March 13, 1951 G. W. NUNN 2,545,375

TYPE LEVER ARRANGEMENT FOR STENOGRAPHIC MACHINES

Filed Aug. 16, 1947

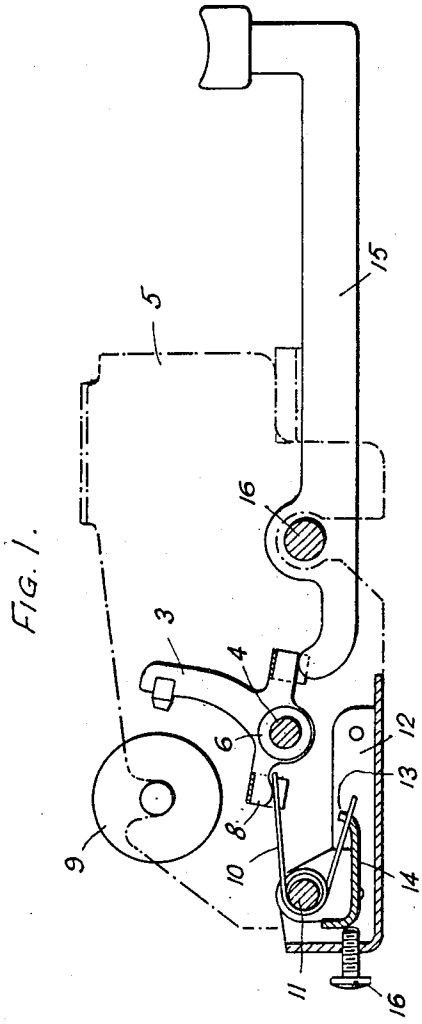


FIG. 1.

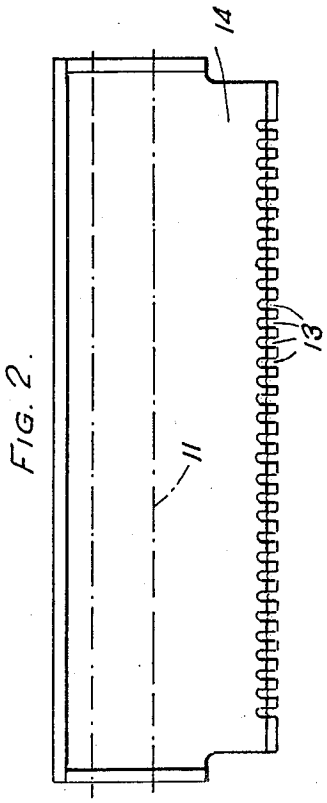


FIG. 2.

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Patented Mar. 13, 1951 2,545,375

UNITED STATES PATENT OFFICE

2,545,375

TYPE LEVER ARRANGEMENT FOR STENOGRAPHIC MACHINES

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Application August 16, 1947, Serial No. 769,009
In Great Britain August 15, 1946

Section 1, Public Law 690, August 8, 1946
Patent expires August 15, 1966

2 Claims. (Cl. 197—9)

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This invention relates to writing machines such as typewriting machines, accounting and billing machines and the like.

The object of the invention is to provide an improved arrangement of type levers particularly but not exclusively adapted for use in shorthand typewriters or stenographic machines.

According to the invention the type levers are pivotally mounted on a bar rigidly secured between the side frames of a cradle or the like and each lever is provided with a heel and a toe. The levers are spaced apart by discs or the like and the cradle is secured in the machine frame. The cradle is so positioned that on operation of the key levers the type levers are moved to cause the type to strike the platen. Tension is maintained on the type levers by means of a series of hairpin springs, one for each type lever, and mounted on a bar carried in a sub-frame on the cradle and arranged adjacent to the toe portions of the type levers. The type levers are operated by pivoted key levers of any usual type and means are provided for varying the tension of the springs as hereinafter described.

To enable the invention to be fully understood it will now be described by reference to the accompanying drawing, in which:

Fig. 1 is a sectional side elevation of a portion of a typewriting machine showing an arrangement of type levers according to one form of the invention, and

Fig. 2 is a plan view of a detail thereof.

As shown the type levers 3 (one only being shown) are mounted on a bar 4 rigidly secured between the side frames of a cradle 5 indicated in chain lines. The cradle is suitably mounted in the machine frame of a writing machine (not shown). The type levers 5 are spaced apart by discs 6 and each lever is provided with a heel 7 and a toe 8. The cradle 5 is so positioned that the type levers on operation by the key levers are moved to cause the type to strike the platen 9.

Tension is maintained on the type levers 3 by means of a series of hairpin springs 10, one for each type lever and mounted on a bar 11 carried in a sub-frame 12 on the cradle 5 and arranged adjacent to the toe portions 8 of the type levers.

One end of each spring 10 engages beneath the toe 8 of the appropriate type lever while the other end of each spring engages between the teeth 13 of a comb 14 adjustably mounted between the sides of the sub-frame 12 beneath the bar 11 carrying the springs. The arrangement is such that the springs engaging beneath the toes 8 of the type levers tend to throw the type back from the platen 9.

The type levers 8 are operated by pivoted key levers 15 of any usual type mounted on a bar 16 secured in the machine frame, the inner ends of the key levers engaging beneath the heels 7 of

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the type levers 3, as shown, so that when a key is depressed the heel of the type lever is raised and the toe 8 depresses the spring 10 as the type makes contact with the platen 9. When the key lever is released the spring throws the type lever back into the original position clear of the platen.

The comb 14 is pivotally mounted and secured in position by locking screws or the like (not shown) and means such as tension screws 16 (one only being shown) are provided in the back of the sub-frame 12 which bear on the comb.

By slackening the locking screws or the like and operating the tension screws 16 the position of the comb 14 can be adjusted to vary the overall tension of the series of hairpin springs 10.

It will be understood that the above described arrangement of type levers may be used with any desired platen actuating and ribbon feed mechanisms and embodied in writing machines of various types.

I claim:

1. In a stenographic machine, a machine frame, a cradle mounted in the machine frame, a platen mounted in the cradle, a bar rigidly secured between the sides of the cradle, a series of type levers pivotally mounted on said bar and each having a heel and a toe, a series of key levers for operating the type levers pivotally mounted in the machine frame and adapted to engage the heels of the respective type levers directly, a subframe mounted on the cradle, a bar mounted in the subframe, a series of hairpin springs one for each type lever mounted on the bar, and a comb adjustably mounted in the subframe below the platen, one end of each hairpin spring engaging between the teeth of the comb and the other end of each spring engaging beneath the toe of the respective type lever.

2. A stenographic machine as set forth in claim 1 in which the comb is pivotally mounted in the subframe, adjusting screws being mounted in the subframe and bearing on the comb for securing the comb in adjusted position to vary the tension on all the hairpin springs simultaneously.

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The following references are of record in the file of this patent:

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