ABSTRACT: An adapter for use on standard typewriting equipment providing a mounting for releasably positioning a type character adding device relative to the platen of the typewriting equipment.
ADAPTER FOR POSITIONING A CHARACTER ADDING DEVICE ON TYPEWRITING EQUIPMENT

BACKGROUND OF THE INVENTION

1. Field of the Invention
This invention relates to an apparatus for applying or inserting in typewritten matter additional type characters such as letters, signs, symbols, and the like for use on a standard typewriter. More particularly, this invention is directed to an adapter for use on standard typewriting equipment providing a mounting for releasably positioning a type character adding device in the desired relative position to the platen of a standard typewriter.

2. State of the Prior Art
In the more conventional uses of typewriting equipment in commerce and industry, there arises the necessity to insert various specialized type characters, as for instance letters, signs, symbols, and the like, of a nature not commercially available on type bars of standard typewriters. In the scientific and technical fields, the use of such special type characters is quite extensive. As the standard typewriter does not provide such a variety of type characters, it is usually necessary to insert the appropriate character by hand after the typewritten material has been removed from the machine. This practice is not only time consuming and subject to error and omission, but also fails to produce an overall general appearance of neatness in the finished typewritten material.

In order to alleviate this problem in the art, I, jointly with Stephen E. Hartnett, invented a device for applying such additional specialized type characters in typewritten material and secured U.S. Letters Pat. No. 3,063,541, issued Nov. 13, 1962, protecting our invention in such a device. In that patent, there is disclosed and claimed an adapter providing a mounting for a type character adding device for properly positioning the device relative to the platen and the type bar guide such that the character will be applied in the proper position in the typewritten material when the character carrying member of the device is driven into printing engagement with a type receiving material. This adapter, however, has presented certain new problems that have been recognized and alleviated by the adapter comprising this invention.

The aforementioned prior art adapter is not susceptible to mounting on a wide range of typewriters, particularly, those of a portable nature. In addition, the aforementioned prior art adapter, due to its structure and mounting on a typewriter, was not capable of being sufficiently secured with adequate rigidity for the use to which it was intended. Also the surfaces of the guide with which the prior adapter engaged were not always precisely or accurately formed such that the adapter could be precisely aligned on each different typewriter.

SUMMARY OF THE INVENTION
This invention encompasses an adapter for use in mounting and positioning a device for applying an additional type character in typewritten material. This adapter is employed on a standard typewriter having a type bar guide adjacent a platen and type bars cooperable with the type bar guide, said type bar guide having a body portion defining an upwardly extending slot and supporting in spaced relation above said slot a pair of guide prongs. The device for applying an additional type character in typewritten material is comprised of a holder and a type character defining member slideable in said holder. The character defining member includes a raised surface defining a type character and a portion engageable by any of the type bars of the typewriter to drive said raised surface into printing engagement with the type receiving material on the platen of the typewriter.

The adapter itself is basically comprised of a guide member for receiving the character adding device and positioning said device in a desired position relative to said platen. The guide member is positioned in abutting relation to the type bar guide, traversing said slot in said type bar guide and having portions abutting the bar guide on opposed sides of said slot. The adapter further includes a mounting member for traversing the slot having portions on opposed sides of said slot positioned in abutting contacting relation with said type bar guide. The mounting member is disposed on the opposite surface of the type bar guide from the guide member. The adapter also includes a means received through the slot of the type bar guide and adjustably connected to each of the mounting member and the guide member for clampingly engaging the mounting and guide members together and to said type bar guide. The connecting means may be a threaded screw or the like having a diameter sufficiently less than the vertical dimension of the slot to allow vertical adjustment of the adapter relative to the type bar guide to affect the proper positioning of additional type characters relative to the standard type characters carried by the typewriter itself.

It is an object of this invention to alleviate the aforementioned difficulties of the prior art by providing a new and novel adapter device capable of employment on a wide range of standard typewriters, particularly those of a portable nature.

