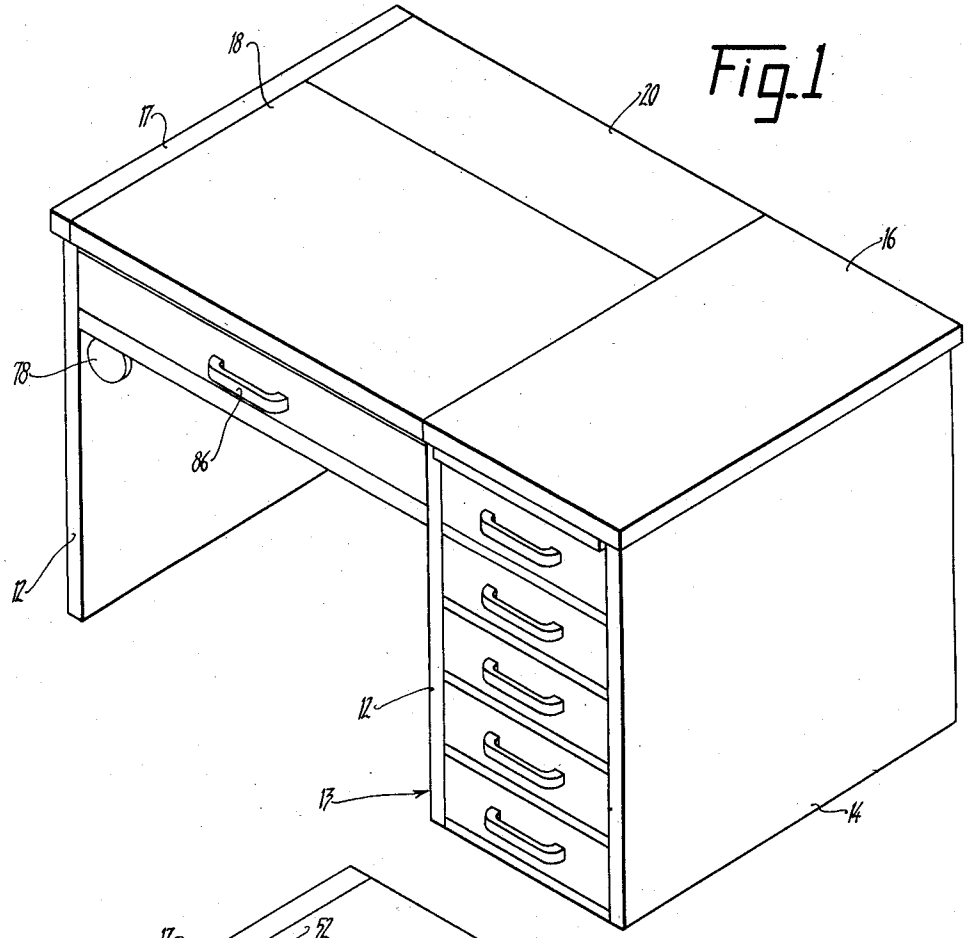
July 7, 1959 H. B. CHILDS 2,893,533

TYPEWRITER AND SOUND ENVELOPING FURNITURE THEREFOR

Filed July 27, 1956 4 Sheets-Sheet 1

Fig. 1



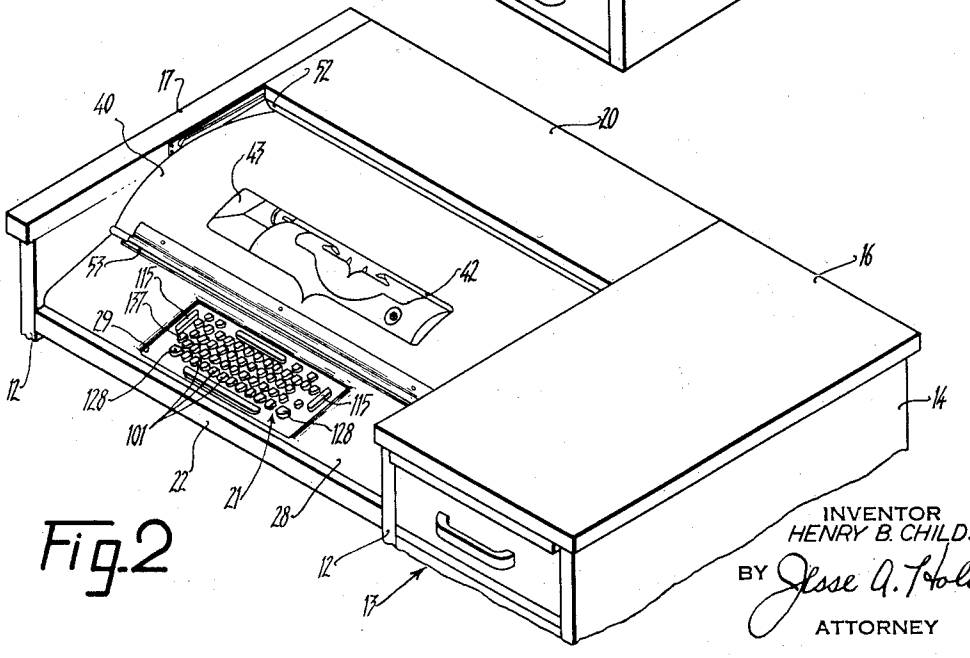


Fig. 2

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TYPEWRITER AND SOUND ENVELOPING FURNITURE THEREFOR

Filed July 27, 1956 4 Sheets-Sheet 2

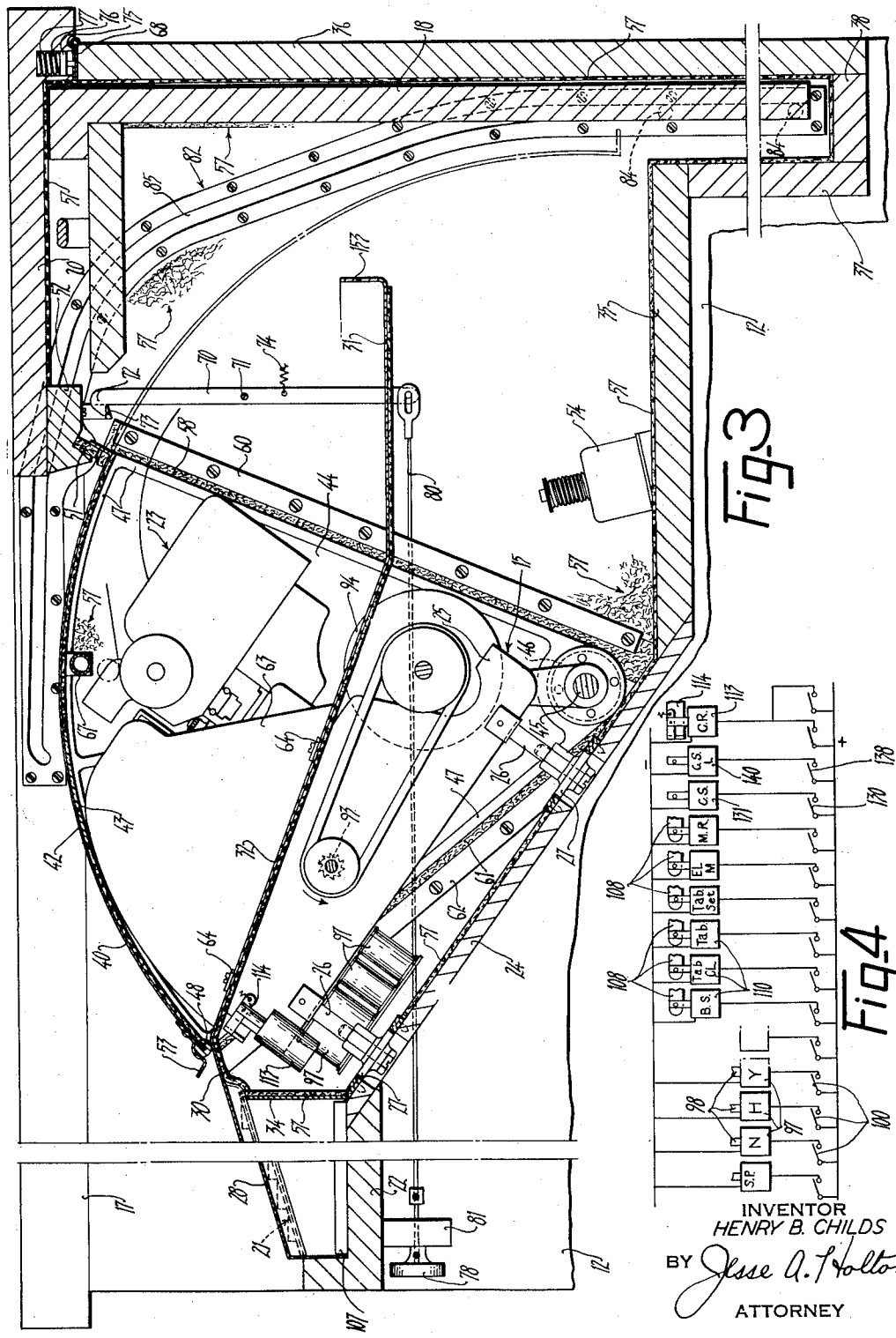


Fig. 3

Fig. 4

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TYPEWRITER AND SOUND ENVELOPING FURNITURE THEREFOR

Filed July 27, 1956 4 Sheets-Sheet 3

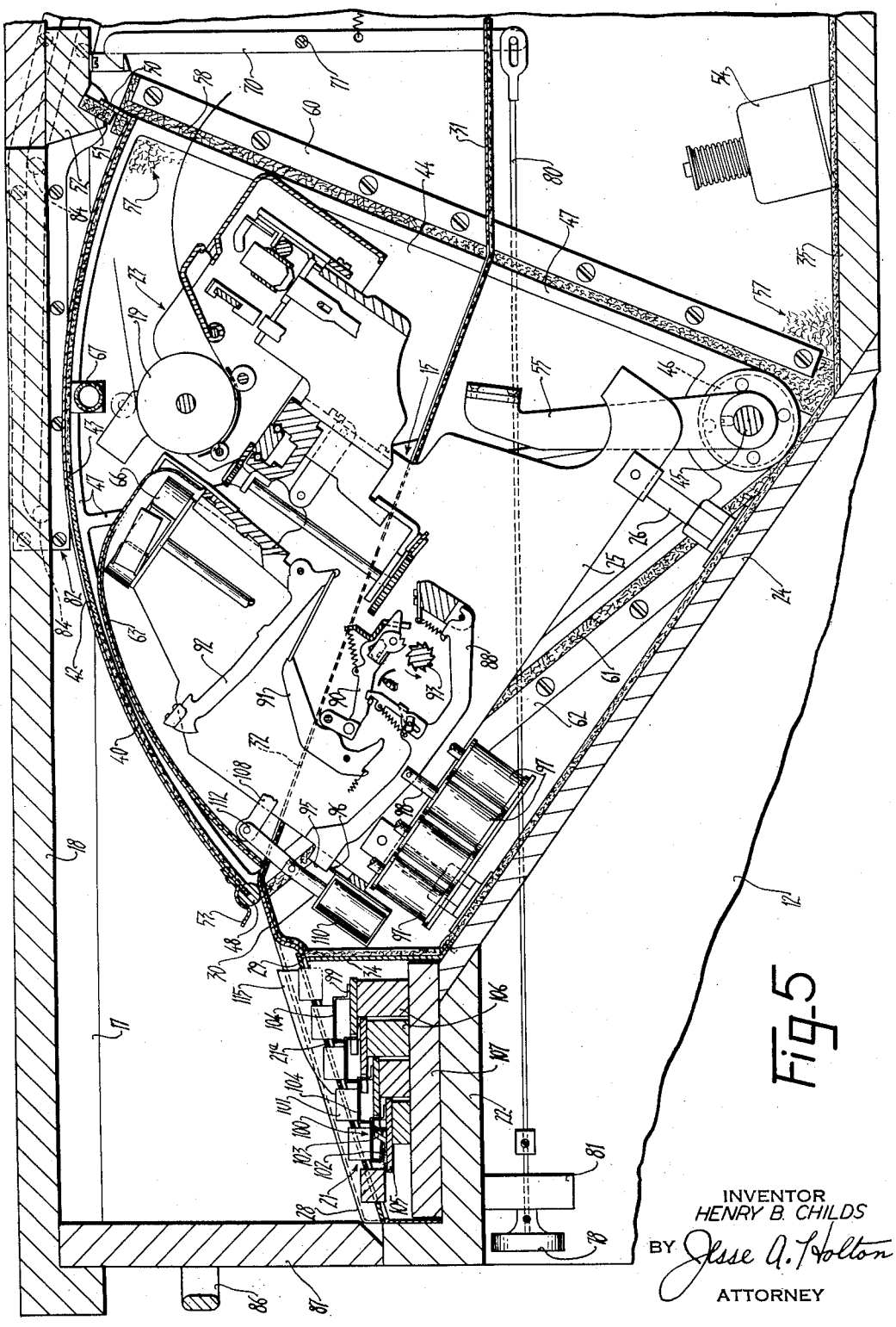


Fig-5

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TYPEWRITER AND SOUND ENVELOPING FURNITURE THEREFOR

Filed July 27, 1956 4 Sheets-Sheet 4

Fig. 6

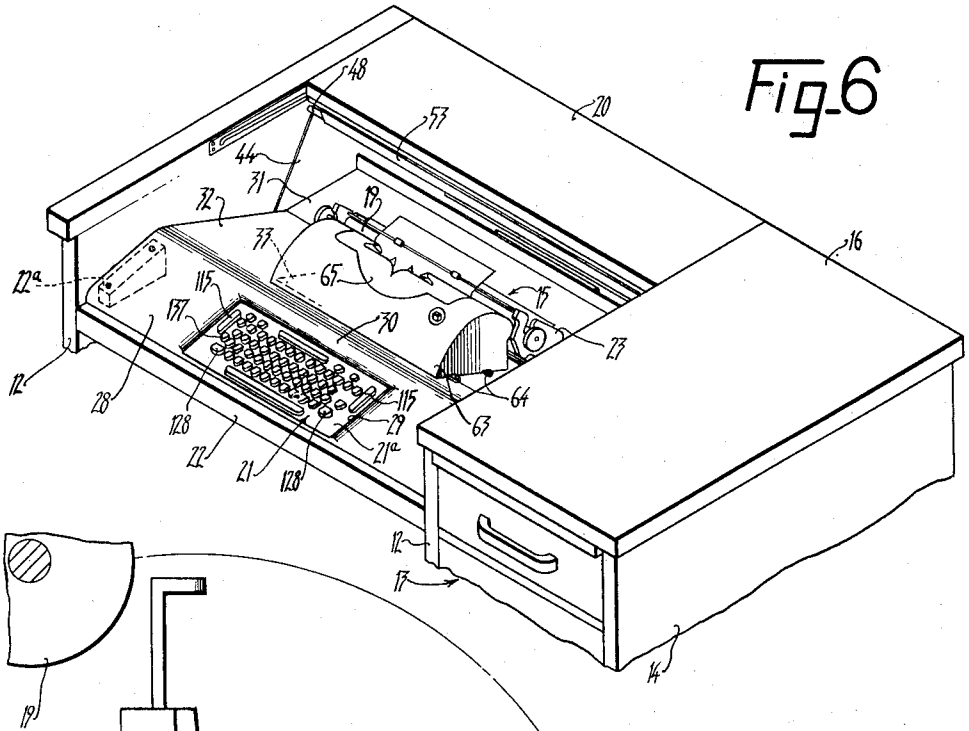
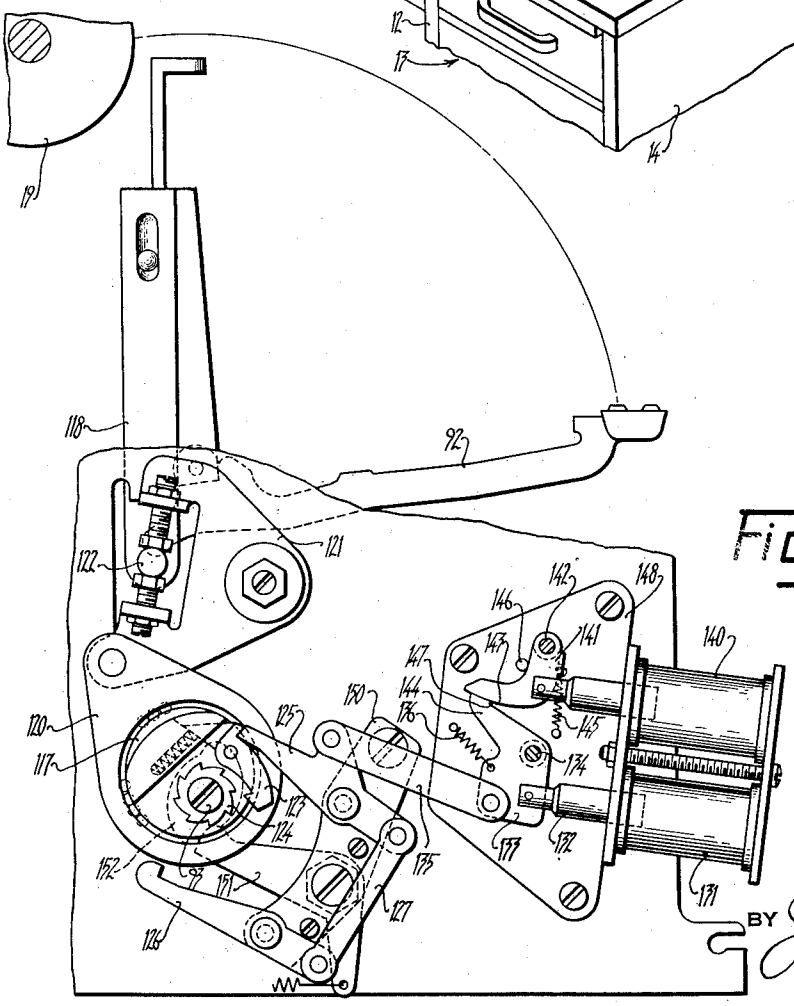


Fig. 7



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United States Patent Office 2,893,533 Patented July 7, 1959

2,893,533

TYPEWRITER AND SOUND ENVELOPING FURNITURE THEREFOR

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Application July 27, 1956, Serial No. 600,544

16 Claims. (Cl. 197—186)

This invention relates to typewriters and more particularly to furniture or desk means constructed coordinately therewith to shield from the office personnel the operating noises of the machine.

