

(No Model.)

2 Sheets—Sheet 1.

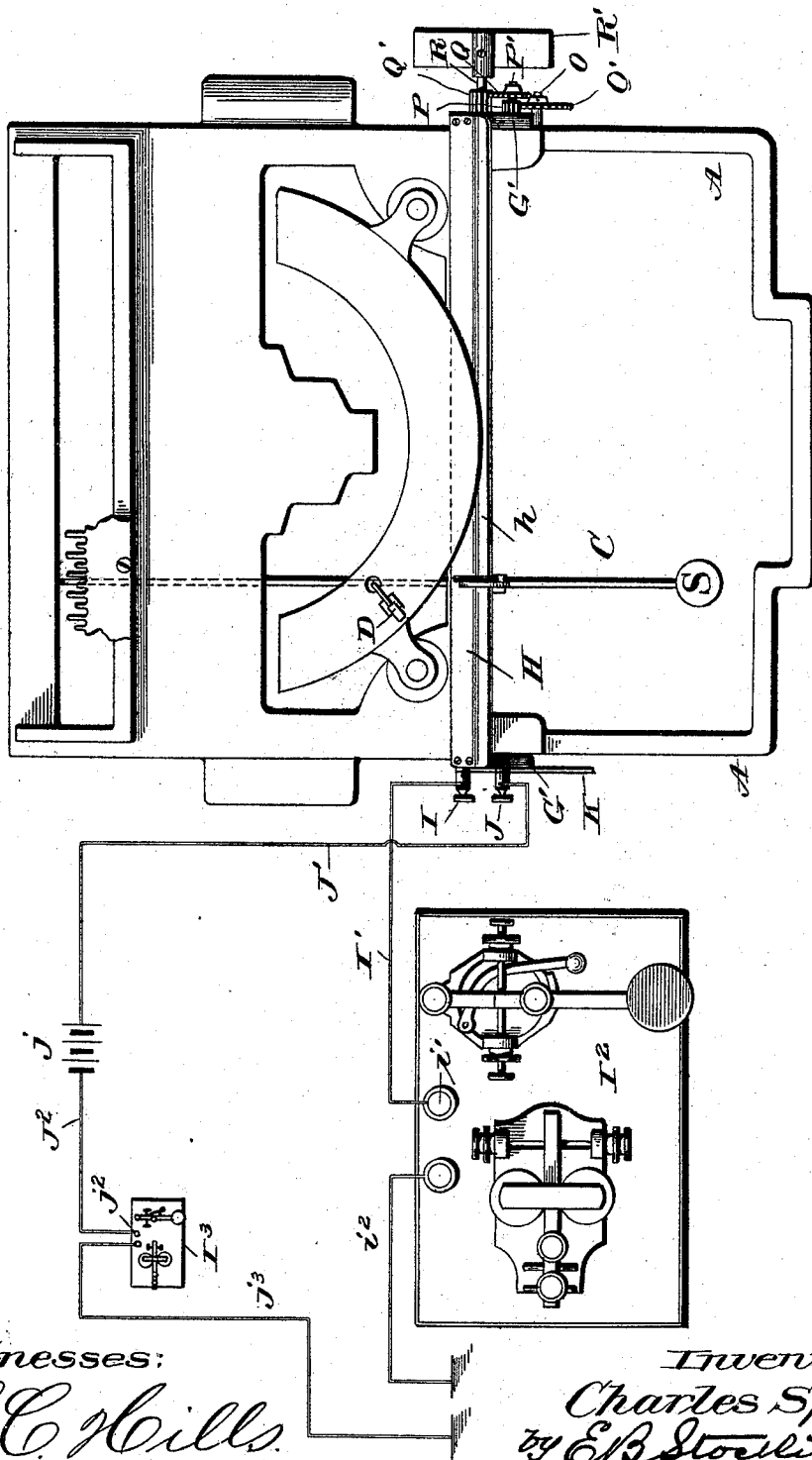
C. SPIRO.

TYPE WRITING MACHINE ATTACHMENT.

No. 535,179.

Patented Mar. 5, 1895.

Fig. 1.



Witnesses:
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Inventor:
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(No Model.)

