No. 719,079.

PATENTED JAN. 27, 1903.

C. S. BOOTH.

TYPE WRITER.

APPLICATION FILED APR. 14, 1902.

NO MODEL.

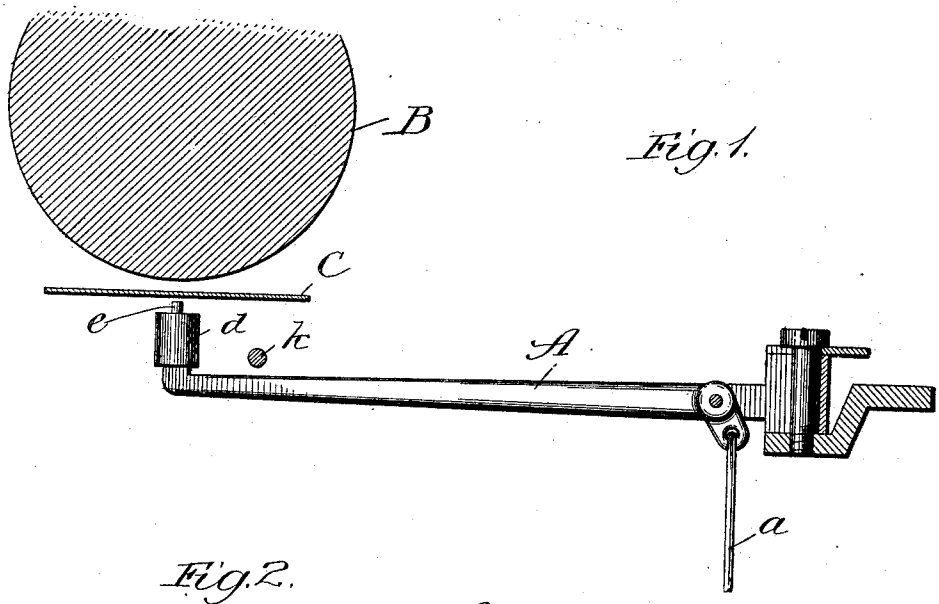


Fig. 1.

Fig. 2.

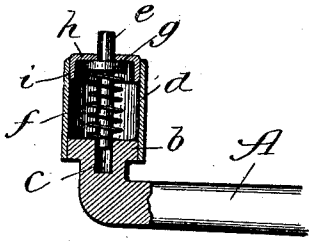
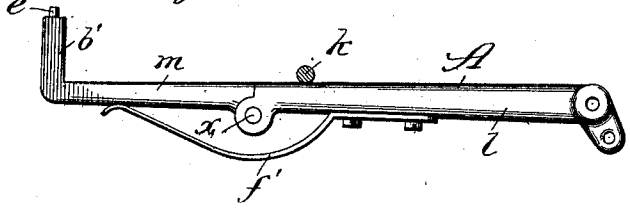


Fig. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

CHRISTOPHER S. BOOTH, OF CAMPPOINT, ILLINOIS.

TYPE-WRITER.

SPECIFICATION forming part of Letters Patent No. 719,079, dated January 27, 1903.

Application filed April 14, 1902. Serial No. 102,869. (No model.)

To all whom it may concern:

Be it known that I, CHRISTOPHER S. BOOTH, a citizen of the United States, residing at Camppoint, in the county of Adams and State of Illinois, have invented a new and useful Improvement in Type-Writers, of which the following is a specification.

My invention relates to an improvement in the type-bars of a type-writing machine.

As the printing mechanism in type-writers is commonly constructed the type-bars and type thereon are so unyielding that the momentum of the bars resulting from the impact on the keys in operating the machine impinges the type so forcibly against the paper as to tend to puncture it, besides cutting the ribbon and indenting the impression-roller, with the effect of impairing the surface of the latter and that of the paper and of wearing out the ribbon. This trouble is more particularly encountered with the period-carrying type in the machine, though it is also inherent in a greater or lesser degree in all the type characters.

The object of my improvement is to obviate these imperfections in a type-writer, and this I accomplish, broadly stated, by providing for a yielding and a lighter impact of the type against the work by forming the type-bar in sections, with the character-carrying member or section yieldingly supported to take up the momentum of the bars in striking.

In the accompanying drawings, Figure 1 is a broken sectional view of a type-writer, showing in side elevation a type-bar provided with my improvement. Fig. 2 is an enlarged view showing the head end of a type-bar in sectional elevation constructed in accordance with the preferred form of my improvement, and Fig. 3 is a view in side elevation of a type-bar provided with my improvement in a modified form.

