April 15, 1952 W. S. ROTHERHAM 2,593,196

RAILWAY SEWING MACHINE

Filed Oct. 25, 1947 4 Sheets-Sheet 1

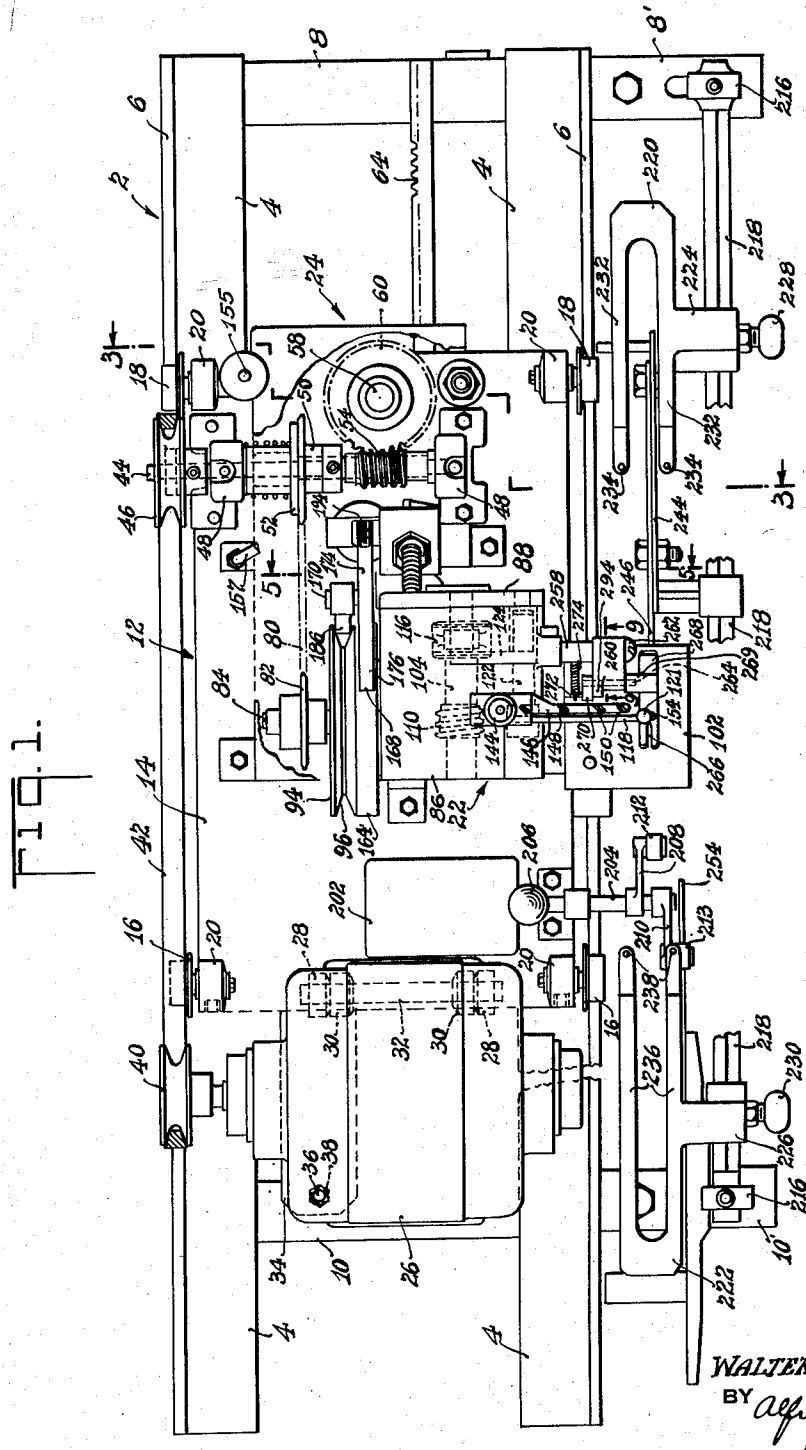

Fig. 1.

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Filed Oct. 25, 1947 4 Sheets-Sheet 2

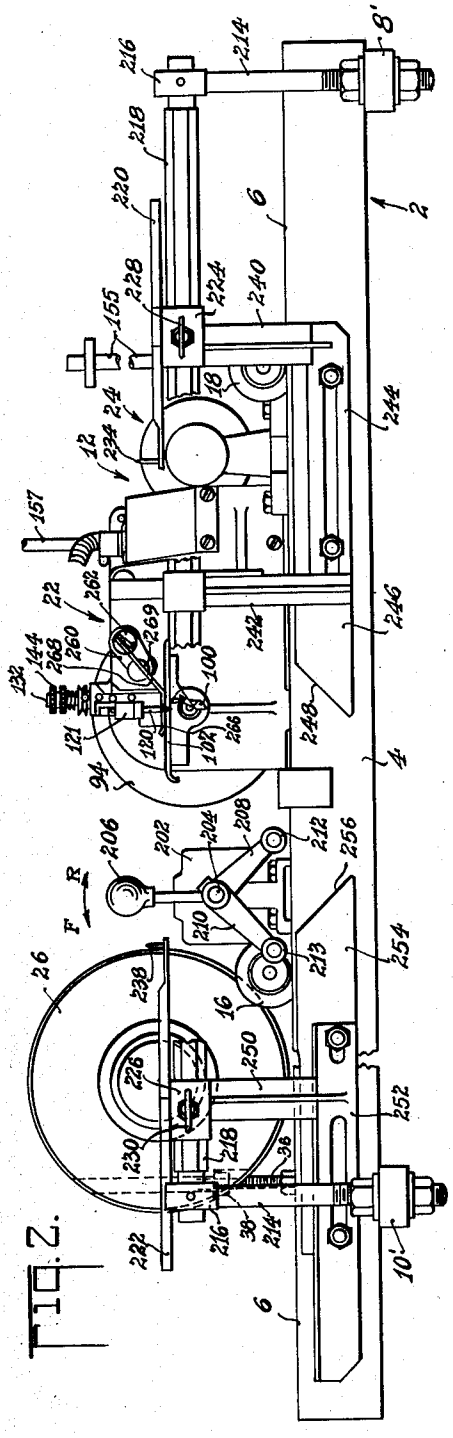

FIG. 2.