Some considerable effort has gone into development of equipment of this nature and the reduction of the noise level obtained thereby has been very pronounced. Some of this equipment has been marketed from time to time, but despite its great merit as a noise reducer, none has ever met with even moderate public acceptance. A paramount obstacle has been the undesirable general weirdness of appearance of known equipment which was dictated by the operational arrangement of the typewriter within the furniture and did not lend itself for an aesthetically pleasing or popular design.

Cognizant of the greatly desirable noise deadening merit of such equipment, it is one paramount object of the invention to provide a typewriter and sound shielding or enveloping desk or furniture in an advantageous coordinated relation with a typewriter, making feasible a product of commercially acceptable form.

It is also a broad object of the invention to provide coordinately with a heavy duty typewriter, a sound shielding or enveloping structure therefor which substantially rises no higher from the floor than a conventional flat top desk, the typewriter being conveniently operable from a keyboard which is arranged at a normal operating level.

It is another object of the invention to provide a sound enveloping typewriting furniture which is readily convertible between a state of use as a flat top desk for doing clerical work, to another state wherein a typewriter becomes accessible for efficient operation in a sound enveloping compartment.

A further object of the invention is to provide for efficient operative accommodation of a typewriter in a sound enveloping compartment below a flat top of a desk of conventional height and to provide for efficient displacement of at least a portion of the flat desk top from over said compartment, the latter including a cover movable to open said compartment for gaining physical access to the typewriter for certain tasks, such as presentation of paper thereto.

With these and other objects in view, the invention includes certain model features of construction and combinations of elements which are set forth in the appended claims, a preferred form or embodiment being hereinafter described with reference to the drawings which accompany and form a part of the specification.

Having now reference to the drawings,

Figure 1 is a perspective view of the typewriter support or desk in a state affording a full flat top for doing clerical work thereon.

Figure 2 is a perspective view similar to Figure 1, but the desk is shown in a converted state for sound shielded use of a typewriter.

Figure 3 is a sectional side elevation of the desk and typewriter in the state seen in Figure 2, the section being

taken along a plane slightly to the right of the right side of the typewriter.

Figure 4 is an electrical diagram.

