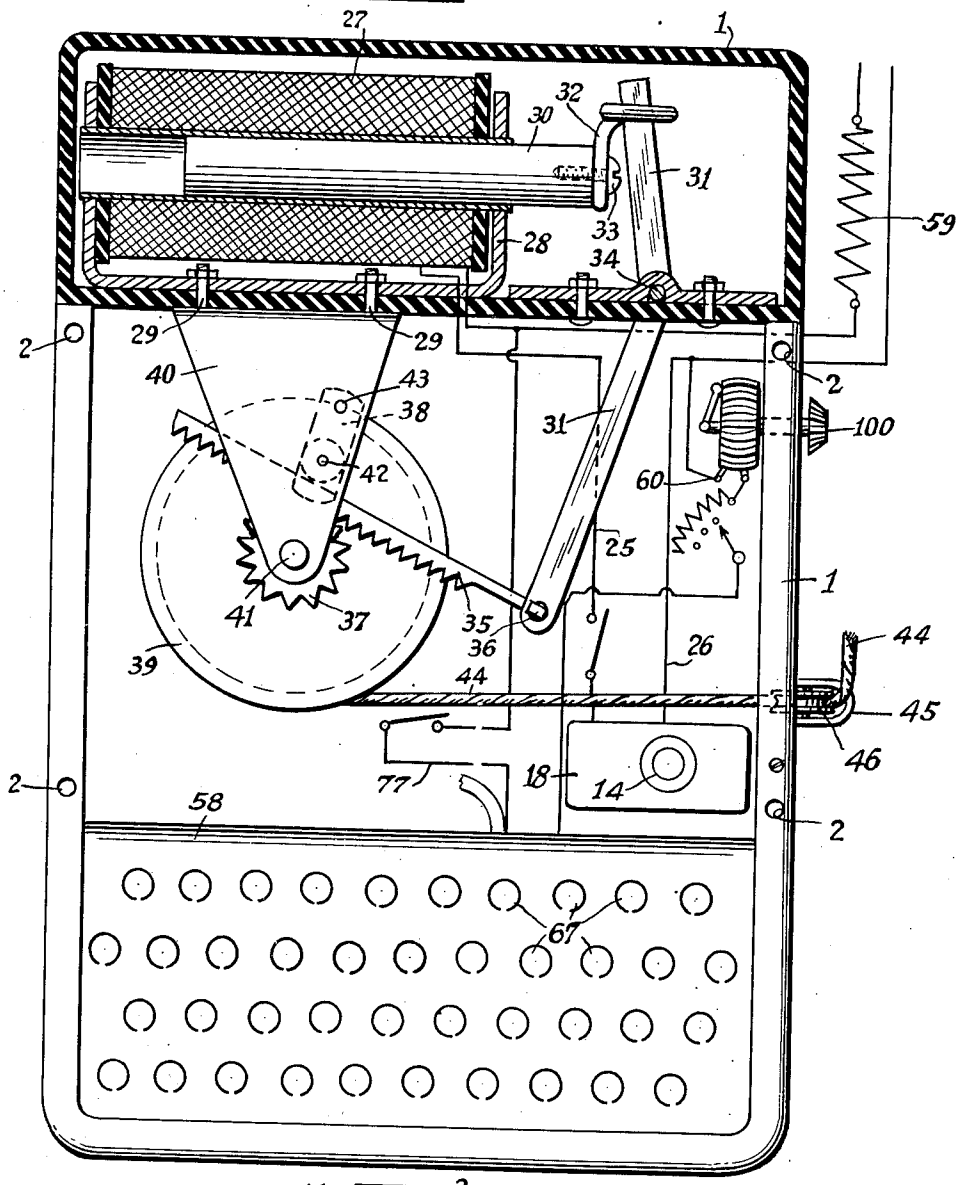
April 7, 1936. T. H. TALLEY 2,036,659

ELECTRIC POWER ATTACHMENT FOR TYPEWRITERS

Filed Aug. 27, 1931 2 Sheets-Sheet 1

Fig. 1.



