

Oct. 10, 1950

E. PRAZAK ET AL

2,525,312

EMBROIDERY SEWING MACHINE

Filed March 1, 1949

4 Sheets-Sheet 1

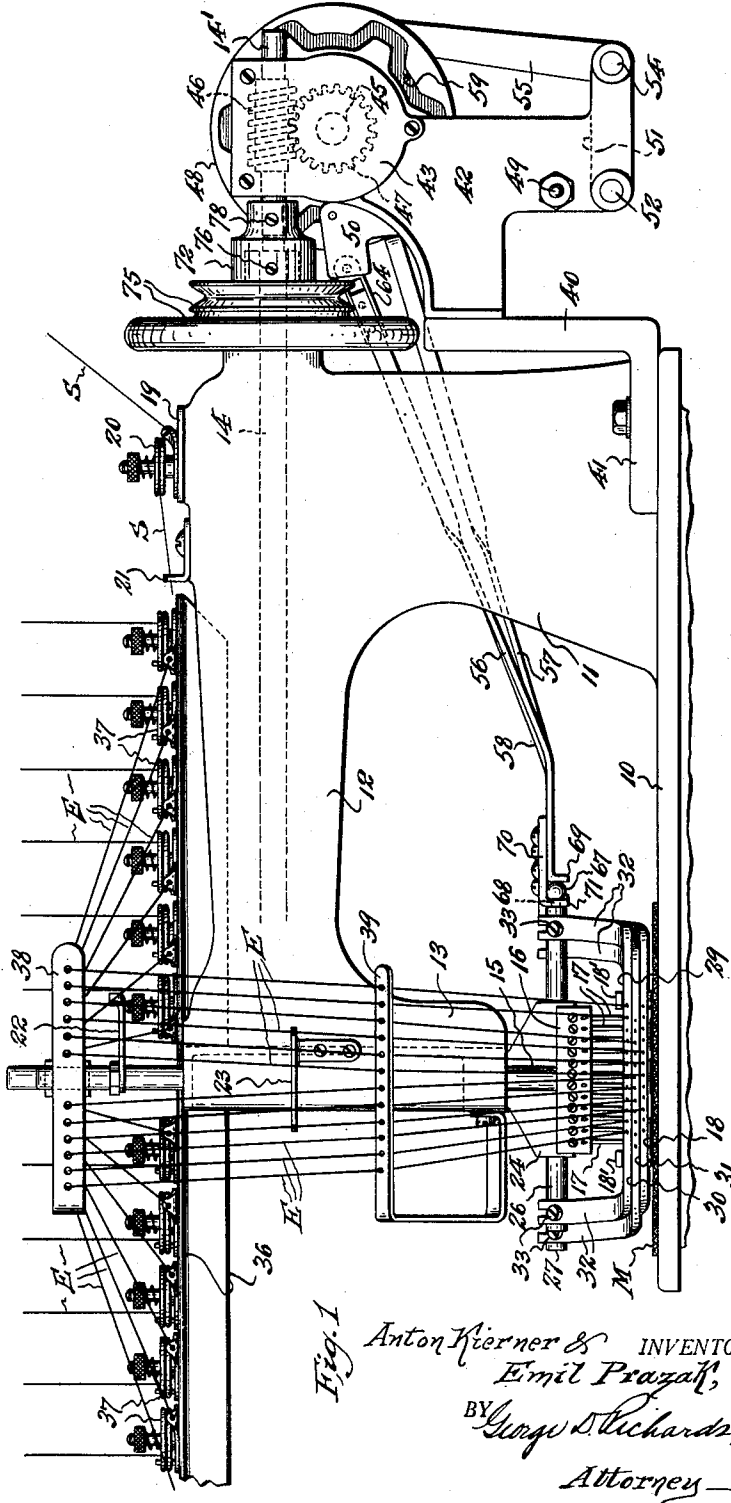


Fig. 1

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