A is a type-bar pivoted at one end to the circle in the usual or any suitable manner to adapt it to be swung on its pivot by actuating a key (not shown) connected with it through the medium of the link *a*.

B is the impression-roller.

C is the ribbon, interposed between the roller and the free end of the type-bar, which I prefer to form for accomplishing my purpose in accordance with the representation in Fig. 2 of the following-described construction. The upturned end of the type-bar is expanded to form a head *b*, in the center of which is formed a socket *c*. A cup *d* rises from about the head *b* and surrounds a pin *e*, which enters at its lower end into the socket *c* and is supported on the head *b* by a spiral spring *f*, confined about it between the head and a flange *g* on the pin near its upper end. The pin is loosely surrounded by a cap *h*, flanged circumferentially, as shown at *i*, to enter the upper end of the cup (to the inner wall of which the flange *i* is fastened, as by soldering) and form a guide therein for the resiliently-supported pin, which is provided on its upper extremity with a type character, such as a period. (Not shown.) A rigidly-fastened rod *k* (which may be adjustable) is preferably provided to extend across the upper edge of the type-bar for the purpose of limiting the extent of its upward stroke. When the key of the machine is struck which controls the type-bar A, the latter rises at its free end as far as the stop-rod *k* will permit, and just before the type-bar meets the stop-rod impinges at the type end of the pin *e* against the surface of the roller B and against the interposed ribbon C and paper. (Not shown.) Any undue force of the momentum of the upwardly-swung type-bar under the impact by the operator on its controlling-key will be taken up by the yield of the spring-supported pin *e* under the impingement of its type-carrying end on the surface of the impression-roller, thereby protecting the latter, as well as the interposed ribbon and paper, from excessive impact, and thus accomplishing the object of my improvement.

The gist of the construction of my improvement illustrated in Fig. 2 consists in a spring-supported type-carrying member or section of the type-bar provided with suitable guiding means. This general construction may be embodied in any of several different forms in the matter of details. Hence I do not limit my improvement as to the manner of embodying it represented in Fig. 2 to the particular detailed form therein illustrated.

The modified construction illustrated in Fig. 3 consists in forming the type-bar A in two sections *l* and *m*, hinged together as or subtantially as represented at *x*, with the up-

turned end b' of the shorter section m of the jointed type-bar terminating in a type-point e'. The type-bar is rendered resiliently yielding for the accomplishment of my aforesaid object by causing the free end of a leaf-spring f' to press against the under edge of the type-bar section m, this spring being fastened at its opposite end to the type-bar section l, and thus crossing the hinge-joint x to support the section m yieldingly against the impact force of the momentum of the bar at the extremity e' upon the surface of the impression-roller. With this modified construction it is also preferred to provide a stop-rod k, crossing the upper edge of the type-bar section l near the hinge-joint x.

Any form of construction embodies my improvement in which the type-bar is formed in sections and the character-carrying section or number is yielding to take up the momentum of its stroke for the purpose described, which is the gist of my invention, and in both of the forms thereof illustrated in the accompanying drawings its embodiment involves forming the type-bar with a yielding section, according to Fig. 2, and of the spring-supported part m, according to Fig. 3.

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

1. As a new article of manufacture, a sectional type-writer type-bar having one of its sections spring-supported from the other section, substantially as and for the purpose set forth.

2. In a type-writer, the combination of a sectional type-bar having one of its sections spring-supported from the other section, and a stop-bar crossing the type-bar, substantially as described.

3. As a new article of manufacture, a type-writer type-bar comprising a pivotal bar having a type-carrying member spring-supported on its free end, substantially as and for the purpose set forth.

4. As a new article of manufacture, a type-writer type-bar comprising a pivotal bar having an upturned end and a type-carrying member spring-supported on said upturned end, substantially as and for the purpose set forth.

5. As a new article of manufacture, a type-writer type-bar comprising a pivotal bar having an upturned headed end containing a socket, a type-carrying pin seated in said socket, a cup rising from said head about said pin, a spring confined on said pin, and a guide-cap about said pin in said cup, substantially as and for the purpose set forth.

6. In a type-writer, the combination of a type-bar comprising the pivotal bar having an upturned headed end containing a socket, a type-carrying pin seated in said socket, a cup rising from said head about said pin, a spring confined about said pin and a guide-cap about said pin in said cup, and a stop-bar crossing the type-bar, substantially as described.

CHRISTOPHER S. BOOTH.

In presence of—
ALBERT D. BACCI,
WM. B. DAVIES.