Jan. 14, 1969 D. R. CASH 3,421,464

QUILTING MACHINE GUIDE-TRACK

Filed Feb. 16, 1965 Sheet 1 of 2

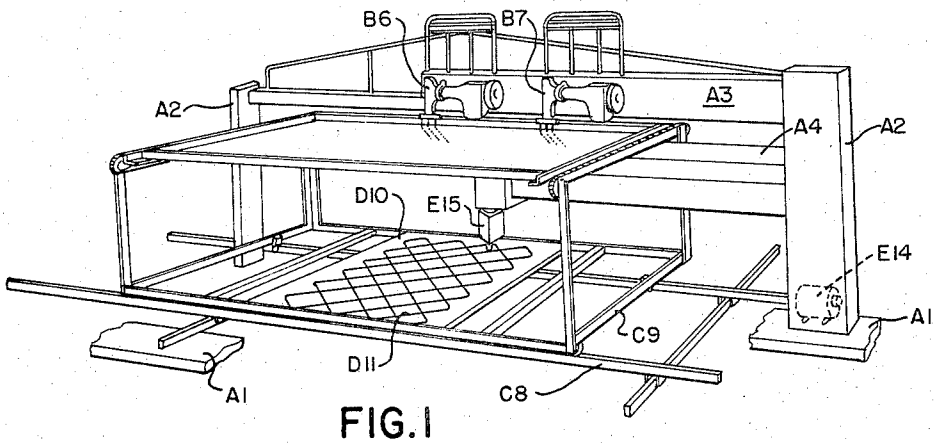

FIG. 1

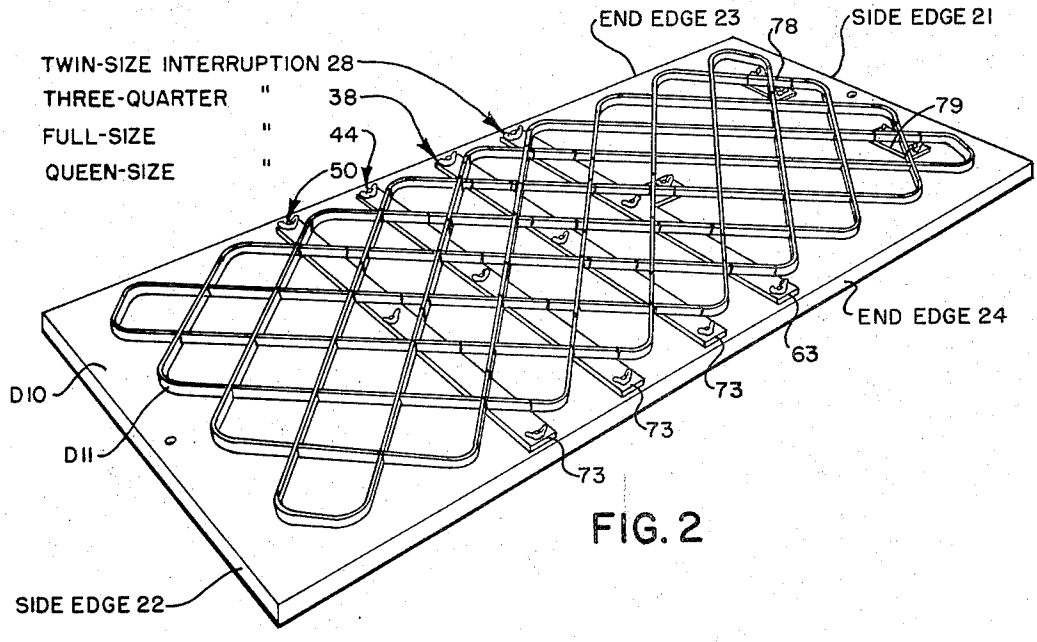

FIG. 2

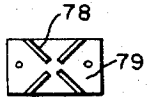

FIG. 11

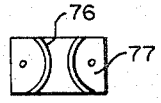

FIG. 12

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QUILTING MACHINE GUIDE-TRACK

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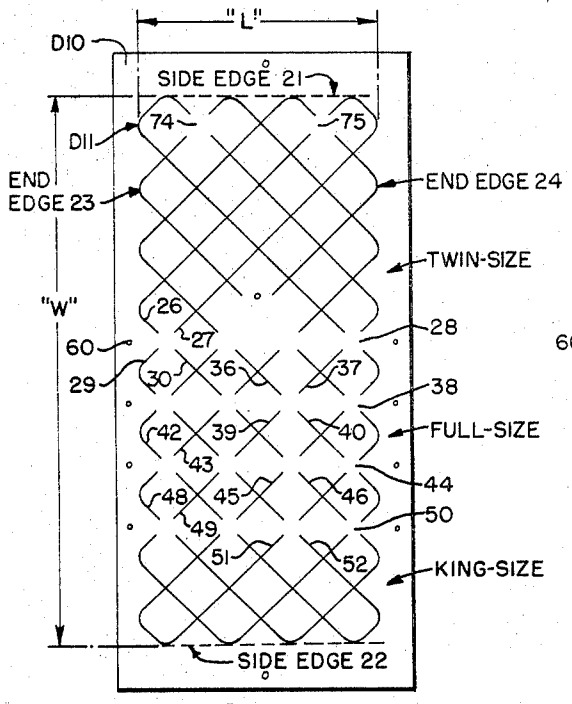