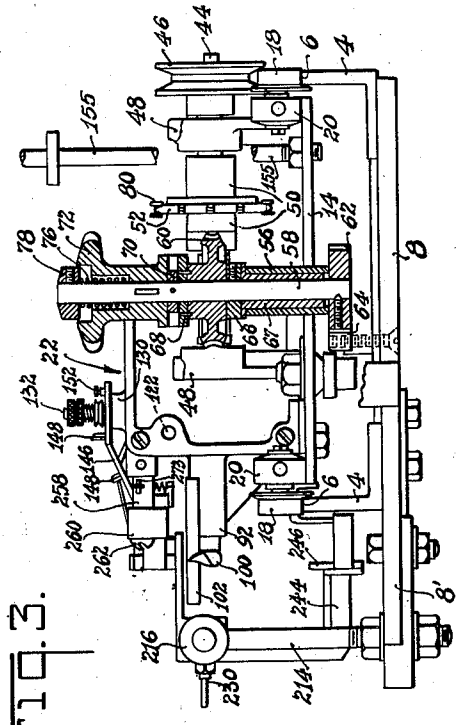

FIG. 3.

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RAILWAY SEWING MACHINE

Filed Oct. 25, 1947 4 Sheets-Sheet 3

Fig. 4.

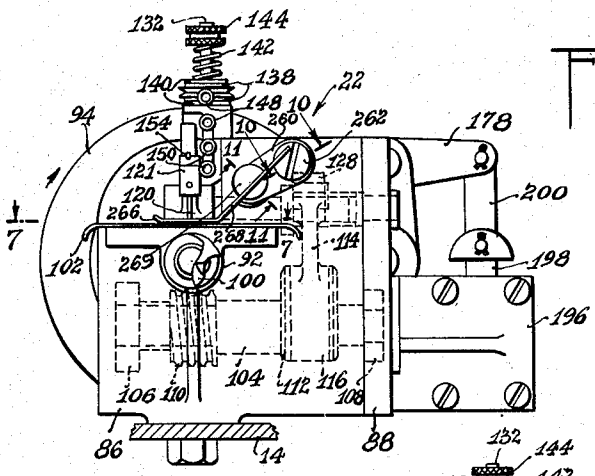


Fig. 5.

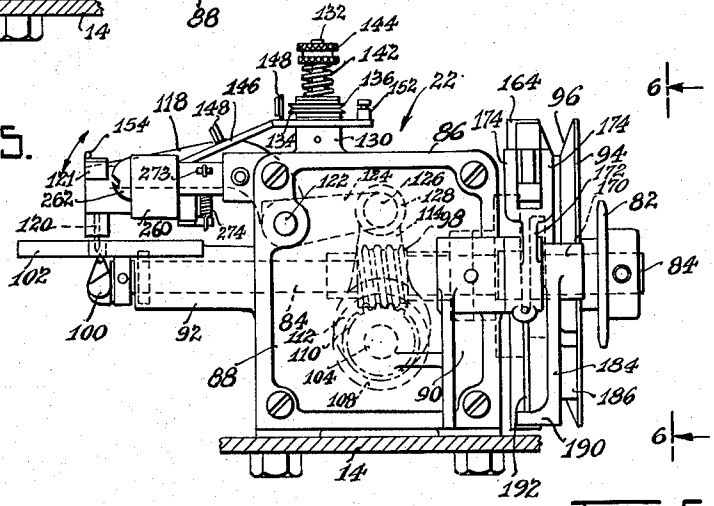


Fig. 6.

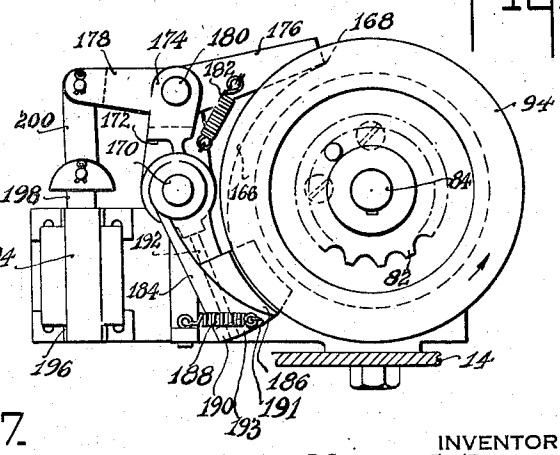
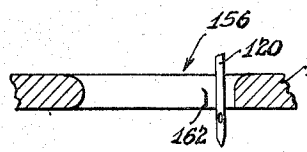


Fig. 8.



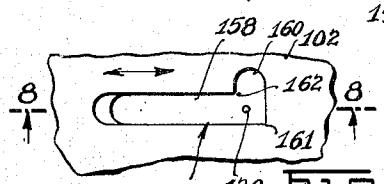


Fig. 7.

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RAILWAY SEWING MACHINE

Filed Oct. 25, 1947 4 Sheets-Sheet 4

Fig. 9.

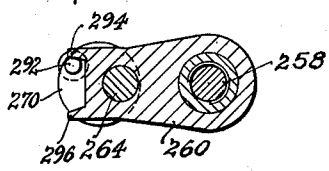


Fig. 10.

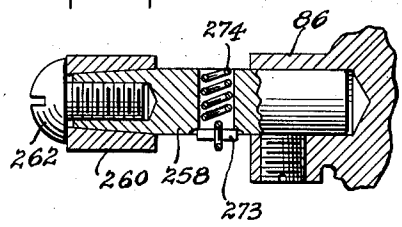


Fig. 11.

