

C. J. REED.
ATTACHMENT FOR TYPE WRITING MACHINES.
No. 473,237. Patented Apr. 19, 1892.

Fig. 1.

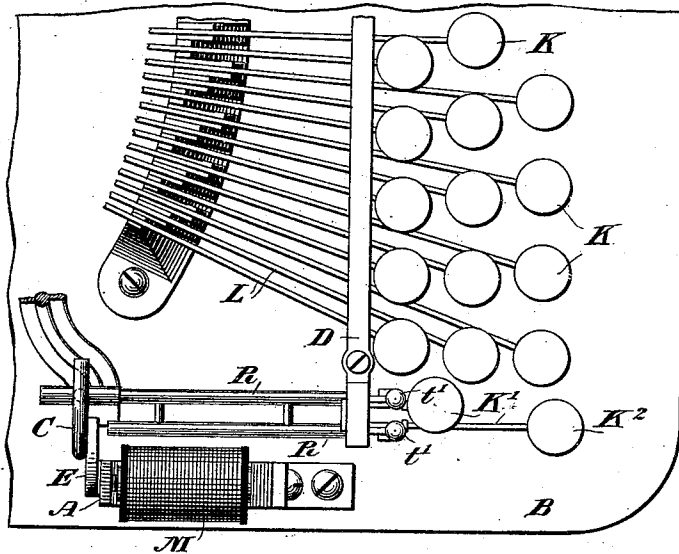


Fig. 2.

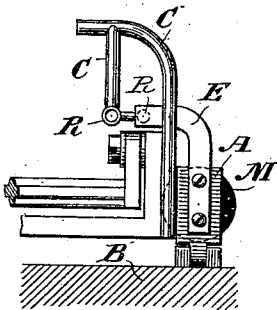


Fig. 3.

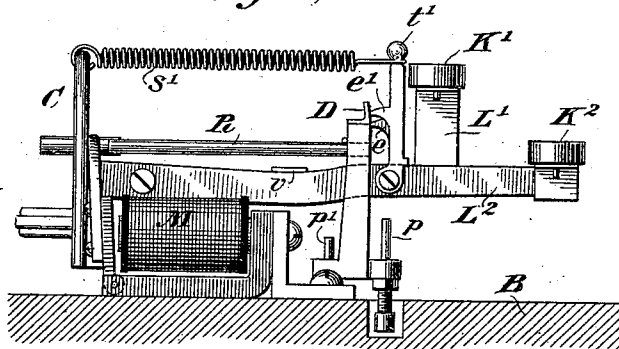
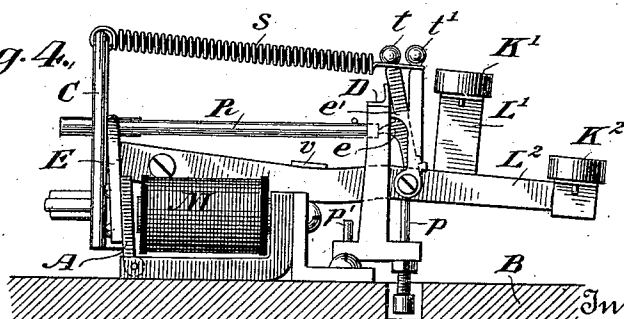


Fig. 4.



