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TYPEWRITER KEYBOARD HAVING THUMB OPERATED CONTROL KEYS

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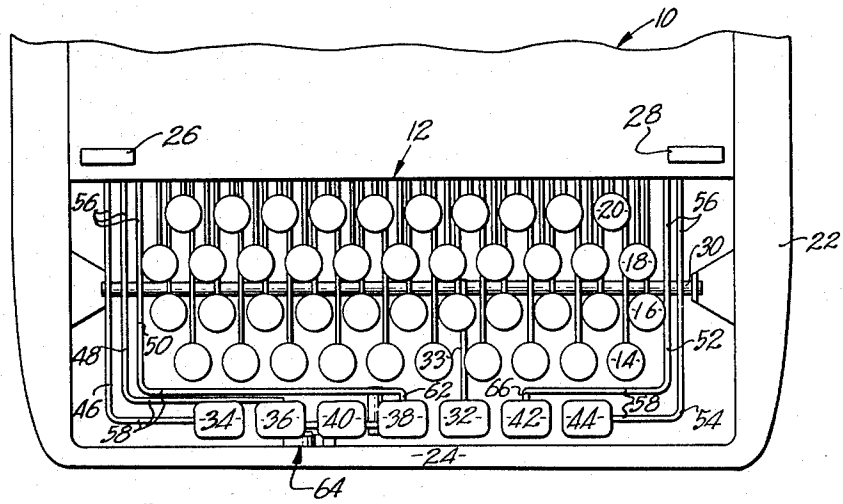


Fig. 1.

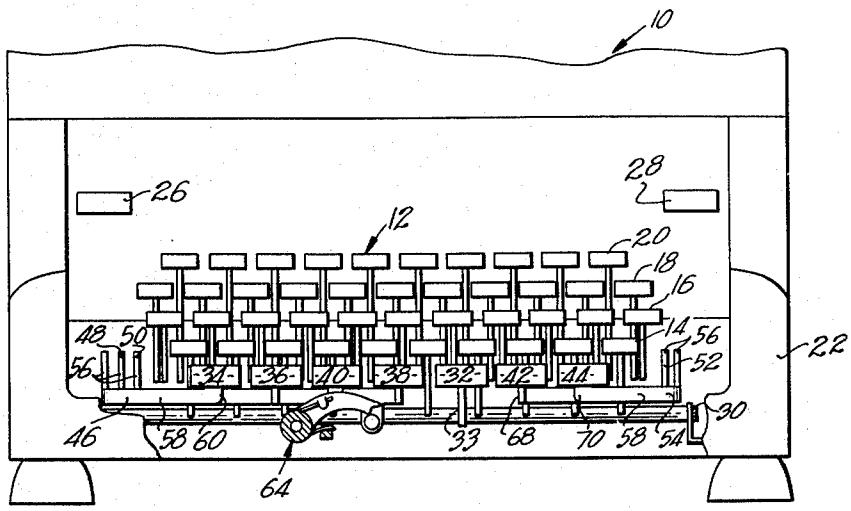


Fig. 2.

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TYPEWRITER KEYBOARD HAVING THUMB OPERATED CONTROL KEYS

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This invention relates to typewriters and more particularly to a typewriter wherein the control keys are disposed in a position where the same may be operated by the thumbs of the typist without displacing the finger tips from their normal position relative to the keyboard.

It is well known that when operating a conventional typewriter keyboard by the touch system the hands of the typist should remain at a predetermined position relative to the keyboard and that when the hands of the typist are in such a position whereby maximum typing effort may be obtained the control keys such as the tabulator, the backspace, the shift, shift lock and margin release are so positioned on the typewriter keyboard that the same can be operated efficiently only with the little fingers of the typist. This necessitates the removal of the little fingers from the letter or typing keys and creates additional work for the little fingers, which are the weakest fingers of the hand, all of which results in unnecessary mistakes in typing.

It is, therefore, the most important object of this invention to provide a typewriter keyboard wherein the control keys are disposed in alignment in series at a position forward of the normally forwardmost row of letter or typing keys. Such disposition of the control keys allows the same to be operated by the thumbs of the typist without removing the fingers from their desired position relative to the keyboard.

A yet further aim of this invention is to provide means for positioning the control keys in aligned series forwardly of the forwardmost row of letter or typing keys, said means including a substantially L-shaped, horizontally disposed operating lever for each of the control keys.