Figure 5 is a right-hand sectional side elevation of the desk and typewriter substantially through the middle of the typewriter, the desk being shown in the state seen in Figure 1.

Figure 6 is a perspective view to Figure 2, but a cover of a sound deadening compartment has been opened to allow access to the upper portion of the typewriter including the typewriter carriage, and

Figure 7 is a left-hand side elevation of a magnet controlled power case shifting mechanism.

In the embodiment of the invention shown, the sound shielding furniture is in the form of a flat-top desk which rises to conventional height. The desk may include two laterally spaced walls **12**. The right-hand one of such walls **12** is shown to comprise part of a drawer unit **13** including an exterior wall **14**. If desired the left wall **12** may comprise a part of a leftwardly disposed drawer unit. A typewriter designated by the general reference numeral **15** is accommodated between the two walls **12** snugly below the top of the desk, as shown. The top of the desk, see particularly Figure 1, may comprise a panel **16** permanently heading the drawer unit **13**, a narrow strip **17** heading the left wall **12**, a flat lid **18** adapted to overlie the typewriter between the panel **16** and the strip **17** even with such panel and strip, and a leaf **20** adapted to adjoin the lid **18** even therewith to the rear thereof. The lid **18** is movable in a manner to be described, from a position fully overlying the typewriter as in Figures 1 and 5, to a position in which it stands concealed within the desk vertically underneath the leaf **20**, see Figures 2, 3 and 6.

When the lid **18** is in the position seen in Figures 1 and 5, the desk affords a large-expanse top surface and thus is conditioned for doing clerical work thereon. When the lid is retired to stand below the leaf **20**, as in Figure 3, the desk is conditioned for noise confined use of the typewriter **15** under control of a keybord **21**, see Figures 2, 3 and 6. This keyboard **21** is at a convenient manipulative level and comprises a box-like unit having a top panel **21***a*. This box-like keyboard unit rests on a shelf **22** which extends intermediate the two spaced vertical walls **12**. Said keyboard **21** in the illustrated embodiment of the invention is not an integral part of the typewriter, but conceivably may be part thereof. It is in control of the typewriter **15** by electrical devices in a manner which will be later set forth. The typewriter **15** slopes from the keyboard **21** rearwardly and downwardly so that a carriage **23**, supporting a platen **19** and constituting the highest portion of the machine, lies clear below the desk top. Closely contiguous to the underside of the typewriter **15** there extends from the shelf **22**, between the walls **12** in a downward and rearward direction, a panel **24**. The stated arrangement provides below the shelf **22** and the panel **24** ample knee-and-shin space for an operator seated at the desk, while at the same time no part of the typewriter extends above the desk top. This is true whether the desk is used for typewriting or doing clerical work. The framework of the typewriter may include two spaced sidewalls **25**, each having a front and a rear leg **26** embodying a rubber mount indicated at **27**, such legs mounting the typewriter resiliently upon the panel **24**.

The keyboard **21** is accommodated in a rectangular cutout **29** of an upwardly slanting dashboard **28** which may be formed of sheet metal. Such dashboard presents directly behind the keyboard panel **21***a* a straight surface **30** extending fully between the spaced walls **12**. Wedge-shaped elements, one of which is indicated at **22***a*, surmount the shelf **22** and the dashboard is secured

by screws upon such elements. At each side of the machine the dashboard **28** continues rearwardly as a baffle board **32**, sloping downwardly underneath the carriage **23**. Preferably said baffle boards **32** merge at the rear of the typewriter to form a substantially horizontal shelf **31**. The typewriter **15**, as indicated at **33**, reaches upwardly through a rectangular opening formed between said baffle boards **32**, said surface **30** and said shelf, see Figure 6. Intermediate the slanted panel **24** and the dashboard **28**, directly behind the keyboard **21** there is a shallow vertical wall **34** extending fully between the two spaced desk walls **12**. Said wall **34** and the typewriter supporting panel **24** are part of a sound enveloping typewriter compartment which adjoining to the rear of the slanted panel **24** includes a horizontal floor **35**. A rear wall **36** of the desk forms the rear of the compartment and in conjunction with a vertical panel **37** reaching downwardly from the floor **35**, and a bottom strip **38**, affords a deep pocket whereinto the desk lid **18** is adapted to be retired. The top leaf **20** in the position seen in Figures 2 and 3 affords a roof for the compartment to the rear of the typewriter. The compartment is completed by a fore and aft movable shroud **40** fitting between the spaced vertical desk walls **12** and having normally the closed compartment position seen in Figures 2, 3 and 5. The said shroud consists of a cylindrically arcuate sheet metal member having an elongated window opening **42** provided with a window **43** of transparent plastic material. The said shroud **40** is mounted by rivets on two spaced webs **44** of generally triangular shape, one contiguous to each desk wall **12**. The said webs are fast on a shaft **45** which is rockable in bearings provided in the walls **12** and indicated at **46**. Said webs are of lightweight material, such as aluminum, and for stiffness may be ribbed as at **47**. In the closed compartment position of the shroud **40** a strip **48** of resilient material, such as rubber, carried fast along the front edge of the shroud member **40** contacts upon the straight surface **30** of the dashboard and thereby affords thereat a sound seal. Along the rear the shroud **40** has an upreaching flange **50** extending intermediate the walls **12**. When the shroud **40** is in its forward position said flange **50** is in sound sealing contact with a strip **51** of resilient material, the latter carried on a cleat **52** extending along and fastened to the underside of the leaf **20**. In the effective position of the shroud its weight exerts a closing bias thereon which is sufficient to cause effective sound seals along said front and rear strips **48**, **51**. The shroud **40** may have attached thereto near its front edge a finger piece **53** whereby to move it between the effective position seen in Figures 2, 3 and 5 and the ineffective position indicated in dot-and-dash lines in Figure 3. It is to be noted that the latter position is fully within the compartment to the rear of the typewriter and underneath the leaf **20**. The shroud in is movement to ineffective position is arrested by a cushioning device **54** which may be in the form of a dash pot, there being an arm **55** fast on the shaft **45**, see Figure 5, for limiting engagement with the device **54**.

The shelf **22** on which the keyboard **21** rests, the slant panel **24**, the floor board **35** and other elements extending between the vertical desk walls **12** have rigid association with the latter at both ends to form therewith the complete desk.

Sound deadening material designated by the reference numeral **57** lines the interior of the aforedescribed typewriter compartment on all sides. The supporting webs **44** of the shroud **40** have such lining **57** on their interior faces between the ribs **47** but outer sides thereof are devoid of lining so that the shroud rocks without having frictional contact with the walls **12**. In the closed position of the shroud, see Figure 3, a strip of felt **58** or other resilient material provides along each rear edge of the webs **44** a sound seal between the latter and the

walls **12**, each such strips **58** being attached to the related wall **12** by a metal strip **60**. The said metal strips **60** compress the felt thereunder, the projecting lips being relatively puffed to provide the desired resilient seal. Two other sound seals are afforded for contact by front edges of the shroud supporting webs **44** and constitute each a strip of resilient material **61**. Moldings **62** attached to the walls **12**, see Figure 3, give support to said strip **61**.