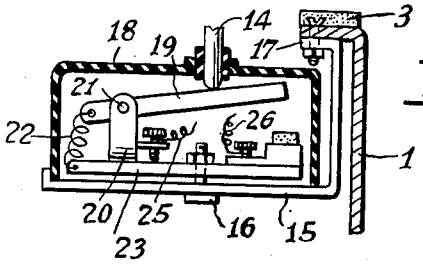


Fig. 2.

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ELECTRIC POWER ATTACHMENT FOR TYPEWRITERS

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Fig. 3.

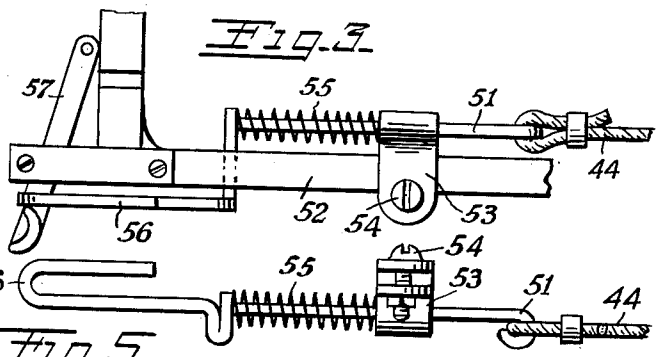


Fig. 4.

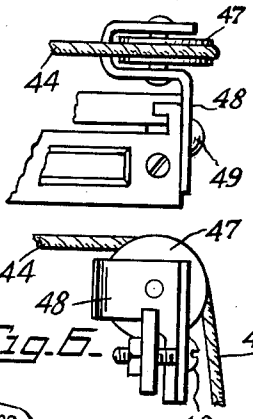




Fig. 5.

Fig. 6.

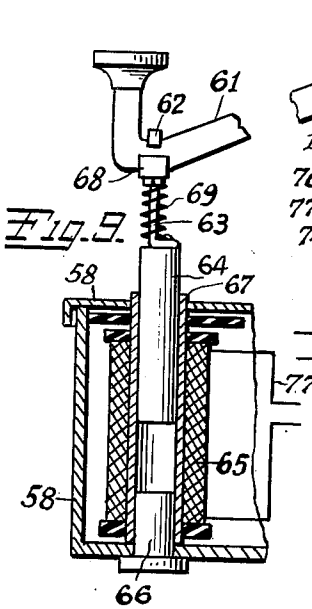


Fig. 9.

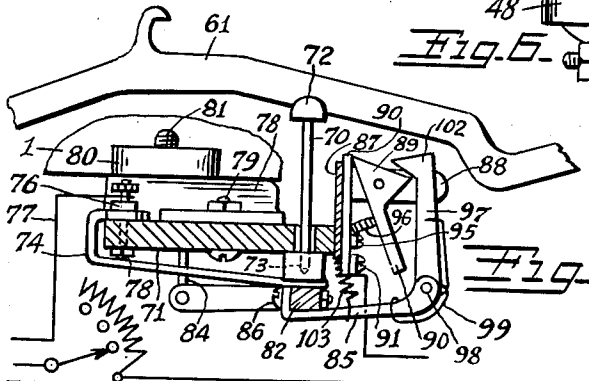


Fig. 10.

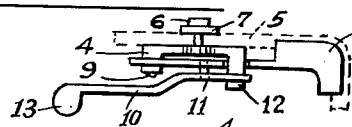


Fig. 7.

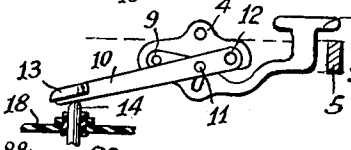


Fig. 8.

