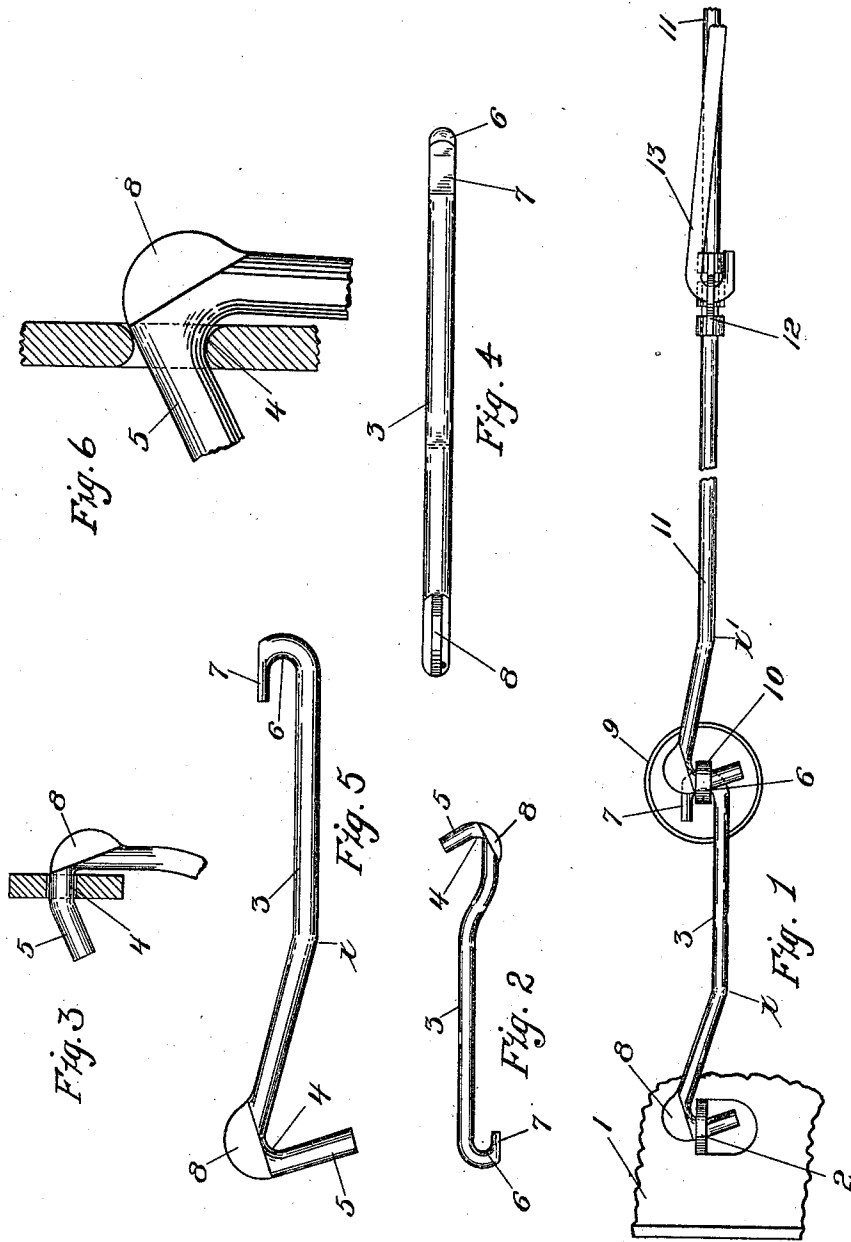


L. S. HOPLEY.
TYPE WRITING MACHINE.
APPLICATION FILED APR. 16, 1909.

946,365.

Patented Jan. 11, 1910.



WITNESSES:

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LEWIS SWINDELL HOPLEY, OF HARTFORD, CONNECTICUT, ASSIGNOR TO ROYAL TYPE-WRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

TYPE-WRITING MACHINE.

946,365.

Specification of Letters Patent. Patented Jan. 11, 1910.

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To all whom it may concern:

Be it known that I, LEWIS SWINDELL HOPLEY, a citizen of the United States of America, residing in Hartford, county of Hartford, State of Connecticut, have invented certain Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates particularly to machines such as those known in the market as the "Royal Standard" in which the type bars are pulled to the printing point by a connection composed of two links hinged together at their adjacent ends, one end of the connection being connected to the heel of the type bar and the other hinged to a fixed point on the frame. Such a machine is illustrated in patent to Edward B. Hess, No. 700,687, dated May 20, 1902. The type bars are actuated by push pins to the lower end of each of which are hinged two links one extending to a fixed point on the frame and the other extending rearwardly to its corresponding type bar. The links in such machines have usually been made of piano wire and in applying their ends to the push pin and to the type bar and fixed point respectively, it has been customary to bend the wire to form hooks at its ends; and to insure its permanent engagement the hook is practically closed. Even then under long continued use there is a tendency for the wire hook to pull out and for the link to disengage the part with which it is connected.