FIG. 3

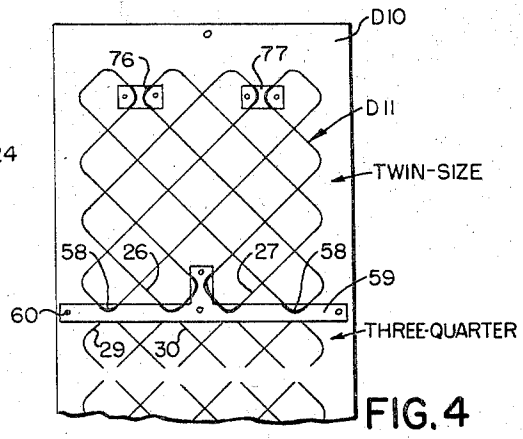


FIG. 4

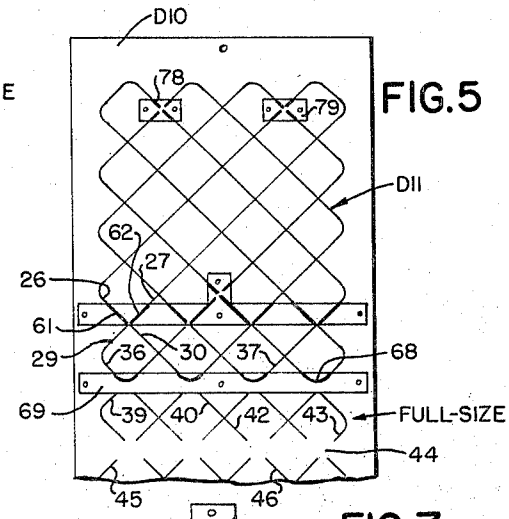
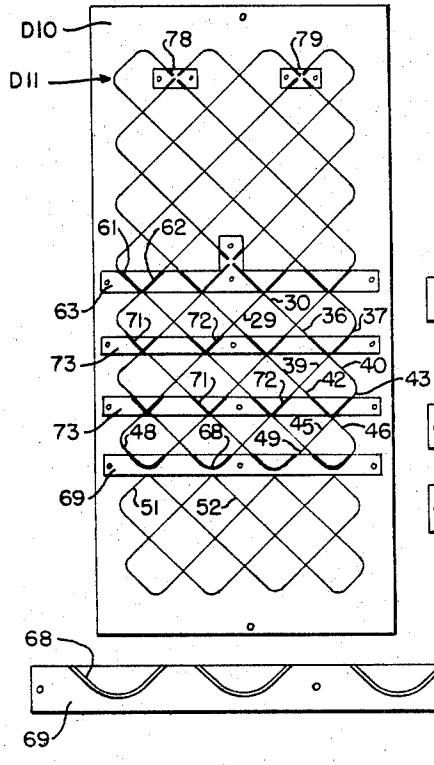


FIG. 5

FIG. 6



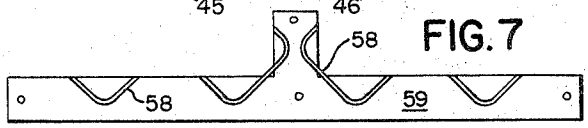


FIG. 7

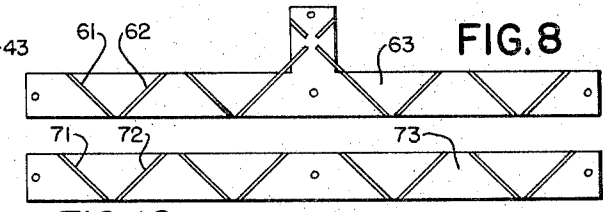


FIG. 8

FIG. 10

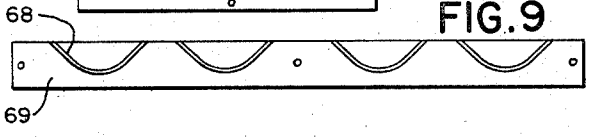


FIG. 9

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QUILTING MACHINE GUIDE-TRACK

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Filed Feb. 16, 1965, Ser. No. 433,148

U.S. Cl. 112—118 11 Claims

Int. Cl. D05b *11/00*

ABSTRACT OF THE DISCLOSURE

A sectional guide-track for use on quilting machines of the type wherein a frame-mounted follower drives a carriage-mounted guide-track to move a carriage-mounted quilt assembly along a given path reproducing a given sewing line design while frame-mounted sewing means sews that design into the quilt. The track, which is composed of a plurality of sections connectable in different ways to provide endless guide-tracks of different sizes, is particularly suited for use in manufacturing variously sized quilt assemblies for variously sized mattresses, such as those ranging from twin size through full size to king-size, which vary in side-to-side width from about 30% below to about 48% above full size and in top-to-bottom length from about full size to about 14% above full size.