A further object of the present invention is to provide an adapter device of the character described which may be easily and quickly installed without the services of a typewriter mechanic.

Another important object of the instant invention is to provide such an adapter for adjustable mounting on the type bar guide of the typewriter permitting adjustment of the adapter relative to said bar guide to thereby provide for the accurate and desired positioning of a particular character relative to the other typewritten characters.

A further object of the present invention is to provide a new and improved guide for releasably positioning the holder of the character adding device to fixedly retain this device in the desired position relative to the platen yet allow for the removal of said holder with relative ease and speed.

Another object of this invention is to provide such an adapter providing a relatively stable mounting for the holder such that the character carrying member of the type adding device is accurately and firmly driven into printing engagement with the type receiving material thereby materially increasing the distinctiveness of the typed character formed thereby.

Other objects, advantages, and novel features of the present invention will become apparent from the following description taken in connection with the accompanying drawings wherein I set forth by way of illustration and example the embodiment of my invention. It is to be understood that the drawing presented herewith are for the purpose of illustration only, and are not intended to define the limits of the invention. This drawing merely illustrates the preferred embodiments of the structure incorporating the features of the present invention.

BRIEF DESCRIPTION OF THE DRAWING
FIG. 1 is a perspective view illustrating the manner in which the adapter of the instant invention and the character adding device are operatively related to a standard typewriter;

FIG. 1a is a fragmentary, side elevational view of a portion of the type bar guide illustrated in FIG. 1 with the adapter of the present invention operatively mounted on said type bar guide;

FIG. 2 is a fragmentary, front elevational view of the type bar guide illustrated in FIG. 1 and the adapter of the present invention operatively mounted on said type bar guide;

FIG. 3 is a fragmentary top view of the type bar guide illustrated in FIG. 1 having the adapter of the present invention operatively mounted thereon;

FIG. 4 is a horizontal sectional view taken through the adapter and the character adding device showing the slideable, character defining member operatively received through a bore in the holder of said device, and said device being operatively received in the guide elements of the adapter of the present invention; and
FIG. 5 is a perspective view of the adapter of the present invention showing its component parts in spaced relative positions for purposes of illustration including a modified form of a mounting member.

DETAILED DESCRIPTION OF THE INVENTION

Character Adding Device

The character adding device contemplated for use with the adapter constituting the present invention is like that described in U.S. Pat. No. 3,063,547 issued Nov. 13, 1962, entitled Character Adding Device for Typewriting Equipment, and is broadly designated herein by the reference numeral 1. Referring to FIGS. 1 and 4, the character adding device 1 is broadly comprised of a holder 2 and a type character defining member 4 slideably received in a through bore 6 in the holder 2. The slideable character defining member 4 has opposed end portions 8 and 10 with end portion 8 having a raised character defining surface 12 forming a particular specialized type character. The opposed end portion 10 defines a key bar striking surface 14 engageable by the key bar of a standard typewriter for driving the raised character defining surface 12 of the slideable member 4 into printing engagement with a type receiving material on the platen 30 of the typewriter. The slideable member 4 is returnable to its nonprinting position by means of a spring member 16 in a manner described in the aforesaid patent. Thus, the slideable member 4 is reciprocally moveable through the bore 6 of the holder 2 to and from printing positions against the type receiving material.

The holder 2 has opposed surfaces 22, each defining a guide 18 and a groove 20 for positioning the holder 2 in the adapter 40 of this invention. The bottom surface of the guide groove 20 of the holder 2 defines a recess 24 which cooperates with a spring biased detent member 70 on the adapter to be described later herein to retain the holder 2 in the adapter 40.

