(No Model.)

W. P. KIDDER.

KEY ACTION FOR TYPE WRITING MACHINES.

No. 585,766. Patented July 6, 1897.

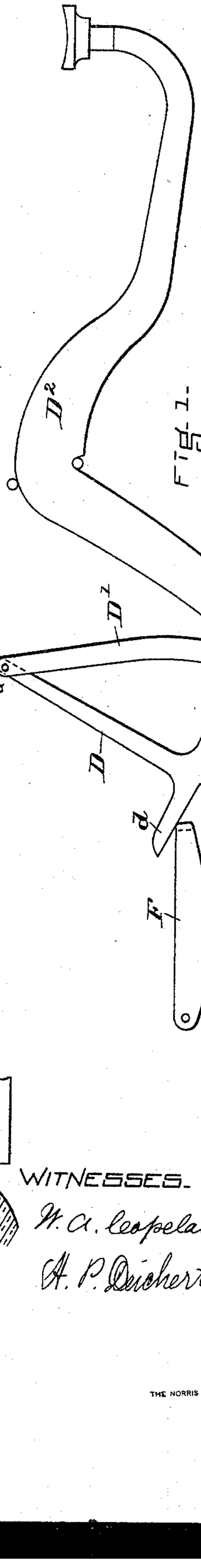

Fig. 1.

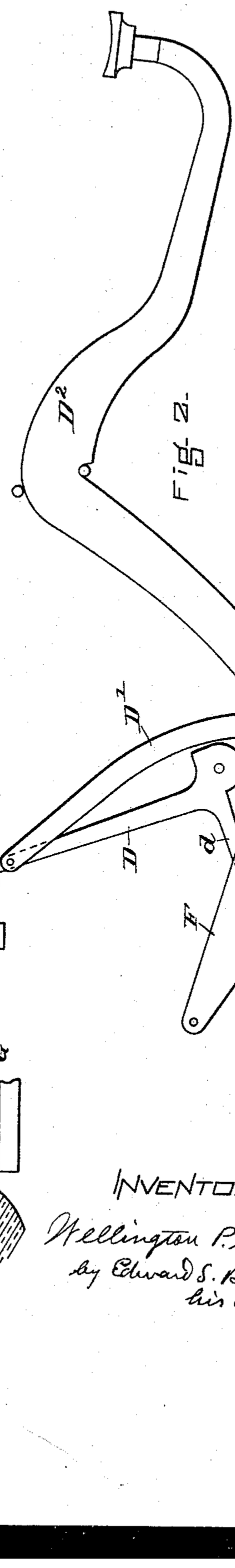

Fig. 2.

WITNESSES.

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UNITED STATES PATENT OFFICE.

WELLINGTON P. KIDDER, OF BOSTON, MASSACHUSETTS.

KEY-ACTION FOR TYPE-WRITING MACHINES.

SPECIFICATION forming part of Letters Patent No. 585,766, dated July 6, 1897.

Application filed October 16, 1895. Serial No. 565,860. (No model.)

To all whom it may concern:

Be it known that I, WELLINGTON P. KIDDER, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Key-Actions for Type-Writing Machines, of which the following is a specification.

Referring to the accompanying drawings, Figures 1 and 2 are side elevations of my new key-action, Fig. 1 showing the impression-key and type-carrier in position of rest and Fig. 2 showing the impression-key in its lowest position with the type-carrier at the platen.

The object of my invention is to produce a type-writing machine in which the resistance offered to the finger when the type-writer strikes the platen is minimized.

My invention is applicable in many different kinds of machines, but is shown in form adapted for use in the well-known Wellington type-writer.

In the drawings illustrating the preferred form of my invention, A is the platen; B, the type-carrier, containing in this instance a plurality of characters *b*. The type-bar is moved forward and back by a swinging arm D, which is connected by a link D′ to the free end of the impression-key D^2. Swinging arm D has an arm *d*, which coöperates with a spring-controlled oscillating support F, the spring being indicated at *f*. Suitable guides G G′ are provided for supporting the type-carrier in proper relation to the platen and for guiding the character-bearing end of the type-bar at the moment of impression.

It will be seen that when the impression-key is depressed to throw the type-carrier to the platen the tension of the spring *f* is gradually increased, and that when impression movement is made there is so much resistance to the forward stroke of the type-carrier that a very delicate "touch" is obtained. Delicacy of touch is a recognized desideratum in type-writing machines. The link D′ above referred to is pivoted at d' to the rocking arm D and at d^2 to the impression-key D^2, while the rocking arm D is pivoted at d^3. As the type-carrier comes to impression-point the pivots or centers d', d^3, and d^2 are in line, and they are brought into this position against the increasing tension of spring *f*, so that prior to impression the actuating force exerted on the impression-key is gradually resisted more and more by the increasing tension of the spring and the type-carrier brought to actual impression with marked delicacy of touch because of the now very considerable tension of spring *f* and of the fact that substantially at the instant of impression the impression-key D^2, link D′, and working arm D are on dead-centers, (pivots d', d^3, and d^2 being in line,) and the tendency of the type-bar to move forward is gently checked by these coöperating conditions, the resistance of the spring now at its maximum and the tendency of the jointed parts D^2, D′, D, and B to come to rest because of the pivots d', d^3, and d^2 being on dead-centers.

The construction above illustrated and described may be modified and altered in many details without departure from my invention.

What I claim is—

The combination of a type-carrier, an impression-key; a rocker-arm engaging the type-carrier; a link pivotally connected to the inner end portion of the impression-key and to that end of the rocker-arm which engages the type-carrier; and a spring mounted to coöperate with the rocker-arm and to resist its forward stroke with an increasing tension; the pivots of the rocker-arm and impression-key connections with the link being in line when the type-carrier is at impression.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 10th day of October, A. D. 1895.

WELLINGTON P. KIDDER.

Witnesses:

WILLIAM A. COPELAND,

E. S. BEACH.