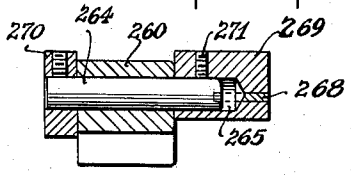
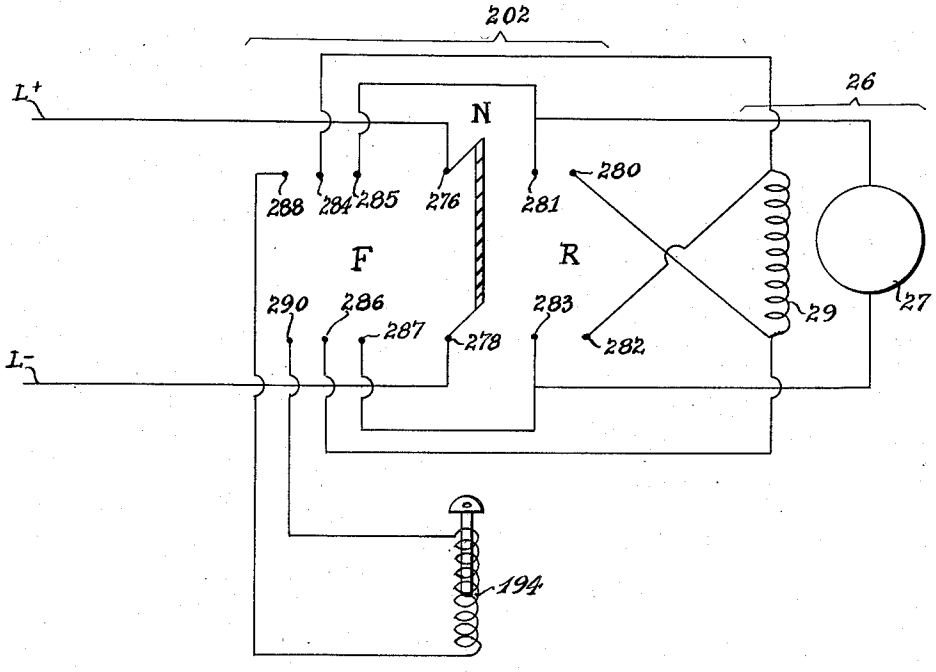


Fig. 12.



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Patented Apr. 15, 1952 2,593,196

UNITED STATES PATENT OFFICE

2,593,196

RAILWAY SEWING MACHINE

Walter S. Rotherham, Lincoln Park, N. J., assignor to The Hermas Machine Company, Hawthorne, N. J., a corporation of New Jersey

Application October 25, 1947, Serial No. 782,176

8 Claims. (Cl. 112—2)

1

This invention relates to an improved sewing machine of the so-called railway type, that is, one in which the goods remain stationary while the sewing machine travels across them.

The invention has among its objects the provision of an improved railway sewing machine which is characterized by its simplicity, rugged construction, and ease of operation.

The invention has, as a further object, the provision particularly in such machine of a simplified needle mounting head and drive therefor.

Another object of the invention resides in the provision of a simplified driving mechanism for the sewing machine head, and driving mechanism for the traveling carriage mounting such head, such driving mechanisms including means automatically to stop the head and carriage at the end of one traverse of the latter, and means to stop the sewing mechanism of the head with the needle in raised position.

Yet another object of the invention is the provision of an improved, yielding pressure-foot and an adjustable mounting for it on the sewing head.

A still further object of the invention is the provision of a novel sewing machine table, and the combination of such table with the improved needle mounting head of the invention.

These and further objects of the invention will be more readily apparent in the following description of a preferred embodiment of the railway sewing machine of the invention.

Sewing machines of the type to which this invention particularly relates are employed among other operations, for the joining together of two lengths of cloth. Because such cloth pieces are wide and the cloth rolls are heavy, it is most convenient to perform such sewing operation with the cloth pieces stationary, the sewing head being traversed across the ends of the superimposed cloth pieces. The railway sewing machine of the present invention provides means for driving the sewing machine head supporting carriage and the sewing machine head while the head travels across the cloth in its operative direction, and automatic stop means operative at the end of such travel to stop the carriage and also to stop the sewing machine with the needle carrying head in raised position free of the cloth. The machine also incorporates a novel pivotally mounted needle supporting head, together with a sewing head table having a needle receiving slot of novel configuration therein, whereby the sewing of a straight seam is assured. The machine further incorporates a novel pressure-foot and mounting therefor by which such foot is yieldably pressed against the cloth being sewed and

2

is quickly and easily raised when desired free of the cloth to inoperative position.

In the accompanying drawings which form a part of the description of the preferred embodiment of the machine,

Figure 1 is a view in plan of the railway sewing machine;

Figure 2 is a view in side elevation of such machine, the view being taken in a direction from right to left in Figure 1;

Figure 3 is a view in vertical section through such machine, the section being taken along the line 3—3 in Figure 1;

Figure 4 is an enlarged view in side elevation of the sewing head, the point of view being the same as in Figure 2, certain parts of the head and attendant mechanism being omitted;

Figure 5 is a view in vertical section through the sewing head, the section being taken along the line 5—5 in Figure 1;

Figure 6 is a partial end view of the sewing head as viewed from the line 6—6 in Figure 5;

Figure 7 is a view in plan of the slotted needle receiving portion of the sewing machine table, the view being taken along the line 7—7 in Figure 4;

Figure 8 is a view in section through the table shown in Figure 7, the section being taken along the line 8—8 in Figure 7;

Figure 9 is an enlarged view in vertical section through the pressure foot structure, the section being taken along the line 9—9 in Figure 1;

Figure 10 is an enlarged view in section through the end of the pressure foot supporting stud, the section being taken along the line 10—10 in Figure 4;

Figure 11 is an enlarged view in section through the means adjustably connecting the pressure foot to its supporting shaft, the section being taken along the line 11—11 in Figure 4; and

Figure 12 is a schematic wiring diagram of the operating circuit for the machine.