A conventional quilting machine of the endless guide-track type comprises: (A) a sewing machine having an an upper thread-sewing mechanism and a lower thread-locking mechanism; (B) a stationary floor-mounted main frame having (1) a pair of horizontally-spaced vertically-arranged side standards and (2) a pair of vertically-spaced horizontally-arranged cross members extending from one side standard to the other, including (a) a transverse base frame for the lower thread-locking mechanism and (b) a transverse head frame for the upper thread-sewing mechanism; (C) movable carriage means mounted on the floor to support a workpiece for operative universal uniplanar movement relative to said sewing machine, said carriage means including (1) a lower carriage mounted on the floor for longitudinal back and forth movement, and (2) an upper carriage mounted on the lower carriage for transverse back and forth movement; (D) an elongate endless guide-track shaped to reproduce a given sewing line pattern or design and stationarily mounted on the upper carriage with its lengthwise dimension extending parallel to the lengthwise dimension or longitude of the quilting machine and at right angles to a transverse plane passing vertically through the head and base frames; and (E) drive means for operating the sewing machine and for driving said guide-track so as to move the carriage means along a path reproducing said sewing line design and thereby cause the stationary sewing mechanism to sew that design into the workpiece. The term "operative universal uniplanar movement" is used to designate operative movement in any direction within a horizontal (or equivalent) plane.

Since quilting machines are conventionally used to sew quilt assemblies in sizes corresponding to the full range of mattress sizes, it is necessary to stock one series of endless guide-track in a corresponding range of sizes for any one sewing pattern or design and another series for each different sewing pattern or design. This is indicated in the following table showing the full range of the more widely used mattress sizes (which are also identified by assigning size-numbers 1 through 5 to them) and the corresponding

range of endless guide-track sizes usually stocked for such mattress.

TABLE I

Size, Number and Name of Mattress	Size of Mattress and of Quilt Assembly W" x L"	Size of Pattern Formed by Endless Guide-Track for Such Assembly W" x L"
1 Twin-Size	38 x 74	28 x 64
2 Three-Quarters	48 x 74	38 x 64
3 Full-Size	54 x 74	44 x 64
4 Queen-Size	60 x 74	50 x 64
5 King-Size:		
(a) West Coast U.S	74 x 84	64 x 74
(b) Elsewhere U.S	78 [1] x 80 [2]	68 x 70

[1] Size-number 5(b) normally varies in W from 72 to 80.
[2] Size-number 5(b) normally varies in L from 74 to 84.

In carrying out the conventional quilting or sewing operation, it is customary to mount both the unsewn quilt assembly and the guide-track for that assembly on the quilting machine with their corresponding length dimensions extending parallel to the length or longitude of the machine so that the lengthwise dimension of the design is sewn not only lengthwise on the quilt assembly but also lengthwise along the machine.

It is also customary to provide some quilting machines with two transversely-spaced sewing machines and with one guide-track of full length but only half width. With this arrangement, two identical patterns, each of full length but only half width, will be simultaneously sewn lengthwise along the machine and lengthwise on the quilt assembly in side-by-side relationship with their innermost longitudinal side edges (a) touching each other when the spacing between the sewing machines equals said half width, (b) overlapping each other when said half widths exceed said spacing, and (c) spaced from each other when said spacing exceeds said half width. This arrangement has the advantage of reducing the size and expense of the guide-track and substantially increasing the capacity of the machine.

The present invention relates broadly to quilting machines having one or more sewing machines.

One of the principal objects of the present invention is to provide a quilting machine which can be easily, quickly and inexpensively adapted to sew one pattern over one area of one length and one width (say half-width or full-width) on one size of quilt-assembly in the twin-size to king-size range, which can be easily and quickly changed to sew the same pattern over a different area of say the same length and a different width on a different size of quilt assembly in said range.

Another important object of the present invention is to provide a quilting machine with an improved guide-track which can be used in sewing one pattern over a wide range of different areas on a corresponding range of differently-sized quilt-assemblies.

All of the foregoing objects of my invention may be achieved by sectionalizing a guide-track so that it may be varied in width over a desired range which may extend from twin-size to king-size. More particularly, my invention may be carried out by doing the following: (1) providing a king-size guide-track having transverse end edges at opposite ends of its largest (i.e. king-size) length dimension and longitudinal side edges at opposite ends of its (king-size) width dimension; (2) interrupting that guide-track along different longitudinal narrow band-like limits which are parallel to one longitudinal side edge and which are spaced therefrom at different distances corresponding to the different width dimensions desired; and

(3) providing, for each interruption, a removable turn-around section and a removable extension section, each turn-around section restricting the sewing operation to the corresponding width and each extension section extending the guide-track beyond the limit provided by the turn-around section it replaces.