The undersides of the baffle boards **32** as well as the shelf **31** have an undercoat of sound deadening material, whereby these elements trap to some degree the noises in the lower portion of the sound enveloping or deadening compartment.

The typewriter, forward of the platen, is covered by a mask or cap **63** which rises from the dashboard surface **30** and said baffle boards and is removably attached upon the latter as at **64**, see Figure 3. Also the interior of this mask **63** is lined with sound deadening material, as indicated, affording a noise barrier. The said mask **63** is clear below the shroud **40** and its top surface may be generally concentric with the latter. A hinged cover indicated at **65** constitutes part of the mask **63** and is displaceable to gain access to the ribbon spools **66** and the typewriter types.

It will now be seen that when the desk is in the state seen in Figures 2 and 3, all the working mechanism of the machine, except the keyboard, is enveloped in the aforedescribed compartment while typing is observable through the window **42**. To illuminate the typed matter, a fluorescent light tube **67** is provided within the compartment fastened to the underside of the shroud **40**. Said fluorescent light **67** is normally directly above the platen and upon movement of the shroud **40** rearwardly is in an out-of-way position. The shroud needs to be moved to the open position only occasionally, as for loading and removing paper from the typewriter and other miscellaneous tasks, such as changing the ribbon. Although the carriage is farther from the operator than usual, all these tasks can be performed conveniently and efficiently because the dashboard **28** at each side of the keyboard affords comfortable rests for the arms of the operator.

The desk is efficiently convertible between its state for typewriting use seen in Figures 2 and 3, and the state seen in Figure 1 wherein it presents a maximum of desk top or table surface for doing clerical work.

Assuming the desk to be in the state seen in Figure 1, and it being decided to convert it for typewriting use, the leaf **20** forming the rear portion of the desk top is first swung upwardly and rearwardly. To facilitate this, such leaf is carried on the rear wall **36** of the desk by a number of hinges **68**. Normally the leaf **20** is held down in its horizontal position by a latch lever **70** having pivotal support as at **71** on one of the spaced walls **12** of the desk. The said lever comprises a hook **72** which under the urge of a spring **74** overlies a finger **73** reaching down rigidly from the cleat **52** of the leaf. The halves of the hinges **68** which are attached to the leaf **20** have each a perforation for a reduced portion of a plunger **75** to extend therethrough and bear against the other hinge-halves. The said plungers **75**, as well as compression springs **76**, are accommodated in sockets **77** provided in the hinged leaf **20**. Under the urge of the compression springs **76** the plungers tend to lift the leaf. The latch lever **70** is operable from the front of the desk by a pull knob **78** for swinging the hook **72** clear of the finger **73**. As the hook **72** swings, the leaf **20** springs upwardly at least sufficiently for the operator to grasp hold thereof and swing it completely to vertical position. The pull knob **78** is in control of the latch lever **70** through a wire link **80** which at the front portion of the desk, in the left top corner of the kneehole, is slidably accommodated in a boss **81**. Positioning of the leaf **20** in vertical position opens a path for the desk lid

18 to be moved to the retired position within the desk seen in Figure 3. To facilitate guided movement of the lid 18 there are provided two channel members 82, countersunk and attached by screws flush with each inner side of the opposite desk walls 12. At each side of the lid 18 there project rigidly therefrom two guide pins 84 into the slot 85 of the adjacent channel member 82. In the closed position of the lid 18 the two front pins 84 lie normally in a downward dip of the slots 85. Movement of the lid 18 from its horizontal position to the upright retired position is effected easily by grasping a handle 86 which is attached to a vertical front board 87 on the lid which closes the space above the keyboard shelf 22. By lifting the handle first in a rearward and upward direction, the front pins 84 move out of the dips of the slots 85 and then the movement of the cover is continued as prescribed by the slots 85 of the channel members. After the lid 18 is in the position seen in Figure 3, the leaf 20 is swung down into horizontal position. In such action the finger 73 cams along the hook 72 which under the influence of the spring 74 will snap thereover to latch the leaf down. The desk is then ready for typewriting use.

To reversely condition the desk, the knob 78 is likewise given a pull to release the leaf 20 for spring urged upward movement. The handle 86 is then grasped to move the lid 18 upwardly and forwardly into flat-top position, and this is followed by swinging the leaf down to latched position. It will be observed that the lid 18 thereby becomes firmly locked in position.

The typewriter shown herein is a well known Underwood All Electric, altered in some respects so that, although it is tilted rearwardly and downwardly in the desk, it will nevertheless be controllable by an efficiently disposed keyboard, such as the aforestated keyboard 21. The typewriter includes a regular complement of type actions of the kind described in the patent to Yaeger No. 2,254,764, dated September 2, 1941. Such type actions, see Figure 5, include each a lever 88, a power actuator 90, a sublever 91 operable by said actuator, and a type bar 92 linked to the sublever. The levers 88 are the key levers of the conventionally marketed machine but are cut off, as at 95, just at the front of the usual key lever comb plate 96, deleting them of their key-bearing portions. All the actuators 90, see Figure 5, stand normally clear of a toothed power roll 93 which, while the machine is in use, is belt-driven in the indicated direction by a motor 94, see Figure 3. The actuators 90 are selectively brought into motion-receiving relation with the power roll 93 through selective operations of the levers 88. Each lever 88 has a solenoid 97 associated therewith to act thereon by an armature rod 98. These solenoids 97 are provided in a staggered four-rows arrangement. Current is supplied to the individual solenoids 97 by closure of related switches 100 through depression of key buttons 101 embodied in the keyboard 21.

Each switch 100 includes a contact leaf 102 operable from the open switch condition seen in Figure 5 upwardly against a stationary contact leaf 103. The switch leaves are borne on four strips 105 of insulating material which are provided at graded levels as shown in Figure 5, there being blocks 106 of graded heights rising from a baseboard 107 of the keyboard to support said strips 105. Each switch includes further a spring leaf 104 riveted as at 99 to one of the strips 105 and bearing thereon a type-key button 101. Operation of any of the latter will operate the related contact leaf 102 and thereby will close a circuit to the appropriate solenoid 97. The switch is of a snap type causing said contacts to close and open instantaneously respectively at the operation and the restoration of the key button 101. There are four rows of such key buttons 101, identically arranged as in the standardly manufactured machine. The solenoids are preferably operated by a direct current source and, having reference to Figure 4, it will be seen that when any of the switches 100 are operated by depression of the associated character key 101, the appropriate solenoid 97 will cause a power actuation of the related type action.

Other key levers of the stated conventional machine are also cut short at the front and are operable by other key buttons in the keyboard 21 through additional switches. These other key buttons include in the rear row of the keyboard 21 a back space key, a tabulator set key, a tabulator key, a tab clear key, and a margin release key. There is also a margin stop setting key. All these keys are in their regular positions with reference to the type keys 101 and their switches are interspersed with other switches on the rear plate 105. In Figure 5 the front end of one of the stated additional cut-off key levers is identified by the numeral 108 and, as will be seen from Figure 5 in conjunction with the electrical diagram of Figure 4, each such lever 108 is operable by its own solenoid 110 through a short link 112.