It is a yet further aim of this invention to provide such operating levers which have a first leg extending along the side of the keyboard and a second leg integral therewith and extending laterally therefrom across the front of the keyboard, the control keys being carried at the outermost free end of the second legs of their respective operating levers.

Further objects of this invention include the relative disposition of the operating keys and other details of construction which will become apparent from the following specification and accompanying drawing, wherein:

Figure 1 is a fragmentary top plan view of a typewriter having a keyboard constructed according to the present invention; and

Fig. 2 is a fragmentary front elevational view of a typewriter having a keyboard made pursuant to this invention.

The typewriter **10** to which the present improvement is applied is conventional in nature and includes a keyboard **12** having a number of rows of typing or letter keys **14**, **16**, **18** and **20**. Said rows **14—20** are disposed in the normal banked or stair-stepped position and include the usual keys used for typing letters, numerals and punctuation symbols. The structural frame **22** of the typewriter substantially surrounds keyboard **12** and has a front portion **24** extending across the front of the keyboard in spaced relation from the normally forwardmost row of typing keys **14**.

Such a typewriter normally also includes control keys such as a margin release; a spacer; a capital shift key; a lock for the capital shift key; a backspacer; a tabulator; and if an electric typewriter, a carriage return control key, these keys, in a conventional keyboard, being disposed at the outermost ends of rows **14—20** whereby said control keys may be operated by the little fingers of the typist when the hands are in the normal position on the keyboard for utilizing the touch typing system.

Other control buttons such as the tabulator clear **26** and tabulator set **28** are located above the keyboard **12** and extend from the housing of the typewriter **10**. Conventional typewriters also include at a position between the forwardmost row of keys **14** and the front portion **24** of frame **22** an elongated spacer bar, which bar is coupled by suitable linkage to a rotatable rod **30** which, upon depression of the spacer bar, actuates additional mechanism to effect a spacing movement of the typewriter.

In the present invention it is contemplated that the spacer bar be substantially shortened and replaced by a spacer key **32** which is coupled with rod **30** by suitable linkage such as **33**. The replacement of the normal elongated spacer bar with a key **32** leaves space on either side of key **32** and it is in this space to each side of spacer key **32** and between row **14** and frame portion **24** wherein the other control keys of the keyboard are disposed pursuant to the improvement of the present invention.

As best seen in Fig. 1 of the drawing, the control keys are disposed in alignment with spacer key **32** and said control keys include a tabulator key **34**; a backspacer **36**; a shift key **38**; a locking key **40** for the shift key **38** and a margin release **42**. In the case of electric typewriters it is contemplated that an additional carriage return key **44** be provided. Keys **32—44**, broadly designated as control keys, are disposed in a row between row of typing keys **14** and the front portion **24** of frame **22**. As seen in Fig. 2, control keys **32—44** are normally in the same horizontal plane, which plane is parallel to the plane of the typing keys constituting rows **14—20**.

To position keys **34**, **36**, **38**, **42** and **44** as above described each of said keys is provided with a substantially L-shaped operating lever such as **46** for key **34**; **48** for key **36**; **50** for key **38**; **52** for key **42**; and **54** for key **44**. Each of levers **46—54** includes a first leg **56**, which legs are in parallel spaced relationship and extend along the sides of the keyboard inwardly toward the housing of typewriter **10**, the same being coupled at their innermost ends with suitable control mechanism corresponding to the key carried by the respective lever. Each of levers **46—54** also includes a second leg **58** integral with the first leg **56** of the lever, which second legs extend laterally from corresponding first legs **56** across the front of the typewriter keyboard **12**, said second legs **58** having their corresponding control keys carried at the outermost, free ends thereof. Each of legs **58** is bent upwardly at its outermost free end to receive the corresponding control key.

Lever **46** for tabulator key **34** is preferably the outermost of levers **46**, **48** and **50** which are disposed at the normally left side of he keyboard and the second leg **58** of lever **46** is bent upwardly at **60** to receive the tabulator key **34**. The next adjacent lever **48** which carries backspacer key **36** at its outermost end has the first leg **56** thereof in parallel relation to first leg **56** of lever **46**, the second leg **58** of said lever **48** extending inwardly in parallel relation with second leg **58** of lever **46** and being spaced a sufficient distance rearwardly thereof whereby when tabulator key **34** is depressed it will clear the second leg **58** of lever **48**. To compensate for such spacing it is

necessary that leg 58 be bent forwardly and then upwardly at its outermost free end to accommodate backspacer key 36 and to maintain the same in a position aligned with the other control keys.