Type Bar Guide

Referring to FIG. 1, a conventional type bar guide 26 is illustrated operatively mounted in a conventional manner to the frame structure 28 of a standard typewriter in cooperative relation with the platen 30 of said typewriter. The illustrated type bar guide 26 is basically comprised of a mounting portion 32, an upstanding body portion 34, and a pair of forwardly projecting prongs 36 each connected to said body portion 34. The body portion 34 also defines an upwardly extending slot 38 which is employed within the concepts of this invention as an adjustment slot for facilitating a vertical adjustment of the adapter relative to the type bar guide 26. Although the type bar guide 26 may take various shapes and forms, the illustrated bar guide 26 is of a type conventionally used in most standard typewriters.

The Adapter

Referring to FIG. 5, an adapter is illustrated embodying the features of this invention and is broadly designated by the reference numeral 40. As illustrated, the adapter 40 is comprised of a guide member 42, a mounting member 44, and a connector member 46. As illustrated in FIG. 1a, the guide member 42 is operatively mounted in contacting relation to a rearward surface 48 of the body portion 34 of type bar guide 26. The mounting member 44 is positioned in contacting relation to a forward surface 50 of said body portion 34 beneath the forwardly extending prongs 36. The connector member 46 is received through the upwardly extending slot 38 defined in the body portion 34 connecting the mounting member 44 and the guide member 42 in clamping engagement together and to the body member 34 of the type bar guide 26.

Referring to FIGS. 2, 3 and 5, the illustrated guide member 42 includes a pair of upstanding, spaced, opposed guide elements 52 and 54. The guide elements 52 and 54 extend upwardly from a relatively thin flat mounting portion 56. The mounting portion 56 includes a raised portion 58 extending outwardly from its forward surface 60. The raised portion 58 is received in the slot 38 in opposing relation to a similar portion on the mounting member 44. The raised portion 58 defines a pair of opposed vertical side surfaces normal to the forward surface 61 of the portion 58 for snugly abutting the side walls of slot 38 thereby preventing rotation of the guide member 42 relative to the type bar guide 26. The mounting portion 56 of the guide member 42 also defines a threaded aperture 62 extending through the raised portion 58 for receiving the connector 46 illustrated herein as a conventional threaded screw.

The upstanding guide elements 52 and 54, as illustrated, each include a vertically extending juxtapositioned guide 64 and guide groove 66. The guide 64 and guide groove 66 are designed for mating engagement with the corresponding guide and guide grooves 18 and 20, respectively, of the holder 2 in order to firmly retain the holder 2 in the desired position within the adapter 40. The inclusion of the guide 64 and guide grooves 66 on each of the guide elements 52 and 54 facilitates the stabilization of the holder 2 particularly preventing forward and rearward tilting or vibration of the holder 2 relative to the type bar guide 26 which tends to cause a blurring of the type character on the type receiving material.

One of the guide elements 54 defines a through bore 68 having a substantially horizontal axis normal to the element 54, said axis extending through the opposed element 52. The bore 68 receives a detent member 70 which is slideably mounted in said bore 68 and includes an end portion 74 located between elements 52 and 54 and receivable in the recess 24 in one of the grooves 20 of the holder 2, as illustrated in FIG. 4. The end portion 74 of the detent member 70 is biased into its recess engaging position by means of a spring 72. The end portion 74 is rounded providing a camming action within the surface setting recess 24 to thereby facilitate the removal of the holder 2 from the guide member 42. Thus, the holder 2 may be fixedly retained within the guide member 42, yet with relative ease removed from the guide member 42.

Referring to FIG. 1, the mounting member 44 includes a raised central portion 80 between a pair of opposed outer portions 82 each defining an abutment surface for contacting relation with the forward surface 50 of the body portion 34 of guide 26 on opposed sides of slot 38. The central raised portion 80 is received in the slot 38 in abutting relation to the raised portion 58 of the guide member 42 also disposed in slot 38. Like the raised portion 58, the raised portion 80 also defines a pair of vertical abutment surfaces 81 which bear against the side walls of the slot 38 preventing rotation of the guide member 42 relative to the type bar guide 26.

