

A. G. F. KUROWSKI.
TYPE WRITING MACHINE.
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1,021,153.

Patented Mar. 26, 1912.

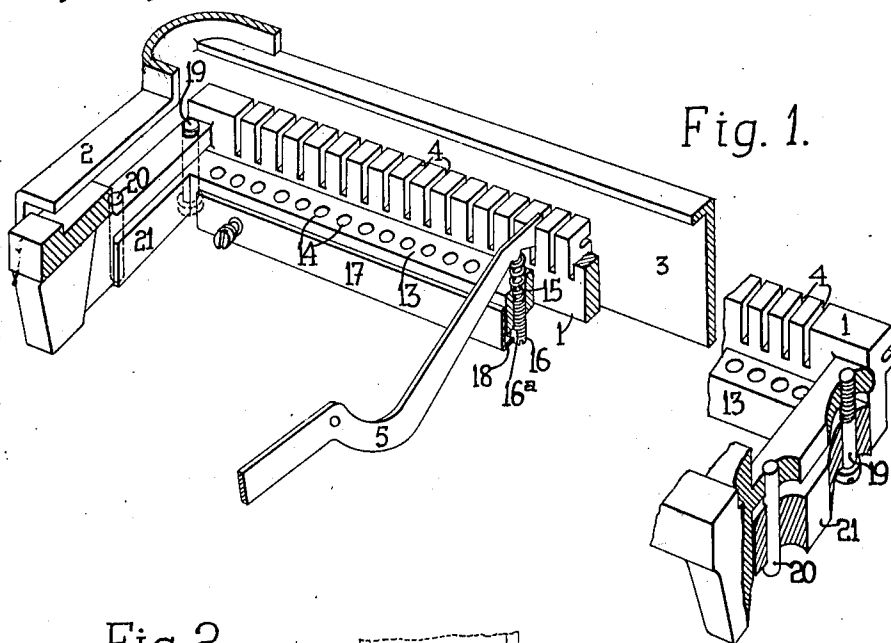


Fig. 1.

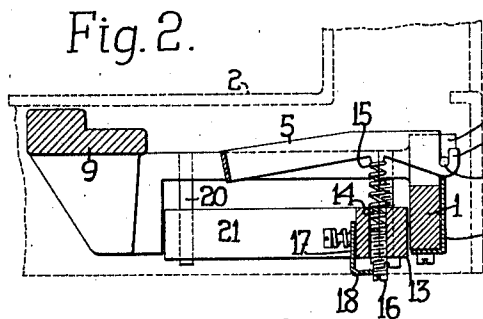


Fig. 2.

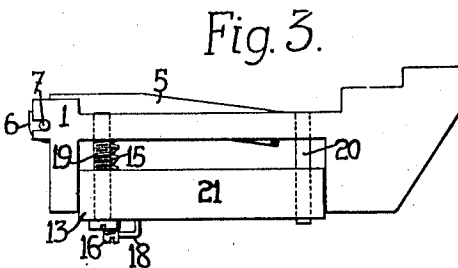


Fig. 3.

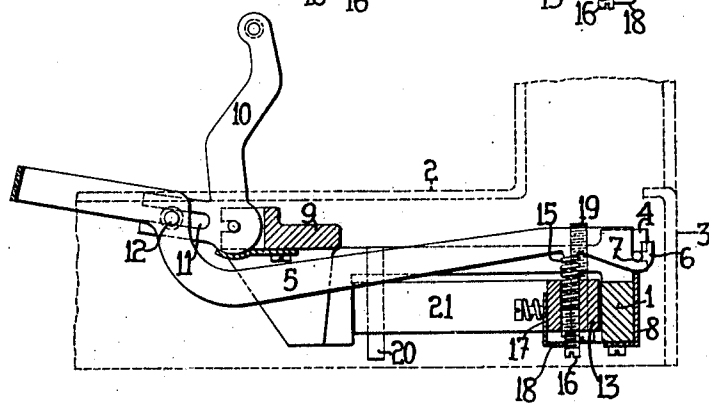


Fig. 4.

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UNITED STATES PATENT OFFICE.

ALFRED G. F. KUROWSKI, OF NEW YORK, N. Y., ASSIGNOR TO UNDERWOOD TYPEWRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

TYPE-WRITING MACHINE.

1,021,153.