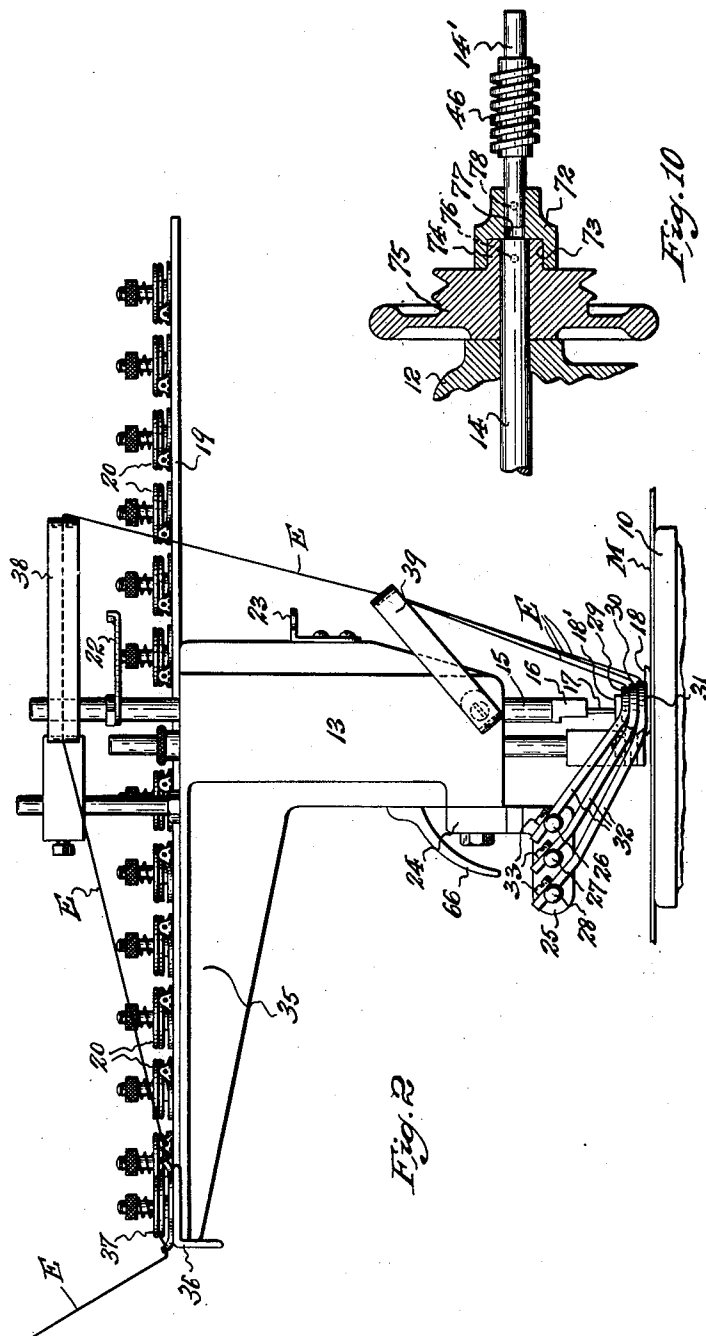
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4 Sheets-Sheet 2



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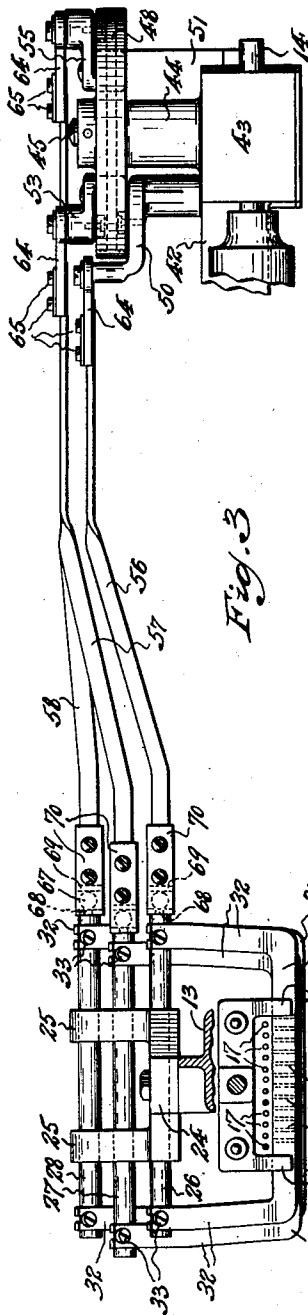