With this arrangement, a single king-size guide-track will provide a twin-size width from one of its longitudinal side edges to the first interruption, a three-quarter width from that same longitudinal side edge to the second interruption, a full-size width to the third interruption and a queen-size width to the fourth interruption. When this sectionalized king-size guide-track is to be used in sewing king-size quilt assemblies, an extension section is placed in each interruption. When it is to be used in sewing twin-size quilt-assemblies, a turn-around section is placed in the first or twin-size interruption. For each intermediate size of quilt-assembly, larger than twin-size and smaller than king-size, a turn around section is placed in the interruption corresponding to that larger size while an extension section is placed in each interruption which corresponds to each smaller size.

Where one single guide-track, sectionalized for transverse adjustment from twin-size to king-size, is used in combination with one sewing machine, that combination will sew a twin-size design completely across the width of a twin-size area and each larger design completely across the width of each larger sewing area. This arrangement presents no problem. However, when one such sectionalized guide-track is reduced in width (to, say, half width) for use in combination with two transversely spaced sewing machines, one sewing machine will sew a twin-size design completely across the width of one-half of the sewing area of a twin-size quilt assembly while the other sewing machine will duplicate that design at a transverse distance equal to the needle spacing. This presents problems.

For example, with one 14" wide twin-size guide-track and two sewing machines transversely spaced 14 inches apart, the guide track will cooperate with one sewing machine to sew one 14" wide design on one-half of the 28" wide sewing area of the twin-size quilt assembly while the other sewing machine will sew a duplicate 14" wide design 14 inches away. In such case, the 14" wide designs will be in side-by-side relationship on the 28" wide sewing area without one design overlapping the other or being spaced from the other. However, when the half width guide-track is adjusted to king-size half width widths of say 32", one sewing machine will sew one design of 32" king-size half width on one-half of the 64" wide sewing area of a king-size assembly while the other machine will sew its 32" king-size half width design only 14 inches away producing an 18" overlap and an aggregate width of only 50" instead of 64".

Similarly, if the needle spacing and guide-track width are both made 32", the duplicate king-size half width designs will be in side-by-side edge abutting relationship aggregating the full king-size width of 64". Now, when the guide-track is adjusted to a 14" width, the sewing machines will cooperate to sew duplicate 14" designs, which are spaced some 32 inches apart on a center-to-center basis. As a result, their inner edges will be spaced some 18" apart and this spacing, plus their respective 14" widths, will produce an aggregate width of 46" from the outer edge of one design to the outer edge of the other design. In this case, since the twin-size sewing area available is only 28", the 46" aggregate width of the two patterns exceeds the available sewing area by some 18".

Another important object of this invention is to overcome this difficulty in sewing duplicate patterns over a range of different widths and to make possible the sewing of (full, overlapping or spaced) duplicate designs of desired widths in each different size over the full range of widths.

This object is accomplished by sectionalizing the guide-track for adjustment in width (throughout the range desired) and by sewing the variable width dimension of the duplicate patterns in directions parallel to each other instead of toward and away from each other. More particularly, this phase of my invention is accomplished by mounting both the unsewn quilt assembly and the guide-track for that assembly on the quilting machine with their corresponding length-dimensions extending across the machine rather than along the machine and with the variable width dimension of the guide-track and the corresponding width dimension of the quilt-assembly extending along the machine rather than across it. In this way, the relatively constant lengthwise dimension of one design is sewn lengthwise on the top or bottom half of the quilt assembly but crosswise on the machine while the (variable) width dimension of said one design is sewn crosswise on the same half of the quilt-assembly but lengthwise along the machine. The duplicate design is similarly sewn across the other half of the quilt-assembly.

The invention is illustrated in the accompanying drawings wherein:

FIG. 1 is a perspective view of a quilting machine of the type using two transversely spaced sewing machines, the guide track being schematically shown in a somewhat conventional manner;

FIG. 2 is a perspective view of a king-size guide-track sectionalized in accordance with my invention;

FIG. 3 is a plan view showing the guide track of FIG. 2 with all removable sections removed therefrom;

FIG. 4 is a fragmentary view of the FIG. 3 guide-track with a removable turn-around section in the twin-size interruption;

FIG. 5 is a fragmentary view similar to FIG. 4 but showing a turn-around section in the three-quarter width interruption and an extension section in the twin-size interruption;

FIG. 6 is a plan view of the FIG. 3 guide-track with extension sections in the 1st three interruptions and a turn-around section in the 4th or queen-size interruption;

FIG. 7 is a top plan view of a removable turn-around section used for the twin-size width;

FIG. 8 is a plan view of the extension section used in the twin-size interruption;

FIGS. 9 and 10 are plan views of the turn-around and extension sections used in the three-quarter, full-size and queen-size interruptions; and

FIGS. 11 and 12 are removably mounted track sections for changing the sewing path.

CONVENTIONAL STRUCTURE

The quilting machine shown in FIG. 1 conventionally comprises: (A) a support; (B) a pair of sewing machines; (C) movable carriage means; (D) an endless guide-track means; and (E) drive means.

