June 17, 1969 K. W. KLOSE 3,450,080

DUAL SEWING MACHINE ASSEMBLY

Filed Dec. 21, 1967 Sheet 1 of 2

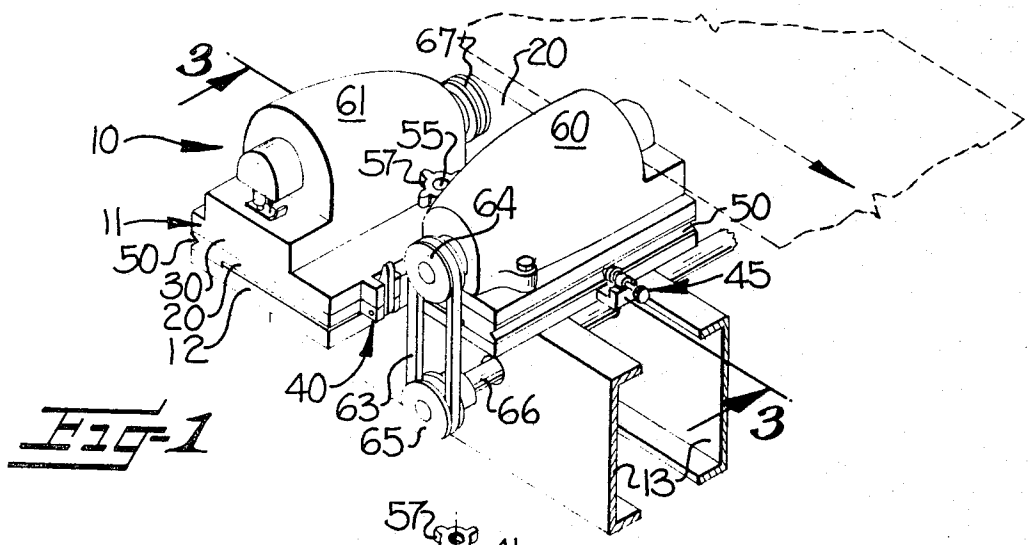


Fig-1

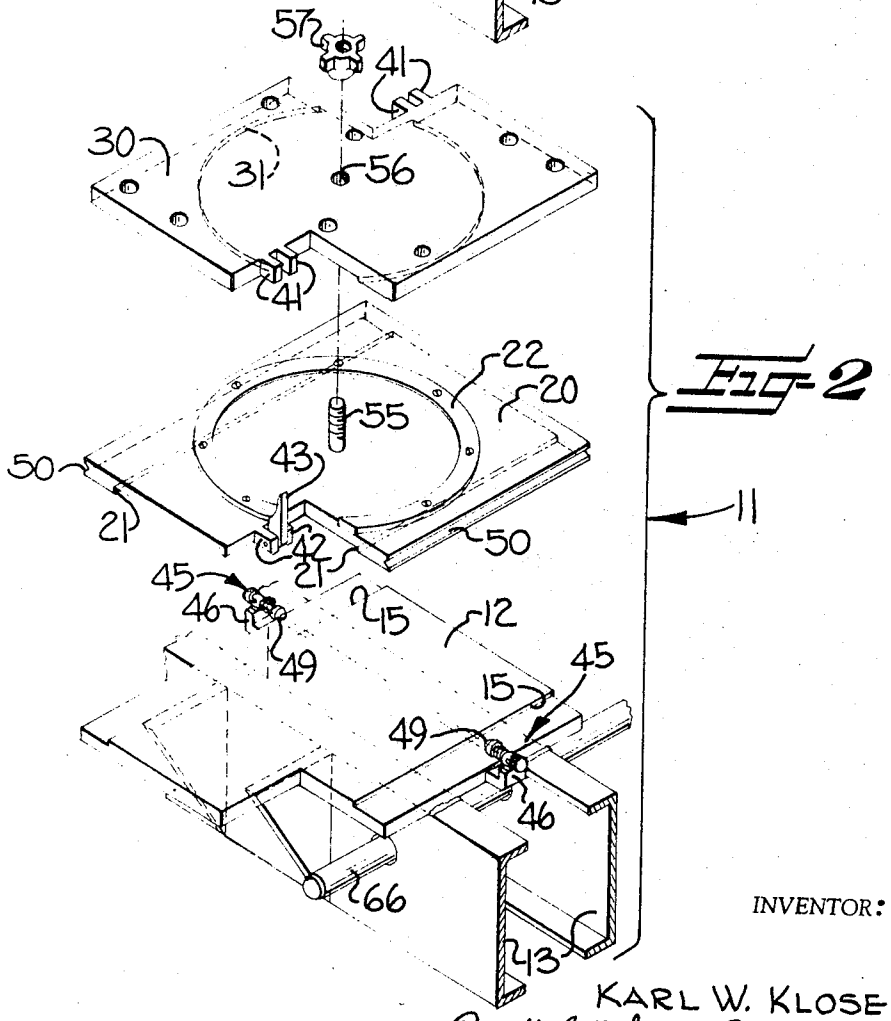


Fig-2

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Filed Dec. 21, 1967 Sheet 2 of 2