Specification of Letters Patent.

Patented Mar. 26, 1912.

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To all whom it may concern:

Be it known that I, ALFRED G. F. KUROWSKI, a citizen of the United States, residing in New York city, borough of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to means for adjusting the tension of the returning springs for the keys or key levers of typewriting machines.

Separate tension-regulating screws are usually provided, whereby to compress the springs individually more or less until a uniform pressure on all the key levers is obtained.

The main object of this invention is to enable the degree of tension of all the key levers to be simultaneously adjusted and to enable the tension on the key levers at one side of the machine to be simultaneously regulated relative to the tension of the key levers on the opposite side of the machine if necessary, while preserving the individual adjustment of the springs. To these ends, I mount the several key lever tension-springs upon a tension bar bodily movable relative to the usual key lever bridge, on which the rear ends of the key levers are fulcrumed. Said bar also carries the tension regulating screws for controlling the spring pressure on the individual key levers.

In the accompanying drawings, Figure 1 is a perspective view of a fragment of the frame of an Underwood typewriting machine, partly broken away and showing one embodiment of my invention applied thereto. Fig. 2 is a side view, partly in section, showing one manner of connecting the adjustable tension bar to the frame. Fig. 3 is a similar view taken from the opposite side. Fig. 4 is a side view, like Fig. 2, showing the key lever tension increased.

A transversely-extending key lever bridge 1 is supported on the base 2 of a typewriting machine of the Underwood style, directly in front of and parallel with the rear cross bar 3 of said base. Said bridge is slotted, as at 4, and fitted into the slots are the rear ends of key levers 5 hooked, as at 6, to engage a fulcrum rod 7 carried by the key lever bridge. A locking plate 8 removably secured to the bridge prevents the disengagement of the key levers and fulcrum rod.

Said key levers extend forwardly beneath a second bridge 9 extending across the base of the machine, in which bridge are fulcrumed the elbow-shaped links 10 connected to the type-bars (not shown) and having a slot and pin connection with the key levers 5, as indicated at 11 and 12, Fig. 4. It will be understood that the key levers are provided with keys (not shown) at their forward ends, in the usual manner.

Depression of the forward end of a key lever will swing the lever downwardly on its fulcrum 7 and rock the upper end of the link 10 forwardly to cause a type bar to strike the platen (not shown).

To return the key levers to normal position, a tension bar 13 is provided, having seats 14 formed therein for the several tension springs 15, which engage the usual nibs on the lower edges of the key levers.

To obtain a uniform tension on all the key levers, screws 16 project upwardly into the seats and engage the springs to cause them to exert more or less pressure against the key levers. After the screws have been adjusted to regulate the spring tension, they are locked against accidental turning, by a plate 17 secured to the tension bar and having a lip 18 engaging the flattened sides 16^a of the screws, as is usual.

I connect the tension bar 13 adjustably to the base by means of headed supporting screws 19, one at each end of the bar, the adjustment of which screws simultaneously increases or decreases the spring tension against the key levers 5, without altering the adjustment of the individual tension screws 16. The screws 19 operate as hangers to sustain the tension bar beneath the series of key levers.

The tension bar may be guided, in its movement up and down by dowels 20 carried by the base and extending through arms 21 projecting from the tension bar, to prevent lateral movement thereof. This prevents the bar from rocking and insures a perfect alinement of the springs, preventing any possibility of their dislodgment from the nibs. It is also possible to regulate the tension of the key levers on one side only of the machine by manipulating one of the screws 19, without disturbing the tension of the key levers on the opposite side.

The pressure of the springs against the tension bar is transmitted to the sustaining

screws or adjustable supports 19 and prevents them from accidentally loosening owing to the jar of the machine.

Having thus described my invention, I
5 claim:

In a typewriting machine, in combination, a frame, a bridge mounted therein, a plurality of key levers fulcrumed on said bridge, and having nibs on the lower edges
10 thereof, a transverse bar extending under said levers at said nibs, coil springs seating at their lower ends in said bar and at their upper ends on said nibs, adjusting screws

passing loosely through said bar and mounted in said frame for adjusting said bar up 15 and down, said bar having laterally extending arms at the ends thereof, and guiding means on said frame engaging said arms to prevent lateral movement of said bar and preserve the alinement of said springs with 20 said nibs.

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Witnesses:

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