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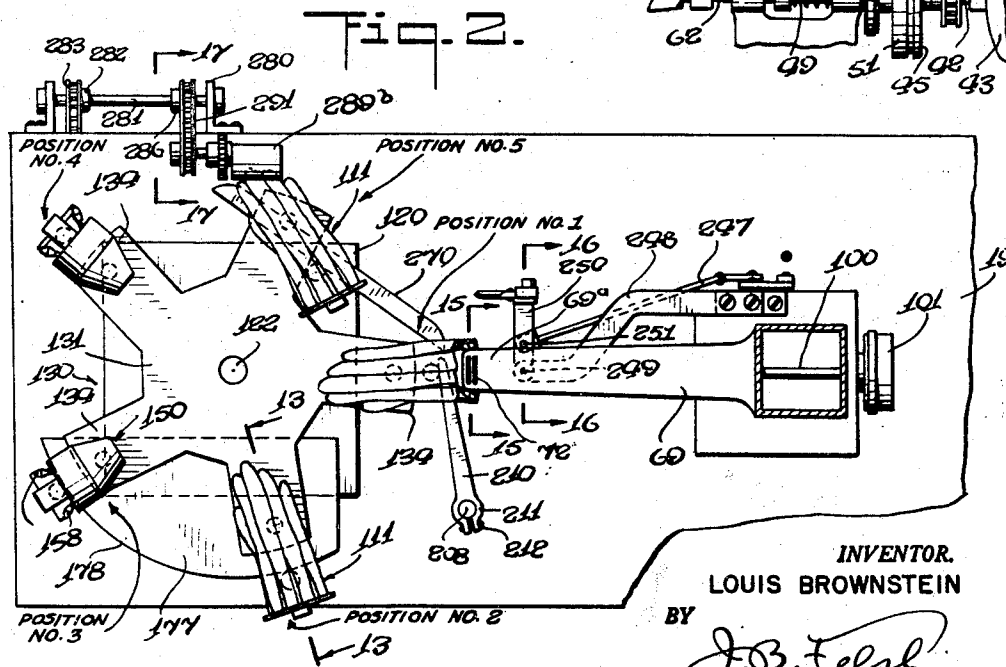
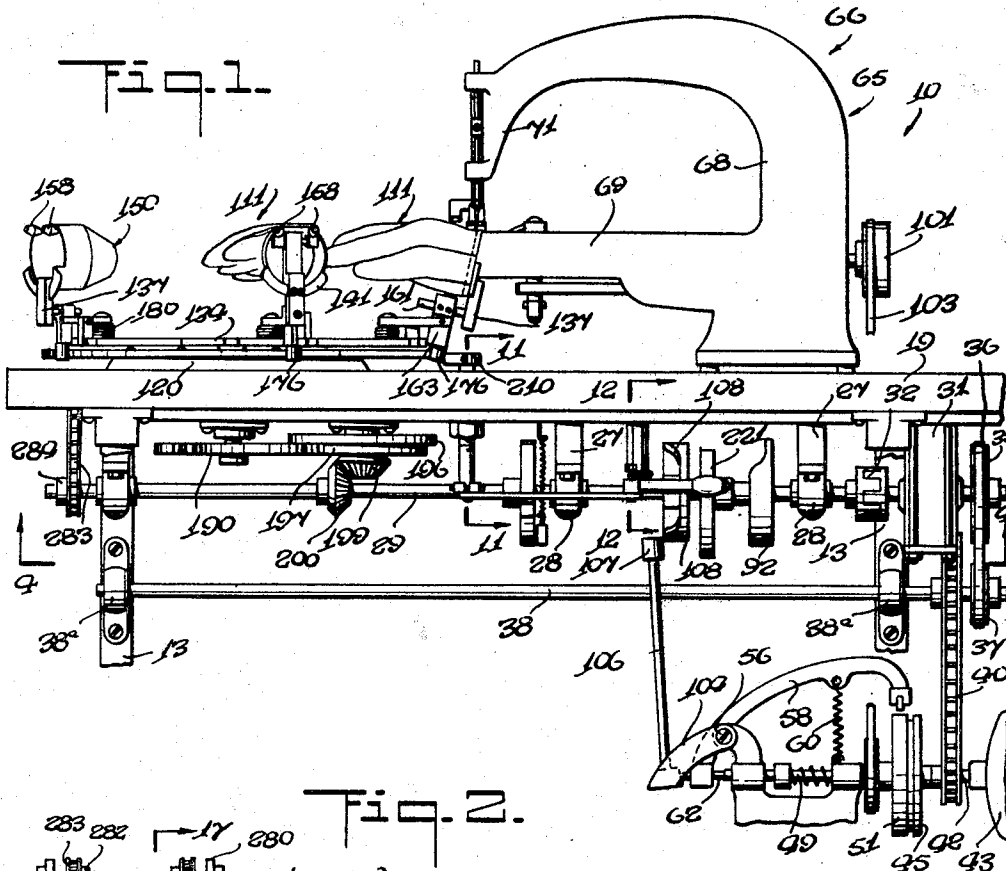
L. BROWNSTEIN

