Oct. 14, 1952 R. T. HOGG 2,613,797

TYPEWRITER OPERATING APPARATUS

Filed June 30, 1950 2 SHEETS—SHEET 1

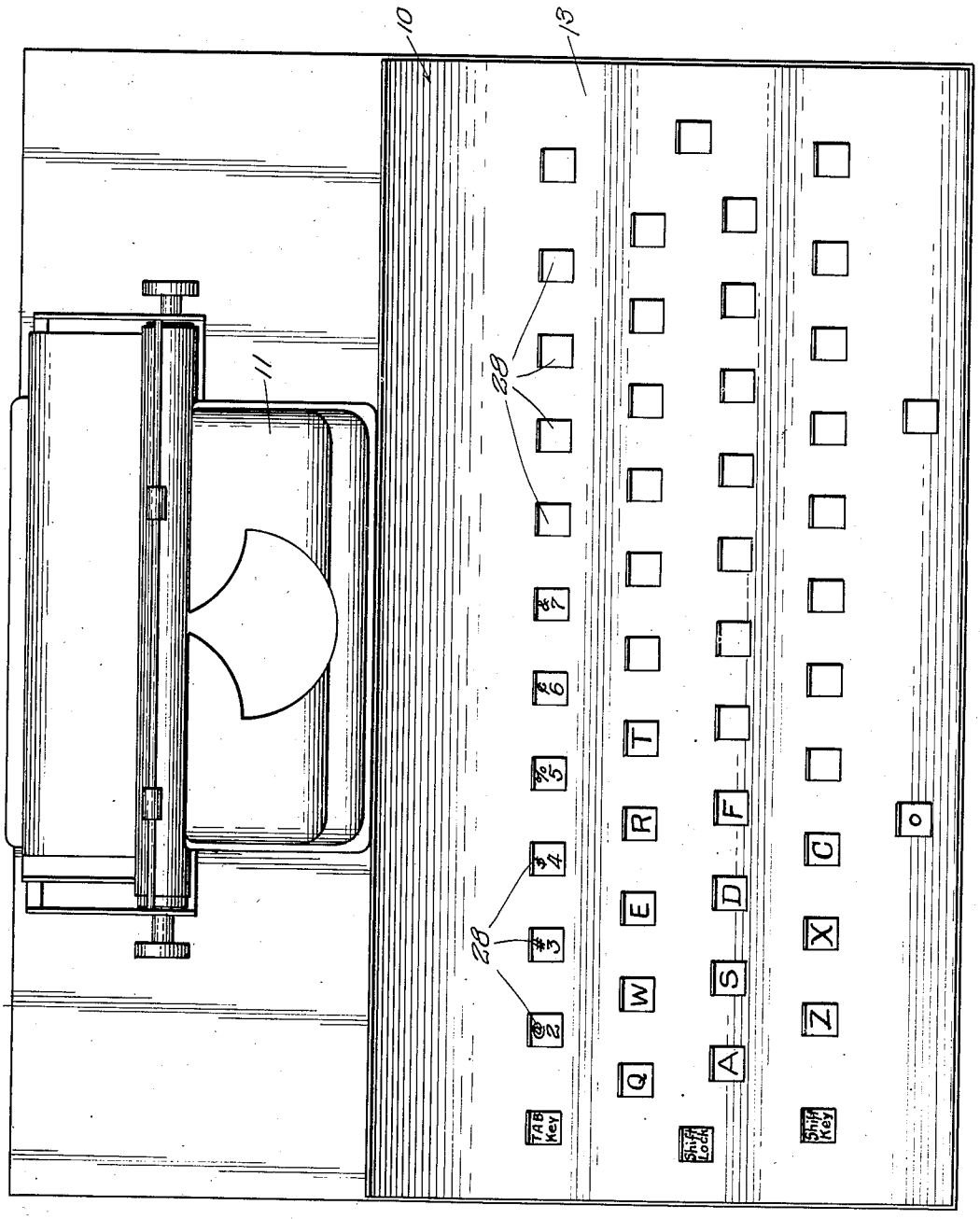


Fig. 1.

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Fig. 2.

