

Aug. 25, 1964

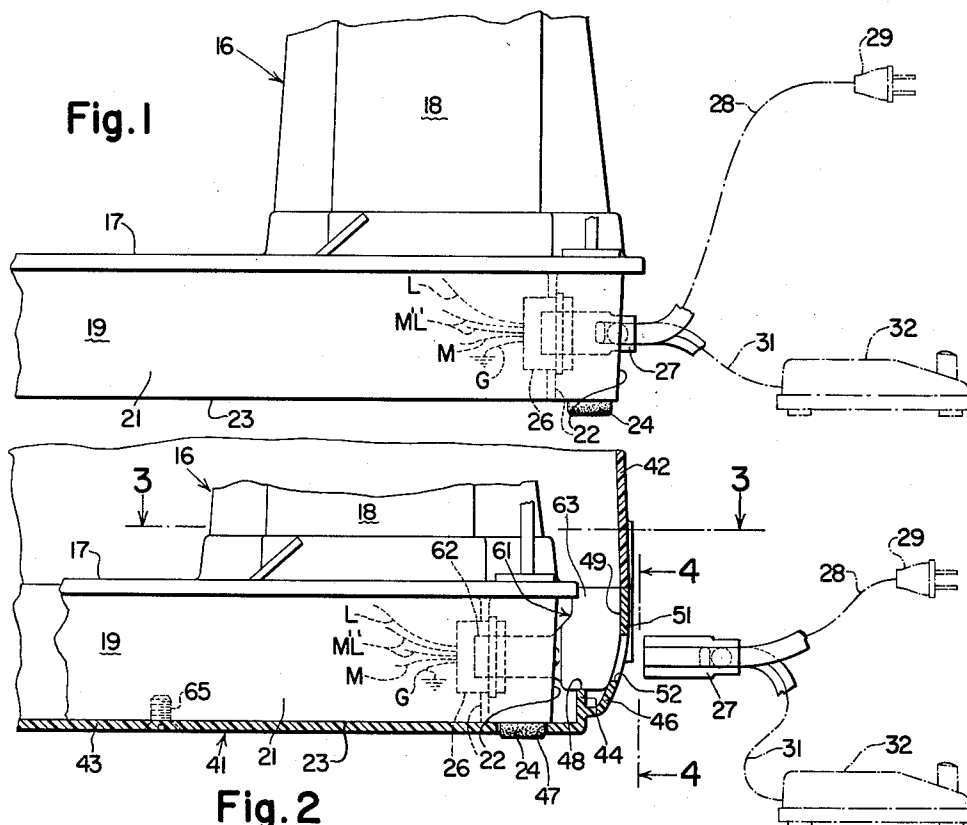
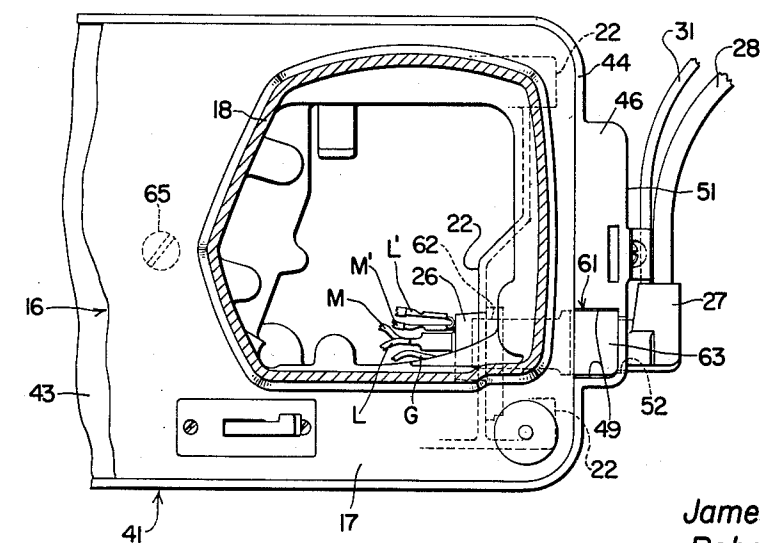
J. W. MOMBERG ETAL

