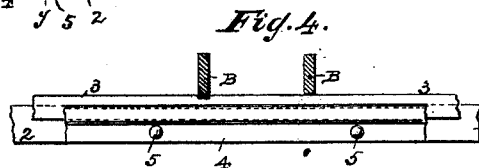
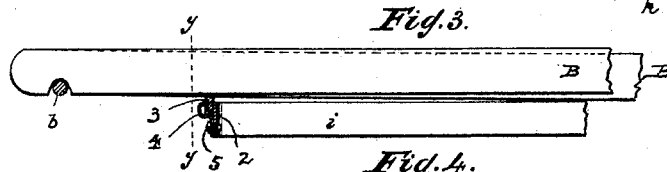
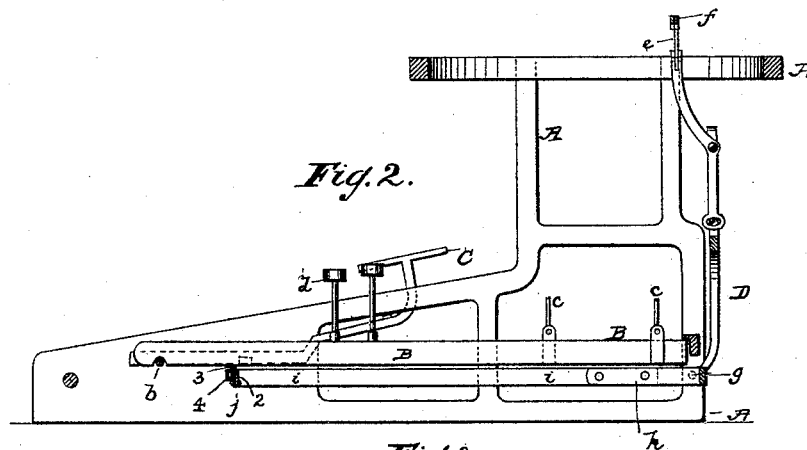
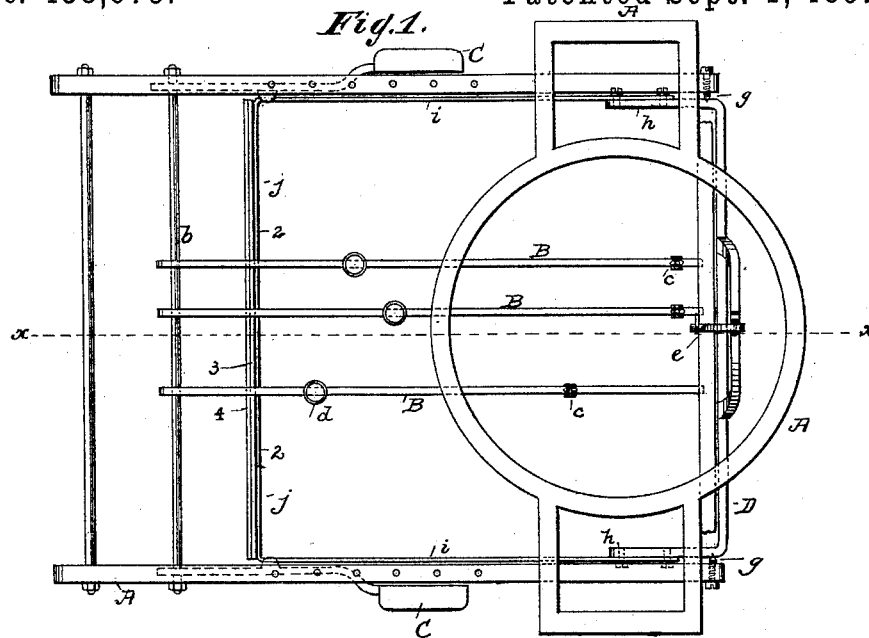


J. M. FAIRFIELD.
TYPE WRITING MACHINE.

Patented Sept. 1, 1891.



INVENTOR

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ATTORNEY

UNITED STATES PATENT OFFICE.

JOHN M. FAIRFIELD, OF HARTFORD, CONNECTICUT, ASSIGNOR TO THE
AMERICAN WRITING MACHINE COMPANY, OF SAME PLACE.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 458,675, dated September 1, 1891.

Application filed July 16, 1888. Serial No. 280,082. (No model.)