A modified form of the mounting member is illustrated in FIG. 5, and is designated by the reference numeral 45. Mounting member 45 includes a pair of spaced opposed shoulders 88 defining a recessed portion 86 therebetween. Each of the shoulders 88 have outer surfaces 84 in snugly fitting contacting relation to the side walls 89 of the slot 38. Otherwise mounting members 44 and 45 may be similarly constructed. The raised portion 58 of the guide member 42 is received in this recessed portion 86 between shoulders 88 in snugly fitting contacting relation to shoulders 88 thus providing a stable mounting. In this manner the same guide member 42 may be used irrespective of the width of the slot by a simple substitution of a different mounting member 45 having different width shoulders 88. For instance, axis normal to the type bar guide 26 having slots 38 of different widths from the U.S. typewriters may be accommodated by manufacturing different mounting members 44 but without necessitating the manufacture of a variety of guide members 42. A single guide member 42 thus may be manufactured for use on any conventional typewriter of foreign or domestic origin.

The mounting members 44 and 45 respectively of both the embodiments of FIGS. 1 and 5 define a countersunk aperture 92 centrally therethrough including a countersunk portion 94 in the forward surface 90 of mounting member 44. The countersunk portion 94 is employed for receipt of the head portion.
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96 of the threaded screw connecting member 46 to thereby facilitate the retention of the screw 46 in the desired position for connecting the guide member 42 to the mounting member 44 in clamping engagement about the body portion 34 of the guide 26. Although the countersunk portion 94 could be omitted, it does provide the distinct advantage of retaining the threaded screw 46 in the proper position until the threaded portion of the screw 46 can be engaged with the threaded aperture 62 in the guide member 42. This advantage materially enhances the ease with which the adapter 40 may be installed on a conventional typewriter.

The connector screw 46 is illustrated herein as a conventional threaded screw having a head portion 96 and a threaded body portion 98. The head portion 96 is provided with a bore 100 extending inwardly from the forward surface 102 of said head portion 96 and having angular side walls 104 to facilitate the engagement of the screw 46 by an Allen wrench for rotating the screw 46 into threaded engagement with the threaded aperture 62 in the guide member 42. The use of the above-described screw 46 further facilitates the ease of installation of the adapter 40. This is of particular importance as this adapter 40 is expected to enjoy wide utilization in the portable typewriter field and the adapter 40 will not require installation by a typewriter mechanic but can be installed by anyone with relative ease.

The guide member 42 is operatively mounted in contacting relation to the rearward surface 48 of the body portion 34 of the guide 26 with its raised portion 58 extending into the slot 38. The mounting member 44 also has its raised portion 80 received in the slot 38 in opposing relation with the raised portion 58 of the guide member 42. When mounting member 45 is utilized, the raised portion 58 is received between shoulders 88 as previously discussed. The threaded screw 46 is then received through the aligned apertures 92 and 62 and threaded engagement 62. The engagement is easily affected by means of an Allen wrench received in the bore 96 of the threaded screw 46. The head 96 is conveniently placed within the countersunk portion 94 of the aperture 92 to facilitate the positioning of the screw 46 prior to rotation into threaded engagement with the threaded aperture 62.

The guide member 42 may be vertically adjusted within the limits of the slot 38 by simply loosening the screw 46 and raising or lowering members 42 and 44 to achieve the proper positioning of the character defining member 4 relative to the typewriter material in which the specialized type character is to be employed. This may easily be affected by a trial and error method initially to provide the proper setting or vertical positioning of the character defining member 4. As the character adding devices 1 are all equally dimensioned, a single setting for the guide member 42 employing one of the devices 1 will provide a correct positioning or setting for all of the character adding devices 1.