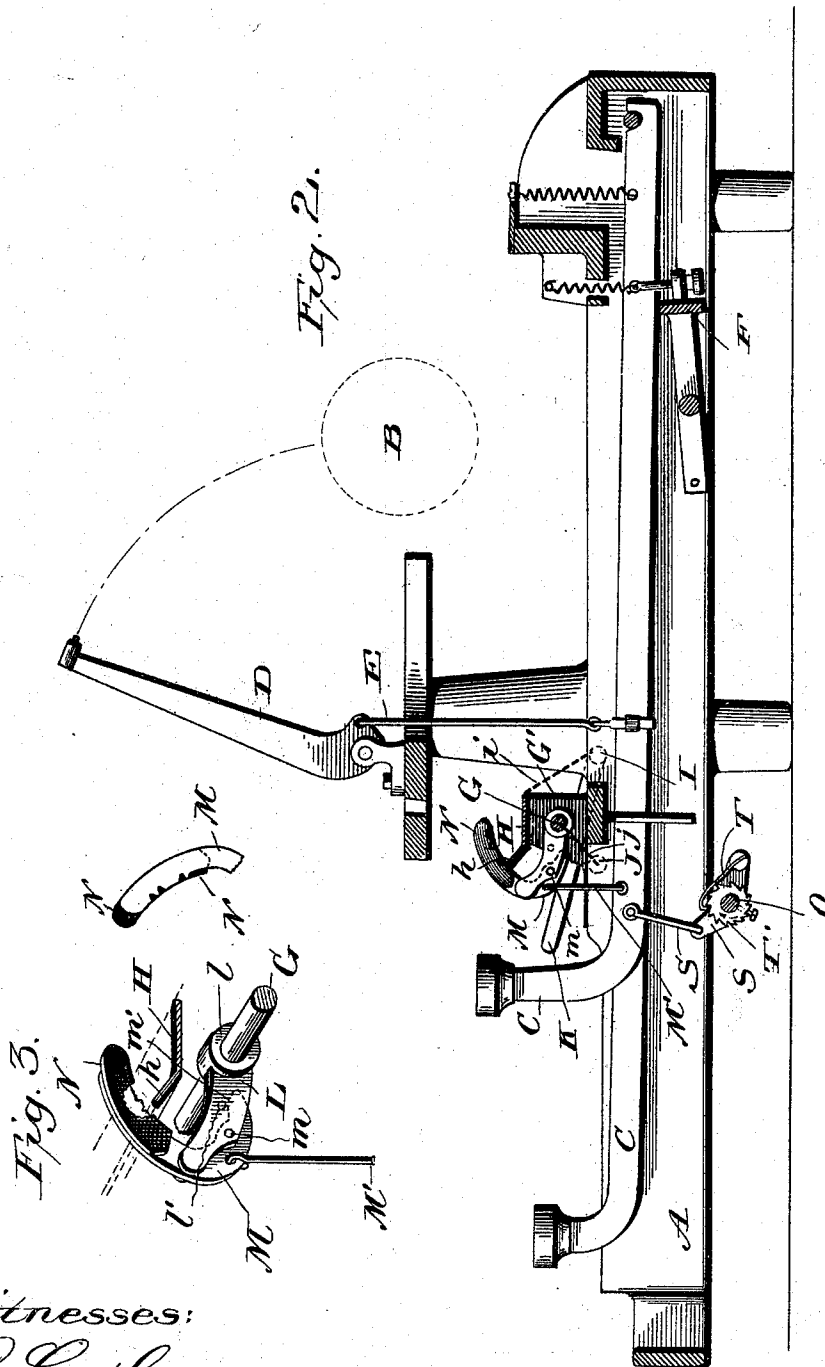
2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

CHARLES SPIRO, OF NEW YORK, N. Y.

TYPE-WRITING-MACHINE ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 535,179, dated March 5, 1895.

Application filed October 9, 1894. Serial No. 525,413. (No model.)