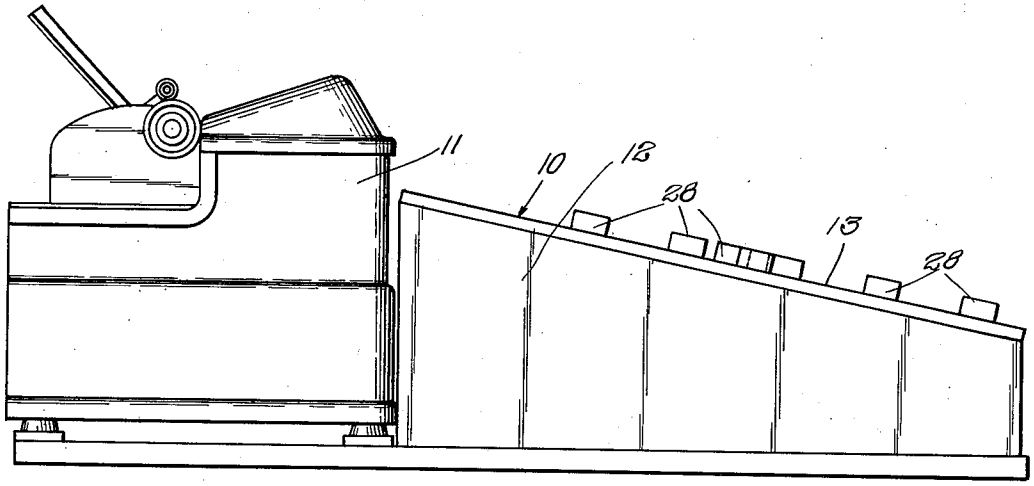


Fig. 3.

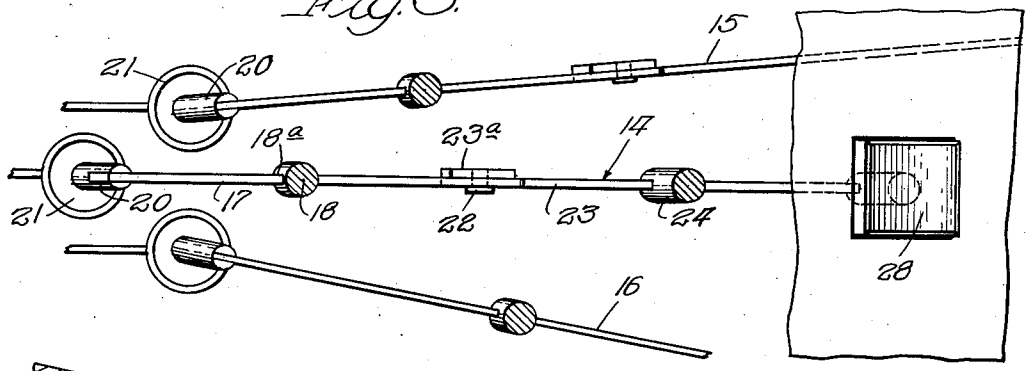
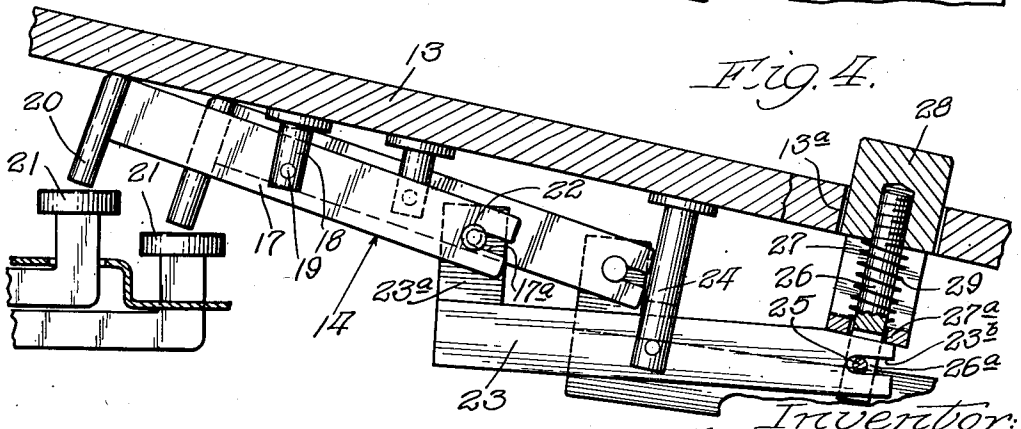


Fig. 4.



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TYPEWRITER OPERATING APPARATUS

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7 Claims. (Cl. 197—19)

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This invention relates to a typewriter mechanism, and relates particularly to an apparatus for operating the type bars of a typewriter.