The holder 2 is simply placed in the adapter 40 by sliding the holder 2 downwardly between the guide elements 52 and 54 with the guides 64 being received in the grooves 20 of the holder 2 and the guides 18 of the holder 2 being received in the guide grooves 66 in the respective guide elements 52 and 54. The holder 2 is moved into the adapter 40 until the detent member 70 is engaged in the recess 24. Any of the keys of the keyboard may then be struck in order to swing a type bar into striking engagement with the slideable character defining member 4 to drive the raised character defining surface 12 of member 4 into printing engagement of the type receiving material. Then by exerting a slight pressure upwardly on the holder 2, the detent element 70 is cammed out of recess 24 and the holder 22 may be withdrawn from the guide member 42.

I claim:

1. In a typewriter having a type bar guide and a platen adjacent said guide, said type bar guide having a body portion with a rearward surface opposite said platen and a forward surface defining an upwardly extending slot, an adapter for use in positioning a character adding device for applying an additional character of type in typewritten material, said adapter comprising:

   a. a guide member including a pair of spaced upright guides positioned above the type bar guide for receiving the character adding device therebetween with the upright guides being positionable in corresponding grooves in the character adding device for positioning the character adding device relative to the platen, said guide member traversing the slot in the body portion of the type bar guide and having portions in abutting relation to the rearward surface of the body portion of the type bar guide on opposed sides of the slot, said guide member having a raised portion thereon received in snugly fitting relation in the slot in said type bar guide, said raised portion defining wall means in substantially contacting relation to said type bar guide on opposite sides of said slot;

   b. a mounting member traversing the slot in the body portion of the type bar guide, said mounting member defining an aperture therethrough in alignment with said slot, said mounting member having portions on opposed sides of the slot in abutting relation to the forward surface of the body portion of the type bar guide, said mounting member having a raised portion thereon received in snugly fitting relation in the slot in said type bar guide, said raised portion defining wall means in substantially contacting relation to said type bar guide on opposed sides of said slot; and

   c. means received through the slot and the aperture in said mounting member and releasably connected to said guide member for clamping engaging said guide and mounting members to the type bar guide.

2. An adapter as recited in claim 1, wherein the aperture defined in said mounting member includes a countersunk portion, said guide member defines a threaded aperture in aligned relation with the countersunk aperture and the slot and wherein said means for clamping engaging said members includes a threaded screw received through said countersunk aperture and having a head portion positioned therein, said screw also being received in the threaded aperture of said guide member and threaded engaging said guide member for clamping said guide and mounting members to the type bar guide.

3. An adapter as recited in claim 2 wherein the head portion of the threaded screw defines a bore therein having angularly related side walls for receipt of an Allen wrench for rotating said screw to effect an engagement, loosening and disengagement of the opposed guide and mounting members.

4. In a typewriter having a type bar guide and a platen adjacent said guide, said type bar guide having a body portion with a rearward surface opposite said platen and a forward surface defining an upwardly extending slot, an adapter for use in positioning a character adding device for applying an additional character of type in typewritten material, said adapter comprising:

   a. a guide member including a pair of spaced upright guides positioned above the type bar guide for receiving the character adding device therebetween with the upright guides being positionable in corresponding grooves in the character adding device for positioning the character adding device relative to the platen, said guide member traversing the slot in the body portion of the type bar guide and having portions in abutting relation to the rearward surface of the body portion of the type bar guide on opposed sides of the slot, said guide member having a raised portion defining spaced wall means; and

   b. a mounting member traversing the slot in the body portion of the type bar guide, said mounting member defining an aperture therethrough in alignment with said slot, said mounting member having portions on opposed sides of the slot in abutting relation to the forward surface of the body portion of the type bar guide, said mounting member having a pair of spaced opposed shoulders...
received in the slot in the type bar guide in substantially contacting relation respectively to the side walls of said slot said raised portion on the guide member being snugly received between said shoulders with the wall means of said raised portion in substantially contacting relation respectively to each of said shoulders; and

c. means received through the slot and the aperture in said mounting member and releasably connected to said guide member for clampingly engaging said guide and mounting members to the type bar guide.