Lever bar 50 for shift key 38 is preferably the innermost of the operating lever bars disposed at the left side of the keyboard and its first leg 56 is in parallel relation to first legs 56 of levers 46 and 48, the second leg 58 of lever 50 being in parallel relation throughout a portion of its distance with second legs 58 of lever bars 46 and 48 and disposed between said second legs of lever bars 46 and 48 and the forwardmost row of keys 14. Such displacement of second leg 58 of bar 50 allows the depression of keys 34 and 36 and the corresponding downward movement of their respective second legs without interference with second leg 58 of lever bar 50 in the operation of keys 34 and 36. To dispose shift key 38, which is carried by the outermost free end of second leg 58 of lever bar 50, in a position of alignment with the remainder of the control keys said second leg 58 is bent at point 62 at a substantial right angle whereby the end thereof extends forwardly toward frame portion 24, said end then being bent upwardly to receive shift key 38.

The locking key 40 is preferably disposed to the left side of shifting key 38 and is coupled by suitable swingable, locking mechanism such as 64 which is carried by frame portion 24, which portion 24 is provided with catch means for the mechanism 64. When lock shift key 40 is depressed it will be arrested by said catch means and serve its intended purpose of locking keys 38 and 40 in a depressed position and thus locking in place the shifting apparatus of the typewriter.

Lever arm 52 for margin release key 42 is disposed to the right of the keyboard 12, as is lever arm 54 for the optional carriage return key 44. Lever arm 52 is the innermost of levers 52 and 54 and has the outermost end thereof bent forwardly at 66 and upwardly at 68 whereby to position margin release key 42 carried by said outermost end in alignment with the remainder of control keys 34—44. It is seen that second leg 58 of lever bar 52 is between the second leg 58 of lever bar 54 and forwardmost row of keys 14 whereby the same will not interfere with the downward movement of carriage return key 44.

The lever bar 54 for carriage return key 44 which would be included in the utilization of the improvements taught by the present invention in connection with an electric typewriter is again substantially L-shaped and has the second leg 58 thereof bent upwardly as at 70 to dispose carriage return key 44 in aligned relationship with the remainder of control keys 34—44.

It will be appreciated that the improvements of the present invention may be utilized in connection with either manual or electric typewriters and that the control keys may be disposed relative to one another in positions other than that shown in the drawing and above-mentioned. Thus, some degree of modification of the present invention is contemplated in connection with various models of typewriters such as transposition of the control keys from left to right side of center depending upon the make of typewriter without departing from the intended scope thereof and it is therefore desired to be limited only by the scope of the appended claims.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. In a typewriter keyboard having a number of rows of typing keys and a plurality of control keys, means for positioning said control keys at the front of said keyboard whereby the same are accessible to the thumbs of the typist without displacement of the fingertips from their normal position relative to the keyboard, said means comprising an L-shaped, horizontally disposed operating lever for each of said control keys, each of said levers having a first leg extending along the side of said keyboard and coupled at its innermost end with corresponding control mechanism and a second leg integral with said first leg and extending laterally therefrom along the front of the keyboard in spaced relation from the forwardmost row of typing keys, said second legs being of varying lengths whereby to dispose said control keys in side by side relationship, the control keys being carried at the outermost, free ends of their respective levers and being disposed in spaced, aligned relationship and normally in the same horizontal plane, said plane being substantially parallel to the normal plane of said typing keys.

2. A typewriter keyboard comprising a number of rows of typing keys and a plurality of control keys including a tabulator key, a backspacer key, a shift key, a margin release key and a carriage return key, said control keys being of equal size and disposed in spaced apart, align relationship forwardly of the normally forwardmost row of typing keys; and means for disposing the named control keys in said relationship including an L-shaped, horizontally disposed operating lever for each of the named control keys, each of said levers having a first leg extending along the side of the keyboard and coupled at its innermost end with corresponding control mechanism and a second leg integral with said first leg, said second legs being of varying lengths and disposed in parallel vertical planes, the control keys being carried at the outermost free ends of their respective levers and normally in the same horizontal plane, said plane being substantially parallel to the normal plane of said typing keys.

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