2,702,014

APPARATUS FOR SEWING TOGETHER TUBULAR ELEMENTS

Filed June 22, 1951

5 Sheets-Sheet 1



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APPARATUS FOR SEWING TOGETHER TUBULAR ELEMENTS

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5 Sheets-Sheet 2

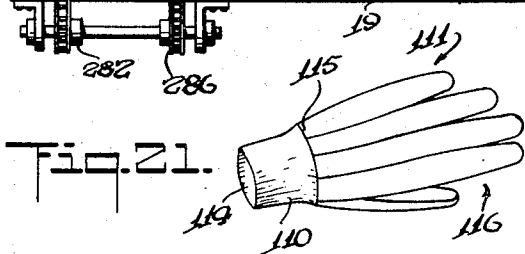
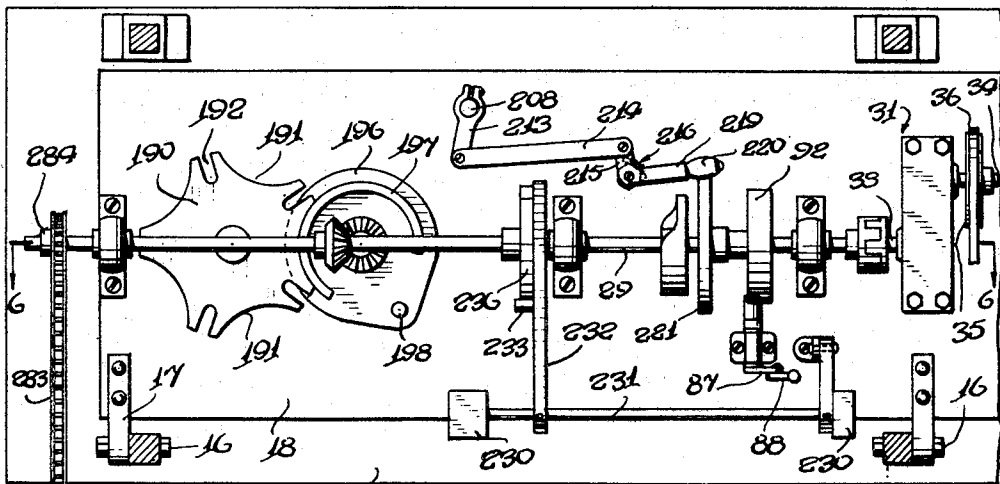
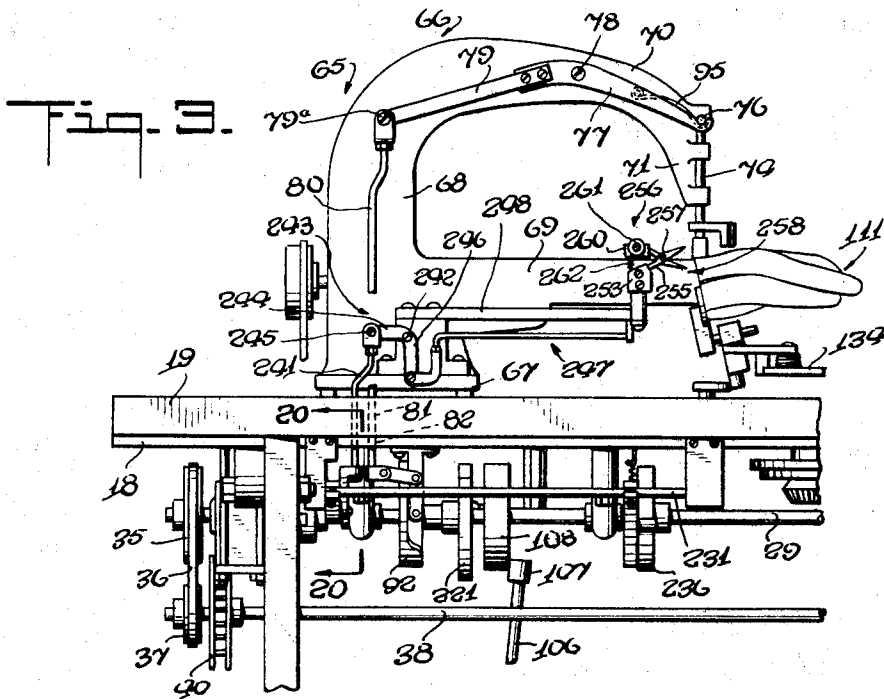


Fig. 4.

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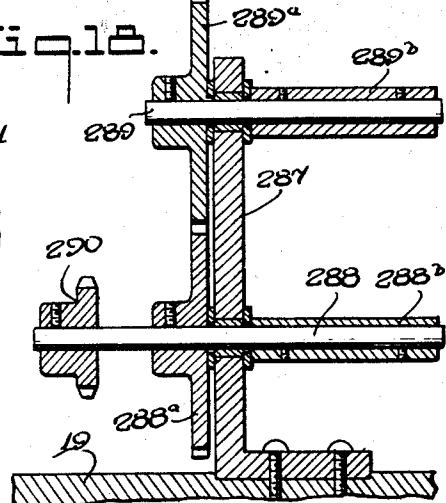
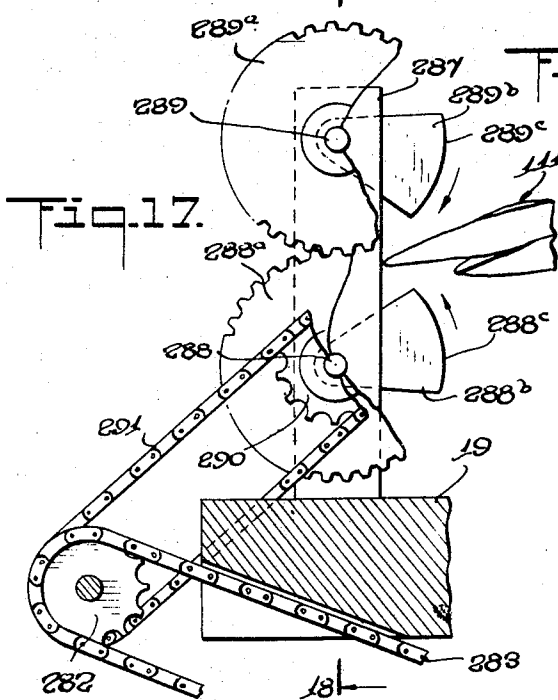
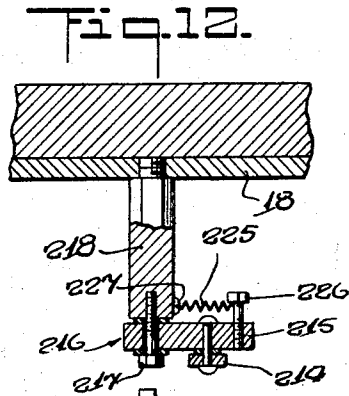
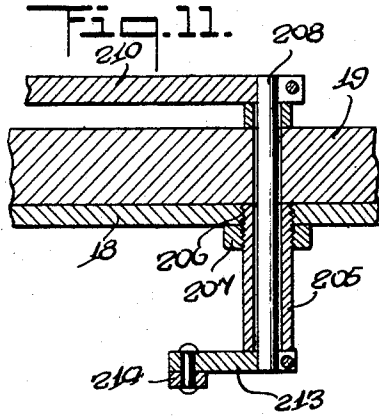
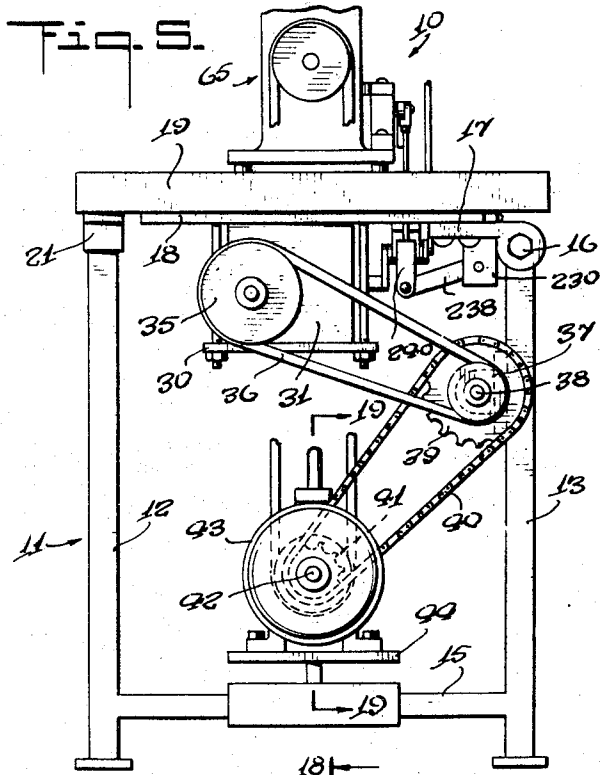
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APPARATUS FOR SEWING TOGETHER TUBULAR ELEMENTS