3,145,675

SEWING MACHINE AND CARRYING CASE WITH ELECTRICAL ADAPTER

Filed May 18, 1961

3 Sheets-Sheet 1



WITNESS
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Fig. 3

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3 Sheets-Sheet 2

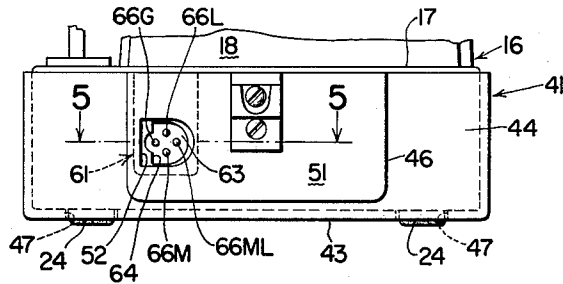


Fig. 4

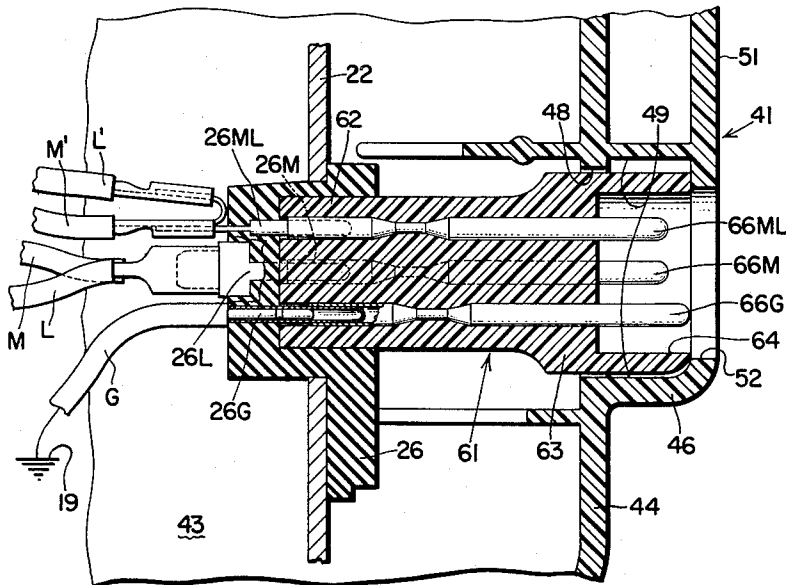


Fig. 5

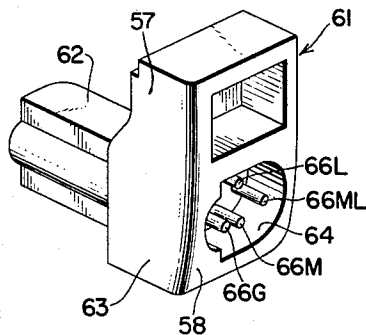


Fig. 6

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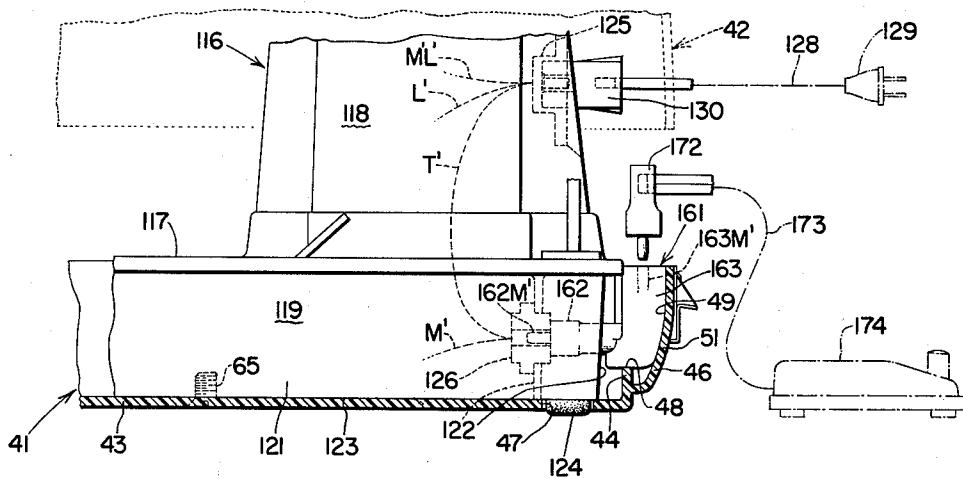