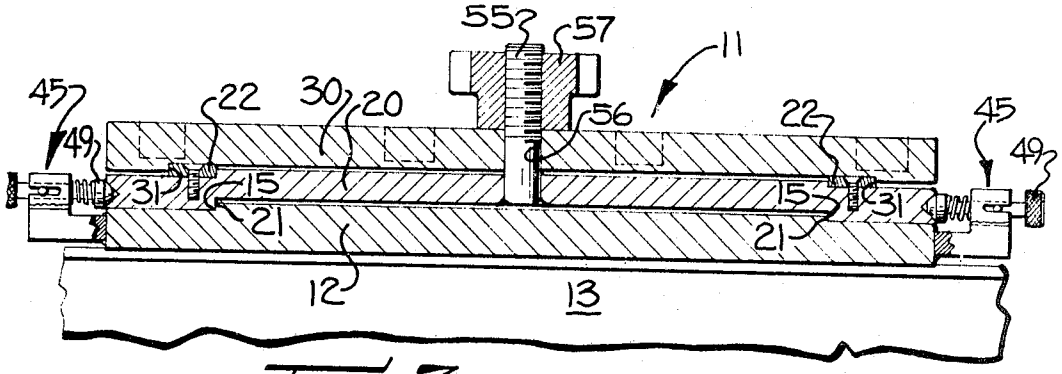


Fig-3

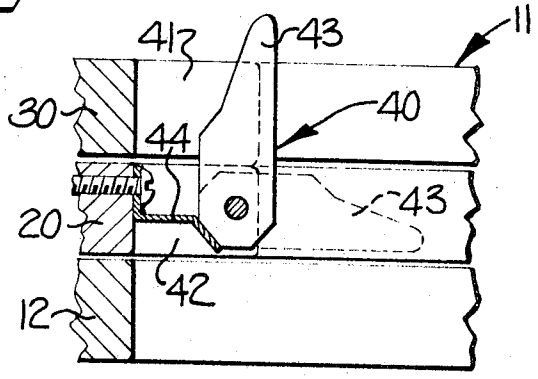


Fig-4

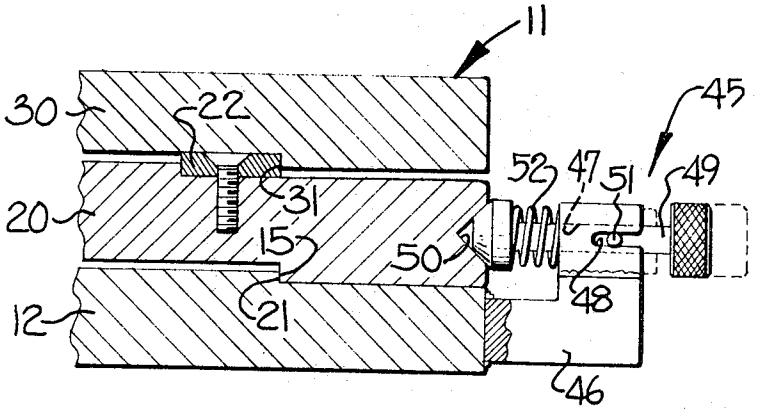


Fig-5

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DUAL SEWING MACHINE ASSEMBLY