In the ordinary typewriter the keys for operating the type bars and imprinting letters and other characters on paper are spaced closely together in a keyboard arrangement so that the individual keys are operated with the individual fingers of the writer. In the ordinary machine the keyboard forms a part of the typewriter.

Many individuals, both children and adults, are incapable of independent operation of their fingers due to various forms of paralysis or a lack of co-ordination necessary for movement of the fingers individually. Such persons are not able to use the ordinary typewriter as they cannot strike a key with a single finger. As many of these crippled persons are not capable of holding a pencil, pen or similar writing instrument, they find it impossible to write.

In order to solve this problem of providing a writing instrument that will permit crippled persons to write, even when they are incapable of holding a writing instrument or manipulating the fingers to operate the ordinary typewriter, I have invented an apparatus for operating the type bars of a typewriter so that the closed fist or other portion of the hand may be used in the writing operation.

The new apparatus for operating the type bars of a typewriter comprises broadly a plurality of individual lever systems each capable of operating one of the type bars and a manually engageable member forming an operating part of each lever system. Each of these members is spaced from the adjacent members a distance sufficient to permit operation thereon with a closed fist, a plurality of fingers or other portion of the hand, or even of the foot or other portions of the body without contact with any of the adjacent members. With such an arrangement, persons who have been unable to write even their names are capable of writing letters and other documents.

In the preferred structure the typewriter is an electric typewriter as here only a slight contact with the keys is required in order to operate the type bars. In the preferred construction, the new apparatus is in the form of an attachment for use on the ordinary typewriter, preferably an electric typewriter, with this attachment comprising a plurality of lever systems mounted on the under-surface of a support member and with the manually engageable members extending through openings in the support member. These manually engageable members are preferably arranged in the same relationship to each other as are the keys of the typewriter so as to form a standard keyboard. The level systems are so arranged on a support member that when the attachment is placed properly with relation to a typewriter, depression of one manually engageable member will contact the corresponding key on the typewriter to operate the corresponding type bar.

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The invention will be described as related to the typical embodiment shown in the accompanying drawings. Of the drawings:

Fig. 1 is a plan view of a typewriter attachment embodying the invention in operative relationship to a typewriter; Fig. 2 is a side elevation of the apparatus of Fig. 1; Fig. 3 is an enlarged fragmentary plan view, partially broken away for clarity of illustration, of the typewriter attachment; and Fig. 4 is an enlarged fragmentary vertical section through the attachment and the adjacent portion of the typewriter.

In the embodiment shown in the accompanying drawings, apparatus for operating the type bars of a typewriter is in the form of an attachment 10 for use with an ordinary typewriter 11, preferably an electric typewriter. The typewriter attachment shown in the drawings is in the form of a box-like structure 12 having an inclined top portion 13 serving as a support member.

Mounted on the underside of the support member 13 and completely enclosed by the box-like structure 12 are a plurality of lever systems of which one system 14 is completely illustrated in the drawings, while additional systems 15 and 16 are partially illustrated. There is provided one lever system for each key and associated type bar of the typewriter. All of the lever systems are constructed similarly, with the only differences being the length of the individual levers making up the lever systems. Because of this similarity, only one of the lever systems will be specifically described in detail.

The lever system 14, which is typical of all the lever systems, includes a lever member 17 held within a slot in a downwardly extending post 18 attached to the under-surface of the top portion 13 and connected thereto by a pivot pin 19. The provision of the lever member 17 within the slot 18*a* aids in rigidly mounting the lever member for rotation in a vertical plane.

The forward end of the lever member 17 is provided with a striker bar 20 positioned directly above a typewriter key 21 when the attachment is in place. The rear end of the lever member 17 is slotted, as indicated at 17*a*, with this slot slidably and rotatably engaging a pivot pin 22 mounted on the upwardly extending portion 23*a* of a second lever member 23. This second lever member 23 extends rearwardly and is rotatably mounted on a second post 24 that is similar to the first post 18.

The rearward end of the second lever member 23 is provided with a slot 23*b* similar to the slot 17*a*. This slot 23*b* slidably and rotatably engages a pivot pin 25 mounted on the bottom end of a reciprocable post 26. This post 26 is provided on its lower end with a slot 26*a* into which the rear end of the lever member 23 extends and across which the pivot pin 25 extends. The reciprocable post 26 extends through a hole in the bracket 27 mounted on the bottom surface of the inclined support member 13. The top end of the reciprocable post 26 is provided with a key member

28 attached thereto. This key member is located in an opening 13*a* in the support member 13. A helical spring 29 is provided around the post 26 extending from the bottom portion 27*a* of the bracket to the bottom surface of the key member 28 to hold the lever system 14 in retracted position as shown in Fig. 4.