Filed June 22, 1951

5 Sheets-Sheet 3



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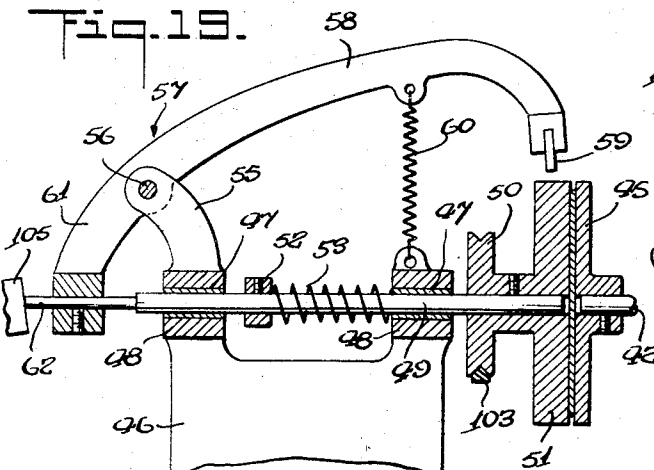
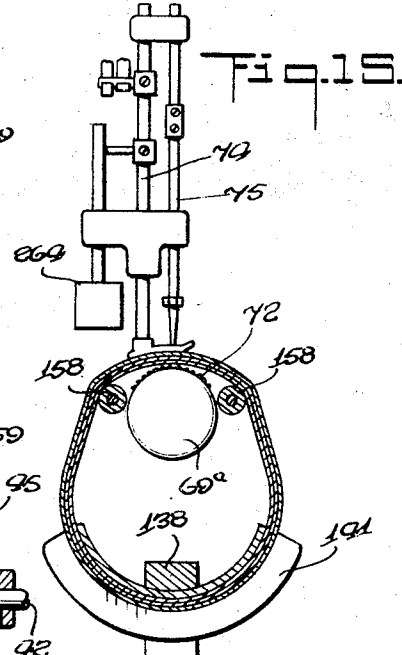
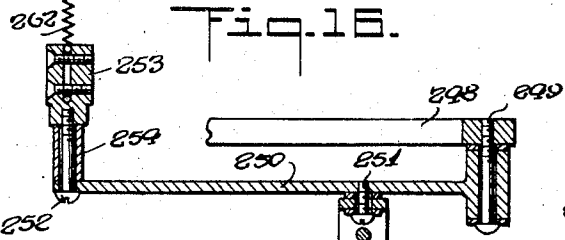
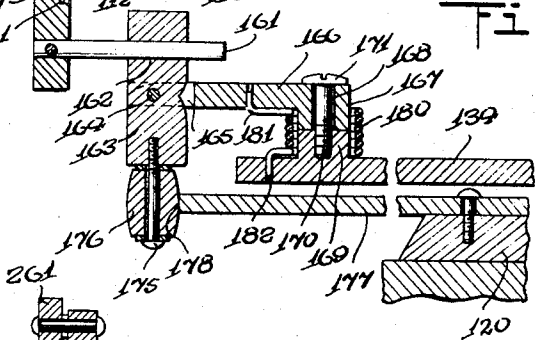
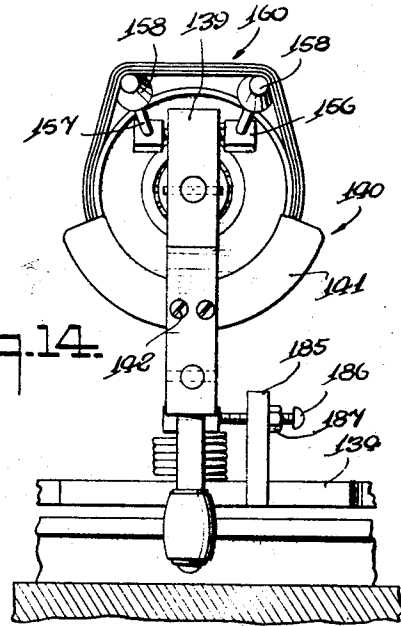
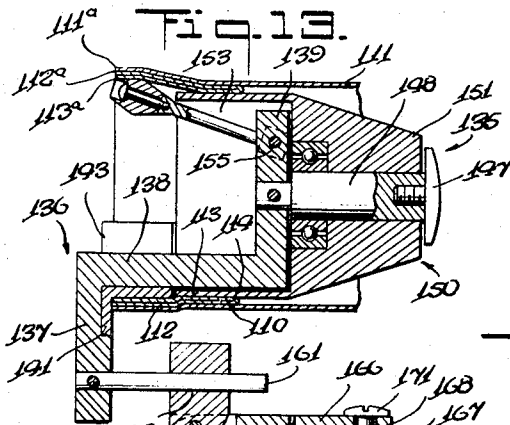
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APPARATUS FOR SEWING TOGETHER TUBULAR ELEMENTS

Filed June 22, 1951

5 Sheets-Sheet 5



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2,702,014

**APPARATUS FOR SEWING TOGETHER  
TUBULAR ELEMENTS**

Louis Brownstein, Brooklyn, N. Y., assignor to Glove Sewers, Inc., Brooklyn, N. Y., a corporation of New York

Application June 22, 1951, Serial No. 233,075

34 Claims. (Cl. 112--2)

This invention relates to apparatus for sewing together tubular elements. It is particularly directed to a machine for sewing wristing to a work glove.

