June 15, 1965 W. D. SZUBA ETAL 3,188,993

CYLINDER BED SEWING MACHINE WITH AN ATTACHMENT BOX BED EXTENSION

Filed June 15, 1961 2 Sheets-Sheet 1

Fig. 1.

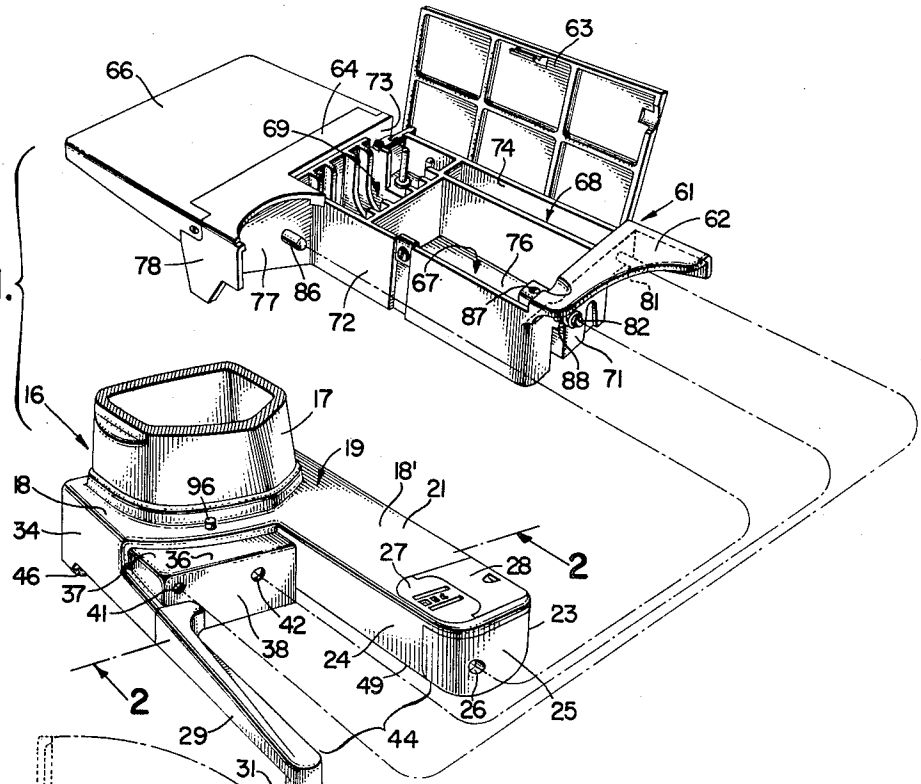


Fig. 2.

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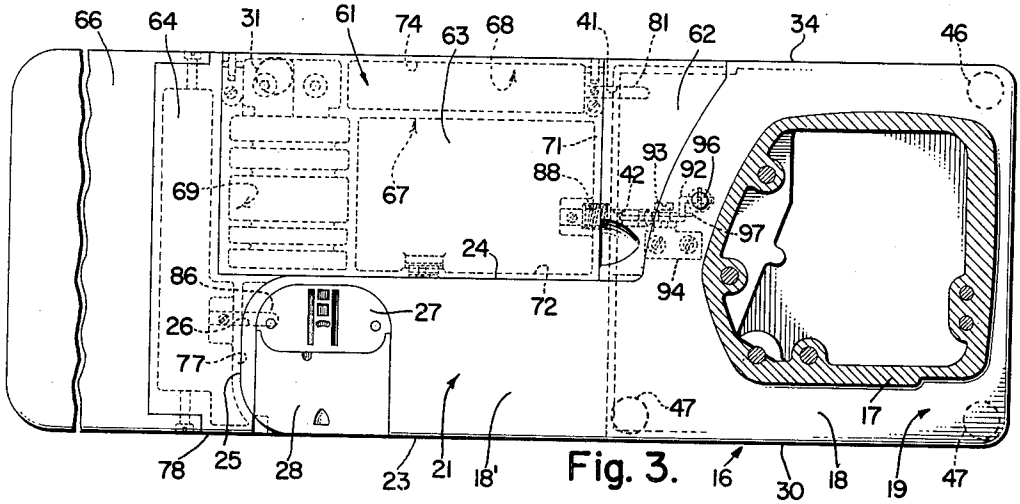


Fig. 3.