The sewing machine needle bar of the invention has a fixed supporting structure generally designated 2. Such structure includes the parallel longitudinally extending channel members 4 positioned so that the top surface 6 of the vertical flanges thereof form carriage supporting tracks. Members 4 are connected together by cross-members upon which they rest, one such cross-member being shown at 8 and another at 10, at the right and left hand ends, respectively, of the supporting structure.

The movable carriage generally designated 12 which moves along rails 6 has a main base plate 14 which forms the support for the driving motor,

transmission, and sewing machine head mounted on the carriage. Carriage supporting wheels 16 at the rear thereof and 18 at the front are supported at the corners of the base plate through the medium of stub shafts, such shafts being connected to the ears 20 welded on to the top surface of the base plate. The sewing machine head, generally designated 22, and the transmission generally designated 24 are both mounted on the base plate 14 as shown. Driving motor 26, by which the carriage is traversed and the sewing machine needle bar driven, is likewise mounted on the base plate. In the preferred embodiment shown the motor mounting takes the form of a pair of parallel upstanding ear members 28 welded to the upper surface of plate 14 near the rear edge thereof, a pair of parallel ears 30, affixed to the bottom of the motor and spaced inwardly of ears 28, and a shaft 32 projecting through ears 28 and 30. Such mounting allows the motor to pivot about shaft 32 and thus to maintain tension upon the belt by which it drives the transmission. The amount of such tension may be varied as desired by means of the motor adjusting screw 36 which at its bottom end is screwed into the member 34, which is a finger integral with base plate 14 and projecting from the rear edge thereof. Screw 36 has a nut 38 screwed on the upper end thereof. At its upper end the screw projects into a hole through the motor housing, the housing resting upon nut 38. Adjustment of such nut up or down determines the extent to which the motor may pivot downwardly about shaft 32.

The motor shaft is provided with a V drive pulley 40 over which runs the V belt 42 which is entrained over the driven V pulley 46 on the driven main transmission shaft 44. Shaft 44 is supported from base plate 14 by brackets 48 containing bearings within which the shaft rotates. Shaft 44 is provided with an over-running clutch 50 through which the driving sprocket 52 for the sewing machine needle bar is positively driven in clockwise direction (Figure 1). Clutch 50, which may be of conventional design, allows the sprocket 52 and thus the sewing machine needle bar driven thereby to remain stationary when shaft 44 is driven in a counterclockwise direction (Figure 1). This allows the carriage to be traversed by power in a return direction, that is, toward the left in Figure 1, with the sewing machine needle bar inoperative.

Shaft 44 is provided with a worm 54 positively keyed thereto, such worm meshing with the worm gear 60 which is freely mounted on vertical shaft 58. Shaft 58 is rotatably supported in the vertical bearing member 56 affixed to base plate 14. A pinion 62 is affixed, as shown, at the bottom of shaft 58. Such pinion meshes with the stationary rack 64 which as shown in Figure 1 is secured to the fixed structure and is positioned between the track members 6 and extends longitudinally thereof. Rotation of pinion 62 thus causes the carriage to travel lengthwise of the fixed structure in a direction determined by the direction of rotation of the pinion. The drive to the pinion from the worm gear 60 in the preferred embodiment is one which may both slip when a certain torque is exceeded and which may be selectively disconnected. Such driving means consists of the collar member 66 located above the bearing sleeve 67, collar 66 being affixed to shaft 58, as shown, and gear 60 resting upon such collar. A clutch member 68 the top surface of which is serrated is affixed to the upper surface of the hub of the gear. An upper sleeve member 72

keyed to shaft 58, so that the two may be slid with respect to each other, is mounted at the top of the shaft, there being a spacing washer 70 between the central zones of the lower end surface of the sleeve and the clutch member 68. The lower end surface of sleeve 72 is serrated in an outer annular zone so that when members 72 and 68 are in contact outside member 70 their serrations mesh. A collar 78 affixed to the upper end of shaft 58 retains a compression coil spring 76 between it and the bottom of a counterbore in the upper end of the sleeve. When the sleeve is in the position shown in Figure 3, with the serrated surfaces of members 68 and 72 in contact, gear 60 drives shaft 58. When sleeve 72 is lifted against the action of spring 76 and such serrated surfaces are separated, gear 60 revolves freely upon shaft 58. Thus the carriage may be freely traversed by hand when the sleeve 72 is so lifted.

The driving of the sewing needle bar is effected from sprocket 52 by means of the chain 80 which runs over it and the sprocket 82 on the main shaft 84 of the sewing head. The sewing head of the machine includes a housing 86 having a side closure plate 88 held thereon by screws, as shown in Figure 5. Shaft 84 is rotatably supported in the housing by means of the rear bearing carrying support 90 and the forward sleevelike extension 92, both integral with the housing. Shaft 84 carries thereon rearwardly thereof outside the housing a brake drum 94, the rear portion of which is provided with a circumferential V groove 96 and the forward portion of which is provided with a generally cylindrical portion 164. Within the housing, shaft 84 carries a worm 98 keyed thereto, and on its forward end, disposed outside extension 92, a looper 100. The sewing head shown in the preferred embodiment is of the chain stitch type, in which the thread is supplied solely from above the goods and is merely looped by the looper 100, which is of a well-known conventional design, when the needle 120 passes through the goods, through the slot in table 102, and upon rising leaves a loop of thread below the table. Within the housing is also supported a cross-shaft 104 supported in bearing supporting members 106 and 108 in the housing, as shown in Figure 4. Keyed on cross-shaft 104 is the worm gear 110 in mesh with the worm 98, rotation of the main shaft 84 thus driving the cross-shaft at a somewhat slower speed. The cross-shaft has keyed thereon an eccentric 112, about which is fitted the large end 116 of the pitman 114.

The sewing machine needle 120 is carried in a needle holding bar 121 affixed to the outer end of the needle carrying lever 118, which is keyed to shaft 122, such shaft being journalled in the housing. The needle carrying lever thus pivots about the axis of shaft 122. Laterally spaced from lever 118 is a rearwardly projecting needle lever operating arm 124, likewise keyed to shaft 122. Arm 124 is connected at its rear end by means of the laterally projecting pin 126 integral therewith to the upper, small end 128 of pitman 114. Thus rotation of shaft 84 causes the needle carrying lever to vibrate or oscillate by means of the driving mechanism above described.

