

No. 845,264.

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W. E. RISINGER.
TYPE WRITER.

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Fig. 1.

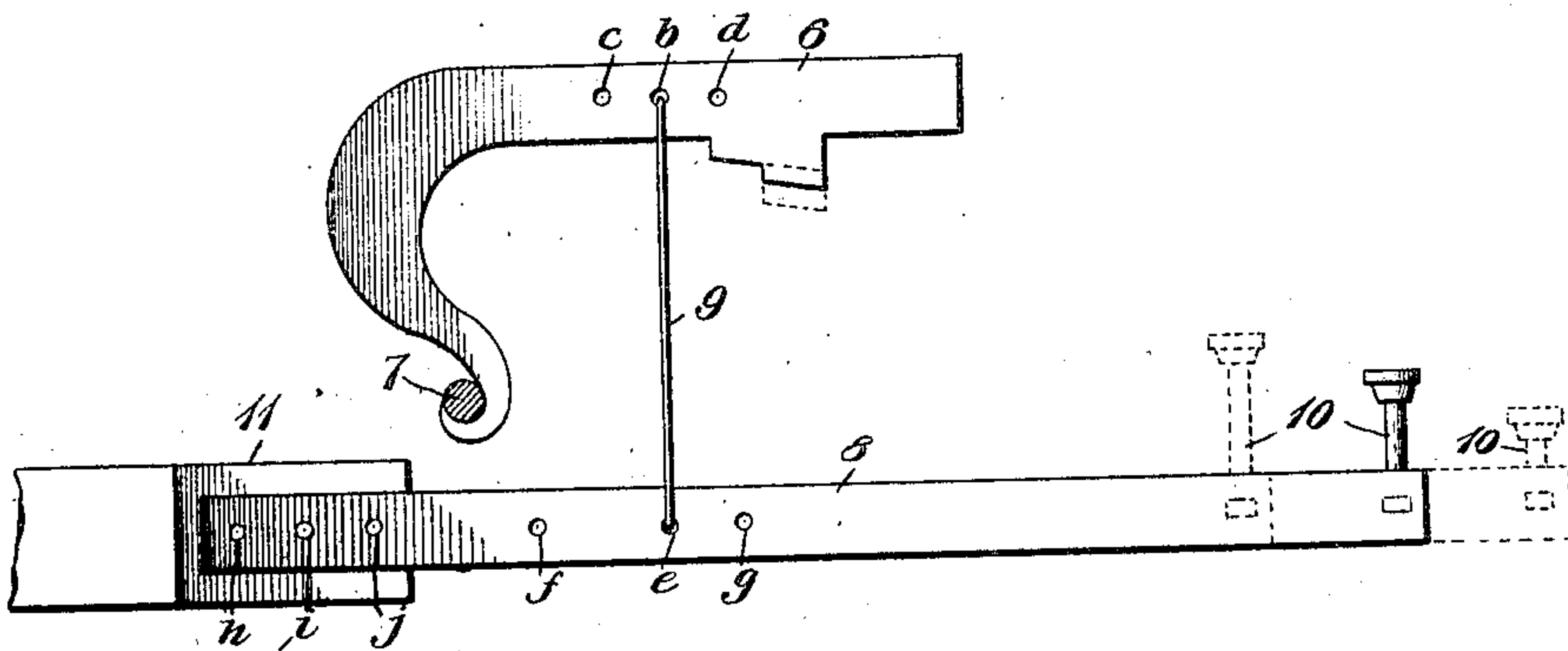
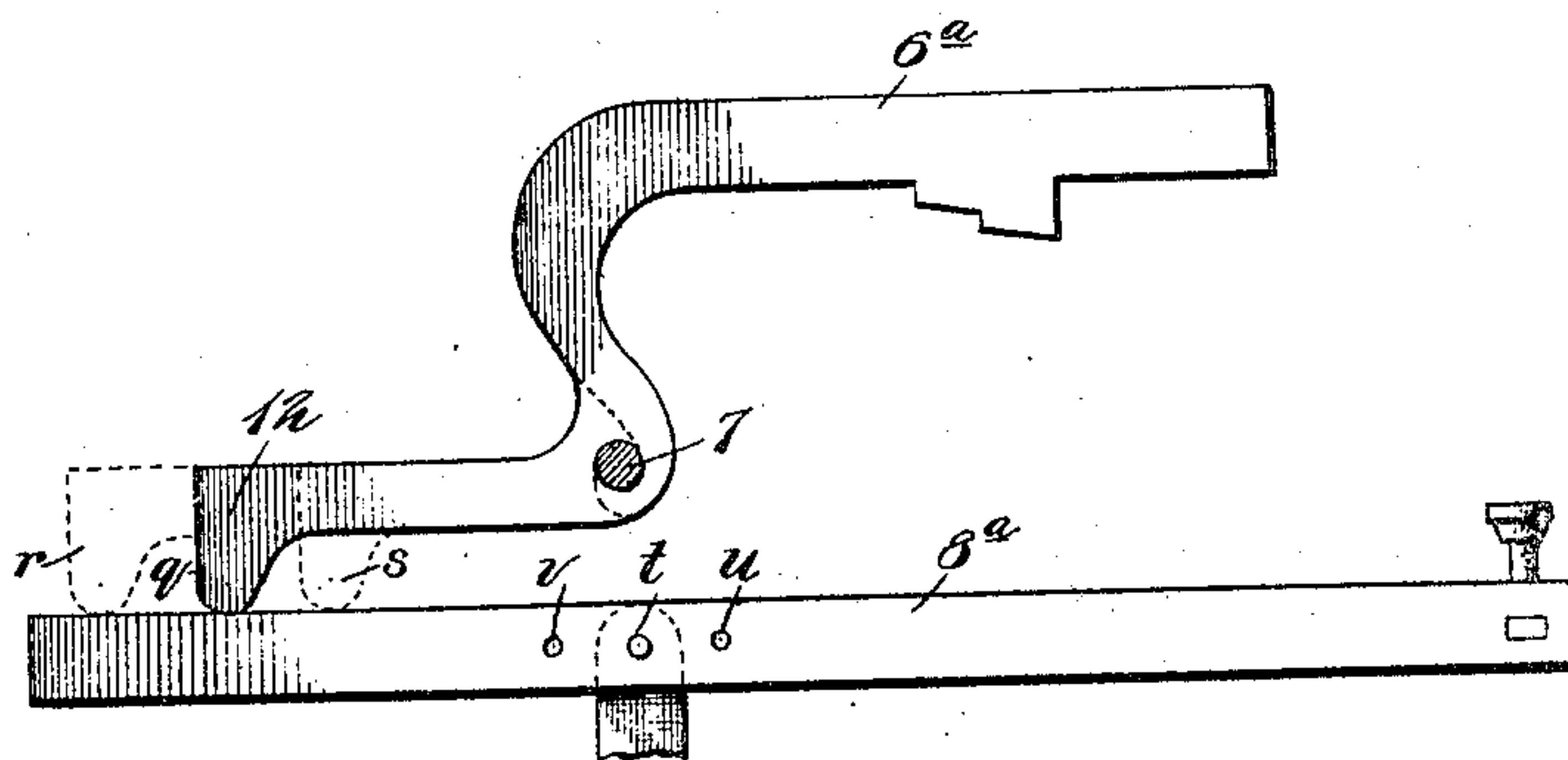