Fig. 7

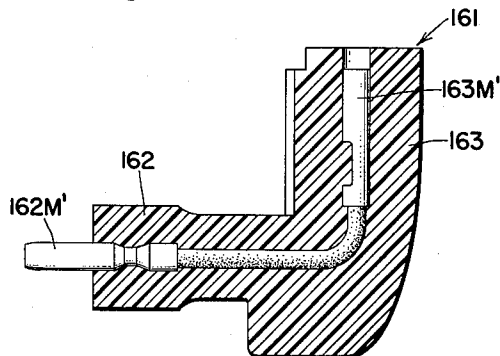


Fig.8

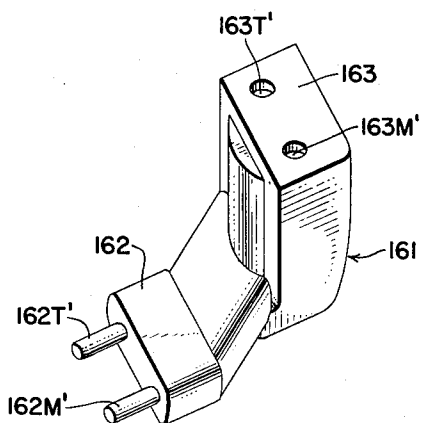


Fig.9

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3,145,675

SEWING MACHINE AND CARRYING CASE WITH ELECTRICAL ADAPTER

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4 Claims. (Cl. 112-258)

This invention relates to carrying cases for sewing machines and more particularly to electrical adapters designed to provide a convenient means for electrically energizing and controlling a sewing machine while the said sewing machine is installed in the base portion of a carrying case.

It is desirable that modern day sewing machines be constructed and arranged so that they can be used in any manner which the owner finds convenient. For example, in the summertime, the owner might wish to carry her sewing machine to a porch or to a patio. This would require that the sewing machine be portable. On the other hand, she might wish to install her sewing machine in a more or less permanent cabinet located in a sewing room, or she might wish to install her sewing machine in a carrying case so that it can conveniently be handled while moving the sewing machine from place to place. In other words, a modern sewing machine must be adaptable to many conditions of use.

When a sewing machine is installed permanently in a cabinet, it is desirable to conceal most of the electrical cords which connect the sewing machine to the electrical wall receptacle and to the electrical controller. This is usually accomplished by having at least one of the electric cords connected to the bed portion of the sewing machine at a location hidden from view by the cabinet. For example, see United States Patent No. 2,706,956. This permits electrical cords to be concealed within the cabinet. If a sewing machine is removed from the cabinet and carried to a porch or other nearby location, the bed of the sewing machine becomes exposed and thus it is easy to connect and disconnect the necessary electric cords to and from the bed of the sewing machine. On the other hand, if a sewing machine of the type shown in United States Patent No. 2,706,956 were installed in a carrying case of a type similar to that shown in United States Patent No. 2,856,726, the base member of the carrying case would enclose the bed portion of the sewing machine in such a manner as to make it difficult if not impossible, to connect electric cords to the bed of the sewing machine without first removing the sewing machine bed from the base member of the carrying case. Therefore, one of the primary objects of the present application is to provide an improved means whereby electrical cords can be used to energize and control a sewing machine while the bed of the sewing machine is installed in the base member of a portable carrying case.

Another object of the invention is to provide an improved electrical adapter designed to be used with a sewing machine and a carrying case designed to house the said sewing machine.

A still further object of the invention is to provide an improved electrical adapter which can be plugged into a sewing machine bed before the sewing machine is installed in a carrying case and which will be accessible after the sewing machine has been installed in the base member of said carrying case.

A still further object of the invention is to provide a sewing machine carrying case having provision for accommodating an adapter designed to provide means for energizing and controlling a sewing machine while the

bed of the sewing machine is installed in the base member of the carrying case.

Another object of the invention is to provide an arrangement whereby a combination comprising a sewing machine and an adapter can be placed into and removed from the base member of a carrying case without detaching the adapter from the sewing machine.

With the above and other objects in view, as will hereinafter appear, the invention comprises the devices, combinations and arrangements of parts hereinafter set forth and illustrated in the accompanying drawings of a preferred embodiment of the invention, from which the several features of the invention and the advantages attained thereby, will be readily understood by those skilled in the art.

In the drawings:

FIG. 1 is a fragmentary elevational view showing one means for electrically energizing and electrically controlling a sewing machine when used as a portable machine.

FIG. 2 is a fragmentary elevational view showing the portable sewing machine of FIG. 1 mounted in the base member of a carrying case and fitted with an adapter so as to embody the present invention.

FIG. 3 is a fragmentary plan view taken substantially on the line 3-3 of FIG. 2.

FIG. 4 is an elevational view taken substantially on the line 4-4 of FIG. 2.