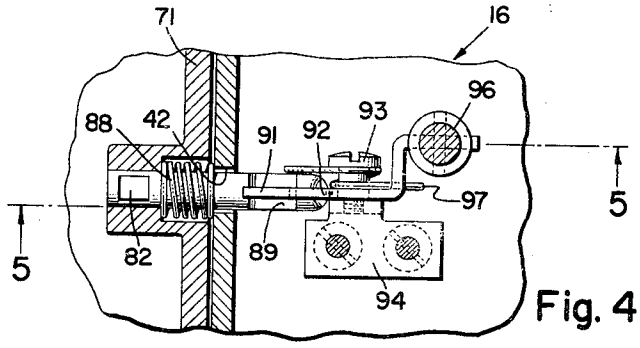


Fig. 4.

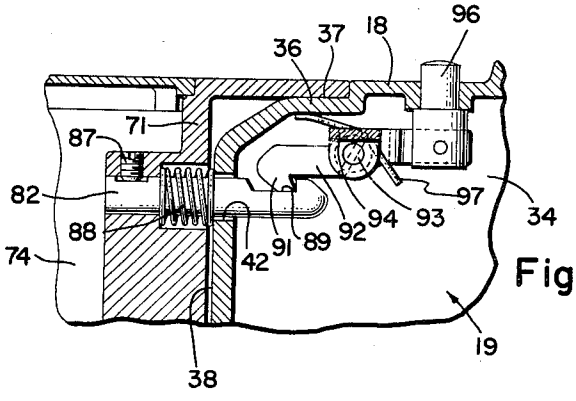


Fig. 5.

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CYLINDER BED SEWING MACHINE WITH AN ATTACHMENT BOX BED EXTENSION

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4 Claims. (Cl. 112—258)

This invention relates to sewing machines and more particularly to portable, cylinder bed sewing machines equipped with a removable combination bed extension and attachment box by the use of which the cylinder bed sewing machine can be converted into a flat bed sewing machine having provisions for storing attachments, and the primary object of the present invention is to provide an improved sewing machine of this character.

Another object of the invention is to provide a cylinder bed sewing machine in which the cylinder bed is so positioned that sufficient space is provided within the normal confines of the sewing machine for accommodation of an attachment box.

A further object of the invention is to provide a sewing machine and associated attachment box having a hinged cover that can be raised and lowered without engaging protruding portions of the sewing machine.

A still further object of the invention is to provide an improved means for storing attachments.

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.

FIG. 1 is an exploded perspective view showing pertinent portions of a cylinder bed sewing machine and a removable combination bed extension and attachment box embodying the present invention,

FIG. 2 is a vertical sectional view taken substantially on the plane 2—2 of FIG. 1 and showing the attachment box connected to the sewing machine,

FIG. 3 is a horizontal view, partly in section, taken on the line 3—3 of FIG. 2,

FIG. 4 is a fragmentary horizontal sectional view illustrating a latch used to secure the removable bed extension to the main portion of the sewing machine, and

FIG. 5 is a fragmentary vertical sectional view taken on the line 5—5 of FIG. 4.

The drawings forming part of this disclosure illustrate a sewing machine 16 having a vertical standard 17 with an overhanging bracket arm 15 (FIG. 2) spaced above a plane defined by the upper work-supporting-surface of the top wall 18 of the main bed 19 of the sewing machine 16. The free or head end of the bracket arm 15 supports conventional sewing machine parts such as a needle bar, a presser bar, etc.

As best seen in FIG. 1, the main bed 19 has projecting from a front portion thereof, in a cantilever fashion, a so-called cylinder bed 21. The cylinder bed 21 has a front wall 23, a rear wall 24 and a curved end wall 25, the latter being formed with a hole 26. The work-supporting-surface of the top wall 18 extends over the top wall 18' of the cylinder bed 21 and the wall 18' is apertured to receive a throat plate 27 and a slide plate 28. As best shown in FIG. 1, the cylinder bed 21 is positioned toward the front of the sewing machine 16. This results in the front surface of the front wall 23 of the cylinder bed 21 being coplanar with the front surface of the front wall 30 (FIG. 3) of the main bed 19. Also, the rear