In the sewing of wristings to work gloves as heretofore produced, the operator would have to pick up a glove and wristing and assemble them by inserting the wristing into the glove, bringing the two elements to the sewing machine, and guiding the line of sewing until the sewing is completed. When the sewing is completed the operator would stop the machine, tear off the thread and then throw the glove with the wristing stitched thereto into a basket. The operator could then proceed to assemble another wristing and glove and feed it to the sewing machine. Thus, while the operator assembles a glove and wristing to be fed to the sewing machine, and while the sewed together glove and wristing is being removed from the machine, the machine is idle. Also, while the machine is sewing the wristing to the glove, the operator cannot assemble another wristing and glove, and cannot remove a sewed wristing and glove from the machine, thereby cutting down on the amount of production. Furthermore, with such practice the services of highly skilled operators was necessary.

It is therefore an object of the present invention to provide an apparatus of the character described which is so arranged that while one glove and tubular wristing is being assembled by the operator, another assembled glove and wristing is being stitched by the sewing machine, and still another stitched together glove and tubular wristing is being stripped or removed from the apparatus to a suitable container, thereby increasing production and requiring an operator of lesser skill.

Another object of this invention is to provide an apparatus of the character described which will increase production and reduce cost by carrying on the operations of assembling, stitching, and removing the gloves, simultaneously rather than in sequence.

In accordance with the present invention the operator has only to pick up two elements, that is, a glove and the wristing, or any two tubular elements, assemble them and place them on one of the glove holders. The apparatus will then automatically take over from that point to complete the following operations: (a) sewing the two elements together; (b) guiding the elements during the sewing operation; (c) cutting the thread; and (d) stripping the glove off the glove holder; so that while the machine is carrying out operations a, b, c and d above, the operator can put a new set of elements on another glove holder, thereby resulting in simultaneous operation instead of sequential operation. There is thereby accomplished a saving in labor cost and increase in speed of production over what was possible previously.

A further object of this invention is to provide apparatus of the character described comprising a sewing machine of the type which sews tubular articles together, a turret mounted for rotation in front of the machine, means to intermittently rotate said turret through predetermined angles, a plurality of glove holders mounted on the turret and spaced said predetermined angles apart, whereby the glove holders are successively brought to the sewing machine, each glove holder being tilttable about a horizontal axis and about a vertical axis, each glove holder including a freely rotatable head on which the glove with the wristing inserted therein, may be mounted in advance of the sewing machine, means being provided to tilt each glove holder forwardly about its horizontal

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axis when it reaches the sewing machine, so as to bring the assembled glove and wristing into sewing position, means being further provided to operate the sewing machine for stitching the glove and the wristing together in such position, means also being provided to automatically cut the thread from the stitched glove and wristing after the stitching operation, as the holder carrying the stitched together glove and wristing begins to move away from the sewing machine.

Yet a further object of this invention is to provide in an apparatus of the character described, means to swing each glove holder about its vertical axis after it leaves the sewing machine, so as to bring fingers of the glove to a position pointing outwardly of the turret, and means being provided to automatically strip the stitched together glove and wristing off the holder after said glove holder has been rotated about its vertical axis.

Still another object of this invention is to provide means for automatically lifting the presser foot of the sewing machine when each glove holder is being tilted about its horizontal axis to bring the glove and wristing thereon into sewing position, and to then lower the presser foot over the glove and wristing just prior to the beginning of the sewing operation, which rotates the wristing and glove during the sewing operation.

Yet a further object of this invention is to provide in an apparatus of the character described, a shaft connected to a motor for continuous operation thereby, said shaft carrying means to operate the mechanism for intermittently rotating the turret, and said shaft also carrying a cam for controlling the means for tilting the glove holder about its horizontal axis towards the sewing machine, said shaft also carrying cam means for controlling the operation and stopping of the sewing machine, and said shaft also carrying cam means for lifting and lowering the presser foot and cam means for controlling the operation of the scissors for cutting the thread on the stitched glove, and said shaft also including means to operate the glove stripping mechanism.

Another object of this invention is to provide in apparatus of the character described, means on the turret to retain the glove holder against tilting about its horizontal axis while the operator puts the glove with the wristing inserted therein, on the holder.

Still another object of this invention is to provide means on the glove holder to flatten out the top of the glove and wristing to facilitate insertion thereof beneath the raised presser foot as the holder is tilted towards the sewing machine.

Still a further object of this invention is to provide in an apparatus of the character described, Geneva gear mechanism for intermittently rotating the turret.

Yet a further object of this invention is to provide in a machine of the character described, means for adjusting the mechanism for tilting the glove holder forwardly so as to adjust the distance of the seam from the edge of the glove.

Yet another object of this invention is to provide in an apparatus of the character described torsion spring means on each glove holder for automatically swinging the glove holder about its vertical axis back to normal position, after the stitched glove and wristing have been stripped therefrom, and adjustable stop means to hold each glove holder at predetermined angular positions with respect to its vertical axis.

A still further object of this invention is to provide a strong, rugged and durable apparatus of the character described, which shall be automatic and positive in operation, relatively inexpensive to manufacture, and yet practical and efficient to a high degree in use.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts, which will be exemplified in the construction hereinafter described, and of which the scope of invention will be indicated in the following claims.