Each of the lever systems of the apparatus is the same as lever system 14 except that it is, of course, necessary for the individual lever members to be of different lengths due to the different spacing of the various keys which operate the lever systems.

The key members 28 are preferably arranged in the same relationship to each other as are the keys of a standard typewriter keyboard. Such construction is illustrated in Fig. 1. These key members may also contain the usual markings customarily found on typewriter keys. When the key on the attachment is depressed, the corresponding key 21 of the typewriter is operated to actuate the type bar. Thus, as shown in Fig. 4, when the key member 28 is pressed downwardly against the urging of spring 29, lever members 23 and 17 are rotated about their pivot pins in a clockwise direction. This causes downward movement of the striker bar 20 to depress the corresponding typewriter key 21 and thus activate the type bar. The spacing of the key members 28 is such that the individual members may be struck with the closed fist if necessary to imprint the corresponding character on a sheet of paper held in the typewriter. The attachment is preferably used in conjunction with an electric typewriter as such typewriters have keys for returning the carriage and for performing every operation except inserting and removing the paper. If the writer is very badly crippled, he will require another person to insert and remove the paper; however, he may perform all the other writing operations himself.

Having described my invention as related to the embodiment set out herein, it is my intention that the invention be not limited by any of the details of description unless otherwise specified, but rather be construed broadly within its spirit and scope as set out in the accompanying drawings.

I claim:

1. Apparatus for operating the type bars of a typewriter comprising a plurality of individual lever systems each capable of operating one of said type bars, and a manually-engageable member forming an operating part of each lever system for activating said lever system and corresponding type bar, each of said members being spaced from adjacent members a distance sufficient to permit operation thereon with a closed fist without contact with any of the adjacent members.

2. The apparatus of claim 1 wherein said lever systems are mounted on the under surface of a support member and said manually-engageable members extend through openings in said support member.

3. An attachment for a typewriter including the ordinary type bars and keys for operating said bars to imprint characters on paper, said attachment comprising a plurality of lever systems each capable of operating on one of said keys to operate the corresponding type bar, and a manually-engageable member forming an operating part of each lever system for operating said system, each of said members being spaced from adjacent members a distance sufficient to permit operation thereon with a closed fist without contact with any of the adjacent members.

4. The attachment of claim 3 wherein there is provided a support member on the under surface of which said lever systems are mounted, with said manually-engageable members extending through openings in said support member, said members being arranged in the same relationship to each other as are the keys of said typewriter.

5. An attachment for an electric typewriter including the ordinary type bars and keys for operating said bars to imprint characters on paper, said attachment comprising an enclosing support member having a top inclined portion and adapted to enclose said keys, a plurality of lever systems mounted on the bottom surface of said top portion and each arranged for operating one of said keys to operate the corresponding type bar, a manually-engageable member forming an operating part of each lever system for operating said system, each of said members extending through an opening in said top portion and being spaced from adjacent members a distance sufficient to permit operation thereon with a closed fist without contact with any of the adjacent members, said members being arranged in the same relationship to each other as are the keys of said typewriter, and yielding means on each lever system normally urging said lever systems out of engagement with said keys, each of said lever systems being operable on the corresponding key by depression of the corresponding manually-engageable member against the urging of said yielding means.

6. Apparatus for operating the type bars of an electric typewriter including finger-engageable keys for operating said bars to imprint characters on paper, said apparatus comprising a plurality of individual lever systems each capable of contacting one of said keys for operating the corresponding type bar, and a manually-engageable member forming an operating part of each lever system for activating said lever system and corresponding type bar, each of said members being spaced from adjacent members a distance sufficient to permit operation thereon with a closed fist without contact with any of the adjacent members.

7. An attachment for an electric typewriter including the ordinary type bars and keys for operating said bars to imprint characters on paper, said attachment comprising a plurality of lever systems each capable of operating on one of said keys to operate the corresponding type bar, a manually-engageable member forming an operating part of each lever system for operating said system, each of said members being spaced from adjacent members a distance sufficient to permit operation thereon with a closed fist without contact with any of the adjacent members, and yielding means normally urging said lever systems out of engagement with said keys.

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