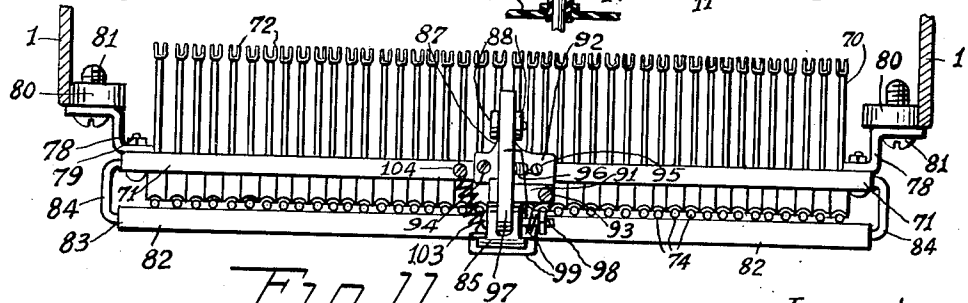


Fig. 11.

Inventor:

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Patented Apr. 7, 1936

2,036,659

UNITED STATES PATENT OFFICE

2,036,659

ELECTRIC POWER ATTACHMENT FOR TYPEWRITERS

Thurmon H. Talley, Little Falls, N. Y.

Application August 27, 1931, Serial No. 559,718

5 Claims. (Cl. 197—13)

My invention relates to improvements in electric power attachments for typewriters, the objects of my improvements are to provide an inexpensive means of converting hand operated standard typewriters, into electric typewriters.

Another object is to provide means for returning the typewriter carriage to position for the next line, also to operate the spacing lever on said carriage, without removing the hand from the keyboard typewriter.

Another object is to eliminate fatigue, and increase speed, without exertion and to make uniform type impressions, also having a rheostat provided to regulate the power to any desired pressure, ranging from one sheet to several carbon copies.

Other features and advantages of the invention will appear in the following description, taken in connection with the drawings, wherein:—

Figure 1 is a top plan view of the base, upon which the typewriter rests.

Figure 2 is a vertical sectional view of the electric switch controlling the large magnet.

Figure 3 is a top plan view of mechanism for operating the spacing lever, also forming an anchor for the cable which draws the carriage to proper position.

Figure 4 is top plan view of a demountable cable pulley, attached to the typewriter frame; and Figure 5 is a side plan view of the cable anchor; and Figure 6 is a side view of the demountable cable pulley.

Figure 7 is a top plan view of a demountable operating mechanism for the electric switch in Figure 2; and Figure 8 is a side elevation of Figure 7; Figure 9 is a vertical sectional view of the electric switch, and the association of the distributor with the key levers on a typewriter.

Figure 10 is a vertical sectional view of one of the solenoid magnets that operates the typewriter keys, showing the association and connection thereto.

Figure 11 is a rear view of the distributor showing means of securing same to the frame of a typewriter.

Similar numerals refer to similar parts throughout the several views.

The box shaped case 1, forms a base upon which the typewriter is placed, the rubber feet of the typewriter being removed, and screw studs replacing them, said studs being inserted in holes 2, on top of case 1, a rubber or sound absorbing gasket 3, in Figure 2, is placed on top of case 1, to absorb vibrations from the typewriter.

Figures 7 and 8, illustrate an electric switch operating mechanism, adapted to be demountably supported on the typewriter frame at the corner of the keyboard, base 4 is clamped to typewriter frame 5, by means of screws 6, and cleat 7, operating lever 8, is placed over the corner of typewriter frame, said lever being pivotally connected to base 4, by means of pivot 9, a rearward extending lever 10 is pivotally supported on base 4 by means of pivot 12, a stud 11 is mounted in lever 10, said stud being slidably engaged in a slot in lever 8, said lever 10 having a spoon shaped free end 13, adapted to engage against and depress a fiber plunger 14 on electric switch Figure 2 when lever 8 is depressed.