Again referring to Figure 3, a solenoid 113 through its armature is connected to the front end of a carriage return instituting lever 114, said lever being conventional, except that its front end is cut off and bent reversely to terminate at the side of the machine for connection to the stated solenoid armature. The keyboard 21 includes two large carriage return bars or buttons 115, each one heading its own switch similar to the switch 100, to close circuits for the carriage return instituting solenoid 113, see Figure 4.

Referring now more particularly to Figure 7, the type bars 92 are as a system case-shiftable by half turn power-movements of an eccentric 117, substantially in accord with the patent to Helmond No. 2,275,759, dated March 10, 1942. Said eccentric is loosely mounted on a reduced shaft portion of the power roll 93 and has normally the position seen in said Figure 7 so that it locates a type system supporting case-shift body 118 upwardly moved, in a lower case position. Specifically, the eccentric 117, by a connecting rod 120, is in control of a rocker 121 which by straddling association with a pin 122 on the case-shift body 118, controls the position of the latter. The eccentric 117 carries a clutch pawl 123 which is under spring urge to engage a toothed wheel 124 fast on the power shaft 93. The clutch pawl 123 however stands intercepted by a dog 125 and swung clear of the toothed wheel 124 through movement of the eccentric 117 to the position shown.

To effect a case-shift of the body 118, the dog 125 is rocked upwardly clear of the pawl 123, causing the latter to spring into engagement with the toothed wheel 124. Concomitantly another dog 126 having a link connection 127 with the dog 125, is rocked into the path of the pawl 123. Consequenetly the eccentric 117 receives a half revolution which is terminated by the dog 126 divorcing the pawl 123 from the wheel 124. A case-shift of the body 118 to its normal, lower case position ensues at the restoration of the dogs 125, 126, at which time the eccentric 117 receives another half turn.

In the noted Helmond patent the dogs are mechanically controlled to cause opposite case-shifts respectively by operation and the release of case-shift levers. According to the present invention the dogs are controlled from the keyboard 21 by case-shift buttons 128 at opposite ends thereof overlying each a switch similar to the switches 100. One of such switches is indicated in Figure 4 at 130. Closure of either of these switches 130 completes the circuit for a solenoid 131 which has an armature 132 pivotally connected to an element 133 rockable about a stationary stud 134. When the solenoid 131 is energized through depression of either of said key buttons 128, there results a counterclockwise movement of the rocker 133 and the latter by a link 135 operates the dogs 125 and 126, causing a downward power shift of the body 118 to upper case position. This upper case

position of the body prevails until the key button **128** is released, at which time the solenoid **131** becomes de-energized, a spring **136** restoring then the rocker **133**, and therealong the dogs **125**, **126**. Consequently the eccentric **117** is picked up by the toothed wheel **124** and shifts the case-shift body **118** to its normal, lower case position.

Additionally to the case-shift buttons **128** there is provided a case-shift lock button **137**, see Figure 6. Depression of this latter button, by closing a switch **138**, see Figure 4, energizes a solenoid **140**. The latter by its armature is adapted to operate a lever **141** pivoted at **142** and having a cam face **143** for action on an arm **144** of the rocker **133**. A spring **145** normally holds the lever **141** against a stop **146**. As the lever **141** is operated, its cam face **143** first actuates the rocker **133** to effect a case-shift instituting movement of the dogs **125**, **126**. At the end of such movement, the pointed end of the lever **141** glides past a shoulder **147** on the rocker arm **144**. Immediately, the rocker **133** under the tension of its spring **136** moves reversely a little so that the shoulder **147** latches the lever **141** against return. It will be seen that the lock button **137** need only momentarily be depressed to cause a case-shift of the body **118** to its upper case position, the shoulder **147** being instrumental in conjunction with the lever **141** to maintain the dogs **125**, **126** operated indefinitely. To cause subsequently the restoration of the case-shift body the operator merely depresses momentarily one of the case-shift buttons **128**. The momentary energization of the solenoid **131** so effected will therefore move the rocker **133** to free the lever **141** from the shoulder **147**, causing the dogs **125**, **126** consequently to return and institute a shift of the body **118** to its lower case position.

The solenoids **131**, **140**, as well as the pivots **134**, **142**, are all carried on a bracket **148** which is secured to the right-hand sidewall **15** of the machine. A plate **150** mounts the dogs **125** and **126** and also a spring pressed detent **151** which in cooperation with a two-lobed element checks the eccentric **117** against backward rotation after completion of each half turn.

The stated key buttons of the keyboard **21**, by selective depression thereof, produce in the typewriter the various required typing and other operations. The typewriter having been deleted of the key-bearing front portions of the keys, facilitates its positioning very closely to the rear of the switch controlling keyboard **21**, wherefore the typewriter with the shroud **40** open is conveniently accessible in the compartment for such tasks as the presentation of paper thereto.

The keyboard **21**, as stated hereinbefore, constitutes a unitary assembly, including its base **107** and the switch supporting shelves **105**. The top panel **19** of the keyboard is perforated to provide working clearances for the key buttons and is borne on the base by studs, not shown. The various electrical leads from the solenoids to the switches in the keyboard, shown in Figure 4, may be gathered into a cable passing through a hole in the sound deadening front wall **34** of the compartment, not shown. The cable may be extra long and the keyboard unit may be removable from its supporting shelf **22**, permitting it to be placed in any desired location for control of the typewriter **15**.

The upper face of the baffle boards **32**, to each side of the typwriter, may serve also as shelves for stationery supplies and may have an upreaching rim indicated at **153**.

Instead of controlling the rearwardly tilted typewriter through the medium of key button controlled solenoids, it may obviously be controlled by mechanical means appropriately arranged. For example, levers may be so provided on the typewriter to support the key buttons appropriately located for the purposes of the invention, or the key buttons may operate the pertinent typewriter parts through the medium of Bowden wires.

Many other variations may be resorted to within the scope of the invention, and certain portions of the improvements may be used without others.

What is claimed is:

1. A typewriter and a sound deadening and supporting structure therefor, comprising in combination, a typewriter frame, a paper supporting carriage movable on said frame to each side therebeyond and having at each lateral end thereon a platen rotating knob, two walls flanking said typewriter widely spaced to workably accommodate it including the carriage therebetween, means associated with said walls to afford therewith a sound enclosing compartment for the typewriter, said affording means comprising a bottom wall whereupon the typewriter is located and which extends straight between said typewriter flanking walls, a controlling keyboard for said typewriter at a conventional operating level in front of said compartment, a member providing a continuous surface extending fully between said flanking walls along a front border of said compartment, behind the keyboard, substantially at an even level with the top of the latter and extended at each side of the typewriter as sound baffling boards reaching above said bottom wall rearwardly into the said compartment under the moving path of the carriage, said affording means comprising also a movable shroud, extending between said walls heading said compartment and having a front edge for compartment closing contact along said surface, and means to mount said shroud for movement from said surface over the typewriter to the rear thereof to render said carriage accessible.