FIG. 5 is a sectional view taken substantially on the line 5-5 of FIG. 4.

FIG. 6 is a perspective view of the adapter shown in FIGS. 2, 3, 4 and 5.

FIG. 7 is a view similar to FIG. 2 but showing a modified form of the invention.

FIG. 8 is an elevational sectional view taken through the adapter shown in FIG. 7, and

FIG. 9 is a perspective view of the adapter shown in FIGS. 7 and 8.

FIG. 1 of the drawings illustrates one means for electrically energizing and controlling a family-type, portable sewing machine 16. The sewing machine 16 illustrated in FIG. 1 includes, in addition to many unshown parts, a work supporting plate 17 from which rises a bracket arm standard 18. Below the work plate 17, certain mechanisms (not shown) of the sewing machine are protected by a bed 19 having a front bed skirt 21, an end bed skirt 22, a bottom 23, and a plurality (only one being shown in FIG. 1) of resilient feet 24. The bed 19 of the sewing machine 16 houses a 4-pin receptacle 26 the end of which is accessible through a hole in the end bed skirt 22. One pin 26G (for more detail see FIG. 5) of the 4-pin receptacle 26 may act as a "ground" and may be connected by a conductor G to the bed 19. The other pins of the receptacle are connected as follows: one pin 26M is connected to the sewing machine motor (not shown) by a conductor M, one pin 26L is connected to the sewing machine light (not shown) by a conductor L, and the other pin 26ML is connected to both the motor and the light by conductors M' and L'. The 4-pin receptacle 26 is designed to receive a cavity plug 27 (FIG. 1) and a multiconductor cord 28 extends from the cavity plug 27 to a power plug 29. A second multiconductor cord 31 also extends from the cavity plug 27 to a conventional foot controller 32.

Many modern sewing machines in use today are provided with a carrying case. These carrying cases are provided with a base member similar to the base member 41 (FIGS. 2, 3, 4 and 5) and a cover member similar to the cover member 42 (FIG. 2). The base member 41 receives and encompasses a portion of the bed 19 of

the sewing machine 16 and the cover member 42 rests on the base member 41 in such a manner as to cover the same and enclose the sewing machine 16 when the sewing machine is not in use. The base member 41, in addition to having other unshown parts, has a bottom wall 43, an end wall 44, and an end projection 46. The bottom wall 43 is formed with a plurality of holes, only two, namely holes 47, being shown. Each hole 47 is designed to allow one of the feet 24 to project through the bottom wall 43 of the base member 41. The end wall 44 is provided with an aperture 48 and the projection 46 provides a receiving cavity 49 adapted to accommodate a portion of a removable electric adapter presently to be fully described. The projection 46 has an outer wall 51 which is formed with an aperture or opening 52 through which access is had to a portion of the said adapter.

The removable electrical adapter referred to above is indicated generally by the numeral 61 (FIGS. 2-6) and comprises a cavity plug portion 62 adapted to be connected to the receptacle 26. The front end of the adapter 61 is in the form of a head portion 63 having an upper end 57 and a lower end 58. The lower end 58 has a hollow 64 in which are positioned the plug ends of four metallic, preferably brass, adapter pins 66G, 66M, 66L and 66ML. The pins 66G, 66M, 66L and 66ML extend through the portion 62 at which end they are provided with cavities adapted to connect the pins 66G, 66M, 66L and 66ML to pins 26G, 26M, 26L and 26ML of the receptacle 26.

If the sewing machine 16 shown in FIG. 1 is, in a previously known manner, installed in a cabinet of the general type shown in Patent No. 2,575,045, the upper surface of the work plate 17 would be flush with the upper surface of the table-top (not shown) of the cabinet (not shown). This, in a known manner, results in the 4-pin receptacle 26, the cavity plug 27, the controller cord 31 and the controller 32 being hidden. Also, much of the cord 28 will be hidden. When the sewing machine 16 is used, in a previously known manner, as a portable machine remote from a cabinet and without a carrying case, as shown in FIG. 1, the cavity plug 27, the cords 28 and 31, and the controller 32 will be exposed and thus the cavity plug 27 can easily be connected to and disconnected from the pin receptacle 26.