Thread for the sewing machine head is in this instance carried on the carriage although it could, if desired, be supported on a stationary support placed about the machine. The thread bobbin is supported on the stud 155, from which it passes to a thread guide, not shown, positioned above the sewing head. The bottom supporting member for such thread guide is shown at 157. The

thread then passes to the sewing head, which is provided with suitable thread guiding and tensioning devices through which it travels prior to its entry into the eye of the needle. Such guiding and tensioning devices are supported on top of the sewing head on the vertical boss 130 projecting from the top of the housing thereof. Affixed to such boss is the vertical stud 132 on which are placed in that order, a bottom steel washer 140, a cork washer 138, the lower portion 134 of a split V grooved tensioning wheel member, the top portion 136 of the V grooved tensioning wheel member, a cork washer 138, a steel washer 140, the compression coil spring 142, and the tension adjusting nut 144 threadedly mounted on the upper end of the stud. A thread guide holder 146 is mounted on the boss 130 below the tensioning device. Such holder has a horizontal portion to which are affixed a first upper thread guiding eye 148 and a rear thread guiding stud 152. The forward portion of the thread guide holder slopes downwardly as shown, and is provided with a second upper guide 148 and two lower guides, 150. The thread passing from the guiding means, of which the bottom portion is shown at 157, preferably first passes through the second, lower eye 148, thence through the upper eye 148, between the two halves of the split V grooved tensioning member in a clockwise direction (Figure 1) and around such pulley for a turn and one-half, after which it passes around the stud 152, and then down through the four guiding eyes, that is, the eyes 148 and the eyes 150. The thread is then led through an eye 154 positioned on the top of the needle carrying head, after which it passes to the eye of the needle.

The sewing machine table 102 is provided, as shown in Figures 7 and 8, with an L shaped slot 156 through which the needle passes. The long arm of such slot is designated 158 and the short arm 160. Such two arms join at the inwardly protruding corner 162, which is immediately adjacent the path of travel of the needle as shown in Figure 7. Probably due to the fact that the needle 120 travels in an arc rather than in a straight line, plus the tendency of the looper 100 to pull the thread inwardly toward the sewing head when forming a loop, the machine tends to sew in a curve rather than a straight line when a round hole is employed through the sewing machine table. The provision of the L shaped slot, related to the path of travel of the needle, as shown, with the center line of the needle lying substantially equidistant from the straight sides of arms 158 and 160 and on the diagonal from corner 162 to corner 161, results in the sewing of the desired straight line. Such result appears to be accomplished by the camming action of the corner 162 upon the thread, which passes therethrough and through the eye of the needle, as the needle is withdrawn from the goods on its upward stroke and the looper subjects it to tension. The travel of the table relative to the goods, as the sewing machine head performs an operative traverse to the right in Figures 1 and 2, is shown by the arrow in Figure 7.

The sewing head is provided with means whereby when the drive motor therefor is stopped, whether manually intermediate the ends of its sewing traverse or automatically at the end thereof, the needle carrying lever and thus the needle bar carried thereby are automatically stopped in raised position with the needle free from the goods. Such braking means, which is shown most clearly in Figures 5 and 6, consists of the brake drum 94 which, as mentioned, is keyed to shaft 84 and which has the V grooved portion 96 and the generally cylindrical portion 164. Portion 164 has over approximately one quarter of its extent a gradually deepening groove 166 which ends in the substantially radial shoulder 168, facing in a counterclockwise direction (Figure 6), which is the direction of rotation of shaft 84, as indicated.

The braking lever system which cooperates with the portions 96 and 164 of the brake drum is designed gradually to bring shaft 84 to a stop without undue shock to the parts of the sewing head or to the braking system. The braking levers of such mechanism are supported from the housing 86 by means of the rearwardly projecting stud 170. On such stud, adjacent the housing there is pivotally mounted a generally upwardly directed bifurcated lever 172 upon which is mounted a stop lever having a front arm 176 and a rear arm 178. The stop lever, which is carried on lever 172 by pivot pin 180 projecting through ears 174 on lever 172, is a lever of the first-class type, since the fulcrum lies intermediate the front, force receiving, arm 176 and the rear, force transmitting, arm 178 thereof. The forward end 176 of the stop lever is held in contact with the surface of brake drum portion 164 by the tension spring 182 acting between such forward arm of the stop lever and the lever 172, as shown. Shoulder 168 is so located on the brake drum that when it is in contact with the forward end of lever arm 176 the needle supporting head is in raised position.

Also mounted on stud 170, outwardly of lever 172, is a further, lower brake lever 184. Lever 184 carries on its inner face a brake segment 186 having a V shaped forward portion fitting within V groove 96 of the brake drum. A coil tension spring 188 is affixed to lever 184 and to the housing 86 as shown, so as to urge segment 186 of lever 184 outwardly from contact with the brake drum. Lever 184 is provided at its bottom with two spaced laterally projecting fingers 190 and 191, in the space 193 between which is received the lower end of the brake lever applying arm 192 which projects from the bottom of lever 172. Arm 192 is of thin resilient construction and fits between fingers 190 and 191 closely but loosely enough to allow rocking between it and the fingers when arm 192 is bowed.