Fig. 3

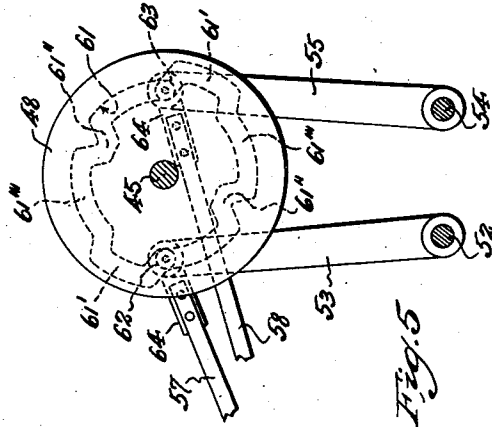


Fig. 5

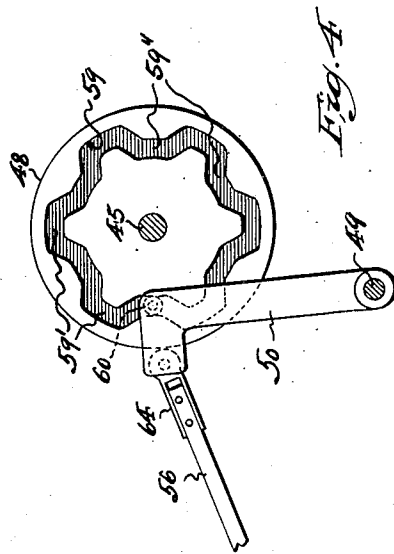


Fig. 4

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4 Sheets-Sheet 4

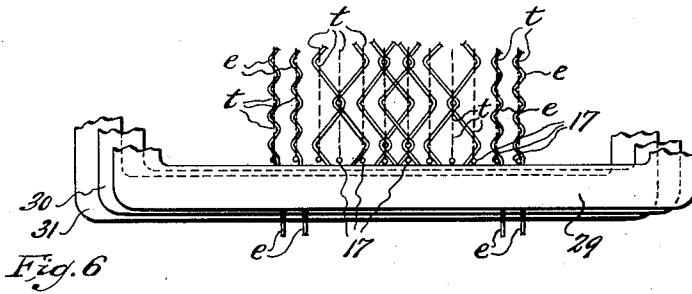


Fig. 6

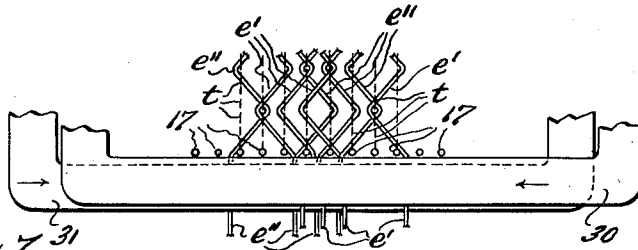


Fig. 7

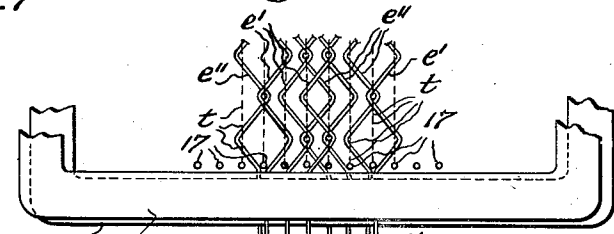


Fig. 8

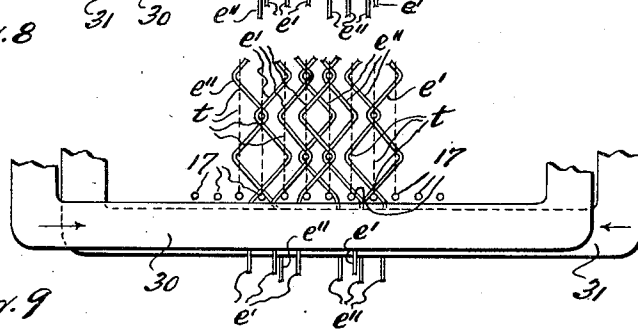


Fig. 9

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# UNITED STATES PATENT OFFICE

2,525,312

## EMBROIDERY SEWING MACHINE

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Union, N. J.

Application March 1, 1949, Serial No. 79,068

12 Claims. (Cl. 112—98)

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This invention relates to improvements in sewing machines, and the invention has reference, more particularly, to means cooperative with the sewing mechanism of the machine for applying decorative embroidery to material worked upon so that said embroidery is secured to the surface of the material by running stitches produced by the sewing mechanism.

The invention has for an object to provide, in a sewing machine, novel means for laying a plurality of embroidering threads upon the face of material worked upon in desired predetermined and cooperative pattern forming relation, such application of the embroidering threads being synchronized with the machine sewing mechanism so that the applied embroidering threads, as disposed in pattern forming relation, will be tacked to the material, by lines of running stitches produced by the sewing mechanism, in firmly and strongly attached relation to the face of said material.

The invention has for a further object to provide a plurality of transversely reciprocable embroidering thread distributing members disposed in advance of the needles of the machine sewing mechanism, and in association with the presser foot of said sewing mechanism, together with cam means operated by the drive shaft of the machine for reciprocating said distributing members in timed relation to one another, whereby to lay the embroidering threads in desired pattern forming relation, upon the face of material worked upon, preparatory to tacking the same to said material by lines of running stitches which are sewn across the pattern forming embroidering threads by the machine sewing mechanism.

Another object of the invention is to provide a novel coupling connection between the sewing machine drive shaft and the transmission actuated thereby for driving the cam means of embroidering thread distributing mechanism, whereby the latter mechanism can be quickly and easily disconnected from the machine drive shaft and manipulated to bring it into properly timed relation to the machine sewing mechanism as operated by the machine drive shaft.

Other objects of the invention, not at this time more particularly enumerated, will be understood from the following detailed description of the same.

An illustrative embodiment of the invention is shown in the accompanying drawings, in which:

Fig. 1 is a side elevation of a sewing machine

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equipped with the novel embroidering mechanism according to this invention; Fig. 2 is a front end elevation of the embroidery sewing machine; Fig. 3 is a fragmentary plan view in part section, showing the embroidering thread distributing means and the means for actuating the same; Fig. 4 is a fragmentary view showing an illustrative form of one cam race of the cam for actuating the embroidering thread distributing members; and Fig. 5 is a fragmentary view showing an illustrative form of another cam race of said actuating cam.