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Int. Cl. D05b 75/00, 23/00, 25/00
U.S. Cl. 112—217.2 7 Claims

ABSTRACT OF THE DISCLOSURE

A dual sewing machine assembly characterized by being movable to alternately position one of the sewing machines in an active position for performing its normal operation in a work area and the other sewing machine in a standby position away from the work area for repair or inactivity. The assembly comprises a first stationary member adapted to support the assembly, a second movable member mounted on and carried by the first member and adapted to move linearly with respect thereto, a third movable member mounted on and carried by the second member and adapted to move linearly therewith and to move rotatively with respect thereto, and a pair of sewing machines mounted on and carried by the third member in opposing active and standby positions and adapted to be moved, linearly and rotatively as desired, to reverse the sewing machines occupying the active and standby positions.

This invention relates to a dual sewing machine assembly and more particularly to a mounting assembly adapted to carry a pair of sewing machines or the like and characterized by being movable to alternately position one of the machines in an active position for performing its normal operation in a work area and the other machine in a standby position away from the work area for repair or inactivity.

In the use of sewing machines or the like, particularly in a fully automatic continuous production line apparatus for the fabrication of articles, such as pillowcases, diapers, baby blankets, etc., in which a sewing operation is involved in conjunction with other fabricating operations, it has been the normal practice to mount a single sewing machine at various locations in the overall apparatus for inserting stitching or the like, as desired, during the fabrication of the article being produced. Also, sewing machines or the like have been used in semi-automatic production lines for performing their desired work or operation as material or fabric is passed thereto from a prior operation before being passed on to a subsequent operation.

These automatic and semi-automatic fabrication and manufacturing operations have been successful in increasing efficiency, reducing space, reducing the number of operators, etc. However, they have proved inefficient when the sewing machine or the like broke down or needed repair for one reason or another inasmuch as stopping the operation of a single sewing machine or the like has necessarily, heretofore, stopped operation of the entire apparatus or production line in which it is utilized.

Therefore, it is the object of this invention to provide a dual sewing machine assembly in which one of the machines is positioned in an active position for performing its normal operation in a work area and the other sewing machine is in a standby position away from the work area for repair or inactivity and in which the positions of the two machines may be reversed at will to place the inactive sewing machine in the active position and the active sewing machine in the inactive or standby position for repair or inactivity of the previously active sewing machine, so as not to stop operation of the entire apparatus or to stall the production line.

It has been found by this invention that the above object may be accomplished by providing a dual sewing machine assembly or a mounting assembly adapted to carry a pair of machines, which comprises a first stationary member adapted to support the assembly, a second movable member mounted on and carried by the first member and adapted to move linearly with respect thereto, and a third movable member mounted on and carried by the second member and adapted to move linearly therewith and to move rotatively with respect thereto. The third member is adapted to carry a pair of machines positioned thereon in opposing active and standby positions and generally parallel with the axis of linear movement thereof, so that both of the machines may be moved linearly away from the work area by linear movement of the second and third members with respect to the first member, then moved rotatively approximately 180° by rotative movement of the third member with respect to the first and second members, and then moved linearly again toward the work area by linear movement of the second and third members with respect to the first member to thereby reverse the machines occupying the active and standby positions.

Some of the details of this invention having been stated, other details will appear as the description proceeds when taken in conjunction with the accompanying drawings, in which:

FIGURE 1 is a perspective view of the dual sewing machine assembly of this invention;

FIGURE 2 is an exploded view of the mounting assembly shown in FIGURE 1 and illustrating the separate component parts thereof;

FIGURE 3 is a cross-sectional view of the mounting assembly shown in FIGURE 1 and taken along the line 3—3 of FIGURE 1;

FIGURE 4 is an enlarged cross-sectional detail of a first latch means utilized in the assembly of this invention; and

FIGURE 5 is an enlarged cross-sectional detail of a second latch means utilized in the assembly of this invention.