Figure 2 illustrates an electric switch controlling the large magnet to return the typewriter carriage to proper position, said switch being secured to case 1 by means of an L shaped bracket 15, being secured to case 1 by means of a rivet or screw 17, a screw or rivet 16 securing the fiber base 23 on said switch to said bracket, a non-conducting plunger 14 is slidably mounted in the top of the non-conducting switch housing 18, said plunger adapted to engage a pivotally supported copper bar 19, supported between the arms of a U shaped bracket 20, by means of a pivot 21, said U shaped bracket 20 being secured to fiber base 23, a spring 22 having one end thereof engaging one end of said copper bar 19, and the opposite end of said spring engaging fiber base 23 adapted to keep the contact points of said switch separated when not in use, wires 25 and 26 connect said switch to magnet 27 in Figure 1, magnet base 28 is secured to cross section of case 1 by means of bolts 29 and 29, a steel plunger 30 is slidably mounted in said magnet, having a hook 32 mounted on the end thereof by means of a screw 33, said hook slidably engaging the free end of a pivoted lever 31, pivotally supported in a longitudinal slot in the cross section of case 1, and secured thereto by means of pivot 34, a rack 35 is pivotally engaged on the end of lever 31, at 36, engaging a gear 37, secured to pulley wheel 39, said pulley wheel being rotatably supported between two arms of a U shaped member 40, by means of a pivot 41, said U shaped member secured to cross section of case 1, by means of bolts 29 and 29, said rack 35 is held in place by means of a support 38 and small roller secured to upper arm of U shaped member 40 by means of rivets 42 and 43.

A flexible cable 44 is secured to a grooved pulley 39, said cable passing under small pulley wheel 46 mounted on the side of case 1, and extending upward over pulley wheel 47 in Figure 4, and having the end thereof secured to hook mem-

ber 51, said pulley wheel 47 adapted to be demountably attached to the upper part of the typewriter frame 50, by means of member 48, and screw and nut 49.

Mechanism for operating the spacing lever on typewriter shown in Figures 3, and 5, comprises a clamp bracket 53, adapted to be demountably supported on frame of the typewriter carriage, and secured thereto by means of a screw 54, and having a hook member 51 slideably mounted therein, a spring 55 is mounted around shaft 51 on said hook member, and engaging said clamp bracket 53, to hold said hook member in proper position, a hook 56 is formed on the end of member 51, to slideably engage spacing lever 57 on the typewriter.

Figure 9 shows a fragment side view of a typewriter key and lever and a vertical sectional view of one of the small solenoid electromagnets and a fragment vertical sectional view of the coil-case 58, showing association and connection of the electromagnet to the typewriter key, a separate magnet is provided for each key on the typewriter and placed directly under each respective key in a case 58, Figure 1, 64 is a steel plunger slidably mounted in a slit brass tube 67, in the electromagnet 65, a stem 63 is secured on the upper end of said plunger, having a hook 62, formed on the upper end thereof, engaged on the typewriter key lever 61, a spring 69 mounted around said stem engaging a clamp 68 to hold hook 62 in proper position, a stud 66 is inserted in a hole in the bottom of case 58, extending up in the lower part of the electromagnet holding said magnet in position also forming a stationary magnet in the lower part of the solenoid.

Figure 10 shows a vertical sectional view of a distributor and switch to control the electric current in the small magnets, and the operation of the typewriter keys, Figure 11 shows a rear view of said distributor and switch, and shows means of securing same to lugs on the typewriter frame.

A number of vertical plungers 70, are slidably mounted in an insulation base 71, having a guide 72, mounted on the top of each plunger, engaging the lower side of each respective key lever 61, on the typewriter, a grooved lug 73, of non-conducting material is secured to the lower end of each plunger, engaging the free end of spring members 74, said spring members extending forward under base 71, and secured to the upper side thereof by means of screws 75, and nuts 76, forming binding posts for wires 77, connecting each section on the distributor to each respective electromagnet 65, in coil case 58.

Said distributor base 71 is located under said typewriter and secured thereto by means of brackets 78, secured to each end of base 71, by means of screws or rivets 79, said brackets adapted to be detachably mounted on lugs 80 on frame of the typewriter, and secured thereto, by means of screws 81.