Figs. 6, 7, 8 and 9 are fragmentary plan views showing various operative positions of embroidering thread distributing members as relatively moved by the actuating cam for the production of an illustrative character of embroidery pattern as shown.

Fig. 10 is a fragmentary longitudinal sectional view of the releasable coupling means by which the embroidering thread distributing mechanism is connected with the sewing machine drive shaft so as to be actuated by the latter.

Similar characters of reference are employed in the above described views, to indicate corresponding parts.

Referring to the drawings, the reference character 10 indicates the bed of a sewing machine having an upstanding pedestal 11 from which projects the forwardly extending arm 12. Said arm 12 terminates in a vertically disposed head 13. Journaled in the arm 12, so as to extend longitudinally therein, is the machine drive shaft 14. Mounted on the head 13, for vertical reciprocation by the usual transmission means (not shown) which is actuated by the drive shaft 14, is a needle bar 15, to the lower end of which is affixed a needle carrier 16 for mounting a plurality of suitably spaced apart sewing machine needles 17, which, in the illustrative machine shown, are twelve in number, arranged in a row transverse to the path of movement of material M to be operated upon by the machine. The needles 17 cooperate with shuttle or like means (not shown) for the formation of sewn stitches in manner well known to the art. Also supported by the head 13 is the usual vertically yieldable presser foot 18 which cooperates with the usual feed dog means (not shown) by which the material M operated upon is controlled and advanced over the bed 10 of the machine relative to the sewing mechanism. A strand of sewing thread S is supplied to each needle 17. Fixed on the machine arm 13, to

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extend across the top thereof, is a supporting bar 19 upon and along which are mounted, in suitably spaced apart relation, a plurality of sewing thread tensioning devices 20, one for each needle 17. The strands of sewing thread S are drawn from suitable supplies thereof to respectively pass through the respective tensioning devices 20, being thence led through suitably disposed thread guides 21, 22 and 23, thence through the needle carrier 16 to the needles 17 which are respectively threaded thereby.

Cooperating with the sewing mechanism of the machine is novel means for laying a plurality of embroidering threads upon the face of the material M as it is moved through the machine, whereby to relatively dispose said threads in a desired pattern formation in the path of the sewing needles 17, so that runs of tacking stitches, which are produced by the operation of said needles, secure the laid pattern forming embroidering threads in place as the pattern is progressively formed. The means for manipulating and laying the embroidering threads in pattern forming relation comprises the following mechanisms:

Affixed to the rearward side of the head 13, to depend from its lower free end behind the presser foot 18 and sewing needles 17, is a bracket 24 provided with rearwardly projecting, horizontal bearing arms 25 which overhang the path of movement of the material M as it is advanced through the machine during the embroidering operation. Slidably supported by said bearing arms 25 for independent reciprocable movements transverse to the path of movement of the material M which is to be worked upon, are a plurality of parallelly spaced slide shafts. As shown, said slide shafts comprise a forward slide shaft 26, an intermediate slide shaft 27, and a rearward slide shaft 28. Disposed to overlie the presser foot 18, adjacently in front of and parallel to the row of sewing needles 17, are a plurality of superposed transverse embroidering thread distributor members or bars. As shown said distributor members or bars comprise a top member or bar 29, an intermediate member or bar 30, and a bottom member or bar 31. Said distributor members or bars each terminate at their opposite ends in rearwardly extending and upwardly inclined side arms 32 which straddle the needle carrier 16 and its needles 17 and the presser foot 18, and by which said distributor members or bars are adjustably affixed, by fastening screws 33, respectively to the slide shafts 26, 27 and 28, subject to independent reciprocation by the latter transverse to the path of movement of the material M through the machine. Each distributor member or bar is provided with a row of endwise open embroidering thread passages 34 corresponding in number and spacing to the number and spacing of the sewing needles 17. Said passages 34 extend through the distributor members or bars from the forward to the rearward edges thereof.

Strands of embroidering thread E are selectively supplied to the distributor members or bars. Affixed to the rearward side of the head 13, to extend outwardly therefrom, is a bracket arm 35, upon the free end portion of which is affixed a second supporting bar 36 which parallels the machine arm 12. Mounted on and along this supporting bar 36, in suitably spaced apart relation, are a plurality of embroidering thread tensioning devices 37. The strands of embroidering thread E are drawn from suitable supplies thereof to respectively pass through respective ten-

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sioning devices 37, being thence led through suitably located thread guides 38 and 39, which are affixed to the head 13, to selected distributor members or bars so as to be threaded rearwardly through selected passages 34 of the latter.