Within extension 196 of the housing is mounted a solenoid 194 of such construction that when the solenoid is energized its plunger 198 is drawn downwardly and when the solenoid is de-energized such plunger is free to travel upwardly. The solenoid plunger is connected to the rear end of arm 178 of the stop lever by means of the link 200. As will appear more clearly in Figure 12, subsequently to be discussed, the solenoid is connected in parallel with motor 26 when the motor is driven in a forward direction, that is, in such direction as to cause the carriage to travel to the right in Figures 1 and 2. Thus when the carriage is travelling in such direction, with the sewing head operating, stop lever arm 176 is withdrawn from shoulder 168 and shaft 84 is free to rotate. Such withdrawal of lever 176 from shoulder 168 does not move lever 172 appreciably in a counterclockwise direction (Figure 6), and thus brake shoe 186 remains free from contact with groove 96 of the brake drum. When, however, the circuit to motor 26 is broken, the solenoid 194 is de-energized, lever arm 176 is urged into contact with the brake drum by spring 182,

and after a portion of a revolution shoulder 168 comes into contact with the forward end of the lever arm 176. Such contact thrusts the stop lever to the left and thus lever 172 counterclockwise (Figure 6). Thereupon arm 192 contacts finger 191 of lever 184, thrusting brake shoe 186 into the V groove 96. Such braking action, together with the yielding of both springs 182 and 188 and the bowing of arm 192 as it thrusts against finger 191, cushions the stoppage of the sewing head mechanism.

Motor 26 is under the control of a reversing switch 202, shown in Figures 1 and 2. Such switch, which is of conventional design is provided with an operating shaft 204 to which are affixed the manually operated handle 206 and the two depending switch operating arms 208 and 210 carrying rollers 212 and 213 respectively, on their lower ends. Arms 208 and 210 operate the switch automatically at the ends of the traverse of the carriage by means to be described.

The machine is provided with means for positioning the ends of the two pieces of cloth in superimposed position so that they may be sewed together upon the operating traverse of the sewing head. Such cloth holding means includes the cloth holder bar supports 214 projecting vertically from the extensions 8' and 10' of the cross members of the fixed structure. Each such support is provided with an eye 216 at its upper end within which fits the end of the cloth holder bar 218. Two cloth holders 220 and 222 slidably mounted on bar 218 are provided. Cloth holder 220 is held on such bar by means of the laterally projecting arm 224 embracing the bar and is held thereon in the desired longitudinal position by means of the set screw 228. Cloth holder 222 is similarly held by arm 226 and set screw 230. Each of the cloth holders is provided with spaced parallel arms having sharp upwardly projecting prongs designed to pierce the goods to be sewed. In cloth holder 220 such arms are designated 232 and the prongs 234, whereas in holder 222 the arms are denoted 236 and the prongs 238. The spacing between the arms of the cloth holders is such, as is apparent in Figure 1, that the pressure foot and the needle carrying head may be received within them.

The cloth holders 220 and 222 are provided with depending portions which form the means of attachment of the means 246 and 254, respectively, by which the switch operating arms 210 and 208, respectively, are operated. Cloth holder 220 is provided with a vertical member 240 and with another member 242 extending vertically and attached to the bar 218. Parts 240 and 242 are connected by the inwardly projecting slotted horizontal member 244 to which switch operating member 246 is secured for longitudinal adjustment. Member 246 is provided with the sloping forward face 248. Roller 213 engages the face 248 when the switch is swung into forward position and the carriage reaches the front end of its forward traverse. Such engagement shifts the switch into the neutral position shown in Figure 2, stopping motor 26 and thus the carriage, and by means of the brake and stop mechanism previously described stops the sewing head with the needle bar in elevated position.

Cloth holder 222 is provided with a vertically extending portion 250 to which is secured the inwardly projecting horizontal member 252. Switch actuating member 254 is adjustably secured to the last named member. The forward inclined face 256 of the switch actuating member 254 is contacted by roller 212 at the end of the reverse inoperative traverse of the carriage. Such contact throws the switch operating shaft into neutral position, stopping motor 26 and thus the carriage. The improved pressure foot of the invention is shown generally in Figures 1, 2, and 4, and as to details in Figures 9, 10, and 11. Support for such foot is provided by the stud 258 projecting laterally from the sewing head housing near the top thereof, and laterally spaced from the needle lever. Stud 258 carries the arm 260 which is retained thereon in a selected angular position by screw 262. As shown in Figure 10, the outer end of stud 258 is in the form of a truncated cone and the bore in arm 260 receiving the end of the stud is of a complementary shape. The lower end of arm 260 carries journalled within it, at a position spaced laterally of the needle, a shaft 264 which extends parallel to stud 258. The pressure foot has a slotted bottom portion 266 disposed, when in operative position, parallel to the table 102 and above it, and an upwardly inclined portion 268. Such latter portion has attached integrally therewith a collar 269, having a bore 265 therein to receive the outer end of shaft 264. The bore is so located as to extend at right angles to the length of part 268 and so that such part extends through the diameter of the bore. The collar is provided with a threaded bore receiving set screw 271 to retain it on shaft 264.

The end of shaft 264 rearwardly of arm 260 is provided with a crank arm 270 on which is mounted the pin 272 spaced from the axis of shaft 264. A coil tension spring 274 extends between the end of pin 272 inwardly of the sewing head and stud 258, being attached to the latter by passing therethrough and being fastened as shown at 273. The angular disposition of crank arm 270 relative to shaft 264 and the angular position of collar 269 relative to the shaft are such that pin 272 is disposed below dead center (with respect to spring 274) when the pressure foot is in operative position, and that it lies above such dead center when the pressure foot is turned clockwise (Figure 2) to an inoperative position with portion 266 spaced well above the goods on the table. The extent of rotation of arm 270 is limited by engagement of the outer end 292 of pin 272 with either the upper ear 294 on arm 260 or the lower ear 296, spaced therefrom on such arm.

The pressure foot thus shown and described is stably but yieldingly held in both its operative and inoperative positions and may be readily thrown from one to the other. The foot may be readily adjusted to space portion 266 a desired distance above the table when the foot is in its operative position by adjusting arm 260 about stud 258, and then adjusting the angular position of collar 269 with respect to shaft 264, to bring portion 266 parallel with the table.