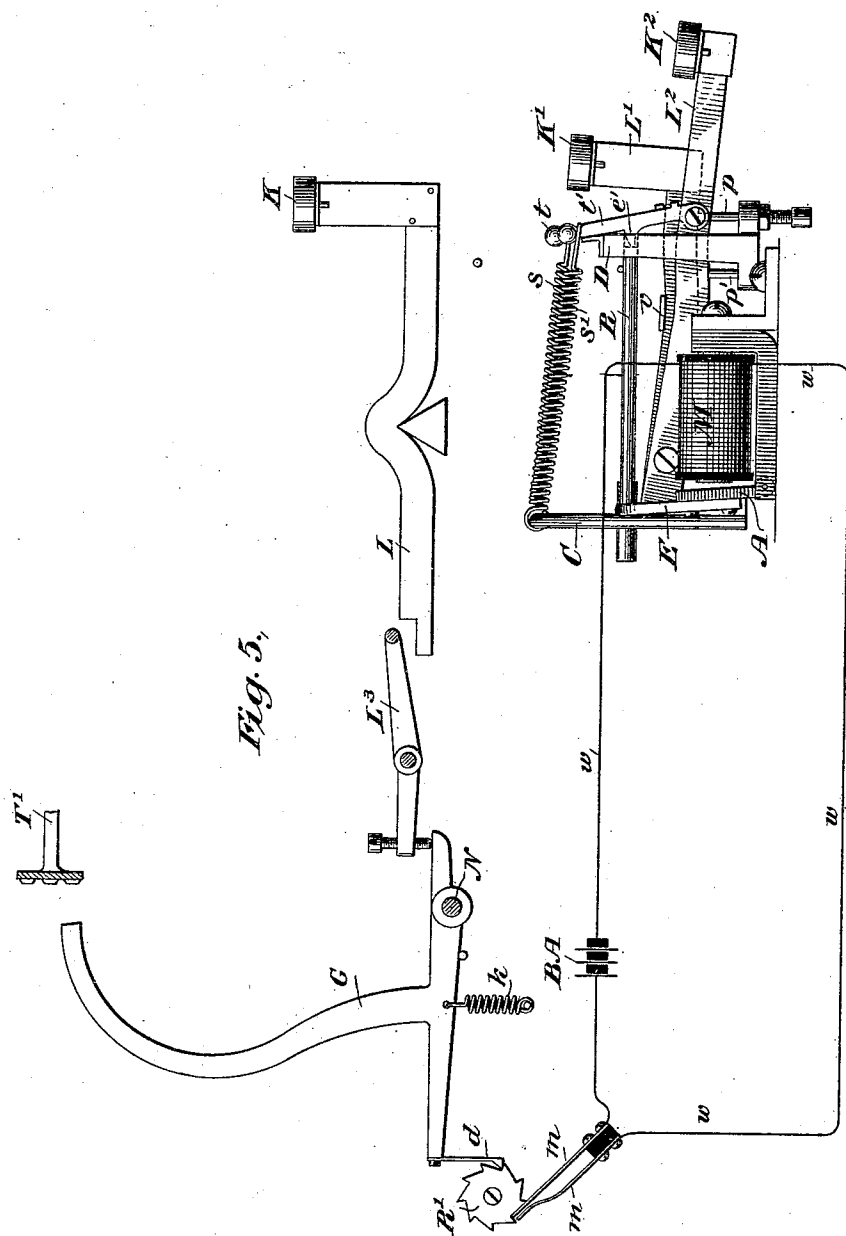
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2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

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ATTACHMENT FOR TYPE-WRITING MACHINES.

SPECIFICATION forming part of Letters Patent No. 473,237, dated April 19, 1892.

Application filed July 6, 1891. Serial No. 398,473. (No model.)

To all whom it may concern:

Be it known that I, CHARLES J. REED, a citizen of the United States, residing at Orange, county of Essex, and State of New Jersey, have made a new and useful invention in Attachments for Type-Writing Machines, of which the following is a specification.

My invention is directed particularly to improvements in those attachments used in connection with well-known forms of type-writers, which govern or control the operation of the key-levers and their application to the printing of different kinds of characters with as few key-levers as possible.

In many of the well-known type-writers now in general use the number of characters to be printed is largely in excess of the number of key-levers actually used, each of said key-levers being adapted, through the agency of additional attachments, to effect the printing of two or more characters. In some of these forms of type-writers—notably the Remington—the change from small letters to capitals is effected by holding down a cross-bar, which varies the position of the carriage in such manner that while it is so held any key-lever depressed will print a different character from that which it would print were said bar not depressed. In the Hammond type-writers supplemental key-levers are held down, which vary the positions of a type-wheel, and it is held in these positions until released.

My invention has for its object the provision of additional means which shall permit the operator to print capitals, small letters, punctuation-points, or numbers at will by simply manipulating the key-levers and the additional key-levers as the writing continues, these attachments being of such a nature that the mechanism is wholly automatic and is restored to its original condition after the depression of each key-lever. I accomplish this object by the use of the mechanism hereinafter described, but particularly pointed out in the claims which follow this specification.

For the purpose of illustrating my invention I have selected the keyboard and some of the adjunct parts of the well-known Hammond type-writer, in which two supplemental key-levers are utilized for giving to the type-

wheel thereof different vertical positions, as is well understood by those acquainted with this special form of type-writer.