The element A support is provided by the floor A1 on which the quilting machine rests and a stationary floor-mounted metal frame having a pair of horizontally-spaced vertically-arranged side standards A2 and a pair of vertically-spaced horizontally-arranged upper and lower cross frame members A3 and 4A extending from one side standard to the other and secured to both, the upper cross member A3 constituting head frame A3 and the lower cross member A4 constituting base frame A4.

The element B sewing machines B6 and B7, each have an upper thread-sewing mechanism or sewing head mounted on the head frame A3 and a lower thread-locking mechanism, which cannot be seen in FIG. 1, mounted on the base frame A4. Each sewing machine is conventional; hence, it vertically reciprocates a vertically-arranged needle bar, the lower end of which removably carries a sewing needle, and also raises and lowers a vertically-arranged presser foot bar, the lower end of which carries a presser foot. It operates its thread-locking mechanism in timed relationship with its sewing needle.

The element C carriage means is conventionally mounted on the floor to support a workpiece for operative universal uniplanar movement. This carriage means conventionally includes: a lower carriage **C8** mounted on longitudinal floor tracks for longitudinal back and forth movement along the machine and an upper carriage **C9** mounted on transverse tracks (carried by the lower carriage **C8**) for right-and-left movement relative to the lower carriage and for universal uniplanar movement relative to the sewing machines.

The element D endless guide track means is conventionally arranged on the upper carriage **C9**. It is conventionally composed of a base **D10** and an endless guide-track **D11**, which is contoured to reproduce a given sewing line design. The contour of track **D11** establishes the pattern of movement which the upper carriage **C9** will follow in causing the sewing machines **B6** and **B7** to sew duplicate sewing line designs into the workpiece.

The element E drive means is in the form of an electric drive motor **E14** which is fixedly mounted on the frame within one of the side standards **A2** and which is connected (a) to the sewing heads on cross head frame **A3**, (b) to the thread-locking mechanisms on cross base frame **A4** and (c) a pattern follower **E15** mounted on base frame **A4** to depend therefrom. The lower end of the pattern follower **E15** has driving engagement with the endless guide-track **D11** for moving that track and the upper carriage **C9** in accordance with the contour of track and, therefore, in accordance with the sewing line design. The intersections of the guide-track **D11** and the track-engaging drive wheel of the follower **E15** may be and preferably are constructed as shown in my U.S. Patent No. 3,127,888 granted Apr. 7, 1964.

INVENTIVE STRUCTURE

In accordance with one phase of my invention, the guide-track **D11** is sectionalized to permit the adjustment of its operative width to dimensions ranging, in magnitude, preferably from twin-size to king-size. In accordance with another phase of my invention, each quilt assembly is mounted with its width dimension extending parallel to the longitude of the machine and with its length dimension extending transversely across the machine while each guide track **D11** not only is made of half length and of sectionalized full width and is mounted with its half length and full width respectively extending transversely and longitudinally of the machine but is also positioned so that one sewing machine sews the top half of the quilt assembly and the other sewing machine sews the bottom half thereof.

Sectionalized guide track

The endless guide-track **D11** has opposite side edges **21–22** and opposite end edges **23–24** which are spaced to provide it with half length and full width dimensions L and W of any desired magnitude. Conforming to Table I, we shall assume that its half-length side-edge dimension L approximates 32 inches and that its full-width end edge dimension W approximates 64 inches.

SIZE-INTERRUPTIONS

The width of track **D11** is interrupted at spaced intervals. These longitudinally-extending interruptions preferably are made to divide the width dimension of the guide-track into sections corresponding to the desired range of sewing area widths indicated in the last column of Table I. In other words, proceeding widthwise, from one extreme side edge **21** toward the other extreme side edge **22**, the track **D11** is interrupted at intervals along longitudinally-extending lines from one end edge **23** to the other end edge **24**, to provide: from side edge **21** up to interruption **28**, a twin-size width of 28 inches; from **21** up to **38**, a three-quarter width of 38 inches; up to **44**, a full-size width of 44 inches; up to 50, a queen-size width of 50 inches; and up to the other end edge **24**, a king-size width of 64 inches.

On one side of the twin-size interruption **28**, the permanent part of the twin-size portion of the guide track **D11** terminates in pairs of adjacent interrupted track sections **26** and **27**. Similarly, on the opposite side of interruption **28**, the permanent part of the three-quarter portion of the guide track **D11** begins with pairs of adjacent interrupted track sections, which are exemplified by one pair of adjacent track sections **29–30**.

Also, on opposite sides of the three-quarter size interruption **38**, the ¾ portion terminates in pairs of adjacent interrupted track sections such as is exemplified by track sections, such as sections **36–37**, while the full-size portion begins with pairs of interrupted track sections such as **39–40**.

Again, on opposite sides of the full-size interruption **44**, the full-size portion ends with pairs of track sections, such as sections **42–43**, while the queen-size portion begins with sections in pairs exemplified by sections **45–46**.

Finally, on opposite sides of the queen-size interruption, the queen-size portion ends with pairs of sections, such as sections **48–49**, while the king-size portion of guide track **D11** begins with pairs of track sections such as **51–52**.