surface of the rear wall 24 of the cylinder bed 21 extends from a position substantially opposite the vertical center of the standard 17, and a supporting leg 29 extends outwardly from a rear portion of the main bed 19, one end of this leg 29 being secured by a screw (not shown) to the main bed 19, whereas the other or free end of the leg 29 terminates in a resilient supporting foot 31. As best seen in FIG. 1, the rear surface of the leg 29 is coplanar with the rear surface of the rear wall 34 of the main bed 19. Between the rear wall 34 of the main bed 19 and the rear wall 24 of the cylinder bed 21, there is formed inegral with the main bed 19 a subbed 36 and the upper surface of the upper wall 37 of the subbed 36 is depressed below the work-supporting-surface of the wall 18. Also, an end wall 38 of the subbed 36 is formed with a pair of holes 41 and 42, the function of which will presently be described. Because of the above construction, the rear wall 24 of the cylinder bed 21 and the end wall 38 and the leg 29 define an open unobstructed space designated by the numeral 44. The main bed 19 is equipped with a pair of resilient feet 46 and 47 (FIG. 3) and when these two feet 46–47 and the previously mentioned foot 31 rest on a table top or other supporting surface such as 48 (FIG. 2), the lower surface of the bottom wall 49 of the cylinder bed 21 will be positioned above the surface 48. This permits the sewing machine 16 to be used as a conventional cylinder bed sewing machine.

The previously described cylinder bed sewing machine 16 can be converted into a so-called flat bed sewing machine by the addition of a combination bed extenison and attachment box designated generally by the numeral 61 and the combination bed extension and attachment box 61 has a top wall formed by four separate portions designated by the numerals 62, 63, 64 and 66. The top wall portion 62 overlies the subbed 36 of the sewing machine 16 and, when in place, covers the depressed upper surface of the wall 37 in such a manner as to cause the upper surface of the top wall portion 62 to be coplanar with the work supporting surface of the top wall 18. The top wall portion 63 is in the form of a hinged cover which in its raised position provides access to three cavities 67, 68 and 69 designed to receive various sewing machine attachments and accessories such as spools of thread, bobbins, shears, etc. When the combination bed extension and attachment box 61 is attached to the sewing machine 16 and the hinged cover portion 63 is in its lowered position, it covers the cavities 67, 68 and 69 and the upper surface of the cover 63 is coplanar with the work supporting surfaces 18 and 18'. When the combination bed extension and attachment box 61 is secured to the sewing machine 16, the hinged cover portion 63 can be raised to the position shown by dash-dash lines in FIG. 2 without removing the combination bed extension and attachment box 61 from engagement with the sewing machine 16. In other words, the hinged cover is so positioned that it can be raised and lowered without interfering with the bracket arm 15 and the parts carried thereby. This is advantageous because it provides easy access to the cavities 67, 68 and 69. The top wall portion 64 extends beyond the cover portion 63 and is of course coplanar with the work supporting surface of the walls 18 and 18'. The portion 66 is in the form of a hinged leaf and, in a well known manner, can assume either of two poistions, one a raised position (not shown) and the other a horizontal position (FIG. 4) which places the upper surface of the leaf portion 66 coplanar with the work supporting surface of the walls 18 and 18'. In addition to the previously mentioned portions 62, 63, 64 and 66, the combination bed extension and attachment box has four vertical walls 71, 72, 73 and 74, which, in

addition to forming structural reinforcement for the combination bed extension and attachment box **61** as a whole, form the outside walls for the attachment box cavities **67**, **68** and **69**. The attachment box also has a bottom wall **76**. The combination bed extension and attachment box **61** also has a curved wall **77** and a partial front wall **78**. The curvature of the wall **77** conforms with the curvature of the end wall **25** of the cylinder bed **21** and when the combination bed extension and attachment box **61** is in the position shown in FIG. 3, the wall **77** covers the wall **25**. As best seen in FIG. 3, the front surface of the wall **78** is coplanar with the front surface of the wall **23**.