The means for producing independent but suitably related reciprocable movements of the slide bars 26, 27 and 28, are consequently like reciprocable movements of the embroidering thread distributor members or bars 29, 30 and 31, all in properly timed or synchronized relation to the tacking stitch forming operations of the sewing needles 17 and the accompanying advance of the material M through the machine, comprises the following mechanism:

Supported by an upstanding bracket 40, the base 41 of which is affixed to the rear end of the machine bed 10, is a bearing frame 42 provided at its upper end with a gear box 43 in which is journaled a secondary shaft 44. Said secondary shaft 44 is aligned with the machine and is coupled thereto so as to be driven thereby, as will be hereinafter further described. Journaled in a bearing member 44 which projects from the upper end of the bearing frame 42 and its gear box 43, transverse to the axis of the machine drive shaft 14, and outwardly relative to the rear side of the machine, is a cam shaft 45. Said cam shaft 45 is driven from the secondary shaft 44 by gearing which is housed in the gear box 43. Said gearing preferably comprises a worm 46 fixed on the secondary shaft 44 so as to mesh with and drive a worm gear 47 which is fixed on the cam shaft 45. Secured to the outer end of the cam shaft 45, so as to be driven thereby, is an actuating cam 48 by which operative movements of the embroidering thread distributor members or bars are produced.

Pivotaly supported on a fulcrum stud 49, which is mounted on the bearing frame 42, is an upwardly extending rocker arm 50, the upper end portion of which is disposed contiguous to the inner face of said actuating cam 48. The lower end of the bearing frame 42 is provided with an angular extension 51 which projects from its rearward side. Pivotaly supported on an inner fulcrum stud 52, which is mounted in the extension 51, is an upwardly extending rocker arm 53, the upper end portion of which is disposed contiguous to the outer face of the actuating cam 48 at one side thereof. Similarly, pivotaly supported on an outer fulcrum stud 54, which is mounted in the extension 51, is another upwardly extending rocker arm 55, the upper end portion of which is disposed contiguous to the outer face of the actuating cam 48 at the other side thereof. As shown, the rocker arm 50 is interconnected with the forward slide rod 26 by a connecting rod 56; the rocker arm 53 is interconnected with the intermediate slide rod 27 by a connecting rod 57; and the rocker arm 55 is interconnected with the rearward slide rod 28 by a connecting rod 58. The inner face of the actuating cam 48 is provided with a suitably shaped cam race 59 which is operatively engaged by a roller stud 60 with which the rocker arm 50 is provided, whereby said rocker arm 50 is oscillated to impart, through the connecting rod 56, desired reciprocable movements to the slide shaft 26 and thus to the top embroidery thread distributor member or bar 29. The outer face of the actuating cam 48 is similarly provided with a suitably shaped cam race 61 which is operatively engaged by the respective roller studs 62 and 63 with which the rocker arms 53 and 55 are respectively provided, whereby said latter

rocker arms are oscillated to impart, through the respective connecting rods 57 and 58, desired reciprocable movements to the respective slide shafts 27 and 28 and thus to the respective intermediate and bottom embroidery thread distributor members or bars 30 and 31.

To permit adjustment of the overall lengths of the respective connecting rods 56, 57 and 58, whereby to properly predetermine the relative positions of the slide rods 26, 27 and 28 and their distributor members or bars 29, 30 and 31, and so that the embroidering thread passages 34 of the latter are properly related to the sewing machine needles 17, each connecting rod is provided at its rocker arm engaging end with a coupling link 54, to which said connecting rod is secured by attachment screws 65, subject to longitudinal adjustment relative to the coupling link.

As previously hereinabove pointed out, the superposed distributor members or bars 29, 30 and 31 overlie the free end portion of the presser foot 18 so as to be subject to lift thereby, when said presser foot is raised, by its manipulating lever 66, to permit initial insertion of material M between the same and the cooperating feed-dog means of the machine sewing mechanism. The presser foot 18 includes keeper lugs 18' which engage over the superposed distributor members or bars, whereby to brace the latter against upward displacement and undue vibration during the operation thereof. In order to permit such lifting movement of said distributor members or bars, the same and their side arms 32 must be capable of up and down swinging movement respectively about the axes of the slide shafts 26, 27 and 28 by which the same are supported and actuated. This requirement necessitates that the slide rods be free for rotative movement as well as sliding movement in their supporting bearings 25. To permit this, each slide bar is connected with its associated connecting rod by a swiveling connection, which, in an illustrative form thereof as shown, comprises a coupler ball 67 axially connected with a slide rod by a neck portion 68 of reduced diameter. The associated connecting rod terminates in an angular stop lug 69 adapted to abut the coupler ball, and a coupler clip 70 is secured to the connecting rod for extension therefrom over the coupler ball, said clip terminating in a bifurcated coupler lug 71 which straddles the neck portion 68 intermediate the coupler ball 67 and the end of the slide rod from which it extends.