A copper universal bar 82, extending the full length of said distributor base 71, underneath the rear thereof, and having a right angle arm 83, formed on each end thereof, and pivotally supported on said distributor base by means of brackets 84, an extension arm 85, is secured to said universal bar 83, by means of screws or rivets 86, to operate electric switch mounted on rear part of said distributor base 71.

Said electric switch having a vertical metal base 87, a triangular copper lug 89, pivotally supported thereon, between two arms 88, said lug having a lower extending arm 90, forming a movable contact point on said switch, adapted to engage a stationary contact point 91, secured to an upright non-conducting base 92, by means of screw 93, forming a binding post for a wire connecting said switch to main line, a spring 96, held in place by screw 95, the free end of said spring engaging arm 90 on the pivoted copper lug to keep the said contact point separated when not in action, said switch adapted to be detachably mounted on the rear of said distributor base 71, by means of screws 94 and 95.

A mechanism to operate said switch is provided, including an extension arm 85, secured on said universal bar 82, by means of a screw 86, having an upright arm 97 pivotally supported on the end thereof by means of pivot 98, a spring 99, is mounted around an extending end of said pivot, having one end thereof engaging arm 85, and the opposite end thereof engaging said pivoted upright arm 97, said arm 97 having a triangular head 102, on the upper end thereof, engaging the triangular pivoted lug 89, a spring 103, having one end thereof secured to distributor base by means of a screw 104, and having the opposite end thereof engaging arm 85, to hold the universal bar 82, and said upward extending arm in proper position.

A rheostat 60, (Figure 1) is mounted in case 1, having the control knob 100, on the outside of said case, is interposed in the direct lead wire carrying the current to the small electromagnets, forming a means to regulate the power of said magnets, thus giving variable amounts of pressure on the type bars on the typewriter, as may be required for a single sheet or several carbon copies.

To connect up and operate said device, turn an Underwood typewriter on its side and mount the distributor to the lugs on the frame thereof as shown in Figure 11, remove the rubber feet and replace same with screw studs, and set said typewriter on the case 1 in Figure 1, inserting said studs in holes 2 in said case, then mount the pulley wheel Figure 6, on the upper right hand corner of said typewriter frame, and mount the spacing lever mechanism on the frame of the typewriter carriage as shown in Figure 3, then mount the switch operating device shown in Figures 7 and 8, on said typewriter frame at the right hand side of the keyboard, then to return the typewriter carriage, and operate the spacing lever, simply press lever 8, and if additional space is desired simply give said lever an additional stroke.

Then connect the plungers in the small electromagnets to the typewriter key levers as shown in Figure 9, and adjust the rheostat 60 in Figure 1, to the desired power, whether a single copy or two or more carbon copies, by turning the knob 100 to the indication number, by slightly depressing the typewriter key (Figures 9 and 10) the vertical plunger on shaft 70, forces the respective spring members 74 down, and keeps it in close contact with the universal bar 82, this movement also causes the upright arm 97 to close the switch causing the electric current to flow through said arm 97, and arm 85 to said universal bar 82, thence through the depressed wire member 74 to the respective magnet having the plunger thereof connected to said key lever, a spring 96, held in place by screw 95, is interposed between switch base 92, and the movable contact arm 90, to prevent the switch from closing, upon the reaction of the lever 97 to initial position; just before the said key reaches the bot-

tom of the stroke the triangular point 102 passes the triangular point on copper lug 89, thus allowing the spring 96 to break the contact and hold the switch open until another downward stroke is made, thus allowing said key to retain its normal position, also making it impossible to burn out the magnet by holding said key down too long, the switch may be easily replaced with a new one by removing screws 94 and 95.