REMOVABLE SECTIONS FOR TWIN-SIZE INTERRUPTIONS

In accordance with my invention, these interrupted track sections in one permanent portion of the guide track **D11** are connected either to each other or to opposed interrupted sections in the next permanent portion of the guide track. To this end, the twin-size interruption **28** is arranged to receive a removable turn-around section for twin-size sewing operations and with a removable extension section for larger sewing operations.

The twin-size turn-around track sections provided for interruption **28** are designated **58**. They are mounted on and preferably welded (or otherwise rigidly secured) to a base **59** which may be removably secured at **60** (by bolts or other means) to the guide track base **D10**. The twin-size turn-around track sections **58** are contoured or shaped) and positioned (or arranged) on the base **59** to interconnect adjacent interrupted track sections **26** and **27** so as to receive a track pattern follower **E15** coming from the twin-size portion and redirect it back into the twin-size portion.

The extension track sections provided in pairs for the twin-size interruption **28** are designated **61** and **62**. They are mounted on a base **63** which may be removably secured at **60** to the guide-track base **D10**. Each pair of extension track sections **61** and **62** connects track sections on one side of interruption **28** to track sections on the other side thereof so as either to receive a track pattern follower **E15** coming from the twin section and direct it onto the three-quarter section or vice versa. Thus, one extension track section **61** interconnects track section **26** on the twin-side of **28** with track section **30** on the other side thereof. Similarly extension track section **62** interconnects track section **27** on the twin side of **28** with section **29** on the opposite side thereof.

REMOVABLE SECTIONS FOR OTHER INTERRUPTIONS

When a quilt assembly for a ¾ mattress is to be sewn, the turn-around sections **58** are removed from the twin-size interruption **28** and replaced by extension sections **61–62** as seen in FIG. 5. At the same time, the interruption **38** for the ¾ size is provided with turn-around sections **68** on base **69**.

In preparing the machine for sewing full-size quilt assemblies, extension sections **61–62** are mounted in interruptions **28**, extension sections **71–72** are mounted in interruption **38** and turn-around sections **68** are mounted in interruption **44**.

Similarly to prepare the machine for queen-size quilt assemblies, extension sections are placed in interruptions

28, 38, and 44 while a turn-around section 68 is placed in interruption 50 as seen in FIG. 6.

The arrangement of FIG. 6 can be prepared for the sewing of king-size assemblies by removing the turn-around sections 68 from interruption 50 and replacing it with extension sections 71–72.

REMOVABLE SECTIONS FOR CHANGING SEWING PATH

In changing the guide-track from one operative width to another, it will usually be necessary to make some change in the sewing path. For example, the guide-track, as illustrated in FIG. 4, sets up one endless path with a turn-around section in the twin-size interruption 28. When the guide-track is extended to the ¾ size, a slight change in the sewing path is necessary in order to have all sections of the guide-track cooperate to form one single continuous endless design.

For this reason, the permanent part of the twin-size portion of the guide-track is provided with two interruptions 74 and 75, as seen in FIG. 3. For twin-size sewing purposes, each of these interruptions is provided with a removable pair of curved sections 76 suitably mounted in spaced back-to-back relationship on a base 77, as seen in FIG. 4. The curved track sections 76 (in the interruptions 74 and 75) cooperate with the remainder of the guide-track to form a single continuous endless guide for the twin-size sewing operation.

When the guide-track is expanded to the ¾ size in the specific manner hereinbefore described, the curved track sections 76 no longer cooperate with the remainder of the guide-track to form one continuous endless guide-path. However, FIG. 5 illustrates that, if each of the curved sections 76, in each of the interruptions 74 and 75, is replaced by four straight track sections 78 arranged on a base 79 to form an "open" cross intersection, which preferably is constructed like all other open cross intersections, then each of these straight sections will cooperate with the remainder of the guide-track to provide a single continuous endless sewing guide of slightly modified contour for a ¾ sewing operation.

What is true of the ¾ sewing operation is also true of the queen-size operation as indicated in FIG. 6 and of the king-size operation also but the full-size operation requires one of said curved track sections 76 in the interruption 74 and one of said straight track sections 78 in the other interruption 75.

It may be noted that the interruptions 74 and 75 may be replaced by the conventional cross intersections if the turn-around sections are appropriately rearranged.

From the foregoing, it will be appreciated that I have mounted, on a suitable base, a follower-driven quilt-guide means for use in sewing quilt assemblies of one size over a sewing area of given length and width and quilting assemblies of a larger size over a sewing area of the same length and of greater width, which embraces the same width plus an extension thereof, comprising: (A) a base; (B) a first base-mounted guide-track extending over a base length and width corresponding to said given length and width of said sewing area of one size, said guide-track including (1) one first part extending over a base length and width corresponding to said given length and to a portion of said given width of said sewing area of one size; (C) a second base-mounted guide-track extending over a length and width corresponding to said given length and to the width of the extension, which is embraced by said sewing of larger size, (1) said second guide-track being spaced widthwise from said one part of said first guide-track (a distance corresponding to the remainder of the width of said sewing area of one size) to provide therebetween an interruption extending over said given length and over a width corresponding to the remaining portion of the width of said one size; and (D) another first guide-track part removably mounted on said base over said interruption, (1) said other first part cooperating with said one first part to provide an endless path extending through both parts in a manner reproducing the corresponding parts of an endless sewing line design.