On the other hand, if the sewing machine 16 were installed in the base member of an ordinary carrying case (not shown), the 4-pin receptacle 26 would be covered by the base member and thus it would be difficult if not impossible to connect a cavity plug, similar to cavity plug 27, to the 4-pin receptacle 26. The present invention alleviates this situation by providing a carrying case having a special base member 41 and by providing the adapter 61. According to the present invention the plug portion 62 of the adapter 61 is plugged into the receptacle 26 before the bed 19 is placed in the base member 41. Then the bed 19 of the sewing machine 18 is lowered into the base member 41 in such a manner that the head portion 63 of the adapter 61 enters the receiving cavity 49 formed by the projection 46. When the bed 19 is fully lowered into the base member 41, the feet 24 (only two being shown) pass through the holes 47 and the hollow 64 registers with the opening 52. Then a conventional fastening means 65 is used to secure the base member 41 to the bed 19. When this has been accomplished the cavity plug 27 (FIGS. 2 and 3) is connected to the adapter pins 66G, 66M, 66L and 66LM. Because of this the sewing machine motor (not shown) and the light (not shown) are electrically connected to the power plug 29. Also, the motor (not shown) can be controlled, in a known manner, by the foot controller 32. Thus, by use of the adapter 61, the sewing machine 16 can be electrically energized and electrically controlled without removing the sewing machine 16 from the base member 41. When the owner of the sewing machine 16 has completed her sewing, she removes the cavity plug 27

from engagement with the adapter 61 and places the cover member 42 on top of the base member 41 and latches the two together in a conventional manner. If the owner of the sewing machine wishes to remove the sewing machine from the base member 41, she can do so by disengaging the fastening means 65. However, she will not have to disconnect the adapter 61 from the sewing machine. This results from the fact that the end 58 of the adapter 61 can be removed through the space normally occupied by the end 57 of the adapter 61.

A modified form of the invention is shown in FIGS. 7, 8 and 9 wherein a portable sewing machine 116 includes, in addition to many unshown parts, a work supporting plate 117, a bracket arm standard 118, a bed 119 having a front bed skirt 121, an end bed skirt 122, a bottom 123, and resilient feet 124, only one of which is shown in FIG. 7. In this embodiment, the standard 118 houses a 2-pin receptacle 125, the end of which is accessible through a hole in the wall of the standard 118. Also, the bed 119 houses a 2-cavity receptacle 126, the end of which is accessible through a hole in the end bed skirt 122. One pin of the 2-pin receptacle 125 is connected inside of the sewing machine by conductors M' L' to a motor (not shown) and a light (not shown). The other pin of the receptacle 125 is connected by a conductor L' to the light (not shown) and by a tie wire T' to one of the cavity terminals of the receptacle 126. The other cavity terminal of the receptacle 126 is connected by a conductor M' inside of the sewing machine to the electric motor (not shown). A multiconductor cord 128, which is equipped with a power plug 129, is connected to a 2-cavity plug 130 and the 2-cavity plug 130 is received by the 2-pin receptacle 125. The sewing machine 116 of FIG. 7 is shown housed in a carrying case which is substantially a duplicate of the carrying case shown in FIG. 2 and comprises a base member 41 and cover member 42, the base member having a bottom wall 43, an end wall 44, an end projection 46, holes 47, an aperture 48, a receiving cavity 49, and a projecting outer wall 51, all of which are similar to parts shown in FIG. 2. In this embodiment an adapter 161 comprises a 2-pin plug portion 162 having plug pins 162T' and 162M' and a receptacle portion 163 having cavity members 163T' and 163M'. It will, of course, be understood that the pin 162T' is electrically connected to the member 163T' and that the pin 162M' is electrically connected to the member 163M'. The 2-plug portion 162 is adapted to be connected to the 2-cavity receptacle 126. The 2-cavity portion 163 of the adapter 161 is positioned at an angle of 90-degrees with respect to the plug portion 162 and the 2-cavity receptacle portion 163 is designed to receive the pins of a 2-pin plug 172 to which is connected, by means of a multiconductor cord 173, a conventional foot controller 174.

If the sewing machine 116 shown in FIG. 7 is, in a previously known manner, installed in a cabinet of the type shown in Patent No. 2,946,639, the upper surface of the work plate 117 would be flush with the upper surface of the table-top (not shown) of the cabinet (not shown). This, in a known manner, results in the 2-cavity receptacle 126, the 2-pin plug 172, the controller cord 173 and the controller 174 being hidden. The cord 128 and the 2-cavity plug 130, in this embodiment, will be above the table-top (not shown) and thus would not be concealed.