Referring now to the drawings, the dual sewing machine assembly of this invention is referred to therein generally by the reference numeral **10**. This assembly comprises a mounting assembly, referred to in the drawings generally by the reference numeral **11**.

The mounting assembly comprises a first stationary member **12** in the form of a flat plate having a cut-out in one of the rear corners thereof, as shown in FIGURES 1 and 2. The member **12** is mounted stationary on any suitable support and, as herein illustrated, is shown welded to a beam **13** of an overall fabricating apparatus. However, it is to be understood that the stationary member **12** may be supported from the floor or other surface by any suitable means including legs, etc. The stationary member **12** is adapted to support the remaining portions of the assembly and includes linearly disposed track means **15** on the upper surface thereof extending along the entire longitudinal axis of the member **12** and being in the form of cut-outs or depressions, as illustrated particularly in FIGURES 2 and 3.

The mounting assembly **11** further comprises a second movable member **20** superimposed on and carried by the first member **12** and being in the form of a flat plate of complementary shape to the member **12**. The second member **20** also includes a cut-out in one of the rear corners thereof which mates with the cut-out in the member **12**. The second member **20** also includes linearly extending track means **21** on the bottom surface thereof which extend along the entire longitudinal axis thereof and are in the form of projections which are adapted to

mate with the track means **15** on the first member **12** to permit linear movement only of the second member **20** with respect to the first member **12**.

The second member **20** also includes circularly disposed track means **22** on the other or top side thereof in the form of a circular projection or rail secured thereto by rivets or screws, as shown particularly in FIGURE 3.

The mounting assembly **11** further comprises a third movable member **30** superimposed on and carried by the second member **20** and being in the form of a flat plate of generally complementary shape to the first member **12** and the second member **20**. The third member **30** also includes a cut-out in one of the rear corners which mates with the cut-outs in the members **12** and **20** and further includes a cut-out in one of the front corners thereof, for purposes to be described hereinafter. The third member **30** includes circularly disposed track means **31** on the bottom surface thereof in the form of a circular cut-out or depression which is adapted to mate with the circularly disposed track means **22** on the second member **20** to permit rotative movement only of the third member **30** with respect to the second member **20**. By the above arrangement, the third member is adapted to move with the second member in a linear path of travel with respect to the first member.

The mounting assembly **11** includes a first movable latch means **40** comprising a pair of projecting collars **41** secured to opposite sides of the third member **30** and a complementary projecting collar **42** secured to the second member **20** so that one of the collars **41** and the collar **42** are superimposed on top of each other in either position of the third member **30**. A movable latch member **43** is pivotally mounted within the extending legs of the collar **42**, as shown in the drawings, and is adapted to be selectively positioned in a latching position, as shown in solid lines in FIGURES 1, 3, and 4, in which the second and third member **20** and **30** are latched together for linear movement with respect to the first member **12** but in which the third member **30** is prevented from rotative movement with respect to the second member **20**. The latch member **43** may also be positioned in a non-latching position, as shown in dotted lines in FIGURE 4, in which the third member **30** is free for rotative movement with respect to the second member **20**. Cooperating with the latch member **43** is a spring means **44** suitably attached to the second member **20** by a screw or otherwise and adapted to engage the latch member **43** for maintaining it in either the above-described latching or non-latching positions, as may be seen in the drawings.

Further included in the mounting assembly **11** is a pair of second latch means **45**, as shown in FIGURES 1 and 5, each of which comprises an L-shaped arm **46** secured to opposite sides of the first member **12** and extending outwardly and upwardly therefrom and including a bore therein communicating with a slot **48** on one side thereof. Each of the latch means **45** further includes plunger **49** extending through the bore **47** and having an outer end thereon adapted to frictionally engage a V-shaped groove **50** formed along opposite edges of the second member **20** to latch the second member **20** with the first member **12** against linear movement therebetween. The plunger **49** further includes horizontally extending lugs **51** on each side thereof which extend through slots **48** when the plunger is placed in friction engagement with the groove **50**. The plunger **49** is biased by spring **52** into friction engagement with the groove **50** and may be selectively withdrawn and placed in a non-latching position, as shown in dotted lines in FIGURE 5, by manually pulling the plunger **49** against the bias of spring **52** so that the lugs **51** are withdrawn from the slots **48**. The plunger **49** may then be rotated slightly to position the lugs **51** outside the groove **50** to hold the plunger in non-latching position.