Since the first guide-track as a whole (element B) may be viewed as corresponding to any size less than king-size, the second or element C guide-track part may be similarly viewed as corresponding to any size larger than twin-size and as embracing those parts forming the width extension required by the larger size. To illustrate, we assume that the first guide-track is of twin size. In this event, its one part constitutes the permanent portion of the twin-size while its other part (element D) constitutes the removable section which is placed over interruption 28 to complete the width of the twin size. Consequently, the second guide-track part (element C) includes all of the guide-track required beyond interruption 28 to complete any of the larger sizes ranging from the three-quarter size to the king-size. Additionally the other part of the first guide-track may be a turn-around section in one case and an extension section in any of the other cases.

It will also be appreciated that my invention may be embodied in a quilting machine having one head or two heads and, in either embodiment, it provides an easy and simple means for rapidly adjusting the machine for a sewing operation embracing any selected width within a desired range of widths. It will be understood that, where the length varies, a guide-track may be constructed in accordance with my invention to provide for length adjustment.

Guide-track and quilt assembly mounting for quilting machine with two heads

Reverting to Table I, it will be noted that the length dimension of the first 4 sizes listed in the table is 64" while the width dimension varies from 28" to 64". Heretofore, it has been the practice to provide a guide-track of full-length and half-width and to mount that guide-track upon the quilting machine in a position such that one sewing head sews one design of full-length and half-width on the right-half of the quilt assembly while the other sewing machine sews a duplicate design of full-length and half-width on the left-half of the quilt assembly. This presented problems because the constant spacing between sewing heads maintained a constant "widthwise" spacing between duplicate designs whereas duplicate designs of one width require a widthwise head spacing of one order while duplicate designs of a different width require a widthwise head spacing of a different order if the best results are to be attained.

In accordance with this particular aspect of my invention, I propose to provide a guide-track of half-length and of sectionalized width so that it may be adjusted to full-width and to mount that guide-track upon the quilting machine in a position such that one head sews one half-length full-width pattern in the corresponding half-length and full-width of the top-half of the quilt assembly while the other head sews the duplicate half-length, full-width pattern in the corresponding half-length and full-width of the bottom-half of the quilt assembly. With this arrangement, the fixed spacing between sewing heads does not present any problem because it corresponds to the fixed or constant half-length of each design in the first four sizes while the sectionalized track can be adjusted in accordance with the variations in widths which are involved in going from one quilt assembly size to another in the first four sizes.

From the foregoing, it will be apparent that the same double-headed quilting machine equipment, constructed in accordance with my invention, can be used to sew the first four sizes of quilting assemblies and to maintain a constant 5" margin around each side and each end of the sewing area as a whole. It can also be used to sew a king-size assembly with larger margins if such larger

margins are not deemed objectionable. For example, a king-size design sewn on said equipment over a 64" wide sewing area will leave a margin on each side ranging from 4" to 8" over king-size widths ranging from 72" to 80" and a margin on each end ranging from 5" to 10" over king-size lengths ranging from 74" to 84".

It will be appreciated that I have provided a quilting machine guide-track comprising:

A. a plurality of separate guide-track means including

(1) a 1st means providing an endless guide-track of one size, say twin size, which includes

(a) a primary section (from side edge **21** up to interruption **28**) and

(b) a separate secondary section (i.e. turn-around section **59** of FIG. 7) removably mounted in interruption **28** where it extends alongside the primary section, and

(2) a 2nd means for cooperating with said primary section to form an endless guide track of larger size (say three-quarter, full, queen or king size), any such larger size including

(a) a separate section (i.e. extension section **63** of FIG. 8) removably mounted in interruption **28** where it extends alongside said primary section (of the 1st guide-track means) in place of said secondary section **59**.

Again, the 1st means may be viewed as having a primary section extending up to interruption **38** and a secondary or turn-around section **69** in interruption **38** with the 2nd means starting in interruption **38** and extending therefrom over part or all of the remainder of the guide track but, in any event, including a separate extension section **73** removably mounted in interruption **38** in place of the secondary turn-around section **69**. In FIG. 6, the 1st means extends from side edge **21** and terminates with a turn-around section **69** in interruption **50** while the 2nd means begins with an extension section **73** in interruption **50** and continues from that interruption to side edge **22**.