For the purpose of illustrating the principles and mode of operation of the mechanism for manipulating and laying the embroidering threads E, the mechanism is shown by way of example as arranged to produce the illustrative embroidery pattern shown in Fig. 6. In such arrangement, outermost pairs of embroidering threads *e* are led to the top distributor member or bar 29, one pair of said threads being threaded through a pair of passages 34 of said distributor member or bar at one end of the row thereof, and the other pair of threads *e* being threaded through a pair of passages 34 at the other end of said row thereof. The cam race 59 of the actuating cam 48 is provided with alternated out-thrusting sections 59' and in-thrusting sections 59'' which are equi-spaced along said race (in the illustrative case) thirty degrees apart. The rotative speed of the cam 48, which turns in counterclockwise direction, is so predetermined that said race sections 59' and 59'' successively function in timed relation to successive tacking stitch

producing movements of the sewing machine needles 17. For example, after tacking stitches *t* have been formed by descent of the needles 17, an out-thrusting cam race section 59' will operate to cause the slide shaft 26 and top distributor member or bar 29 to move to the left from the position shown in Fig. 6, whereby the embroidering threads *e* will be swung outward across the path of tacking stitches *t*, so that on a succeeding descent of the needles 17, succeeding tacking stitches will be carried across and sewn down over the out-swung embroidering threads *e*, whereafter an in-thrusting cam race section 59'' will operate to cause the slide shaft 26 and top distributor member or bar 29 to move to the right back to the position shown in Fig. 6, whereby the embroidering threads *e* will be swung inward relative to the last formed tacking stitches *t*, so that on the next succeeding descent of the needles 17, next succeeding tacking stitches will be carried across and sewn down over the thus in-swung embroidering threads *e*. These operations are progressively repeated as the material M is advanced through the machine, thus producing the marginal portions of the embroidery pattern shown in Fig. 6.

The interior portions of the illustrative embroidery pattern shown in Fig. 6 are formed by two groups of the embroidering threads, viz. the group of threads *e'* and the group of threads *e''*. One group of these threads, i. e. the threads *e'*, are led to the intermediate distributor member or bar 30, and the threaded through selected passages 34 of the row thereof with which said member or bar 30 is provided; the other group of these threads, e. g. the threads *e''*, are led to the bottom distributor member or bar 31, and are threaded through corresponding selected passages 34 of the row thereof with which the member or bar 31 is provided. The cam race 61 of the actuating cam 48 is provided with oppositely directed thrust sections 61' and 61'' and with dwell sections 61''' intermediate thereof, which (in the illustrative case) are equi-spaced along said race forty-five degrees apart. Since the rocker arms 53 and 55 engage the cam race 61 at diametrically opposite points, it will be obvious that the slide rods 27 and 28, which are respectively actuated thereby through the connecting rods 57 and 58, will be relatively reciprocated in opposite directions, and consequently the distributor members or bars 30 and 31 will be likewise relatively reciprocated in opposite directions. Each rocker arm will be successively engaged by a thrust section 61', a dwell section 61''', a thrust section 61'', and then another dwell section 61''', with the result that the distributor members or bars 30 and 31 will be intermittently moved in given directions, but in timed relation to successive tacking stitch producing movements of the sewing machine needles 17. For example, after tacking stitches *t* have been formed by descent of the needles 17 to cross over and sew down previously disposed portions of the threads *e'* and *e''* (see Fig. 7), a first step of outward movement of the intermediate distributor member or bar 30 is initiated and an opposite or inward movement of the distributor member or bar 31 is simultaneously initiated, with the result that the group of threads *e'* will be swung outward by the member or bar 30 across the paths of tacking stitches *t*, while the group of threads *e''* will be swung inward by the member or bar 31 across said paths of tacking stitches *t*, whereby, on a succeeding descent of

the needles 17, succeeding tacking stitches will be carried across and sewn down over the crossed threads  $e'$  and  $e''$ . After this, the members or bars 30 and 31 will be caused to dwell in their initially advanced positions while following tacking stitches are produced (see Fig. 8), whereafter final step movements of the members or bars 30 and 31 are effected to further position the crossed threads  $e'$  and  $e''$  for engagement by the next formed tacking stitches (see Fig. 9). Following these operations, the same sequence of operations are effected by movements of the members or bars 30 and 31 respectively in reversed or opposite directions. All these operations are progressively repeated as the material M is advanced through the machine, thus producing the interior portions of the illustrative embroidery pattern shown in Fig. 6; said operations being synchronized with and so as to be carried on simultaneously with the heretofore described production of the marginal portions of said embroidery pattern.