The mounting assembly **11** further comprises an adjustable protruding bolt and nut means including a threaded bolt **55** secured generally centrally of the second member **20** and extending upwardly therefrom through a central opening **56** in the third member **30**. A cooperating threaded nut **57** is adapted to be received on the bolt **55** and to be tightened against the third member **30** for securing and centering the second and third members in the desired position or, in the alternative, may be loosened to allow relative movement of the second and third members **20** and **30** with respect to each other, as described above.

The dual sewing machine assembly **10** of this invention further comprises a pair of sewing machines **60** and **61** mounted on and carried by the third member **30** in opposing active and standby positions and generally parallel with the axis of linear movement thereof. As may be seen in FIGURE 1, the sewing machine **60** is mounted on one side of the third member **30** forwardly thereof so that the stitching instrumentalities of the sewing machine will extend into the work area, indicated in dotted lines, so that the sewing machine **60** may perform its normal operation in the work area. The sewing machine **60** is driven by a belt **63** which passes around a pulley **64** on the sewing machine and around a pulley **65** connected to a shaft **66** and driven from any suitable means (not shown). The sewing machine **61** is mounted on the other side of the third member **30** in a generally parallel position with the machine **60** but facing in the opposite direction and extending rearwardly of the third member **30**. This sewing machine **61** also includes and is driven from a pulley **67**.

With the above described assembly, when the sewing machine positioned in the active position is to be moved, for repair or otherwise, from the active position to the inactive position, an operator may manually move both of the machines linearly away from the work area by positioning the first and second latch means **40** and **45** in their non-latching positions and by linear movement of the second and third member **20** and **30** with respect to the first member **12**, then manually move the machines rotatively approximately 180° by rotative movement of the third member **30** with respect to the first and second members **12** and **20**, and then again manually move the machines linearly toward the work area by linear movement of the second and third members **20** and **30** with respect to the first member **12** to thereby reverse the sewing machines occupying the active and standby positions, so that the machine **61** will now be adjacent the work area and the machine **60** will be rearward of the assembly. For this purpose, the belt **63** will be removed from the pulley **64** of the machine **60** and positioned on the pulley **67** on the machine **61** when the sewing machines **60** and **61** are reversed. This location of the belt **63** on either the pulley **64** of the machine **60** or the pulley **67** of the machine **61** is made possible by the cut-outs in the two corners of the third member **30** and the complementary cut-outs in rear corners of the second member **20** and the first member **12**, as illustrated in the drawings.

In the drawings and specification, there has been set forth a preferred embodiment of this invention and, although specific terms are employed, they are used in a descriptive sense only and not for purposes of limitation, the scope of the invention being defined in the following claims.

What is claimed is:

1. A dual sewing machine assembly characterized by being movable to alternately position one of the sewing machines in an active position for performing its normal operation in a work area and the other sewing machine in a standby position away from the work area for repair or inactivity, said mounting assembly comprising:

(a) a first stationary member adapted to support said assembly;

(b) a second movable member mounted on and carried by said first member and adapted to move linearly with respect thereto;

(c) a third movable member mounted on and carried

by said second member and adapted to move linearly therewith and to move rotatively with respect thereto; and

(d) a pair of sewing machines mounted on and carried by said third member in opposing active and standby positions and generally parallel with the axis of linear movement thereof; so that both of said machines may be moved linearly away from the work area by linear movement of said second and third members with respect to said first member, then moved rotatively approximately 180° by rotative movement of said third member with respect to said first and second members, and then moved linearly again toward the work area by linear movement of said second and third members with respect to said first member to thereby reverse the sewing machines occupying the active and standby positions.

