Oct. 29, 1929. M. GARBELL 1,733,788

KEY LEVER PIVOT MEMBER

Filed Aug. 1, 1927

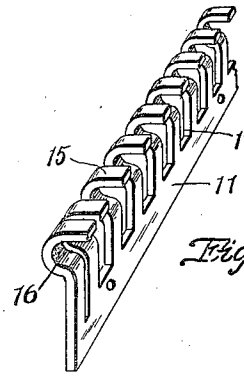


Fig. 3.

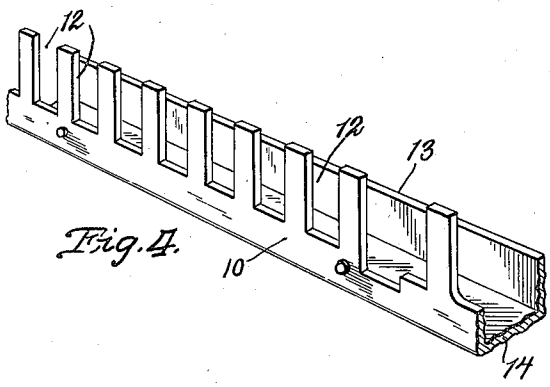


Fig. 4.

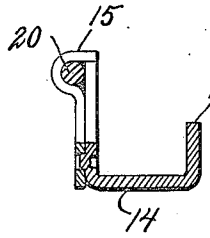


Fig. 2.

Fig. 1.

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UNITED STATES PATENT OFFICE

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KEY-LEVER-PIVOT MEMBER

Application filed August 1, 1927. Serial No. 209,672.

My invention relates to typewriters and it has particular relation to a novel key lever pivot mounting member.

My invention will be better understood by reference to the accompanying drawing, in which:

Figure 1 is a fragmentary perspective view of a portion of a typewriter, namely, of a key lever mounting or pivot member;

Figure 2 is an elevational, sectional view of a cross-section of said member; and

Figures 3 and 4 are perspective views of the two members from which my assembly member is formed.

The key lever mounting member of a typewriter, that is, a member on which key levers are pivotally mounted, is slotted to afford guideways for key levers, and is utilized on all typewriting machines.

My invention is directed to such a member to permit the production thereof by punch press operations. It so happens that said member must be of appreciable thickness and weight in order to properly fulfill its function. On the other hand, the slots which must be formed therein need to be quite narrow, in fact, only as wide as the key lever is thick. I find it impossible to form such a member by punching the slots therein. This results because of the very narrow slots which must be punched and the fact that relatively thick material must be used. Those conversant with the punch press art will recognize the difficulties inherent in punching such a member. A slot cannot be punched narrower than the thickness of the metal that is being punched because the punches will deteriorate in such operation. But in my process, relatively wide punches may be used with a corresponding increase in manufacturing economy.

On the other hand, casting of the member results in very unsatisfactory articles and it is necessary to do an appreciable amount of machining in order to give the proper formation to the member and insure that the slots or guideways are accurately formed and properly spaced. It is, therefore, a matter of considerable expense to form a key lever pivot member in this latter manner, and my invention has for its object a method of forming such a member with punch press operations.

The invention contemplates the forming of slots in two or more members (in the hereinafter description I have illustrated two for simplicity) and thereafter associating these members in such a manner that the slots are staggered or overlap to form a narrow slot or guideway. In this manner I am able to have the metal in the member of the requisite thickness and at the same time to have slots therein of the required narrowness, all of the operations being effected on a punch press with the attendant cheapening of production. Moreover, I am able to produce a key lever pivot member which is quite strong and which receives the pivot wire in a desirable and effective manner to perform its required function.

The method which I prefer to utilize in producing the key lever pivot member of the present application is not claimed herein, but constitutes the subject matter of my copending application, Serial No. 369,321, filed June 8, 1929, as a division of the present application.

Referring now more particularly to the drawings, the key lever assembly is made up of two slotted members 10 and 11. The member 10 is of channel formation; it being punched out in flat condition, whereafter the sides are turned up to form said channel. The side which is provided with slots 12 is longer than the side 13. The bottom of the channel after being formed is designated as 14. As indicated, punch press operations only are necessary in the formation of the member 10, as well as in the making of the member associated therewith, since the slots are quite wide and the thickness of each of said members is relatively small, thereby approaching the ideal conditions for cheap and successful punch press operations. The companion member which is used to complete the pivot assembly is likewise punched out flat in a press, and preferably the same operation produces hook-like overhanging portions 15, it being observed that a re-entrant channel-like portion 16 is produced by this last operation.