This invention comprises a specific improvement in the construction of such links.

In the accompanying drawing: Figure 1 is a bottom plan view showing one pair of links, the anchor point for the front end of the front link, the end of the push pin and the under face of the finger piece applied thereto: Fig. 2, a view of the front link *i. e.* the one that extends from the end of the push pin forwardly to the anchor point: Fig. 3, a view illustrating the engagement of the front end of such a link with this fixed point or anchor piece: Fig. 4, a top view of such a front link on a somewhat enlarged scale: Fig. 5, a side view of such a front link of a construction however slightly different from that indicated in Fig. 2: and Fig. 6, an enlarged view similar to Fig. 3 showing the front end of such a link as that indicated in Fig. 5 engaged with its fixed support or anchor point.

1, in Fig. 1 indicates the bottom face of the fixed plate located beneath the key board from which are punched on three sides downwardly turned lugs 2 having apertures for connection with links 3. The links 3 at their front ends are each formed by bending the wire abruptly so as to form a seat 4 for the walls of the aperture in the lug 2. Beyond this seat, the end 5 of the wire is inclined slightly rearwardly. The rear end of the link 3 is bent in a circular curve as at 6 into parallelism with the adjacent body of the link, and its end is preferably flattened. At the front end of the link, the outer curved part of the wire, the curve of which is formed by bending over the end to form the seat 4 is swaged upon both sides by power exerted at right angles to the plane in which the hook 4, 5 is disposed, there being thus formed a flat plate-like or rib-like part 8. An elevation of such a link, looking at the edge of the swaged part 8, the link appears straight,—that is all of its parts are in the same plane; but as viewed at right angles to Fig. 4 that is, as seen in Figs. 1 and 2, part of the link in front of the point *a* is deflected slightly so as to be oblique to the part in rear of that point. The deflection of the forward part of the link is in the direction of that side of the link upon which is formed the hook 6, 7. Such particular shape of the body of the link is considered advisable as it tends to retain the link in engagement with the lug 2.

In Fig. 1, 9 indicates the finger piece of a push pin of which 10 is the stem. The hooked rear end of link 3 is engaged in an aperture in the stem. The front hooked end 4, 5, is engaged in the aperture in the lug 2. In assembling the machine, the hook 6, 7, is engaged with an aperture in the push pin stem, and then the link 3 is strained toward the front of the machine until its front hooked end may be inserted in the aperture in lug 2. Experience has demonstrated that the link will not disengage its push pin 10 or lug 2, and that the swaging of that part of the metal forming the circumferential part of the curve produced in forming the hook 4, 5, imparts such rigidity and strength as to prevent the hook from straightening out, or being distorted to such extent as to make it liable to disengagement from the lug 2.

Figs. 5 and 6 indicate a slight modifica-

tion of construction in which the hook that engages the lug 2 is not so bent as to form the straight or flat seat 4, but is on the contrary a circular bend in the curve of which the wall of the lug 2 lies. The link 11 that extends rearwardly from the push pin 10, has at its front end a hook, similar to that at the front end of link 3, for engagement with an aperture in the stem shown as being below that one with which the link 3 engages. There is an inclination of that part of the link 11 in front of the point α' similar to that which the link 3 has. Beyond the point α' , the link 11 is straight. It is however shown broken away. Its rear end will, however, be formed with a hook to engage an aperture in the heel of the type bar (not shown). The part marked 12 in Fig. 1 is a hanger clamped upon the link 11 in the manner set forth in the patent of M. H. Flynn No. 885,742 April 28, 1908, and from which extends rearwardly a link 13 that operates the universal bar of the machine.

I claim:

25 1. A wire type-bar operating-link having

its end bent to form an engaging hook and the outer circumferential part of the bend forming the hook swaged in the plane of the hook.

2. A wire type-bar operating-link bent at its respective ends in opposite directions to form engaging hooks and having the metal forming the outer circumferential part of one of the hooks swaged in the plane of the hook.

3. A wire type-bar operating-link bent at its respective ends in opposite directions to form engaging hooks and having the metal forming the circumferential part of one of the hooks swaged and the swaged end of the link inclined to the remainder of the link in a direction toward that side upon which is the other hook.

In testimony whereof, I have hereunto subscribed my name.

LEWIS SWINDELL HOPLEY.

Witnesses:

M. H. FLYNN,

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