In the accompanying drawings in which are shown various illustrative embodiments of this invention,

Fig. 1 is a front elevational view of an apparatus embodying the invention;

Fig. 2 is a top plan view thereof, with parts broken away and in cross-section;

Fig. 3 is a partial elevational view of an opposite side of the apparatus;

Fig. 4 is a cross-sectional view taken on line 4—4 of Fig. 1;

Fig. 5 is a rear end view of the apparatus embodying the invention;

Fig. 6 is an enlarged vertical cross-sectional view through a part of the apparatus taken on line 6—6 of Fig. 4;

Fig. 7 is a cross-sectional view taken on line 7—7 of Fig. 6;

Fig. 8 is a cross-sectional view taken on line 8—8 of Fig. 6;

Fig. 9 is a cross-sectional view taken on line 9—9 of Fig. 6;

Fig. 10 is a cross-sectional view taken on line 10—10 of Fig. 6;

Fig. 11 is an enlarged cross-sectional view taken on line 11—11 of Fig. 1;

Fig. 12 is an enlarged cross-sectional view taken on line 12—12 of Fig. 1;

Fig. 13 is an enlarged cross-sectional view taken on line 13—13 of Fig. 2;

Fig. 14 is a vertical outer end view of the structure shown in Fig. 13;

Fig. 15 is an enlarged cross-sectional view taken on line 15—15 of Fig. 2;

Fig. 16 is an enlarged cross-sectional view taken on line 16—16 of Fig. 2;

Fig. 17 is a vertical view illustrating the glove stripping mechanism;

Fig. 18 is a cross-sectional view taken on line 18—18 of Fig. 17;

Fig. 19 is a cross-sectional view taken on line 19—19 of Fig. 5;

Fig. 20 is a cross-sectional view taken on line 20—20 of Fig. 3; and

Fig. 21 is a perspective view of a completed glove.

Referring now in detail to the drawing, 10 designates apparatus or a machine embodying the invention. The same comprises a stand 11 comprising a pair of vertical front legs 12, and a pair of vertical rear legs 13 interconnected by horizontal side brace 15 and by suitable longitudinal bracing, not shown. Pivoted to the upper ends of the rear legs 13, as on pivots 16, are hinge plates 17 supporting a horizontal rectangular metal plate 18, to the upper side of which is fixed a horizontal rectangular wooden table 19, of larger dimension than the plate 18. Thus the plate 18 together with the table 19 may be swung upwardly about the rear pivot pins 16. Attached to the upper ends of the front legs 12 are brackets 21 on which the front end of the table top 19 rests.

Plate 18 is formed with a pair of longitudinally aligned vertical through openings 22 and 23, respectively. Table 19 is formed on its underside with a pair of annular recesses 24 and 25, disposed above and surrounding the through openings 22. Said table 19 is furthermore formed with a vertical through opening 26 coaxial with the opening 22 in plate 18, and communicating with the recess 24. Attached to the underside of plate 18, in any suitable manner, and projecting downwardly therefrom are three downwardly extending brackets 27 supporting longitudinally aligned pillow blocks or ball bearings 28. Rotatably supported by the ball bearings 28 is a horizontal operating shaft 29.

Attached to the underside of the plate 18, as by means of brackets 30, is a gear reduction box 31. Connected to the shaft 29, as by coupling 32, is a shaft 33 aligned therewith, entering the gear reduction box 31 and connected through suitable reduction gearing to a shaft 34 projecting from the opposite end of the reduction box. On shaft 34 is a pulley 35 connected by belt 36 to a pulley 37 mounted on horizontal shaft 38 supported on suitable brackets or bearings 38a attached to the rear legs 13.

Fixed to the shaft 38 is a sprocket wheel 39 connected by sprocket chain 40 to a sprocket wheel 41, the latter being mounted on a horizontal shaft 42 driven by an electric motor 43. The motor 43 is mounted on a suitable bracket 44 supported by the stand 11 in any suitable manner. It will now be understood that while the motor operates the shafts 38 and 39 will rotate continuously.

Fixed to said motor shaft 42 is a friction disc 45. Fixed to the motor supporting bracket 44 is a bracket 46 provided with a pair of horizontal, aligned bushings 47 carried on a pair of spaced apertured ears 48 on said bracket. Slidable through said bushings 47 is a horizontal rod 49 aligned with the shaft 42. Carried on the rod 49 is a pulley 50 to which is fixed a friction disc 51. It will now be understood that the rod 49 is slidable to bring the friction disc 51 toward or away from the friction disc 45. When the shaft 49 is moved towards the disc 45 pulley 50 will be rotated, and when shaft 49 is moved away from the disc 45 pulley 50 will no longer be driven. Thus the friction disc 45, 51 constitutes a friction clutch.

Fixed to the rod 49 and disposed between the ears 48 is a collar 52. Interposed between the collar 52 and one of the ears 48 is a coil compression spring 53 which normally biases the friction disc 51 away from the friction disc 45, to de clutch the pulley 50.

Means is provided for braking the pulley 50 when the rod 49 is allowed to be moved away from the disc 45 under the action of spring 53. To this end there extends upwardly from one of the ears 48 a bracket 55 supporting a horizontal, transverse pivot pin 56. Pivoted to the pin 56 is a lever 57 having an arm 58 provided with a brake 59 located above the friction disc 51. Arm 58 is interconnected to the other ear 48 by means of a coil tension spring 60. When the lever 57 is rotated in a clockwise direction (Fig. 19) under the influence of spring 60, the brake 59 will engage the peripheral edge of the friction disc 51 to stop the rotation of the pulley 50.

The lever 57 also comprises an arm 61 extending in a direction opposite to arm 58. Attached to the lower end of arm 61 is a push pin 62. When the spring 60 pulls lever 57 in a clockwise direction, push pin 62 moves away from rod 49, permitting spring 53 to push the rod 49 to the left, looking at Fig. 19, so as to de clutch the pulley 50, and at the same time to brake the pulley. The pin 62, it will be observed, is aligned with one end of the rod 49.

Means is provided, as hereinafter described, to push the push pin 62 to the right to thereby simultaneously push rod 49 to the right for clutching position, and at the same time to release the brake 59.

Mounted on table 19 is a sewing machine 65 for sewing together tubular or sleeve-like parts or cuffs. The machine may be of any suitable standard construction, such as for example as is manufactured by Union Special Machine Company of Chicago, Illinois, under Style No. 11700C, or similar styles. The sewing machine 65 comprises a frame 66 having a base portion 67 and vertical portions 68 extending upwardly therefrom, a lower horizontal arm 69, and a top forwardly projecting arm 70 provided with a downward head or extension 71 at its front end. At the front end of the arm 69 is the usual rotary material feeder 72, for rotating the material to be stitched about the axis of arm 69.