To all whom it may concern:

Be it known that I, CHARLES SPIRO, a citizen of the United States, residing at New York, in the county of New York, State of New York, have invented certain new and useful Improvements in Type-Writing-Machine Attachments, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention pertains to type writing machines having for its object primarily to provide an attachment to an ordinary type writer, such for instance as the bar lock although not restricted to its connection with such form
15 of machine, whereby telegraphic signals may be produced or transmitted simultaneously with the printing of the letter or character on the paper by the simple depression of a key lever as in the ordinary act of writing with
20 such machines. As far as my knowledge of the prior art extends these results have been produced only by machines of special construction, none of them being in the nature of an attachment to or being capable of being
25 employed in any of the standard type-writing machines without a material reorganization thereof. I provide a telegraphic signal producing device for a type-writing machine and mounted directly on a key-lever so
30 that said device will work simultaneously with or be actuated by the movement of a key-lever or it may be on a type bar. The device is in circuit with a telegraphic instrument of known construction so that the move-
35 ment of the key lever actuates the type bar in the ordinary manner to make an impression on the paper on the platen and then transmits a message consisting of dots and dashes, &c., in accordance with the well known
40 Morse system now in general use. By this means it will be seen that there is less liability to err in sending a message and the operator has a positive and unmistakable record of the message sent, and mistakes, should
45 they occur, which is not likely by my method, can be more readily rectified.

The essential feature therefore of my invention is mechanism (of any character) by which telegraphic signals may be produced
50 mounted directly on a key-lever of a type writing machine, which at the same time, or by the said actuation of the key-lever makes

an impression upon the paper on the platen of the machine. Various forms of devices may be devised to accomplish this end. I
55 have already conceived of several forms, one of which is illustrated in the annexed drawings and others of which will form the subject matter of separate applications.

The invention in its present form is clearly 60 illustrated in the accompanying drawings which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a diagrammatic view showing 65 sufficient of the type-writing machine for a clear understanding of the construction and application of my present improvement. Fig. 2 is a vertical section through the type writing machine from front to rear. Fig. 3 is a
70 detail in perspective with a portion broken away showing the mechanical electrical signal producing devices, this latter figure being upon an enlarged scale.

Like letters of reference indicate like parts 75 in all the figures of the drawings.

Referring now to the details of the drawings by letter A designates the frame, B the platen, C the key-levers, D the type-bars, E the rod ligament or link connecting the type-
80 bar with the key-lever, and F the universal bail, all of any well known or approved construction, in this instance being shown as of that form of type writing machine known as the bar lock.

85 The type writing machine with the exception of the parts hereinafter specifically described is, as a whole, the same as is the machine now upon the market. My improvements are readily applied to such machine
90 without any material change in the structure thereof.

My improvement as illustrated in the present application is extremely simple. It embodies a rod G extending transversely of the
95 machine, being mounted at its ends in the brackets G' which are of hard rubber or some analogous insulating or non-conducting material attached to the sides of the frame of the machine, and H is a plate, bar or strip
100 of some good conductor, attached to the upper ends of the brackets G' in any suitable manner and the forward edge of which plate, bar or strip is extended upwardly and for-

wardly as seen in Figs. 2 and 3 at *h* for a purpose which will hereinafter appear. The rod G and plate H are insulated from each other and both are of some good conducting material.

I is a binding post connected by wires *i* with the plate H and J is a binding post connected by wire *j* with the rod G. The binding post I is connected by wire I' with the binding post *i'* of the telegraphic instrument I² of usual form. The binding post J is connected by wire J' with the battery *j'* and with the telegraphic instrument I³ at a distant station by the wire J² from the battery to the binding post *j'* of such instrument. The other binding posts of the instrument I² and I³ are connected with the ground by means of the wires *i'*² and *j'*³ respectively.

K is a lever pivotally mounted on one of the binding posts I or J and designed to be thrown into contact with the other at times when it is desired to throw the telegraphic instrument out of operative connection with the type writing machine so that either may be used independently of the other.

The signal producing devices are mounted on the rod G and as these are alike in all essentials except of course the conformation or indentations of the contact arm, a description of one will suffice for all. Referring then to Fig. 3 in which one of these devices is shown enlarged L is an arm mounted to turn on the rod G and held preferably between the collars *l* on said rod. This arm is bifurcated as seen best in said Fig. 3 and between the bifurcations is mounted to move the curved bar M, the pivot *m* of which is held in the arm L the bar having a tail-piece *m'* extending beyond its pivot and adapted as will hereinafter appear to engage a stop pin *l'* held in the arm L, as seen in Figs. 2 and 3. The under face or edge of the upper portion of this bar M is formed with a series of indentations, that upon each bar conforming to or adapted to produce the telegraphic signal of dots, or dots and dashes, or dots, spaces and dashes, representing the letter carried by the key-lever and type-bar with which the said bar M is connected.