I claim:

1. An electric power attachment for typewriters, including a frame case, forming a base for said typewriter, a plurality of small solenoid electric magnets enclosed in a box mounted in said case, and secured thereto, said magnets being adapted to be connected to each of the several typewriter key levers, respectively, by means of plungers slidably mounted in each of the magnets, having shafts secured on the upper ends thereof, and hooks formed on the upper ends of said shafts, engaged over each of the respective key levers, a clamp member slidably mounted on each shaft to engage the lower part of the key levers, a spring mounted around each of said shafts to hold said clamps in contact with said key levers, and a distributor adapted to be detachably mounted under said typewriter, and secured to the base thereof, by means of a bracket mounted on each end thereof, having a hole therein, screws mounted in said holes, and screwed into lugs on said typewriter frame, said distributor comprising a non-conducting base, having vertical shafts slidably mounted therein, directly under each of the typewriter key levers, a U shaped head formed on the upper ends thereof engaging each respective key lever, a grooved non-conducting lug mounted on the lower end of each vertical shaft, engaging respective spring members secured to the forward upper side of the base by screws and nuts, the latter forming binding posts for each of the respective spring members and having wires mounted thereon, connecting them to each respective solenoid electromagnet in the coil box, a universal bar pivotally supported underneath the base by means of a bracket in each end thereof, an extension arm mounted on said universal bar, having an upright arm pivotally supported thereon, and a spring mounted around said pivot, having one end engaging the extension arm and the opposite end thereof engaging said pivoted upright arm, and a spring having one end secured to the distributor base and the opposite end thereof engaging said extension arm on said universal bar, an electric switch adapted to be demountably supported on the distributor base and secured thereto, comprising a non-conducting base, and a metal base having a triangular conducting lug pivotally supported thereon, an extension arm on said lug forming a movable contact point and a fixed contact point mounted on said non-conducting switch base, a spring mounted on said base to separate said contact points.

2. In an electric power attachment for typewriters, comprising a solenoid electromagnet and connecting means, for each typewriter key lever, a distributor demountably supported on said typewriter, comprising means for connecting each electromagnet selectively to an electric switch demountably supported on said distributor base, said switch being automatically operated by connecting operable engaging means on a universal bar, said universal bar being pivotally supported on said distributor base, said bar being actuated by the depression of a typewriter key, through operable engaging means connecting the key levers to said universal bar, a rheostat connected in series with said switch, to control volume of current, and power of said electromagnets.

3. In a typewriter and similar key operated machines, a means for actuating the keys and typebars of said machine by means of solenoid electro-magnets, means for connecting said magnets to said keys, a distributor on the machine comprising means for connecting each electro-magnet selectively to an electric switch supported on said distributor, said switch being automatically operated by engaging operable connecting means on a universal bar, pivotally supported on the distributor, said universal bar being actuated by the depression of a key, through selective operable engaging means connecting the key lever to said universal bar, a rheostat connected in series with the switch, to control the power of the magnets, and the pressure of the type bars upon the paper.

4. An electric power unit for typewriters and similar machines, comprising a solenoid electromagnet for each key, means for connecting the plunger in said magnet to said key, a distributor switch on the machine comprising means for connecting each electro-magnet selectively to an electric switch mounted on said distributor switch, a rheostat connected in series with said electric switch and the electro-magnets, a universal bar operably supported on the distributor switch, selective operable connecting means on said distributor switch, whereby any selected key being slightly depressed will operate the universal bar and associated parts, operable connecting means on said universal bar to engage and operate an electric switch mounted on the distributor switch, means for demountably securing said electric switch to the base of the distributor switch, means for closing the electric switch on the downward stroke of the key, and means for holding the electric switch open on the upward return movement of the operating mechanism.

5. A demountable and detachable electric power attachment for typewriters and similar key operated machines, comprising a solenoid electro-magnet for each key, means for detachably connecting the plungers in said magnets to the key levers, a distributor demountably supported on the machine, comprising means for selectively connecting each electro-magnet to an electric switch, demountably supported on the base of said distributor, a rheostat connected in series with the electric switch, and the electro-magnets, a universal bar operably supported on the distributor, selective operable connecting means on said distributor engaging the key levers on the machine, whereby any selected key being slightly depressed operates the universal bar and associated parts, operable connecting means on the universal bar to engage and operate an electric switch mounted on the distributor, means for closing the electric switch on the downward stroke of the key, and means for holding the switch open on the upward return movement of the operating mechanism.

THURMON H. TALLEY.