Mounted for reciprocation on portion 71 of the sewing machine frame is a usual presser foot 74 and a usual needle holder 75. Presser foot 74 is pivoted at its upper end, as on pivot 76, to the front end of a bell crank 77, the latter being pivoted to the frame portion 70, as on pivot pin 78. Attached to the bell crank and extending rearwardly therefrom is an arm 79, to the rear end of which is pivoted, as at 79a, the upper end of the connecting rod 80 passing through suitable registering openings 81 and 82 in the table 19, and plate 18, respectively.

Means is provided to reciprocate connecting rod 80 for alternately lifting and lowering the presser foot 74 for the purpose hereinafter appearing. To this end, rod 80 projects below plate 18. Attached to the underside of plate 18 is a bracket 84 carrying a horizontal bushing 85 in which is journaled a horizontal shaft 86 (Fig. 10). Fixed to one end of the shaft 86 is an arm 87, pivoted as at 88 to a collar 89 attached to the lower end of the rod 80. Attached to the opposite end of the shaft 86 is an arm 90 carrying a horizontal roller 91. Fixed to shaft 29 is a cam disc 92 carrying a cam 93 adapted to engage the roller 91 for rotating the shaft 86 in a direction for pulling down the connecting rod 80 which oscillates the lever 70 and raises the presser foot 74. A leaf spring 95 fixed to the frame portion 70 engages the lever arm 77 for depressing the presser foot 74.

It will now be understood that the presser foot 74 is

in raised position when the articles to be stitched are placed on the sewing machine in sewing position. It is lowered during the sewing operation and again raised when the stitched together articles are removed from the machine, as explained hereinafter. The cam 93 on the cam disc 92 is so placed as to synchronize the raising and lowering of the presser foot with the stitching operation, as will be explained in greater detail hereinafter.

It will be understood that the arm 69 has an annular front end or nose portion 69a which is apertured to receive the feeder 72. The sewing mechanism is controlled by the usual horizontal shaft 100, to the rear end of which is attached a pulley 101 connected to pulley 50 by a belt 103. Means is provided for controlling the movement of the pusher pin 62 on lever 57, for controlling the operation of the sewing machine. To this end there is pivoted to the pivot pin 56, a yoke 104 having a portion 105 adapted to contact one end of the pusher pin 62. Fixed to the yoke is an upstanding arm 106 having a head 107 at its upper end contacting a face cam 108 mounted on said shaft 29.

When the high part of the cam 108 contacts the head 107, arm 106 will be rotated about pin 56 in a counter-clockwise direction, looking at Fig. 1 of the drawing, for pushing the pin 62 against the rod 49 to clutch the pulley 50 to the motor drive for operating the sewing machine. When the low part of the cam 108 passes the head 107, spring 60 declutches the clutch 45, 51 and brakes the pulley 50 to stop the operation of the sewing mechanism. The cams 92 and 108 are so arranged that the presser foot is depressed during the sewing operation and raised while the sewing mechanism is braked.

As explained above, the apparatus 10 is for stitching together any two tubular or sleeve-like elements. For the purpose of illustration, however, the apparatus shown and described is for the purpose of stitching together a tubular wristing element 110 to a glove 111. The wristing 110 may be made of knitted material and comprises a knitted tubular sleeve folded in half so as to have an outside portion 112 and an inner portion 113 interconnected by a fold 114, with the portions 112 and 113 having registering outer edges 112a and 113a. The wristing 110 is fitted or inserted by the operator inside the open end of the glove 111. The glove 111 is turned inside out before the wristing 110 is inserted therein, with the edges 112a, 113a of portions 112 and 113 registering with the end edge 111a of the glove 111. The purpose of this apparatus is to stitch the wristing 110 to the glove 111 by a circular line of stitching 115, adjacent the registering edges 111a, 112a, 113a. After the two parts have been stitched together, the glove 111 may be turned right side out and the wristing 110 may be pulled out to the position shown in Fig. 21, which shows the completed glove 116. In such position the fold 114 of the wristing 110 is at the outer end of the glove 116.

To facilitate the stitching of the wristing 110 to the glove portion 111 there is mounted on the table 19 a square metal plate 120 formed with a central opening 121 registering with the opening 26. Extending through the openings 121, 26 and 22 and passing through the recess 24 (Fig. 6) is a vertical shaft 122 having a lower stem portion 123 of reduced diameter projecting below plate 18, and an upper portion 124 of increased diameter. Attached to opposite sides of plate 18 are ball bearings 125, 126 attached together by bolts 127 passing through suitable openings in the plate 18. The bearing 125 is located within the recess 24 and the bearing 126 is located below plate 18. The reduced portion 123 of shaft 122 passes through the bearings 125, 126 and through the opening 122 in the plate 18. The lower end or shoulder of the portion 124 of said shaft 122 rests on the upper bearing 125 which acts as a thrust bearing for the shaft 122.

It will now be understood that the vertical shaft 122 is mounted for rotation about its axis. The shaft portion 124 projects above plate 120. Supported on the upper end of shaft 122 is a turret 130. The turret 130 comprises a turret plate 131 having a central opening 132 receiving the upper end of the shaft 124. A suitable set screw fixes the turret plate 131 to the upper end of the shaft. The turret plate 131 is provided with a plurality of equi-angularly spaced, outwardly extending wings 134.

For the purpose of illustration the turret plate is shown to have five wings, although any other suitable number of wings may be employed. Mounted on each wing 134 is a glove holder 135. Each glove holder 135 comprises

a Z-shaped bar 136 comprising a vertical downwardly extending arm 137, from the upper end of which extends inwardly a horizontal portion 138. Extending upwardly from the inner end of portion 138 is a vertical arm 139. Fixed to the vertical arm 137 is a guide 140 having a curved vertical flange 141 attached to arm 137 by screws 142. Extending from the vertical flange 141 is a part cylindrical flange 143. The guide 140 extends to opposite sides of bar 136, as shown in Figs. 13 and 14 of the drawing.