Both pieces 10 and 11 are of relatively thin material, while the slots 12 and 17 are of appreciable width, that is, much wider than the ordinary requisite width of slots to receive the key levers. The operation on both of these pieces is, therefore, simple and none of the difficulties attendant upon the punching of a narrow slot in a thick piece of material is encountered.

Referring now to Figs. 1 and 2, my assembly is completed by welding or otherwise securing the members 10 and 11 together as shown in said Figs. 1 and 2. It will be observed that these pieces are secured together in face-to-face relation, the slotted portions thereof being off-set so that narrow slots 18 are produced in the completed assembly. Moreover, the combined thickness of the assembled complete mounting member is equal to the thickness of the members 10 and 11 taken together. By this method I am able to produce a slotted mounting member of appreciable thickness with slots therein of a narrow width which would have been impossible of formation had I attempted to form said slots in a single piece of material of the thickness shown with a punch press.

Key levers 19 are positioned to be guided in said slots 18 and are pivotally mounted on a pivot wire 20, which latter is positioned, and properly held, in the channel 16.

From the above description, those skilled in the art will perceive that I have produced a desirable key lever pivot mounting member through punch operations, which mounting is of such character that several desirable features are realized therefrom. Not only are the desirable narrow slots produced in a relatively thick piece of material through punch press operations, but at the same time, the pivot wire 20 is associated with the assembly in an effective and desirable manner. This latter feature permits of the quick assembly of the key levers on the mounting piece and contributes markedly to the reduced cost in the manufacture of a typewriter embodying my invention.

While, therefore, I have described but one embodiment of my invention, various means of accomplishing the same will occur to those skilled in the art without requiring a departure from the spirit of the present invention, and I desire, therefore, that the same be limited only by the scope of the appended claims and the prior art.

I claim:

1. A mounting and guiding assembly for one or more pivotally movable levers comprising two relatively thin slotted members, the slots in both of said members being much wider than required and said members being associated to function as a single member with their individual slots placed in non-matched position to produce a slot of less width than the slots in either of the members.

2. A mounting and guiding assembly for one or more pivotally movable levers comprising two relatively thin slotted members, the slots in both of said members being much wider than required, and said members being associated to function as a single member with their individual slots placed in non-matched position to produce a slot of less width than the slots in either of the members, said pivotally movable levers being positioned in said last named slots and being guided by the sides thereof.

3. A mounting and guiding assembly for one or more pivotally movable levers comprising two relatively thin slotted members, the slots in both of said members being much wider than required, and said members being associated to function as a single member with their individual slots placed in non-matched position to produce a slot of less width than the slots in either of the members, said pivotally movable levers being positioned in said last named slots and being guided by the sides thereof, and a pivot member on which said levers are mounted secured in position between the two relatively thin members.

4. A mounting and guiding assembly for a plurality of pivotally movable levers comprising a slotted member embodying two portions each of which has individual slots of a width greater than that desired and a pivot wire or member secured in said assembly and serving as a point of pivotal support for said levers, the sides of the slots in said member serving as guides for the levers.

5. A mounting and guiding assembly for one or more pivotally movable levers comprising two relatively thin slotted members, the slots in both of said members being much wider than required and said members being associated to function as a single member with their individual slots placed in non-matched position, one of said members being substantially flat and the other member being formed with portions adapted to overhang the edge of said first member when the two are associated in face-to-face relation.

6. A mounting and guiding assembly for one or more pivotally movable levers comprising two relatively thin slotted members, the slots in both of said members being much wider than required and said members being associated to function as a single member with their individual slots placed in non-matched position, one of said members being substantially flat and the other member being formed with the inter-slot portions of hook-like formation so that when said members are associated together in face-to-face relation to form a single mounting piece, a wire supporting channel is produced, and a pivot wire mounted in said channel.

7. A mounting and guiding assembly for one or more pivotally movable levers comprising two relatively thin slotted members, the

slots in both of said members being much wider than required and said members being associated to function as a single member with their individual slots placed in non-matched position, one of said members being a channel-shape with one side thereof slotted and the other member being hook-like in cross-section so that the ends of said hook portions overhang the ends of the slots in said channel member, a pivot wire secured between said members, and levers mounted on said wire and guided by the sides of the slot formed by the juxtapositioning of the members.

In witness whereof, I have hereunto subscribed my name.

MAX GARBELL.