2. A dual sewing machine assembly, as set forth in claim 1, including movable latch means cooperatively disposed on said second and third members and adapted to be placed in a latching position, in which said second and third members are latched together for linear movement with respect to said first member but in which said third member is prevented from rotative movement with respect to said second member, and in a non-latching position, in which said third member is free for rotative movement with respect to said second member.

3. A dual sewing machine assembly, as set forth in claim 1, including movable latch means cooperatively disposed on said first and second members and adapted to be placed in a latching position, in which said first and second members are latched together to prevent linear movement therebetween but in which said third member is free for rotative movement with respect to said first and second members, and in a non-latching position, in which said second member is free for linear movement with respect to said first member.

4. A dual sewing machine assembly, as set forth in claim 1, in which said first member includes linearly disposed track means thereon, and in which said second member includes linearly disposed track means thereon adapted to mate with said track means on said first member to permit linear movement of said second member with respect to said first member.

5. A dual sewing machine assembly, as set forth in claim 1, in which said second member includes circularly disposed track means thereon, and in which said third means includes circularly disposed track means thereon adapted to mate with said track means on said second member to permit rotative movement of said third member with respect to said second member.

6 A dual sewing machine assembly characterized by being movable to alternately position one of the sewing machines in an active position for performing its normal operation in a work area and the other sewing machine in a standby position away from the work area for repair or inactivity, said mounting assembly comprising:

(a) a first stationary member adapted to support said assembly and including linearly disposed track means thereon;

(b) a second movable member superimposed on and carried by said first member and including linearly disposed track means on one side thereof adapted to mate with said track means on said first member to permit linear movement of said second member with respect to said first member and including circularly disposed track means on the other side thereof;

(c) a third movable member superimposed on and carried by said second member and including circularly disposed track means thereon adapted to mate with said circularly disposed track means on said second member to permit rotative movement of said third member with respect to said second member and to allow said third member to move linearly with said second member;

(d) a first movable latch means cooperatively disposed on said second and third members and adapted to be placed in a latching position, in which said second and third members are latched together for linear movement with respect to said first member but in which said third member is prevented from rotative movement with respect to said second member, and in a non-latching position, in which said third member is free for rotative movement with respect to said second member;

(e) a second latch means cooperatively disposed on said first and second members and adapted to be placed in a latching position, in which said first and second members are latched together to prevent linear movement therebetween but in which said third member is free for rotative movement with respect to said first and second members, and in a non-latching position, in which said second member is free for linear movement with respect to said first member; and

(f) a pair of sewing machines mounted on and carried by said third member in opposing active and standby positions and generally parallel with the axis of linear movement thereof; so that both of said machines may be moved linearly away from the work area by linear movement of said second and third members with respect to said first member, then moved rotatively approximately 180° by rotative movement of said third member with respect to said first and second members, and then moved linearly again toward the work area by linear movement of said second and third members with respect to said first member to thereby reverse the sewing machines occupying the active and standby positions.

7. A mounting assembly adapted to carry a pair of machines and characterized by being movable to alternately position one of the machines in an active position for performing its normal operation in a work area and the other machine in a standby position away from the work area for repair or inactivity, said mounting assembly comprising:

(a) a first stationary member adapted to support said assembly;

(b) a second movable member mounted on and carried by said first member and adapted to move linearly with respect thereto; and

(c) a third movable member mounted on and carried by said second member and adapted to move linearly therewith and to move rotatively with respect thereto, said third member being adapted to carry a pair of machines positioned thereon in opposing active and standby positions and generally parallel with the axis of linear movement thereof; so that both of said machines may be moved linearly away from the work area by linear movement of said second and third members with respect to said first member, then moved rotatively approximately 180° by rotative movement of said third member with respect to said first and second members, and then moved linearly again toward the work area by linear movement of said second and third member with respect to said first member to thereby reverse the machines occupying the active and standby positions.

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U.S. Cl. X.R.

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