As heretofore mentioned, the secondary shaft 14' is aligned with and coupled to the machine drive shaft 14 so as to be driven thereby. The coupling connection between said secondary shaft 14' and machine drive shaft 14 is quickly and easily releasable, and to this end comprises a coupler member 72 having a socket 73 at its inner end sized to receive the hub 74 of a combined hand wheel and drive pulley 75 which is affixed to the drive shaft 14. The coupler member 72 is secured to the hub 73 by at least one set screw 76. At its outer end the coupler member 72 is provided with a bore 77 to receive the inner end of the secondary shaft 14', and the latter is secured to the coupling member by at least one set-screw 78. It will be obvious, that by merely withdrawing either the set screw 76 or the set screw 78, or both, the secondary shaft 14' may be quickly and easily released from its coupled and driven connection with the machine drive shaft 14. This is of considerable advantage, since it permits the machine sewing mechanism, as driven by the drive shaft 14, to be set in a predetermined position, whereupon the released secondary shaft 14' permits the cam 48 and its driving transmission to be easily and quickly adjusted so as to set the embroidering thread distributing mechanism relative to the machine sewing mechanism in a proper initial position which will assure the necessary timed relation of the operation of the former relative to the operation of the latter. After which timed relation is established, the set screw or screws 76 and/or 78 are again tightened to couple the machine drive shaft 14 in driving relation to the secondary shaft 14', whereupon properly synchronized operations of the distributing mechanism and machine sewing mechanism is assured. It will be noted that such timing adjustment of the machine may be easily and quickly accomplished without necessity for dismantling the mechanisms or disturbing the respective assembled relations of their parts.

Although in the illustrative embodiment of this invention as shown and as hereinabove described, the arrangement of superposed distributor members or bars comprises three such members or bars, it will nevertheless be understood that such number of distributor members or bars, together with the means for supporting and actuating the same, may be more or less than three, accordingly as may be desirable in connection with the production of specific pattern variations. It will

also be understood that pattern variations may be variously attained by selectively relatively spacing and positioning the embroidering threads with respect to their threaded engagement with respective distributor members or bars; by increasing or reducing the number of such embroidering threads employed in any given case; by varying the contours of actuating cam race or races; or by combinations of any one or more of these factors.

Having now described our invention, we claim:

1. In a sewing machine having a head, a sewing mechanism including a transverse row of spaced sewing needles supported by said head, a drive shaft for the sewing mechanism, a bearing bracket affixed to said head to project from its rear side, a plurality of transversely reciprocable slide rods slidably supported by said bearing bracket, a plurality of embroidering thread distributor members in advance of and parallel to the row of sewing needles, each distributor member terminating at its ends in rearwardly extending side arms, the side arms of the respective distributor members being affixed to respective slide rods in straddling relation to the sewing needles, each distributor member having thread passages corresponding in number and spacing to the number and spacing of the sewing needles, a plurality of rocker arms, connecting rods interconnecting said rocker arms respectively with respective slide rods, and rotatable cam means actuated by the machine drive shaft for oscillating said rocker arms to reciprocate said slide rods and distributor members in desired relative directions and in timed relation to the operation of the sewing mechanism, whereby to lay embroidering threads served through selected passages of said distributor members in embroidery pattern forming disposition on material operated upon by the sewing mechanism subject to be secured to said material by runs of needle produced tacking stitches.

2. A sewing machine according to claim 1 wherein each connecting rod is provided with means for adjusting the length thereof.

3. In a sewing machine having a head, a sewing mechanism including a transverse row of spaced sewing needles supported by said head, a drive shaft for the sewing mechanism, a bearing bracket affixed to said head to project from its rear side, a plurality of transversely reciprocable slide rods slidably supported by said bearing bracket, a plurality of embroidering thread distributor members in advance of and parallel to the row of sewing needles, each distributor member terminating at its ends in rearwardly extending side arms, the side arms of the respective distributor members being affixed to respective slide rods in straddling relation to the sewing needles, each distributor member having thread passages corresponding in number and spacing to the number and spacing of the sewing needles, a plurality of rocker arms, connecting rods interconnecting said rocker arms respectively with respective slide rods, rotatable cam means actuated by the machine drive shaft for oscillating said rocker arms to reciprocate said slide rods and distributor members in desired relative directions and in timed relation to the operation of the sewing mechanism, whereby to lay embroidering threads served through selected passages of said distributor members in embroidery pattern forming disposition on material operated upon by the sewing mechanism subject to be secured to said material by runs of needle produced tacking

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stitches, means including tensioning devices corresponding in number to the number of sewing needles for leading sewing thread to the respective needles, and means including tensioning devices corresponding to the number of embroidering threads for leading the latter threads to the distributor members.

4. In a sewing machine having a head, a sewing mechanism including a transverse row of spaced sewing needles and a presser foot supported by said head, a drive shaft for the sewing mechanism, a bearing bracket affixed to said head to project from its rear side, a plurality of transversely reciprocable slide rods slidably and rotatively supported by said bearing bracket, a plurality of superposed embroidering thread distributor members supported upon the presser foot in advance of and parallel to the row of sewing needles and subject to lift by the presser foot, each distributor member terminating at its end in rearwardly extending side arms, the side arms of the respective distributor members being secured to respective slide rods in straddling relation to the sewing needles and the presser foot, each distributor member having thread passages corresponding in number and spacing to the number and spacing of the sewing needles, and means actuated by the machine drive shaft for reciprocating said slide rods and distributor members in desired relative directions and in timed relation to the operation of the sewing mechanism, whereby to lay embroidering threads served through selected passages of said distributor members in embroidery pattern forming disposition on material operated upon by the sewing mechanism subject to be secured to said material by runs of needle produced tacking stitches.