The combination bed extension and attachment box **61** is held to the sewing machine **16** by means of three pins **81**, **82** and **86**. The pins **81** and **82**, which are secured to the wall **71** and protrude therefrom, respectively enter the holes **41** and **42** in the wall **38**. The pin **86**, which is secured to the wall **77** and protrudes therefrom, enters the hole **26** formed in the wall **25**. The pin **82** (FIG. 5), which is held to the wall **71** by a set screw **87**, is surrounded by a coiled compression spring **88** and the free end of the pin **82** carries an upwardly-open notch **89** adapted to be engaged by the downwardly extending hooked end **91** of a Z-shaped lever **92** which is pivotally mounted on a screw **93** threaded into a depending arm formed on an L-shaped bracket **94** secured to the lower surface of the top wall **18**. The end of the lever **92**, remote from the hooked end **91**, is pivotally connected to an upstanding push button **96** which extends upwardly through a hole formed in the top wall **18**. A spring **97** biases the hooked end **91** of the lever **92** downwardly and at the same time biases the push buttons **96** upwardly.

In operation, the subject parts function in the following manner. If the operator wishes to do work of the class normally performed on a cylinder bed sewing machine, she simply uses the sewing machine **16** as a unit by itself without the combination bed extension and attachment box **61** being secured thereto. If the operator wishes to do work of the class normally performed on a flat bed sewing machine, she moves the combination bed extension and attachment box **61** into connected engagement with the sewing machine **16**. This is done by entering the pin **86** into the hole **26** and by respectively entering the pins **81** and **82** into the holes **41** and **42**. When these pins have entered the proper holes, the operator presses the combination bed extension and attachment box **61** firmly against the sewing machine **16**. This compresses the spring **88** and finally engages the hooked end **91** of the lever **92** with notch **89** of the pin **82**. This latter operation securely holds the combination bed extension and attachment box **61** to the sewing machine **16** and allows the operator to use the upper surfaces of the top walls **18**, **18'**, and the upper surfaces of the top wall portions **62**, **63**, **64** and **66** as flat bed work supporting surfaces. In the event that the operator needs any of the attachments, etc. stored in the cavities **67**, **68** and **69**, she opens the hinged top wall cover portion **63**, removes the needed articles and then closes the top wall cover portion **63**. In the event the sewing machine **16** and the combination bed extension and attachment box **61** are to be stored in a carrying case or otherwise, the hinged leaf **66** can be raised, in a well known manner, to the raised position (not shown). If the operator wishes to remove the combination bed extension and attachment box **61** from engagement with the sewing machine **16**, she simply presses

the push-button **96**. This releases the hooked end **91** of the lever **92** from engagement with the notch **89** and allows the compression spring **88** to move the combination bed extension and attachment box **61** away from the sewing machine **16**.

Having thus set forth the nature of this invention, what we claim herein is:

1. A sewing machine comprising in combination, a main bed, a standard rising above said main bed, a cantilever cylinder bed extending from a front portion of said main bed, and a supporting leg extending from a rear portion of said main bed, the cylinder bed, the main bed and the supporting leg defining and bounding three sides of an open ended cavity, a combination bed extension and attachment box designed to be received in said open ended cavity, and means for securing said combination bed extension and attachment box to said main bed and said cylinder bed.

2. A sewing machine comprising in combination, an apertured main bed portion, a standard rising above said main bed portion, an apertured cantilever cylinder bed extending from said main bed, a combination bed extension and attachment box, a plurality of pins carried by said combination bed extension and attachment box, said pins being positioned to enter apertures in said main bed and said cylinder bed.

3. A sewing machine comprising in combination a main bed; a subbed formed integrally with said main bed, said subbed being provided with fastening means; a standard rising from said main bed; a cantilever cylinder bed extending horizontally from said main bed, said cylinder bed being provided with fastening means; a supporting leg extending substantially horizontally from said main bed; a combination bed extension and attachment box adapted to be associated with said sewing machine; and fastening means carried by said combination bed extension and attachment box being designed to cooperate with the fastening means on said subbed and on said cylinder bed to secure said combination bed extension and attachment box to said sewing machine.

4. In combination, a sewing machine and an attachment box adapted to be latched to or released from engagement with said sewing machine, said sewing machine comprising a vertical standard, a main bed from which said standard rises, and a cylinder bed cantilever arm extending from said main bed, said cylinder bed cantilever arm being located entirely forward of a vertical plane extending parallel to said cylinder bed cantilever arm and including the center line of said standard.

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