On the other hand, if the sewing machine 116 were installed in the base member of an ordinary carrying case (not shown), the 2-pin receptacle 126 would be covered by the base member and thus it would be difficult if not impossible to connect a cavity plug, similar to cavity plug 172 to the 2-pin receptacle 126. The present invention alleviates this situation by providing a carrying case having a special base member 41 and by providing the adapter 161. According to the present invention the plug portion 162 of the adapter 161 is plugged into the receptacle 126 before the bed 119 is placed into the base 41. Then the

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bed 119 of the sewing machine 116 is lowered into the base 41 (FIG. 7) in such a manner that the 2-cavity receptacle portion 163 of the adapter 161 enters the receiving cavity 49 formed in the projection 46. When the bed 119 is fully lowered into the base member 41, the feet 24 (only one being shown in FIG. 7) pass through the holes 47 and the end of the 2-cavity receptacle portion 163 becomes accessible because the upper end of the portion 163 is substantially flush with the upper surface of the work plate 117. Then a fastening means 65 is used to secure the base member 41 to the bed 119. When this has been accomplished, the 2-pin plug 172 is connected through the adapter 161 to the conductors T' and M'. Thereafter the 2-cavity plug 130 is connected to the 2-pin receptacle 125. Because of these connections, the sewing machine 116 can be electrically energized and electrically controlled without removing the sewing machine 116 from the base member 41. When the owner of the sewing machine 116 has completed her sewing, she will remove the 2-cavity plug 130 from the receptacle 125 and she will remove the 2-pin plug 172 from the 2-cavity receptacle portion 163 and place the cover member 42 on the top of the base member 41 and latch the two together in a conventional manner.

From the above it is evident that either the sewing machine 16 or 116 can be used in the carrying case 41-42 and that it is both possible and convenient after removing the cover 42 to operate either the sewing machine 16 or 116 without removing either the bed 19 of the sewing machine 16 or the bed 119 of the sewing machine 116 from the base member 41 of the carrying case. It is also evident that either the sewing machine 16 or 116 can be removed from the carrying case base 41 without removing the adapter 61 or 161.

Having thus described the nature of the invention, what we claim herein is:

1. In combination a sewing machine, a bed portion formed as part of said sewing machine, an apertured bed skirt enclosing a portion of said bed, an electrical receptacle carried by said bed skirt, an adapter designed to be connected to said electrical receptacle, a carrying case having an apertured base member adapted to be connected to said sewing machine and to encompass a portion of said bed and bed skirt, to encompass said electrical receptacle and completely to encompass said adapter, means including the aperture in said base member accessible while said base member is connected to said sewing machine for engaging said adapter and thereby attaching electrical connections to said sewing machine without removing said bed from said base member, and means permitting removal of said sewing machine and said adapter as a unit from said base member.

2. In combination a sewing machine, a bed portion formed as part of said sewing machine, an apertured bed

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skirt enclosing a portion of said bed, a multi-pin electrical receptacle carried by said bed skirt, a carrying case having an apertured base member adapted to encompass a portion of said bed and bed skirt, a multi-pin adapter designed to be connected to said electrical receptacle, and means accessible through the aperture in said base member while said base member is connected to said sewing machine, for connecting and disconnecting a multi-cavity plug to said adapter and thereby providing means for operating said sewing machine without removing said bed from said base member.

3. In combination a sewing machine, a bed portion formed as part of said sewing machine, an apertured bed skirt enclosing a portion of said bed, a receptacle carried by said bed skirt, a carrying case having a base member adapted to encompass a portion of said bed and bed skirt, a receiving cavity formed in said base member, an adapter having a plug portion connected to said electrical receptacle and of such size and shape as to fit completely into said receiving cavity, a receptacle portion formed as part of said adapter, means including the aperture in said base member of the carrying case for connecting a multiconductor cord to the receptacle portion of said adapter, thereby attaching electrical connections to said sewing machine without removing said sewing machine from said base member.

4. A carrying case comprising a base member designed to encompass a portion of the bed of a sewing machine; an apertured inner wall formed as part of said carrying case base member, the aperture in said inner wall providing plug-in access to the bed of the sewing machine; a projection carried by said carrying case base member and extending beyond the said apertured wall; and an apertured outer wall formed as part of said projection, said projection and its apertured outer wall defining a cavity designed to receive an adapter in a position so as to have a portion of said adapter pass through the aperture in said apertured inner wall and be plugged into the bed of said sewing machine and the aperture in the outer wall of said projection defining an opening designed to permit plug-in access to said adapter without removing said sewing machine bed from said carrying case member and without removing said adapter from the cavity defined by said projection and its outer wall.

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