Fixed to the vertical arm 139 is a horizontal stud shaft 148 to the front of which is attached a headed screw 147. Rotatably mounted on the pin or shaft 148 is a rotary head 150 having a frustoconical portion 151 projecting inwardly, and a rearwardly extending cylindrical portion 153 surrounding part of the portion 138 of the Z-shaped bracket 136. The head of screw 147 retains rotary head 150 on shaft 148. It will now be understood that member 150 rotates freely on the shaft 148. The outer diameter of flange 143 is substantially the same as the outer diameter of the sleeve 153.

It will now be understood that the operator first inserts the wristing 110 within the glove 111 (turned inside out) and then fits the assembled parts 110, 111 onto the glove holder 150 in the position shown in Fig. 13, with the registering edges 111a, 112a, 113a contacting the flange 141 of the guide 140. In such position, it will be understood, the member 150 is disposed inside of the glove. The fingers of the glove project beyond the headed screw 147.

Means is provided to flatten the top portion of the assembled glove and wristing adjacent their outer ends, to facilitate insertion thereof between the raised presser foot and the feeder bar of the sewing machine. To this end there is fixed to the bracket portion 139 a cross pin 155 carrying blocks 156, at the outer ends thereof. Fixed to the blocks 156 are radiating pins 157 carrying double conical rollers 158 at their outer ends. The rollers 158 project radially outwardly of the sleeve portion 153 and beyond said sleeve. The two rollers 158 are spaced apart. The upper portion of the assembled wristing and glove contact the rollers 158 so as to provide a flattened portion 160 for the assembled parts at the top of the glove holder.

Fixed to the lower end of foot 137 of the bracket 136 is a horizontal pin 161. Said pin 161 passes through an opening 162 in a bar 163. The bar 163 carries a transverse pivot pin 164. Pivoted to the pivot pin 164 are the forked ends 165 of a horizontal arm 166. The forked ends 165 of said arm 166 straddle the bar 163 and are formed with openings to receive the transverse pivot pin 164. Arm 166 is formed at its inner end with a downwardly projecting boss 167 formed with a vertical through opening 168. Adjacent the outer end of each wing 134 is an upwardly extending boss 169, the upper surface of which is contacted by the lower surface of boss 167. Screwed to the boss 169 is a vertical screw 170 formed with a head 171 at its upper end. The shank of the screw 170 passes through the vertical through opening 168 in the boss 167. It will now be understood that the arm 166 is connected for swinging movement about a vertical axis (screw 170) relative to the wing 134.

It will be further observed that the glove holder 135 may be swung about the horizontal pin 164.

Attached to the lower end of the bar 163 is a vertical screw 175 carrying a roller 176. Attached to plate 120 is a guide plate 177 which projects beyond said plate 120. The plate 177 has a part circular edge 178 the center of curvature of which is the axis of shaft 122. The curved edge 178 is sufficiently long to extend between a pair of adjacent wings 134 in advance of the sewing machine, as shown in Fig. 2 of the drawing.

It will be observed that when the follower 176 contacts edge 178 of plate 177, bar 163 is maintained in vertical position. Looking at Fig. 2 of the drawing, it will be noted that one wing 134 is in alignment with the sewing machine. It will be further observed that the shaft 122 is in alignment with the sewing machine.

The position of the glove holder at the sewing machine will be called position #1, and the position of the glove holder preceding that one will be called position #2, and the position of the glove holder preceding the last one will be called position #3, and it will now be observed that the glove holders passing from positions #3 to #2 are maintained against tilting movement with the axis of the shaft 148 in horizontal position. While a glove holder

is in positions #3 and #2 and therebetween, the operator has an opportunity to feed the assembled glove and wringing thereon, as during that time the glove holder is kept from tilting and is held steady. When the glove holder passes from position #2 toward position #1, the roller 176 passes beyond the edge 178 to permit tilting of the glove holder about its horizontal pin or axis 164. This is accomplished in position #1 by means hereinafter described.

Means is provided to urge rotation of the arm 166 about axis 170 in one direction. To this end there surrounds bosses 167, 169 a torsion spring 180 having one arm 181 received in a hole in arm 166, and a second arm 182 received in a hole in the wing 134. The torsion springs tend to rotate the glove holders about a vertical axis in a counterclockwise direction, looking at Fig. 2 of the drawing, for the purpose hereinafter appearing.

Stop means is provided to limit the angular movement of arms 166. To this end there is fixed to each wing 134 an upstanding arm 185 provided with an adjustable set screw 186 adapted to contact a side of arm 166. A lock nut 187 on each set screw serves to hold said screw in adjusted position.

It will now be understood that the operator slips an assembled wringing and glove onto a glove holder either in position #2 or position #3, or inbetween, as the glove holder moves in a counterclockwise direction toward the sewing machine, looking at Fig. 2 of the drawing.

Means is provided for intermittently rotating the turret in such counterclockwise direction. To this end there is attached to the lower end of portion 123 of the vertical shaft 122, by means of any suitable set screw, a Geneva gear member 190. Said member 190 has curved edges 191 and radial slots 192 therebetween. For a five wing turret the Geneva gear will have five curved edges 191 and five slots 192. Such Geneva gear construction is well known. It further comprises a vertical shaft 193 supported on a thrust bearing 194 mounted on plate 18 and comprising a part disposed within recess 25 and a part disposed beneath the plate 18, said parts being interconnected by bolts passing through suitable openings in said plate. The shaft 193 comprises a portion 195 projecting downwardly below plate 18. Mounted thereon is a plate 196 having a curved flange 197 having the same radius of curvature as the curved edges 191. On the plate 196 is a downwardly extending pin 198 adapted to be received within the slots 192.

It will now be observed that as plate 196 rotates member 190 will be rotated, while the pin 198 is within one of the slots 192. Plate 190 will be stationary, however, while the flange 197 rotates in engagement with one of the edges 191.

At the lower end of plate 196 is a bevel gear 199 meshing with the bevel gear 200 mounted on shaft 29. It will now be observed that since shaft 29 rotates continuously plate 196 will rotate continuously, but that plate 190 and hence the turret, will be rotated intermittently through predetermined equal angles. If there are five wings then the angle of rotation each time the turret is rotated will be equal to one-fifth of a complete revolution. The Geneva gearing and the cam 108 are so arranged that the sewing machine operates while the turret is stationary and the sewing machine stops operating while the turret is rotating. Thus the turret stops to retain the glove holders in their various positions, and then the glove holders move onto their next positions. The wringing and glove may be slipped onto the glove holders preferably while the turret is stationary.

