(No Model.)

G. W. N. YOST.

STEM KEY FOR TYPE WRITING MACHINES.

No. 420,566. Patented Feb. 4, 1890.

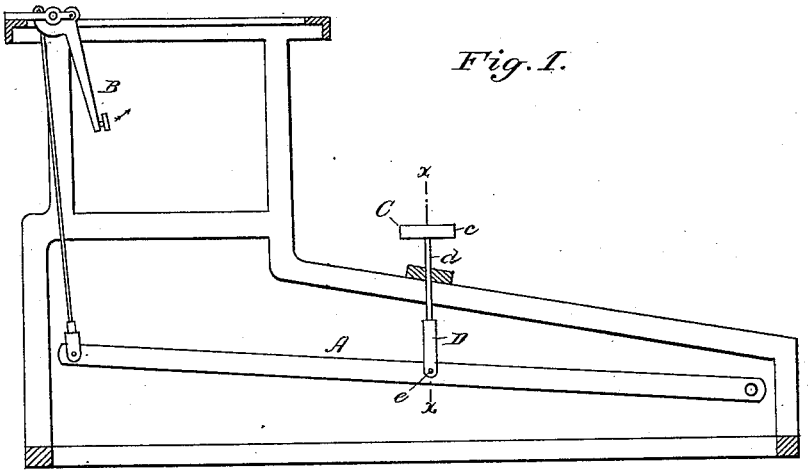
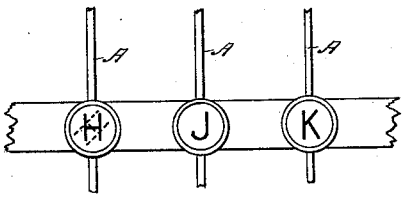


Fig. 1.

Fig. 2.



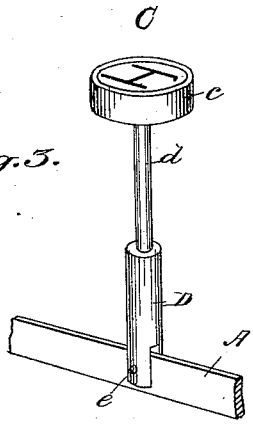


Fig. 5.

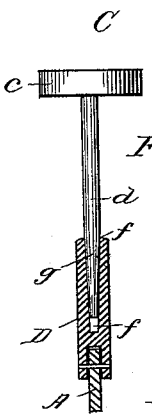


Fig. 4.

Attest:

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Atty:

UNITED STATES PATENT OFFICE.

GEORGE W. N. YOST, OF NEW YORK, N. Y., ASSIGNOR TO THE YOST WRITING MACHINE COMPANY, OF SAME PLACE.

STEM-KEY FOR TYPE-WRITING MACHINES.

SPECIFICATION forming part of Letters Patent No. 420,566, dated February 4, 1890.

Application filed February 2, 1887. Serial No. 226,227. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. N. YOST, a citizen of the United States, and a resident of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Stem-Keys for Type-Writing Machines, of which the following is a specification.

My invention relates to the stem-keys of type-writing machines. Previous thereto it had been customary to employ tubular sockets (pivotally mounted upon the key-levers) threaded interiorly to receive the threaded ends of the shanks of the stem-keys or press-buttons bearing upon their faces letters, numerals, or other characters. To this mode of securing the stem-keys the objection exists that in time, during the operation of the machine, the shanks or stems turn in the sockets and the letters or other characters get askew and render difficult and tiresome the work of the operator. It had also been customary to split the shank of the stem-key to form spring-like jaws, and to use in connection therewith a flanged and perforated link pivoted to a strap secured to the key-lever, and also a link having spring-jaws and an intermediate split partition, as shown in Letters Patent granted to me September 18, 1883, and February 23, 1886. In addition to the above, it had also been customary to form the end of the cylindrical shank of the stem-key with a flattened tenon, and to employ in conjunction therewith a pivoted socket mortised for the reception of the tenon and provided with a cylindrical bearing for the lower portion of the cylindrical shank. The objections to the last-mentioned modes of mounting the stem-keys are mainly that the constructions are comparatively complex and costly to produce.

My invention has for its main objects to not only provide a simple, cheap, and durable construction of stem-key and socket or holder, but one in which the stem-key, when once properly adjusted or seated, shall not be liable to be turned aslant or become disarranged or detached during the operation of the machine.

To these main ends and objects my invention consists in the combination of a socket provided with a tapering seat or interior and a stem-key provided with a tapering shank or end fitting therein, as will be hereinafter more fully described, and particularly pointed out in the claim.

In the accompanying drawings, Figure 1 is a sectional side elevation of a type-writing machine embodying my invention. Fig. 2 is a plan view of a portion of the key-board. Fig. 3 is a perspective view of a portion of one of the key-levers, the socket, and the stem-key; and Fig. 4 is a vertical section taken at the line *x x* of Fig. 1.

In the several views the same part wherever found will be indicated by the same letter of reference.

The machine shown at Fig. 1 is that commonly known as the "Caligraph," in which the key-levers A for operating the type-bars B are pivoted or fulcrumed at the front of the machine.

C represents a stem-key, which consists of a head *c* and a stem or shank *d*.

D represents the socket for receiving and supporting the stem or shank of the stem-key. This socket is shown as pivoted at the point *e* of the key-lever A by a pin passing through coincident holes in the lower bifurcated end straddling the key-lever. A tapering vertical seat or bearing *f* is formed in the socket, and the lower end of the shank *g* of the stem-key is made tapering to correspond with the taper of said seat, as shown in Fig. 4.

In putting these parts together the tapering end of the shank is slipped into the tapering seat in the socket and then turned therein and at the same time forced downwardly slightly with a screwing motion. When so inserted, it is almost impossible to pull the stem-key out of the socket, and there is such a wedging action between the tapering surfaces of the parts that during the ordinary operations of the machine there is not the slightest liability of the stem-key turning within the socket, and hence of the letter becoming disarranged. It will be understood of course that it is very desirable to have all the letters or other characters of the key-board stand with their axes at right angles to the front edge of the machine, and that any deviation of the letters from this position—such,

for instance, as represented in dotted lines at the letter H in Fig. 2—is most annoying to the operator of the machine.

By my invention I have found in practice that all the stem-keys may be properly adjusted, and when once fixed in position will always remain so during the working of the machine. Of course if for any purpose it should be desirable to remove any stem-key from its socket, the same may be accomplished by forcibly turning the stem within the socket and exerting at the same time an outward pull upon the key.

Although I have shown a key-lever of the third order, and also shown a socket pivotally secured to said lever, it will be understood of course that my improvement in the mounting of stem-keys may be used in machines provided with key-levers of some other order or construction and having stem-sockets that are immovable upon or made integral with the key-levers instead of being pivotally attached thereto, and in lieu of making the part C with a tapering shank or end, as shown, it may be formed with a tapering socket and the part D made with a tapering shank or end to fit therein.

What I claim as new, and desire to secure by Letters Patent, is—

In a type-writing machine, the combination, with the key-lever A, of a stem-key C, consisting of a head *c*, bearing a character, and a tapering shank *d*, and a socket D, having a tapering seat or bearing *f*, into which the tapering shank *d* is wedged to avoid casual detachment of the stem-key and any turning thereof during the operation of the machine which would throw the character on the head *c* out of alignment or true position, as set forth.

Signed at New York, in the county of New York and State of New York, this 22d day of January, A. D. 1887.

G. W. N. YOST.

Witnesses:
ANDREW W. STEIGER,
JACOB FELBEL.