Having described my invention, I claim:

1. A follower-driven quilt-guide means for use in sewing quilt assemblies of one size over a sewing area of given length and width and quilting assemblies of a larger size over a sewing area of the same length and of greater width, which embraces the same width plus an extension thereof, comprising:

A. a base;

B. a first base-mounted guide-track extending over a base length and width corresponding to said given length and width of said sewing area of one size, said guide-track including

(1) one first part extending over a base length and width corresponding to said given length and to a portion of said given width of said sewing area of one size;

C. a second base-mounted guide-track extending over a length and width corresponding to said given length and to the width of the extension, which is embraced by said sewing area of larger size,

(1) said second guide-track being spaced widthwise from said one first part of said first guide-track to provide therebetween an interruption extending over said given length and over a width corresponding to the remaining portion of the width of said one size; and

D. another first guide-track part removably mounted on said base over said interruption,

(1) said other first part cooperating with said one first part to provide a guide path extending through both parts in a manner reproducing the corresponding parts of an endless sewing line design.

2. The guide means of claim **1** wherein:

A. said other first guide-track part is in the form of a turn-around track section which, when mounted in said interruption, is operative to receive a follower coming from said one first part and to direct that follower back into the same part so as to restrict said endless path to said first guide-track.

3. The guide means of claim **1** wherein:

A. said other first guide-track part is in the form of an extension track section which, when mounted in said interruption, is operative to receive a follower coming from said one first part and to direct that follower onto the second guide-track and vice versa so as to extend said endless path from said first over said second guide-track.

4. A follower-driven quilt guide means for use in sewing quilt assemblies over sewing areas ranging from small to large and being of given lengths and of widths correspondingly ranging from small to large, comprising:

A. a guide-track extending over a length and width corresponding to the length and width of said large sewing area,

(1) said guide-track being divided lengthwise, at intervals along its width, into sections such that the width dimension from one given long edge of the guide-track to the first subdivision corresponds to the width of said small sewing area, the width dimension from that same long edge to the second subdivision, corresponds to the width of the next larger sewing area and from said same long edge to the last subdivision corresponds to the width of the sewing area next to the largest,

(2) each section, between said one long edge and a subdivision, being further subdivided lengthwise to provide, along the edge corresponding to its aforesaid subdivision, a removable extension section which cooperates with the remainder of the guide-track as a whole to provide a single continuous endless sewing line design for the sewing area of said largest size.

5. The guide means of claim **4** including:

A. a turn-around section adapted to replace one of said extension sections,

(1) said turn-around section, when mounted in place of said extension section, cooperating with the remainder of the guide-track, between it and said one long edge, to provide a single continuous endless guide-track extending from said one long edge to said turn-around section and having its opposite long edge on said turn-around section.

6. In a quilting machine, a guide, comprising:

A. a plurality of separate guide track means including

(1) a 1st means providing an endless guide track of one size,

(a) said 1st means including a primary section and a separate secondary section removably mounted alongside said primary section, and

(2) a 2nd means for cooperating with said primary section to form an endless guide track of larger size,

(a) said 2nd means including a separate section removably mounted alongside said primary section in place of said secondary section.

7. The guide of claim **6**, wherein:

A. said primary section includes an end section.

8. The guide of claim **7**, wherein:

A. said secondary section is a removable turn-around section,

(1) which cooperates with all sections on its one side adjacent to said end section, to provide an endless guide-track of one width.

9. The guide of claim **8**, including:

A. said separate section is an extension section positionable in place of said turn-around section to provide,

in cooperation with sections on both sides of it, an endless guide-track of greater width.

10. An improved quilting machine of the type in which a motorized-follower and a follower-engaged guide-track cooperate to move a frame-mounted carriage and a carriage-mounted quilt assembly along a path reproducing an endless sewing line design while a pair of spaced frame-mounted sewing means sews duplicates of said design into a selected quilt assembly taken from a range of quilt assemblies of different widths for mattresses of different widths, such as those ranging from twin size through full size to king size, which vary in side-to-side width from about 30% less to about 48% more than full size and in top-to-bottom length from about full size to about 14% more than full size, comprising:

A. a frame, including a head-frame arranged with its length dimension extending transversely across the quilting machine;

B. a pair of sewing means, including a pair of sewing heads transversely-spaced on said head-frame;

C. manually selectable means to provide, for a quilt assembly of selected width, a guide track, which reproduces an endless sewing line design having a width equal to the full width of the whole sewing area of said selected quilt assembly and a length equal to a desired fraction of the full length of said whole sewing area; and

D. means for rendering said transversely-spaced sewing means operative to sew a 1st reproduction of said design into said quilt assembly over a 1st sewing area portion, which is of said full-width and fractional-length, and a 2nd reproduction thereof into a transversely-spaced 2nd sewing area portion, which is of the same full-width and fractional-length, said means including

(1) mounting means for holding the quilt assembly on the carriage with the length dimension of the assembly extending transversely across the machine, and

(2) means for mounting the guide-track with its fractional "length" dimension extending transversely across the machine and parallel to the length dimension of said quilt assembly and with its full width dimension extending longitudinally along the machine.

11. The machine of claim **10** wherein:

A. said manually selectable means is composed of a plurality of sections which can be connected together

(1) in one arrangement to provide an endless guide-track of one selected full width and a desired fractional length for sewing one quilt assembly of corresponding width, and

(2) in a different arrangement to provide an endless guide-track of a selected larger full width and a desired fractional length for sewing another quilt assembly of corresponding larger width.

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