My invention will be fully understood by 55 referring to the drawings, in which—

Figure 1 represents a portion of the keyboard of a Hammond type-writer, showing the key-levers and two supplemental key-levers for controlling the printing of capitals or 60 numbers, together with a part of my improvement. Fig. 2 is a detail end or elevational view showing my attachment; and Figs. 3 and 4 are side elevational views thereof, illustrating the supplemental key-levers and their 65 locking-dogs in different positions, while Fig. 5 is a diagrammatic view disclosing my entire improvement, together with a single key-lever of the set, having mechanical connections with a type-hammer, the connections between 70 the key-lever, type-hammer, and type-wheel being illustrated in the simplest manner to show the relation between my improvement and said parts.

Referring to the drawings in detail, B represents the base, K the keys, and L the key-levers, arranged as is usual in a Hammond type-writer, all of the rest of the operative portion of the apparatus being well understood by those skilled in the art and not shown 80 here.

K' and K² represent the supplemental or controlling keys, and L' and L² the key-levers therefor, said keys and key-levers being operatively connected with the type-wheel 85 through intermediate mechanism (not shown) and adapted when depressed to raise said type-wheel to different elevations in a manner well understood by those familiar with the aforesaid type-writer. 90

t and *t'* are dogs pivoted to the key-levers L' and L² and provided with projections or catches *e e'*, adapted to fall into openings in the front face of a cross-bar D, as shown clearly in Fig. 5, when the key-levers are in 95 their lowermost positions and to remain in their locked positions until they have been released, the adjustable stops *p p'* limiting their lower throw.

The apparatus as thus far described is 100 found in the Hammond type-writer, and the supplemental key-levers L' and L² are released

after they have been once depressed by tilting the dogs t and t' into their backward position, which is done by the operator after the desired letter or character has been printed, this operation of releasing the dogs requiring, also, a separate movement on the part of the operator after each capital or character or a series thereof has been printed. My attachment effects the automatic removal of these dogs, as I will now proceed to describe.

s s' are spiral springs attached at one end to an upright standard or support C, and at their other ends to the upper ends of the dogs t t' and having sufficient retractile power to cause said dogs to assume the position shown in Fig. 5 when the key-levers L' and L^2 are depressed.

R is a sliding bar, composed of a pair of rods joined together and having longitudinal sliding motion through the cross-bar D at one end and through the standard or support C at the other end, one portion thereof lying in the path of an extension E, carried by an armature-lever A, pivoted to the extended core of an electro-magnet M, secured to the base B, as clearly shown in all the figures of the drawings.

The electro-magnet M is included in circuit with a battery BA through a conductor w , attached to a pair of yielding springs m m , having their free ends resting normally in the path of the teeth of a ratchet-wheel R' .

G is a type-hammer, pivotally secured to a shaft N and provided with a retractile spring k and carrying a pawl d , adapted to propel the ratchet-wheel R' .

T' is a type-wheel shown in its upper position and adapted to print numbers, and when in its lower position adapted to print small letters, the intermediate position being for capitals, these features being well understood by those familiar with the Hammond type-writer. It is also to be understood that when the key K' and lever L' are depressed the arm v will carry with it the key K^2 and lever L^2 to the intermediate position, and when the key K^2 is depressed it will assume its lowermost position regardless of the position of the key K' and lever L' .

The operation of the apparatus is as follows: Under ordinary conditions, when the keys K and levers L are actuated the type-wheel will be in its lowermost position and small letters will be continuously printed. When, however, it is desired to print a figure, the supplemental key K' is depressed, carrying with it the levers L' and L^2 and permitting the spiral spring s to tilt the dog t into its forward position, as shown in Fig. 4, thereby locking both levers L' and L^2 in an intermediate position and simultaneously lifting the type-wheel in the usual manner so as to bring the figures thereon opposite the type-hammers G. The operator then strikes the desired key K which is to print the figure required. In doing this, he causes the type-hammer G to be actuated, as I have shown, through an interme-