To all whom it may concern:

Be it known that I, JOHN M. FAIRFIELD, a citizen of the United States, and a resident of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates particularly to the universal bar of type-writing machines, which is that device which underlies the key-levers and communicates the motion thereof to the letter-spacing or feeding devices. The universal bar has heretofore been made entirely of rigid material, as wood or metal, and has been objectionable for the following reasons: first, because it renders the touch of the machine hard or the depression of the key-levers difficult, and, secondly, because it contributes in no small degree to the noise of the machine during the operation of writing.

My invention has for its aims to overcome the objections existing to the previously-made universal bars and to provide a construction whereby the touch may be made lighter or easier and the machine more noiseless; and to these ends it consists in certain features of construction and combination of devices, all as hereinafter more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a skeleton plan view of a portion of a type-writing machine embodying my invention. Fig. 2 is a vertical section of the same at the line *x x*. Fig. 3 is an enlarged detail side view, partly in section; and Fig. 4 is a vertical section taken at the line *y y*.

In the several views the same part will be found designated by the same letter or numeral of reference.

A represents the frame-work of the machine, and B the key-levers, a few of which only I have shown. They are preferably pivoted or fulcrumed at their front ends upon a rod or cross-bar *b*, as in prior machines. To the key-levers may be attached the lower ends of connecting-rods *c*, whose upper ends are connected to the type-carriers (not shown) in the usual manner. *d* represents the finger heads or portions of the key-levers.

CC represents the usual "Caligraph" spacing-keys on the right and left hand sides of the machine.

D designates a rocking frame, which carries at its upper vertical end a dog or pawl *e* for engagement with the letter-spacing rack *f*, in practice secured to the paper-carriage. (Not shown.) The rocking frame is pivoted at *g*, and is provided with horizontally-arranged arms *h*, extending forwardly and beneath the key-levers. To these arms are fastened the rear ends of longitudinally-disposed bars *i*, connected to which is the universal bar *j*. The universal bar is composed of a transverse rigid bar or portion 2, and a vulcanized-rubber or other flexible and yielding substance 3, projecting above the same. The rubber strip is preferably secured to the portion 2 by means of a clamping-plate 4. The bar or portion 2 may be made of metal, and the clamping-plate (bent to form a recess for the rubber strip) fastened thereto by means of rivets 5 5, as plainly illustrated.

By preference I form the transverse bar or rubber-strip support 2 integral or of a piece with the longitudinally-arranged bars *i*.

The operation of the machine will be understood to be as usual, except in respect to the action of the key-levers upon the universal bar. As each key-lever is depressed by the finger of the operator, the strip 3 first yields or is compressed slightly, and the rocking frame is then vibrated to permit the feed of the carriage. The initial downward movement of the key-lever is met by the cushion or strip 3, and a yielding resistance is afforded to the key-lever. When the key-lever has descended a short distance and compressed the cushion, as shown at Fig. 4, the universal bar as an entirety descends bodily with the key-lever and the rocking frame is actuated. It will thus be seen that the inertia of the universal bar and the rocking frame is gradually overcome, and that hence the touch of the key is lighter and easier and less tiresome to the fingers of the operator than in prior machines, where the load was obliged to start at the initial depression of the key-lever, or at the instant the finger-key was struck. By reason of the employment of the soft yielding strip 3 the key-levers are cush-

ioned, so to speak, and the noise heretofore occasioned by the contact of the key-levers with the universal bar is prevented or eliminated. A spring may be provided, as usual, to return the moving parts after each actuation.

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

1. In a type-writing machine, the combination, with the key-levers and the pivoted rocking frame carrying the dog or pawl *e* and the letter-space rack *f*, of the universal bar connected to the rocking frame and arranged transversely beneath the key-levers and consisting of a bar, a clamping-plate, and a yielding strip or cushion secured between said bar and plate, as set forth.

2. In a type-writing machine, the combination, with the key-levers and the pivoted rocking frame carrying the dog or pawl *e* and the spacing-rack *f*, of the universal bar connected to the rocking frame and consisting of a transverse bar 2, a projecting rubber strip or cushion 3, a clamping-plate 4, and rivets 5, as set forth.

Signed at Hartford, in the county of Hartford and State of Connecticut, this 30th day of June, A. D. 1888.

JOHN M. FAIRFIELD.

Witnesses:

L. G. CUMMINGS,
DANIEL A. MARKHAM.