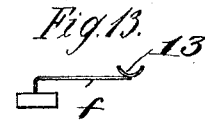
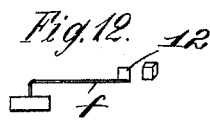
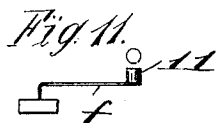
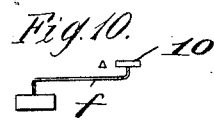
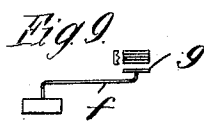
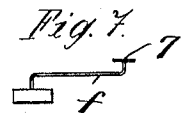
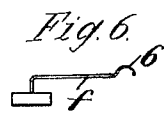
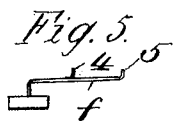
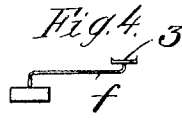
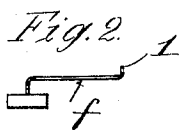
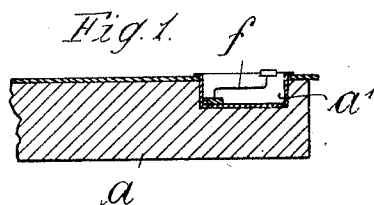


J. H. LAUDENBACH.
KEYBOARD FOR TYPE WRITING MACHINES.
APPLICATION FILED JULY 17, 1903.



Witnesses:

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J. B. Keeler

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Atty.

UNITED STATES PATENT OFFICE.

JEAN HENRI LAUDENBACH, OF PARIS, FRANCE.

KEYBOARD FOR TYPE-WRITING MACHINES.

No. 825,845.

Specification of Letters Patent.

Patented July 10, 1906.

Application filed July 17, 1903. Serial No. 165,985.

To all whom it may concern:

Be it known that I, JEAN HENRI LAUDENBACH, a citizen of the Republic of France, residing at Paris, France, have invented certain new and useful Improvements in Keyboards for Type-Writing Machines, Piano-fortes, and the Like, of which the following is a specification.

This invention relates to a keyboard for type-writing machines and other machines or instruments provided with keys in which each key of the keyboard or each key of a group of keys the multiplication of which forms the keyboard is provided with an arrangement by means of which the several keys can be recognized directly, not only by the sense of sight, but also by touch, whereby the learning of writing on type-writing machines or the playing of instruments with a keyboard is considerably facilitated. For this purpose each key is provided with a recess, and in this recess is arranged a spring which is secured at one end in a suitable manner to the key and at its other end extends somewhat beyond the surface of the key, where it is formed in various ways, so that the operator before depressing the key must move the projecting end of the spring, whereby the varied impression which the specially-formed end of the spring exerts on the finger makes a clear impression on the mind of the operator, so that before depressing the key he feels which key it is.

The springs can be arranged in various positions in the recess, whereby one is able to cause the point of the spring to act on different parts of the finger in the different keys.

The upper corners or edges of the recesses in the keys are preferably beveled, and since these beveled corners or edges are covered with different materials the keys can be still more easily distinguished. Moreover, different cross-sections (quadrangular, rectangular, triangular, polygonal, round) are preferably given to the recesses, whereby in the depression of the springs the periphery of the recess exerts a different kind of impression on the finger.

The improved keyboard is shown in the accompanying drawings.

Figure 1 is a section through one of the

keys; and Figs. 2 to 13 show, by way of example, springs which are designed for the twelve keys of a group.

Each key *a* is provided with a recess *a'*, in which a flat spring *f* is arranged, which spring is fastened at one end in any suitable manner to the key and at its other end projects somewhat beyond the surface of the key, where it is formed in any suitable manner.

Figs. 2 to 13 show, by way of example, springs *f*, which are designed for the twelve keys of a group and are formed differently at their projecting ends. Fig. 2 shows a spring with a simple point 1; Fig. 3, a spring at the end of which a toothed wheel 2 is mounted; Fig. 4, a spring at the end of which a knob 3 is arranged; Fig. 5, a spring which is provided with two points 4 5; Fig. 6, a spring which is bent convexly at its end, as at 6; Fig. 7, a spring which is covered with velvet at its end, as at 7; Fig. 8, a spring which bears at its end a polished metal ball 8; Fig. 9, a spring which is roughened at its flat end, as at 9; Fig. 10, a spring which carries a knife-edge at its end, as at 10; Fig. 11, a spring which carries a small cylinder 11 at its end; Fig. 12, a spring which carries a wooden cube 12 at its end, and Fig. 13 a spring which has a concave surface 13 at its end.

In order to be able to distinguish the several groups of keys, the springs are given a different strength or resiliency for the keys of each group, so that it is possible to recognize by the resistance which is offered to the depression of the springs which group of keys is being touched.

What I claim is—

1. In a keyboard for type-writing machines, the combination, with each individual key, of a spring, the resiliency of which differs from the resiliency of the springs of other keys and is contained in part within a recess in said key and in part projects from the upper surface thereof sufficiently to produce, on depression of the key, a definite tactual impression on the finger of the operator.

2. In a keyboard for type-writing machines, the combination, with each individual key, of a spring, the resiliency of which differs from the resiliency of the springs of other keys and is contained in part within a recess

in said key and in part projects from the upper surface thereof, and an object mounted on the said spring at its projecting end to produce, on depression of the key, a definite
5 tactual impression on the finger of the operator.

In testimony whereof I have hereunto set

my hand in presence of two subscribing witnesses.

JEAN HENRI LAUDENBACH. [L. s]

Witnesses:

A. LECONTY,

J. ALLISON BOWEN.