5. In a sewing machine having a head, a sewing mechanism including a transverse row of spaced sewing needles and a presser foot supported by said head, a drive shaft for the sewing mechanism, a bearing bracket affixed to said head to project from its rear side, a plurality of transversely reciprocable slide rods slidably and rotatively supported by said bearing bracket, a plurality of superposed embroidering thread distributor members supported upon the presser foot in advance of and parallel to the row of sewing needles and subject to lift by the presser foot, each distributor member terminating at its ends in rearwardly extending side arms, the side arms of the respective distributor members being secured to respective slide rods in straddling relation to the sewing needles and the presser foot, each distributor member having thread passages corresponding in number and spacing to the number and spacing of the sewing needles, a plurality of rocker arms, connecting rods interconnecting said rocker arms respectively with respective slide rods, and rotatable cam means actuated by the machine drive shaft for oscillating said rocker arms to reciprocate said slide rods and distributor members in desired relative directions and in timed relation to the operation of the sewing mechanism, whereby to lay embroidering threads served through selected passages of said distributor members in embroidery pattern forming disposition on material operated upon by the sewing mechanism subject to be secured to said material by runs of needle produced tacking stitches.

6. A sewing machine according to claim 5, including a swivel connection for coupling each connecting rod to a slide rod to be actuated

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thereby, and wherein each connecting rod is provided with means for adjusting the length thereof.

7. A sewing machine according to claim 6, wherein the presser foot of the sewing mechanism is provided with keeper lugs to overlie the superposed embroidering thread distributor members, whereby to brace the latter against upward displacement and undue vibration during operation thereof.

8. In a sewing machine having a head, a sewing mechanism including a transverse row of spaced sewing needles and a presser foot supported by said head, a drive shaft for the sewing mechanism, a bearing bracket affixed to said head to project from its rear side, a plurality of transversely reciprocable slide rods slidably and rotatively supported by said bearing bracket, a plurality of superposed embroidering thread distributor members supported upon the presser foot in advance of and parallel to the row of sewing needles and subject to lift by the presser foot, each distributor member terminating at its ends in rearwardly extending side arms, the side arms of the respective distributor members being secured to respective slide rods in straddling relation to the sewing needles and the presser foot, each distributor member having thread passages corresponding in number and spacing to the number and spacing of the sewing needles, a plurality of rocker arms, connecting rods interconnecting said rocker arms respectively with respective slide rods, rotatable cam means actuated by the machine drive shaft for oscillating said rocker arms to reciprocate said slide rods and distributor members in desired relative directions and in timed relation to the operation of the sewing mechanism whereby to lay embroidering threads served through selected passages of said distributor members in embroidery pattern forming disposition on material operated upon by the sewing mechanism subject to be secured to said material by runs of needle produced tacking stitches, means including tensioning devices corresponding in number to the number of sewing needles for leading sewing thread to the respective needles, and means including tensioning devices corresponding to the number of embroidering threads for leading the latter threads to the distributor members.

9. A sewing machine according to claim 4, wherein the presser foot of the sewing mechanism is provided with keeper lugs to overlie the superposed embroidering thread distributor members, whereby to brace the latter against upward displacement and undue vibration during operation thereof.

10. A sewing machine according to claim 1, wherein the means for actuating the cam means comprises transmission means including a secondary shaft aligned with the machine drive shaft, and a releasable coupling connection between said drive shaft and said secondary shaft.

11. A sewing machine according to claim 5, wherein the means for actuating the cam means comprises transmission means including a secondary shaft aligned with the machine drive shaft, and a releasable coupling connection between said drive shaft and said secondary shaft.

12. In a sewing machine having a head, a sewing mechanism including a transverse row of spaced sewing needles and a presser foot supported by said head, a drive shaft for the sewing mechanism, a bearing bracket affixed to said head to project from its rear side, a transversely

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reciprocable slide rod slidably and rotatively supported by said bearing bracket, an embroidering thread distributor member supported upon the presser foot in advance of and parallel to the row of sewing needles and subject to lift by the presser foot, said distributor member terminating at its ends in rearwardly extending side arms which are secured to said slide rod in straddling relation to the sewing needles and the presser foot, said presser foot having keeper lugs engaged over said embroidering thread distributor member whereby to hold the latter against upward displacement and undue vibration during operation thereof, and means actuated by the machine drive shaft for reciprocating said slide rod and distributor member in timed relation to the operation of the sewing machine, whereby to lay embroidering thread served by the distributor member in a pattern formation on material op-

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erated upon by the sewing mechanism subject to be secured to said material by runs of needle produced tacking stitches.

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ANTON KIERNER.

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