2. The combination in a desk having a flat top at a conventional desk-top level suitable for a person seated at the desk to perform clerical work thereon, of two laterally spaced desk walls to support the flat desk top, a shelf at the front portion of said desk below said desk top for support of a typewriter keyboard at a normal manipulative level and extending between said walls, a sound deadening typewriter compartment behind said shelf below the said desk-top level, said shelf and compartment disposed to leave a kneehole in the desk for the person seated at the desk and said compartment partially constituted by said spaced desk walls, and means to mount at least a part of said flat top for movement from over said sound deadening compartment to uncover said compartment and thereby to condition the desk for typewriting use, the said compartment including a cover which spans the space between said walls, at least in part is of transparent material and is movable fore and aft between a rearward, open-compartment position below said flat desk-top and a closed compartment position.

3. The combination in a desk having a flat top at a normal desk top level suitable for a person seated at the desk to perform clerical work thereon, of two spaced vertical desk walls rising to said flat top to accommodate therebetween operatively a typewriter just therebelow, means supplementing said vertical walls to provide in conjunction therewith a sound deadening compartment for said typewriter and including, extending between said vertical walls below the flat desk top, a movable compartment cover of which at least a portion is transparent for observation of typing done in said compartment, said supplementing means leaving underneath said compartment, between said walls, a kneehole for a person seated at the desk, and means to mount at least a part of said flat top for movement from over said compartment to condition the desk for typewriting use, said cover, when the desk is conditioned for typewriting use, being movable so as to open and close said compartment respectively to facilitate access to the typewriter or to render the sound deadening compartment closed.

4. An office furniture, comprising in combination, a sound enveloping typewriter compartment including a top cover, and a top board at the rear of said compartment at a conventional desk-top level, said compartment, in-

clusive of said cover disposed substantially no higher than the top surface of said board, means to mount said cover for movement from a forward, compartment-closing position, rearwardly to an open-compartment position underneath said top board, the compartment dimensioned to accommodate therein a heavy-duty, full-sized typewriter downwardly tilted about its front portion with the exception of a keyboard, and including a panel which for permanent accommodation of a typewriter tilted in the stated position slants rearwardly and downwardly from near the front of the furniture in a position to leave ample knee and shin clearance for a person seated at the furniture for typewriting and making thereby possible the disposition of said compartment inclusive of its cover below said top board, the said cover having a transparent area wherethrough in its closed position typewriting may be observed.

5. The combination in a desk having a flat, substantially horizontal top at a normal desk-top level suitable for a person seated at the desk to perform clerical work thereon, of a sound enveloping typewriter compartment disposed below said flat top to leave a kneehole for a person seated at the desk, said flat top comprising a panel adapted to overlie horizontally said compartment and reaching to the front of the desk, and means to guide said panel for movement from a position in which it horizontally overlies said compartment, to a rearward position in which it allows access thereto, thereby to condition the desk for typewriting use, said guide means comprising two laterally spaced guideways in the desk and means on said panel engaging said guideways, the said compartment including a cover which after said panel is moved from over said compartment is operable to close or to gain access to the interior of the latter, the compartment, exclusive of said cover, being stationary, the said cover including a transparent area for observation of typewriting in the compartment while said cover is closed and the panel is in its rearward position.

6. The combination in a desk having a flat top at a normal desk-top level suitable for a person seated at the desk to perform clerical work thereon, of a sound enveloping typewriter compartment disposed fixedly below said flat top to leave a kneehole for a person seated at the desk and including a cover movable between open and closed compartment positions, the said flat top comprising a panel and a leaf, both normally in flat top positions over said compartment, the leaf adjoining the rear of said panel, means to mount the said leaf for movement from its flat top position to open a space behind said panel, and means to guide said panel for movement from over the compartment in a course rearwardly and downwardly through the space opened by said leaf to a retired position sufficiently low to permit the restoration of the leaf to its level position to overlie the retired panel.

7. The combination in a desk having a flat top at a normal desk-top level suitable for a person seated at the desk to perform clerical work thereon, of a sound enveloping compartment for a full-sized, heavy-duty typewriter disposed below said desk level comprising a bottom panel slanting rearwardly and downwardly from a front region of the desk from a level slightly above the knee position of a person seated at the desk, said sound enveloping typewriter compartment leaving a kneehole for a person seated at the desk and including a cover movable between open and closed compartment positions, the said flat top comprising a panel and a leaf, both normally in flat top positions over said compartment, the leaf adjoining the rear of said panel, means to hinge said leaf to swing about its rear to open a space behind said panel, and means to guide said panel for movement from over the compartment in a course rearwardly and downwardly through the space opened by said leaf to a position of retirement below the desk-top level thereby to condition the desk for typewriting use, the said cover including a transparent area for observation of typewriting therethrough while said cover is closed and the panel is in its rearward position.

8. The combination in a desk having a flat top at a normal desk-top level suitable for a person seated at the desk to perform clerical work thereon, of a sound enveloping typewriter compartment disposed below said flat top to leave a kneehole for a person seated at the desk and including a top cover movable between an open compartment position at the rear within the compartment to a forward position fully closing the compartment, the said flat top comprising a panel for overlying horizontally said compartment and a leaf adapted to adjoin said panel horizontally to the rear thereof and forming thereat a top portion of the compartment, means to mount said leaf for displacement to open temporarily the compartment behind said panel, and means to mount and guide said panel for movement in a course over the compartment and downwardly in front of the open-compartment position of said leaf to occupy an out-of-use position behind the open-compartment position of said cover and low enough to allow restoration of said leaf into overlying relation to said panel in its out-of-use position, the said leaf while in such relation forming part of the compartment and the said cover when moved to closed compartment position having a souud sealing association with said leaf.

9. A heavy-duty typewriter and a furniture for operatively supporting and sound enveloping such typewriter in an operable condition, comprising in combination, a sound enveloping typewriter compartment including a movable cover to facilitate physical access to the typewriter, said cover having a transparent area wherethrough in its closed position typewriting may be observed, said typewriter having at a front portion of the furniture a controlling keyboard having substantially vertically operable keys at a level below the height of a conventional flat-top desk for a seated person, but above the knee position of a person seated at the furniture for typewriting, the typewriter exclusive of said keyboard being permanently disposed rearwardly and downwardly tilted from the rear of said keyboard for its top portion to lie fully below conventional desk top height, considerably lower than otherwise would be feasible, said sound enveloping compartment having a bottom panel slanting from the rear region of said keyboard in a generally contiguous relation to the rearwardly and downwardly slanting bottom of said typewriter so that at the front of such panel adequate clearance is afforded for the shins of said seated person, said cover of said compartment arranged to overlie normally closely the rearwardly and downwardly tilted typewriter and being mounted for movement rearwardly, said furniture with its typewriter compartment inclusive of the said cover reaching to no greater height than a conventional flat-top desk.