Fig. 2.



WITNESSES:

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WILLIE E. RISINGER, OF ROCHELLE, ILLINOIS, ASSIGNOR OF ONE-HALF TO
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TYPE-WRITER.

No 845,264.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIE E. RISINGER, a citizen of the United States, residing at Rochelle, in the county of Ogle and State of Illinois, have invented new and useful Improvements in Type-Writers, of which the following is a specification.

This invention relates particularly to key-levers for type-writer machines of that class in which the type is carried by a type-wheel. It is particularly a modification and improvement of the key-lever action of the Blickensderfer type-writing machine or of other machines having a similar method of operation. Said machines have key-levers which are arranged usually in three banks, the levers of each bank being of different lengths. In consequence of this the force necessary to operate the keys of the different banks varies. The top bank is particularly difficult and unsatisfactory, and this difficulty is characteristic of the machine. Similarly, the middle bank of keys is more difficult of operation than the lower bank, the levers of the latter being longer than the others. Under the alphabetical arrangement of the keyboard known as the "Scientific" the work occurs chiefly on the lower bank of keys, the proportion of seventy per cent. being done on that bank, twenty-four per cent. on the middle bank, and six per cent. on the top bank. Designedly the work is thrown as much as possible off the top bank and onto the lower bank, where the action is easiest; but in the arrangement of the keyboard known as the "Universal" nearly half the work of the machine (forty-seven per cent.) occurs on the top bank of the keys. The result is that the operation of the machine as a whole is proportionately difficult and unsatisfactory and operators have objection to its use.

The object of the present invention is to equalize the relative force and length of stroke of the various banks by means of a modification of the key-levers, whereby the strokes are controlled and equalized and capable of adjustment at the will of the maker.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of one of the key-levers and connected parts. Fig. 2 is a similar elevation of a modification.

Referring to the form shown in Fig. 1, 6 indicates one of the set of levers which are fulcrumed by hooks at their ends under the sector-shaft 7 in a manner similar to the ordinary key-levers of the Blickensderfer machine. Instead of carrying keys these levers are connected to the key-levers proper (indicated at 8) by means of rods 9. The keys on the levers 8 are arranged in three banks, as shown at 10, and said levers are fulcrumed at their ends to rear frames or blocks 11. A variety of adjustments to suit the various lengths of the levers 8 or other conditions is provided by means of different connecting-points for the rods 9 and also different fulcrum-points for the levers 8. Said rods may be hooked into the lever 6 at any one of the holes *b c d* and to the levers 8 at any one of the holes *e f g*. A further modification of the stroke may be effected by locating the fulcrum-pin at any one of the holes *h i j*. By this manner of construction and adjustment one key-lever may be made as easy to operate as another, the stroke being equalized throughout the entire keyboard with respect to the different banks of keys. By these means the operation of the various levers is greatly improved and the force required to operate the machine greatly lessened, and the touch is made uniform for all the keys.

In the modification shown in Fig. 2 levers of a different order are used. Here the bail-operating levers 6^a are continued toward the rear beyond the sector-shaft 7, as at 12, and rest at their ends upon the rear ends of the key-levers 8^a, which levers are of the first order. The leverage is varied by varying the lengths of the arms 12 of the levers 6^a, as indicated in dotted lines, so that the ends thereof will rest upon the key-levers 8^a at different points, as at *q r s*. Also the fulcrum of the key-lever may be adjusted or fixed at different points *t u v*. The positions may thus be varied to regulate and equalize the stroke, and one key-lever may be made as agreeable in operation as another.

I claim—

1. In a type-writing machine of the class stated, the combination with the type-wheel-operating levers, of banks of separate key-levers connected thereto, the connections being various, to equalize the stroke of the respective banks.

2. In a type-writer of the key-wheels kind, the combination with type-wheel-operating levers fulcrumed on the sector-shaft, of key-levers fulcrumed independent thereof, and
5 connections between said levers adjustable to vary the leverage.

3. In a type-writer of the key-wheels kind, the combination with type-wheel-operating levers fulcrumed on the sector-shaft, of le-
10 vers located thereunder and fulcrumed at

their rear ends and having keys arranged in several banks at their front ends, and connecting pull-rods between the said levers.

In testimony whereof I have signed my name to this specification in the presence of 15 two subscribing witnesses.

WILLIE E. RISINGER.

Witnesses:

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