N is a piece of rubber or other non-conducting material affixed to the side of the bar M, as seen in Fig. 3 with its under edge curved to conform to and flush with the under edge of said bar M. This bar M is connected with corresponding key-lever C by means of a practically stiff link or ligament M' as shown in Fig. 2, the connection of said ligament with the bar being substantially on a horizontal line with the pivot of the bar as shown best in Fig. 3, the manner of connecting the ligament and bar not being material although it should be such as to permit of easy movement of the parts.

Under ordinary circumstances an operator of the type writing machine will manipulate the keys much more rapidly than the party at the other end of the line can "take." It

will therefore be necessary to provide a retarding mechanism and when such is required any suitable means for accomplishing this end may be employed. In this instance I have shown one of the forms that may be used for this purpose. It comprises a shaft O mounted to revolve in suitable bearings upon the under side of the frame and carrying at one end a toothed wheel O' designed to mesh with a pinion P on a stub-shaft P' which in turn carries a toothed wheel Q meshing with a pinion Q' on a shaft R which latter shaft is extended and carries a cam R'. On the shaft O is loosely mounted a lever S connected with its key lever by a link or ligament S' as seen best in Fig. 2 and this lever S carries a pawl T designed to engage with a ratchet T' fast on the shaft O, it being understood of course, that there is a lever, ratchet, and pawl for each key-lever and type bar.

With the parts constructed and arranged substantially as above set forth the operation will be as follows:—The type writing machine is operated upon in the usual manner. If it be desired to use the same for ordinary work the switch K is thrown into position so that the telegraph instrument is not actuated but when it is designed to transmit a message by the ordinary telegraphic signals the switch is thrown in the opposite direction when by manipulating the key-levers not only is the message printed upon the paper upon the platen as before but each actuation of a key lever transmits over the line the signal representing such letter. This is accomplished as follows: When the key-lever is depressed the curved bar M is raised from contact with the plate H the connection being such that upon the initial downward movement of the key-lever the said curved bar is first moved away from and out of contact with the strip H and then continues its downward movement until the type strikes the paper on the platen. Then as pressure is removed from the key-lever and the same begins to move upwardly to assume its normal position, the curved bar M drops against the beveled edge or inclined portion of the strip H, and as the said bar moves upwardly in its curved path, the portions thereof between the notches or serrations come in contact with said strip will complete the circuit and of course the signals transmitted will be in accordance with the spaces between such notches or serrations. When the bar presents its notches opposite the inclined portion of the strip H, the insulation N only is in contact with said inclined portion and consequently the circuit is broken. The upper end of the bar M is caused to first move away from the strip H by reason of the engagement of its tail piece with the stop pin *m'* which occurs upon the initial downward movement of the key-lever.

The action of the retarding movement is as follows: When a key-lever is depressed the lever S is moved on the shaft in the direction of the arrow in Fig. 2 its point riding over

the teeth of the ratchet. As the key-lever begins to ascend the hook of the pawl engages the teeth of the ratchet and rotates the same in the direction of the arrow on the ratchet in Fig. 2, thus rotating the shaft O in the same direction and through the medium of the tooth wheel and pinions at the right of the machine rotates the fan so as to retard the up-stroke of the key-lever and consequently the movement of the curved arm M. It must be understood that the curved arm rides at all times during the upward stroke or movement of the key lever upon its edge on the inclined portion of the plate H, never dropping so that the notches will be engaged with said inclined portion, the insulating strip N being provided to prevent such occurrence. It will thus be seen that each depression of a key-lever makes an impression of its type on the paper and the dots and dashes or other characters or combinations representing the same letter are transmitted through the telegraphic instrument the same as if the key thereof were actuated.