10. A heavy-duty typewriter and a furniture for selectively supporting and sound enveloping it in an operable condition, comprising in combination, a sound enveloping typewriter compartment including a movable top cover to facilitate physical access to the typewriter, said cover having a transparent area wherethrough in the closed position thereof typewriting may be observed, said typewriter having at the front portion of the furniture a controlling keyboard having substantially vertically operable type and other keys at a level slightly below the height of a conventional flat-top desk for a seated person, but yet above the knee position of a person seated at the furniture for typewriting, switches selectively closeable by operations of said keys, said typewriter exclusive of said keyboard being disposed rearwardly and downwardly tilted from the rear of said keyboard for its top portion to lie fully below conventional desk top height, considerably lower than otherwise would be feasible, said sound enveloping compartment having a bottom panel slanting from the region of said keyboard in a general-

ly contiguous relation to the rearwardly and downwardly slanting bottom of said typewriter, thereby to afford adequate knee and shin clearance thereunder for a seated person, said compartment cover arranged to overlie normally closely the rearwardly and downwardly tilted typewriter, said furniture with its typewriting compartment having only the height of a conventional flat-top desk for seated persons, said typewriter comprising within said compartment devices selectively operable to effect typing and other operations and electromagnetic elements energizable to cause operations of said devices, and circuits connecting said switches with said electromagnetic elements for selective energization of the latter under the control of said keys.

11. A typewriter and a supporting and sound enveloping furniture therefor, comprising in combination, a sound deadening typewriter compartment including a movable cover, a horizontal top board at the rear of the typewriter at a conventional desk-top level of a desk for seated persons, said top board constituting a part of said furniture, said typewriter being full-sized and of heavy-duty structure, having typewriting instrumentalities in said compartment adapted to be operated selectively and having a keyboard with generally vertically operable keys in control of said typewriting instrumentalities disposed at a level below said top board, slightly above the knee position of a person seated at the furniture, the main body of said typewriter being tilted rearwardly so that its bottom slants from the level of the keyboard rearwardly and downwardly for its top portion to lie fully below the level of said top board, said compartment having a bottom wall reaching downwardly and rearwardly from the rear of said keyboard in generally contiguous relation to the bottom of the tilted typewriter to afford thereby knee and shin clearance for said seated person, said cover located not higher than said top board and including a transparent area for viewing through it the progress of typewriting done by the typewriter within said compartment, and means to mount said compartment cover for movement from a compartment closing position overlying the typewriter, rearwardly to a compartment uncovering position underneath said top board.

12. The invention set forth in claim 11, said keyboard including a complement of type keys, and means to control the typewriter instrumentalities by said keys, including contacts outside of said compartment closeable by said type keys, solenoids in said compartment operatively connected with said typing instrumentalities for control thereof and electrical leads closeable by said contacts to control said solenoids selectively.

13. A typewriter and a furniture for operatively supporting and sound enveloping such typewriter, comprising in combination, a typewriter frame, a paper supporting carriage movable on said frame to each side therebeyond, two spaced, upright furniture walls oppositely reaching up to and flanking said typewriter to accommodate it including the carriage workably therebetween, means extending intermediate said walls and joined thereto to afford therewith a sound enclosing compartment for the typewriter, a controlling keyboard for said typewriter in front of said compartment at a level below the height of a conventional flat-top desk for seated persons but above the knee position of a person seated at the furniture, a dashboard extending in front of said typewriter frame intermediate said walls, even with the general level of said keyboard and containing such keyboard in a midportion thereof, and affording behind the keyboard a continuous surface extending between said spaced walls, said intermediate means comprising further a bottom for said compartment extending between said walls and joined thereto, and comprising still further a movable cover capping said compartment and having an edge along its front for compartment-sealing contact along said continuous surface of said dashboard, the bottom of said compartment and said typewriter arranged to provide adequate space therebelow for the knees and shins of a person who is seated at the furniture to operate the typewriter, and means to mount said cover for movement from said continuous surface over the typewriter to a position therebehind and lower than the flat-top-desk height, thereby to render the carriage and other parts of the typewriter temporarily accessible for carrying out various tasks.

14. A typewriter and a furniture for operatively supporting and sound enveloping such typewriter, comprising in combination, a typewriter frame, a paper supporting a platen, two spaced, upright walls oppositely flanking said typewriter to accommodate the latter workably therebetween, means intermediate said walls to afford therewith a sound enclosing compartment for the typewriter, a controlling keyboard for said typewriter in front of said compartment at a level below the height of a conventional flat-top desk for seated persons, but above the knee position of a person seated at the furniture to operate the typewriter, said intermediate means affording closely to the rear of the keyboard, at the front portion of said compartment, a continuous surface extending intermediate said walls and generally at the level of the keyboard, said intermediate means including also a bottom panel slanting from the rear region of said keyboard rearwardly and downwardly but having adequate clearance for the shins of the person seated at the furniture, means to support said typewriter frame rearwardly and downwardly tilted on said bottom panel for the top portion of the typewriter to lie considerably lower than otherwise would be feasible, said intermediate means comprising also a movable cover for capping said compartment closely contiguous to said top portion of the typewriter and having a front edge for compartment-sealing contact along said continuous surface, and means to mount said cover for movement from said surface rearwardly over the typewriter to render the typewriter accessible for various tasks, said intermediate means embodying at each side of the keyboard, to the front of said continuous surface, a wide shelf affording a comfortable rest for an operator's arms while said tasks are being performed.

15. The combination in a desk having a flat top at a conventional desk-top level suitable for a person seated at the desk to perform clerical work thereon, of a sound enveloping compartment for a full-sized heavy-duty typewriter located below said conventional desk-top level and comprising a bottom panel slanting rearwardly and downwardly from a front region of the desk from a level slightly above the knee position of a person seated at the desk, said sound enveloping typewriter compartment including a cover and because of its rearwardly slanting bottom panel facilitating the accommodation of said typewriter compartment inclusive of said cover fully below the level of said flat desk top while at the same time leaving adequate knee and shin clearance for said seated person, and means to mount at least a part of said desk top for movement from over the said sound enveloping compartment to condition the desk for typewriting use, the cover of said compartment mounted for compartment opening and compartment closing movement, and being at least in part of transparent material, said compartment being concealed underneath said flat top while the latter in its entirety is at desk-top level.

16. The combination in a desk having a flat top at a normal desk-top level suitable for a person seated at the desk to perform clerical work thereon, of a sound enveloping typewriter compartment disposed fixedly below said flat top to leave a kneehole for a person seated at the desk and including a cover movable between open and closed compartment positions, the said flat top comprising a panel and a leaf, both normally in flat top positions over said compartment, the leaf adjoining the rear of said panel, means to mount the said leaf for movement from its flat top position to open a space behind

said panel, means to guide said panel for movement from over the compartment in a course rearwardly and downwardly through the space opened by said leaf to a retired position sufficiently low to permit the restoration of the leaf to its level position to overlie the retired panel, means to latch said leaf in its flat top position, spring means associated with said leaf to bias it for said movement from its flat top position, and manipulative means at the front of the desk for releasing said latch means.

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