diate lever L^3 , and the impression of the figure is made upon the paper. (Not shown.) When the key K is released, the pawl d on the free end of the type-hammer lever G will be drawn downward under the influence of the retractile spring k , thereby causing one of the teeth in the ratchet-wheel R' to momentarily close the circuit of the battery BA between the contact-springs m m , at the same time energizing the magnet M and causing its armature A to be drawn up, carrying with it the extension E and sliding bar or rods R, thus forcing the dogs t t' backward by reason of their frictional contract with the projections or catches e e' and allowing the key-levers L' and L^2 to assume their normal position. (Shown in Fig. 3.) In a similar manner when the supplemental key K^2 , and hence its key-lever L^2 , is forced into its lower position the type-wheel is caused to assume the position shown in Fig. 5, and the dog t' is locked in the position there shown, and will be released in the manner already described after the desired key has been depressed and released. It will be understood, therefore, that each time one of the supplemental keys K' or K^2 is depressed the type-wheel T' is lifted to a corresponding position, just as is ordinarily the case with Hammond type-writers, and that said keys and key-levers will be locked in the positions described and released for each operation, so that all that is required of the operator in the printing of capitals, small letters, punctuation-points, and figures is to manipulate the keys K and supplemental keys K' and K^2 in the desired order.

I desire it understood that my claims hereinafter made are directed, broadly, to the application of a locking and a releasing device for use with type-writers which shall control the character or letter or figure to be printed, and which shall be automatically released after this feature has been accomplished, and this without any regard to the particular type of machine used. As, for instance, in the Remington machine, (a well-known form of type-writer,) a bar is depressed when it is desired to make a capital, and this bar is held in its depressed position by one hand of the operator while the character is being printed through the agency of the key-lever and the other hand of the operator, making it, therefore, absolutely impossible for a person to operate the instrument with one hand. My attachment may be applied to this capitalizing-bar in the Remington so as to lock it down in the same manner as I have shown and described how I would lock down the supplemental key-levers L' and L^2 in the Hammond type-writer, and said bar would be released on the depression of each letter key-lever in the same manner as I have already described. My claims, therefore, are directed, broadly, to automatic mechanism for controlling the key-levers of a type-writer and their attached parts in such manner that small letters, capitals, figures, or punctuation-points

may be made at will, and that the mechanism will be returned to its normal condition automatically after each letter is printed.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. A type-writer provided with key-levers and means for adapting said key-levers to print from different sets of type, in combination with locking mechanism adapted to hold the latter in one position, and additional mechanism adapted to automatically release the locking mechanism after the depression of any one of the aforesaid key-levers, substantially as described.

2. A type-writer provided with key-levers and one or more additional levers for adapting the aforesaid key-levers to print from different sets of type, in combination with locking mechanism for locking said additional lever or levers in one position, and additional means for automatically releasing said locking mechanism after any one of the key-levers has been depressed, substantially as described.

3. A type-writer provided with a set of key-levers and one or more locking-levers operatively connected with the printing mechanism thereof, in combination with locking mechanism for locking the second lever or levers in one position, a releasing mechanism adapted to automatically release said locking lever or levers after the depression of any one of the key-levers, substantially as described.

4. A type-writer provided with a set of key-levers operatively connected with printing mechanism and an additional lever also operatively connected with the printing mechanism and adapted when depressed to cause the same to print from a second set of type, and a locking device for locking the latter in a fixed position, and a releasing device operatively connected with the printing mechanism and adapted to automatically release the

locking mechanism after the depression of any one of the aforesaid key-levers, substantially as described.

5. A type-writer provided with a set of key-levers operatively connected to printing mechanism, a locking-lever also connected to the aforesaid printing mechanism and adapted to permit the aforesaid key-levers to print from either one of two sets of type, and a locking device for holding the locking-lever in a fixed position, in combination with electro-magnetic means operatively connected to the printing mechanism and adapted to release the locking device, substantially as described.

6. A type-writer provided with a set of key-levers operatively connected to printing mechanism, a pair of locking-levers also operatively connected to the printing mechanism and adapted to cause said printing mechanism to print from either one of three sets of type, in combination with locking devices for each of the locking-levers, and electro-magnetic means also operatively connected to the printing mechanism and adapted to release the locking devices after the depression of any one of the key-levers, substantially as described.

7. A type-writer having a set of key-levers operatively connected to printing mechanism, one or more locking-levers also operatively connected to the printing mechanism, locking devices, one or more, carried by said locking-levers, an electro-magnet having its armature operatively connected to the locking device or devices, a battery included in circuit with said electro-magnet, and a circuit-closing device operatively connected to the printing mechanism and adapted to close the circuit of the aforesaid battery after the depression of each key-lever, substantially as described.

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Witnesses:

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