The manner in which motor 26 and solenoid 194 are controlled by switch 202 will be apparent from a consideration of the schematic wiring diagram in Figure 12. Motor 26 in this instance is of the shunt field D. C. type supplied through the source of direct current L+, L−. Switch 202 is, in effect, of the double-pole, double-throw type by which the main line contacts 276 and 278 may selectively be connected, respectively, to the reverse contacts 280 and 282 for the field 29 of the motor and to contacts 281 and 283 to the rotor 27, connected respectively, to the forward contacts 284 and 286 for such field,

and to contacts 285 and 287 to the rotor, or positioned in circuit opening position N. Two additional contacts 288 and 290 are arranged on the forward side of the switch so as to be connected to the current source when the switch is thrown to operate the motor in a forward direction, that is, in such direction as to drive the carriage in its forward operating traverse. Contacts 288 and 290 are connected to solenoid 194, and thus such solenoid is energized only when the switch is in forward position.

Although I have described and illustrated preferred embodiments of the railway sewing machine and the various parts thereof of my invention, it is to be understood that the invention is not limited thereto since it is capable of considerable variation as to details.

I claim as new the following:

1. The combination with a sewing device having a driven shaft, a vibrating needle bar driven thereby, a sewing needle carried by the bar, a source of electric current, and an electric motor supplied thereby for driving the driven shaft of the sewing device, of a mechanism having a switch in the motor supply line, means selectively to close and open the switch thus to start and stop the motor, respectively, and a braking means responsive to opening of such switch to stop the sewing device with the needle carrying bar in raised position with the needle free from the goods being sewed, such braking means including a brake drum connected to the driven shaft of the device, the drum having a stop shoulder thereon, a stop member, means mounting the stop member for movement into contact with and away from the brake drum, resilient means constantly urging the stop member into contact with the brake drum, the stop member cooperating with the stop shoulder when such shoulder is opposite it and the stop member is in contact with the brake drum resiliently but positively to stop the driven shaft of the device in a predetermined angular position, a brake member, means mounting the brake member for movement into contact with and away from the brake drum, means constantly urging the brake member out of contact with the brake drum, means including a solenoid connected in parallel with the motor for moving the stop member away from the brake drum against the action of the means constantly urging the stop member into contact with the brake drum, when the solenoid is energized, and resilient means connecting the stop member and the brake member so that when the solenoid is de-energized the stop shoulder contacts the stop member, the stop member moves to absorb the shock, and upon such movement of the stop member such stop member moves the brake member by means of the recited resilient connecting means into operative contact with the brake drum against the action of the means constantly urging the brake member out of contact with the brake drum.

2. The combination with a sewing device having a head with supporting fixed structure, a driven shaft rotatably mounted in the head, a vibrating needle bar driven thereby, a sewing needle carried by the needle bar, a source of electric current, and an electric motor driven thereby for driving the driven shaft of the sewing device, of a mechanism having a circuit opening switch in the motor supply line, means selectively to close and open the switch thus to start and stop the motor, respectively, and a braking means responsive to opening of such switch to stop the sewing device with the needle bar in raised position with the needle free from the goods being sewed, such braking means including a brake drum connected to the driven shaft of the device, the drum having a stop shoulder thereon in a first portion thereof, a supporting means mounted on supporting fixed structure of the head, an upstanding stop member supporting element pivotally mounted on an axis parallel to the shaft on the supporting means, a stop lever of the first-class pivoted on the upstanding stop member supporting element at the upper end of the latter, a first arm of such stop lever having its outer end shaped to cooperate with the stop shoulder on the brake drum, a tension coil spring operatively connected between the first arm of the stop lever and the upstanding stop member supporting element whereby the first arm of the stop lever is constantly urged toward engagement with the brake drum, a depending braking arm pivotally mounted on the fixed supporting structure of the head, a brake drum engaging member mounted on the lower, outer, end of the braking arm, means resiliently connecting the stop member supporting element to the braking arm, a coil tension spring operatively connected from the braking arm rearwardly to a fixed part of the supporting structure of the head of the sewing device, whereby constantly to urge the brake member away from the brake drum, a solenoid provided with a plunger, the plunger being connected to the outer end of the second arm of the stop lever, the solenoid being so constructed and arranged that when it is energized it pulls the plunger inwardly and thus depresses the second arm of the stop lever to raise the first arm of such lever from engagement with the brake drum, the solenoid being connected in parallel with the motor for moving the first arm of the stop lever away from the brake drum, the stop lever when released by the solenoid contacting the stop shoulder with the end of the first arm of such lever, such lever and the upstanding stop member supporting element being pivoted rearwardly to a limited extent, the resilient means connecting the stop lever supporting element and the braking arm momentarily pressing the brake member into operative, braking engagement, with the brake drum.

3. The combination with a sewing device having a head with supporting fixed structure, a driven shaft rotatably mounted in the head, a vibrating needle bar driven thereby, a sewing needle carried by the needle bar, a source of electric current, and an electric motor driven thereby for driving the driven shaft of the sewing device, of a mechanism having a circuit opening switch in the motor supply line, means selectively to close and open the switch thus to start and stop the motor, respectively, and a braking means responsive to opening of such switch to stop the sewing device with the needle bar in raised position with the needle free from the goods being sewed, such braking means including a brake drum connected to the driven shaft of the device, the drum having a stop shoulder thereon in a first portion thereof, a supporting means mounted on supporting fixed structure of the head, an upstanding stop member supporting element pivotally mounted on an axis parallel to the shaft on the supporting means, a stop lever of the first-class pivoted on the stop member supporting element at the upper end of the latter, a first arm of such stop lever

having its outer end shaped to cooperate with the stop shoulder on the brake drum, a tension coil spring operatively connected between the first arm of the stop lever and the stop member supporting element whereby the first arm of the stop lever is constantly urged toward engagement with the brake drum, a depending braking arm pivotally mounted on the fixed supporting structure of the head beside the upstanding supporting element, a brake drum engaging member mounted on the lower, outer, end of the braking arm, the brake member being provided with parallel ears thereon projecting laterally toward the upstanding supporting element, the parallel ears being located approximately in a horizontal plane, a resilient arm depending from the upstanding stop member supporting element, the lower end of such resilient arm being received between the aforesaid parallel ears on the brake member, a coil tension spring operatively connected from the braking arm rearwardly to a fixed part of the supporting structure of the head of the sewing device, whereby constantly to urge the brake member away from the brake drum, a solenoid provided with a plunger, the plunger being connected to the outer end of the second arm of the stop lever, the solenoid being so constructed and arranged that when it is energized it pulls the plunger inwardly and thus depresses the second arm of the stop lever to raise the first arm of such lever from engagement with the brake drum, the solenoid being connected in parallel with the motor for moving the first arm of the stop lever away from the brake drum, the stop lever when released by the solenoid contacting the stop shoulder with the end of the first arm of such lever, such lever and the upstanding stop member supporting element being pivoted rearwardly to a limited extent, the resilient member depending from the upstanding stop member supporting element thereupon momentarily pressing the brake member into operative, braking engagement, with the brake drum.

