

966,169.

Witnesses:
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UNITED STATES PATENT OFFICE.

MATTHEW S. CUMNER, OF NEW YORK, N. Y.

TYPE-WRITING MACHINE.

266,169.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, MATTHEW S. CUMNER, a citizen of the United States of America, and residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to typewriting machines, and the object thereof is to provide readily detachable key levers therefor; a further object being to so construct the said key levers as to be individually detachable without interfering in any way with the remaining levers, or other parts of the said machine; a further object being to provide individual guides and locking means for the said levers; a further object being to form the said guides collectively of one piece; a further object being to provide individual tension springs for the said levers and collectively formed of one piece; and a still further object being to accomplish the desired results in a simple, uniform, practical, and economical manner.

My invention is fully described in the following specification, of which the accompanying drawing forms a part, said drawing being a fragmentary perspective showing of a preferred method of accomplishing the desired results.

In the said drawing I have shown a portion *a* of a typewriting machine base and provided, at the rear thereof, with an upright member *a*², while at the front thereof, and arranged in any desired manner, is a lever guide *a*³ having a plurality of vertical slots *a*⁴ therein.

Secured upon the upright *a*² is a horizontally arranged plate *b* provided, at the forward edge thereof, with a depending member *b*² provided with a plurality of slots *b*³ therein corresponding, in number and position, with the slots *a*⁴ and forming teeth similar to a comb.

Arranged between the support *a*² and the plate *b* is a spring plate *c* having a plurality of slots *c*² therein forming teeth *c*³ which are curved downwardly and forwardly to project beyond the depending member *b*², said teeth *c*³ forming individual springs for the key levers and, as clearly shown, they extend from one tooth *b*⁴ to

another and thus cover the corresponding slots *b*³, said spring plate, as well as the plate *b*, being held in position by means of screws *c*⁴ or equivalent.

I have shown a plurality of key levers *d* arranged in banks in the usual manner, *d*², this difference in the form of the levers being confined to the forward ends thereof, as all of the rear ends thereof are alike and comprise a recess *d*³ in the top edge of each of the said levers forming heads *d*⁴ which I preferably incline or curve for ease in assembling or detaching.

At *e* I have shown a plurality of hangers or hooks which are connected with the corresponding type-bars, the latter not being shown as they may be of any desired construction, and, in assembling, all that is necessary is to move a lever *d*, from front to rear, through the corresponding slot *a*⁴, thence through the corresponding hook *e*, and through the corresponding slot *b*³, the incline or curve of the lever head *d*⁴ forcing the corresponding spring finger *e*³ downwardly to permit the entrance of the lever head after which the said spring finger exerts pressure against the lever and holds the recessed portion *d*³ against the depending member *b*² and between the adjacent teeth *b*⁴ and the key lever is thus locked in position.

It will be observed, from this construction, that the usual pivot rod passing through all the levers is omitted, thus not interfering with any other lever when removing or replacing one, and, while the levers are readily movable in the type-bar operation, they are held against accidental dislodgment, thus permitting the substitution of any or all of them for repair or the like, and this is also important when an unskilled person desires to send one of the levers to the factory, perhaps at a great distance, as he does not need to employ a mechanic to remove the lever, nor does he need to pay more than light postage instead of heavy express charges if the entire machine were sent to the factory, although, because of the simplicity of the lever construction, there could be but slight chance for breakage, it probably being necessary only to replace the characters on the keys at times.

It will thus be seen that I provide key levers readily detachable from a machine and without interfering with others, I pro-

vide front guides formed of a single piece of metal or the like, and I provide the rear guides and locking means also made in similar manner, thus preserving uniformity in these parts as well as in the levers, but it will be obvious that I do not confine myself to the exact details shown and described, as many changes thereover will suggest themselves according to conditions encountered in different makes of such machines.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. In a typewriting machine, a plurality of key levers, a comb-like guide adjacent the ends thereof, and a spring for holding each of said levers against the guide, said levers having, each, a tapered head adapted to force said spring away from said guide in assembling, and a recess adjacent said head for engagement with said guide.

2. In a typewriting machine, a plurality of key levers provided, each, with an in-

clined head, and a recess adjacent thereto, a comb-like guide for said levers, and a plate provided with an integral spring tooth for each of said levers, said springs serving to hold said levers in position in said guide.

3. In a typewriting machine, a plurality of key levers provided, each, with a tapered head and a recess adjacent thereto, a plate having a plurality of downwardly directed teeth serving as guides for said levers, and a plate having a plurality of spring teeth, one for each lever, and serving to maintain the same in position with respect to said guides, said plates being jointly held to said machine.

In testimony that I claim the foregoing as my invention I have signed my name in presence of the subscribing witnesses this 3rd day of January 1910.

MATTHEW S. CUMNER.

Witnesses:

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