If it be desired to use the telegraphic instrument in the ordinary manner the switch K is turned so as to practically disconnect the telegraphic instrument and type writing machine, when both may be used independently of each other and in the manner in which they are usually manipulated.

It is to be understood that the message is received at the other end of the line by dots and dashes, &c., the same as if the message had been sent in the ordinary manner by the manipulation of the key of a telegraphic instrument.

Modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

While thus far described the signal transmitting bar M has been referred to as connected directly with the key-lever I do not wish to restrict myself to such connection as it may be connected to or with any part to which is imparted movement in the printing of a letter. The retarding device although shown as arranged to retard the movement of the lever upon its return stroke may be mounted to act during the opposite movement, or upon the return stroke whether the lever be pivoted or otherwise mounted. All such minor changes I should consider as within the scope of my present invention.

What is claimed as new is—

1. The combination of a platen, a type-bar, a ligament and key-lever operatively connected with each other, a pivoted contact arm, a link connected at one end to said key-lever and at the other to said arm between its ends, an insulated bar and electrical connections related to the arm and bar to produce and transmit electrical signals, substantially as specified.

2. The combination with the type-bar and key-lever of a type-writing machine operatively connected with each other, of a fixed

electrical conductive bar, a pivoted electrical conductive contact arm and a link directly connecting said arm with said key-lever, substantially as specified.

3. The combination with a type-bar and key-lever of a type-writing machine, of a fixed electrical conductive bar, a contact arm and a link extending from said arm to said key-lever, with one end connected directly to said arm and the other end directly to said lever substantially as specified.

4. The combination with a type writing machine type-bar, key-lever and their connecting link, of a fixed conductive bar, a conductive contact pivoted to a pivoted support and connected directly with the key-lever by a link, whereby upon the depression of a key-lever the contact arm is carried away from the conductive bar.

5. The combination with a fixed conductive bar, of a contact arm pivoted on a pivoted part and directly connected with a key-lever, and movable in different curved paths during its upward and downward travel, as set forth.

6. The combination of the type-bar, ligament and key-lever of a type-writing machine, of a fixed conductive bar, a conductive contact arm, a link connecting the latter with the key-lever, retarding mechanism and a link connecting the same with the said key-lever, substantially as specified.

7. The combination with the type-bar, ligament and key-lever of a type-writing machine, of a fixed conductive bar, a pivoted contact arm carried by a pivoted device, a link connecting said arm with the key-lever, a retarding mechanism and a link connecting the same with said key-lever whereby the contact arm is thrown out of operation in the downward or printing movement of the key-lever and is brought into operation with retarded speed upon the return movement of the key-lever.

8. The combination with the key-lever, type-bar, platen and ligament of a type-writing machine, a fixed contact, and of a movable contact and a link directly pivoted at one end to the latter and at the other end to the key-lever, as set forth.

9. The combination with a type-writing machine, of a telegraphic instrument and mechanical devices actuated by the manipulation of and directly connected with the key-lever by a substantially vertically-disposed link to transmit symbols through said telegraphic instrument upon the return stroke of the lever, as set forth.

10. The combination with a key-lever, type-bar, ligament and platen of a type-writing machine, of a signal-producing device directly connected with the key-lever and mounted for actuation thereby, and means for retarding the upward movement of the lever, as set forth.

11. The combination of a key-lever, type-bar, ligament and platen of a type-writing

machine, of a pivoted signal-producing device operatively and directly connected with said lever, and means for retarding the return movement of the lever, as set forth.

- 5 12. The combination of a key-lever, a pivotally-mounted signal-producing device operatively connected with the lever, and means for throwing the said device away from and out of mechanical engagement with its coacting contact upon the initial movement of the lever, as set forth.

- 10 13. The combination of a key-lever, a pivotally-mounted signal-producing device operatively connected with the lever, and means
15 for throwing the device away from and out of engagement with its coacting contact upon

the initial movement of the lever and means for retarding the return movement of the lever, as set forth.

14. The combination of a key-lever, a pivotally-mounted signal-producing device directly and operatively connected with the lever, and means for throwing the said device away from and out of mechanical engagement with its coacting contact upon the initial movement of the lever, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES SPIRO.

Witnesses:

HENRY LESINSKY,
C. W. RICHARDSON.