4. The combination with a sewing device having a head with supporting fixed structure, a sewing needle carried by the needle bar, a source of electric current, and an electric motor driven thereby for driving the driven shaft of the sewing device, of a mechanism having a reversing and circuit opening switch in the motor supply line, means selectively to close and open the switch thus to start in the desired direction and stop the motor, respectively, and a braking means responsive to opening of such switch to stop the sewing device with the needle bar in raised position with the needle free from the goods being sewed, such braking means including a brake drum connected to the driven shaft of the device, the drum having a stop shoulder thereon in a first portion thereof, a supporting stud mounted on supporting fixed structure of the head, such stud extending parallel to the driven shaft of the sewing device, an upstanding stop member supporting element pivotally mounted on the stud, such supporting element being bifurcated at its upper end, a stop lever of the first-class pivoted on the bifurcated supporting element between the ears of the bifurcated upper end of the latter, a first arm of such stop lever having its outer end shaped to cooperate with the stop shoulder on the brake drum, a tension coil spring operatively connected between the first arm of the stop lever and upstanding bifurcated supporting element whereby the first arm of the stop lever is constantly urged toward engagement with the brake drum, a depending braking arm pivotally mounted on the supporting stud, a brake drum engaging member mounted on the lower, outer, end of the braking arm, the brake member being provided with parallel ears thereon projecting laterally toward the upstanding bifurcated supporting element, the parallel ears being located approximately in a horizontal plane, a resilient arm depending from the bifurcated upstanding element, the lower end of such resilient arm being received between the aforesaid parallel ears on the brake member, a coil tension spring operatively connected from the braking arm rearwardly to a fixed part of the supporting structure of the head of the sewing device, whereby constantly to urge the brake member away from the brake drum, a solenoid provided with a plunger, the plunger being connected to the outer end of the second arm of the stop lever, the solenoid being so constructed and arranged that when it is energized it pulls the plunger inwardly and thus depresses the second arm of the stop lever to raise the first arm of such lever from engagement with the brake drum, the solenoid being connected in parallel with the motor when the latter is running in forward, sewing, direction, for moving the first arm of the stop lever away from the brake drum, the stop lever when released by the solenoid contacting the stop shoulder with the end of the first arm of such lever, such lever and the upstanding bifurcated supporting member being then pivoted rearwardly to a limited extent, the resilient member depending from the upstanding bifurcated supporting element thereupon momentarily pressing the brake member into operative, braking, engagement with the brake drum.

5. The combination, with a railway sewing machine having a fixed supporting structure including a guideway, a carriage running on the fixed supporting structure and being guided by the guideway, a sewing device having a vibrating needle carrying bar mounted on the carriage, and common motive means for driving the sewing device and traversing the carriage, of a mechanism for selectively stopping the motive means, and means responsive to operation of such stop mechanism for stopping the sewing device with the needle carrying bar in raised position free from the goods being sewed.

6. The combination, with a railway sewing machine having a fixed supporting structure including a guideway, a carriage running on the fixed supporting structure and being guided by the guideway, a sewing device having a vibrating needle carrying bar mounted on the carriage, and common motive means for driving the sewing device and traversing the carriage, of a mechanism including a stop drum having a positive stop shoulder thereon affixed to a driven shaft of the sewing device, a stop lever cooperating with the stop drum, means constantly urging the stop lever toward the stop drum, for engagement with the shoulder, and means responsive to operation of the motive means in a direction to drive the carriage in the operative sewing direction for withdrawing the stop lever from the stop drum.

7. The combination, with a railway sewing machine having a fixed supporting structure including a guideway, a carriage running on the fixed supporting structure and being guided by the guideway, a sewing device having a vibrat-

ing needle carrying bar mounted on the carriage, and an electric motor for driving the sewing device and traversing the carriage, of a mechanism including a stop drum having a stop shoulder thereon, the drum being keyed to a driven shaft of the sewing device, a stop lever mounted for cooperation with the shoulder on the stop drum, the lever and shoulder being so located that when they are in contact the needle carrying bar is raised, means constantly urging the stop lever into contact with the drum, and means comprising a solenoid for withdrawing the stop lever from the drum upon operation of the motor to drive the carriage in the operative sewing direction.

8. The combination with a railway sewing machine having a fixed supporting structure including a guideway, a carriage running on the fixed supporting structure and being guided by the guideway, a sewing device having a vibrating needle carrying bar mounted on the carriage, and an electric motor for driving the sewing device and traversing the carriage in a forward operative sewing traverse and a reverse direction with the sewing head inoperative, of a mechanism including a stop drum having a stop shoulder thereon, the drum being keyed to a driven shaft of the sewing device, a stop lever mounted for cooperation with the shoulder on the stop drum, the lever and shoulder being so located that when they are in contact the needle carrying bar is raised, means constantly urging the stop lever into contact with the drum, and

means comprising a solenoid for withdrawing the stop lever from the drum upon operation of the motor to drive the carriage in its operative sewing traverse, a current supply circuit for the motor, a current supply circuit for the solenoid, a motor reversing switch located in the supply circuit for the motor, the solenoid supply circuit being so connected to such switch that it is energized when the switch connects the motor to drive the carriage in forward operating sewing direction and to deenergize it when such switch is either in open circuit or reverse position.

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