Means is provided to tilt the glove holder in position #1 in a clockwise direction about its horizontal axis 164, to bring the assembled glove and wringing over the nose 69a of arm 69 of the sewing machine, and over the feeder bar 72 and beneath the presser foot, so that said glove and wringing will be in a position for being stitched or sewed peripherally by the sewing mechanism. In such position the forward end or nose of the arm 69 will enter the assembled glove and wringing and the flattened top portion 160 of the latter will move in above the feeder bar 72, so that the presser foot can then come down and the needle can then stitch the assembled glove and wringing together. During such operation, furthermore, the glove and wringing will rotate together with the rotary head 150.

The tilting means comprises a tube 205 screwed into a threaded opening 206 formed in the underside of plate 18. The tube 205 is retained against plate 18 by

means of a lock nut 207. Extending through the tube 205 and rotatable therein, is a vertical shaft 208 projecting above table 19 and below the tube 205. Attached to the upper projecting end of the shaft 208 is an arm 210 disposed above the table 19 and movable into the path of the rollers 176. As shown in Fig. 2, arm 210 has a split head 211 adapted to be clamped about the upper end of shaft 208 by a screw 212, whereby the angular position of the arm 210 relative to shaft 208 may be adjusted. Fixed to the lower end of shaft 208 (Figs. 4 and 11) is an arm 213 connected by link 214 to one arm 215 of a bell crank 216. The bell crank 216 is pivoted about a screw 217 attached to a vertical rod 218 screwed at its upper end to plate 18. Bell crank 216 thus rotates about a vertical axis. It has a second arm 219 on the outer end of which is rotatably mounted a follower 220 contacting an edge cam 221 (Figs. 4 and 9) mounted on shaft 18 and rotatable therewith. When the high part of the cam 221 contacts the follower 220 bell crank 216 is rotated in a counterclockwise position, looking at Fig. 4, for rotating the arm 210 in a counterclockwise direction, looking at Fig. 2. The arm 210 projects in front of the nose 69a of the arm 69 of the sewing machine. As the roller 176 of the glove holder reaches position #1 said arm 210 will move in said counterclockwise direction, looking at Fig. 2, for engaging the roller 176 for tilting the glove holder toward the nose 69a to bring the flat portion 160 of the assembled glove and wringing over the feeder bar 72. While the glove is being stitched, arm 210 remains in contact with the roller 176. After the stitching operation, arm 210 is rotated in an opposite direction to permit the glove holder to swing back to straight position, due to gravity. (It will be noted that the weight of the glove holder tends to swing the glove holder in a clockwise direction about the horizontal pin 164, looking at Fig. 13 of the drawing.)

Spring means is provided to move the arm 210 in a clockwise direction, looking at Fig. 2 of the drawing, away from the roller 176. To this end there is provided (Figs. 4 and 12) a coil tension spring 225, one end of which is fixed to a pin 226, attached to arm 215, and the other end of which is attached to a screw 227, attached to the fixed rod 218. The spring 225 bends around the rod 218 and tends to rotate the bell crank 216 in a clockwise direction, looking at Fig. 4 of the drawing, for maintaining the follower 220 in engagement with the edge of cam 221. When the low part of the cam 221 is contacted by the follower, spring 225 will rotate the bell crank in a direction for retracting arm 220.

When the glove holder in position #1 straightens up the glove is moved away or off the nose 69a of the sewing machine, and thereafter the turret is again rotated to bring the glove holder in position #1 to the next position past the sewing machine, which will be called position #5.

Means is provided to cut the thread as the glove holder leaves position #1. To this end there is attached to the plate 18, a pair of downwardly extending spaced parallel brackets 230 in which is journaled shaft 231. Fixed to the shaft 231 (Fig. 7) is an arm 232 which extends below the shaft 29. It will be noted that the shaft 231 is located adjacent the front of the table 19 and that the arm 232 is inclined downwardly and rearwardly. Rotatably mounted on an intermediate portion of arm 232 is a follower 233. The outer end of arm 232 is connected by a coil tension spring 234 to a hook 235 fixed to the underside of plate 18. Fixed on shaft 29 is a cam disc 236 formed with an outwardly extending radial projection 237. As the shaft 29 rotates in a counterclockwise direction, looking at Fig. 7 of the drawing, the projection 237 will strike the follower 233 to rotate arm 232 in a clockwise direction about the axis of shaft 231, thereby rotating said shaft 231 at the same time.

Fixed to said shaft 231 is another arm 238 (Fig. 20), likewise inclined downwardly and rearwardly. Pivoted to the rear end of arm 238 as at 239 is an L-shaped bracket 240 having a horizontal arm attached to the lower end of the connecting rod 241 which passes upwardly through suitable registering openings in plate 18 and table 19. The connecting arm 241 projects above table 19. Pivoted to the base 67 of the frame 66, as at 242 is a bell crank 243 having a horizontal rearwardly

extending arm 244 pivoted as at 245 to the upper end of the connecting rod 241. Said bell crank 243 has a downwardly projecting arm 246. Pivoted to the lower end of said arm 246 is a connecting member 247. Attached to the base 67 is a fixed bracket 248 extending forwardly alongside of frame portion 69. Said bracket 248 has a portion extending beneath frame arm 69 and pivoted to the forward end of said bracket as at 249 is an arm 250. The forward end of the connecting rod 247 is pivoted as at 251 (Fig. 2) to an intermediate portion of said arm 250. The arm 250 extends transversely of the sewing machine to one side thereof. Attached to the outer end of arm 250, as by means of screws 252, is a block 253. A sleeve 254 surrounds the screw 252 and is interposed between the arm 250 and the block 253. Attached to the block 253 is one part 255 of a scissors 256. Pivoted to the part 255 of the scissors as at 257, is a second scissors part 258. It is the handle of the part 255 which is attached to the block 253. The blade of said part is inclined forwardly and upwardly. The blade of the part 258 of the scissors 256 is inclined downwardly and forwardly. Attached to the handle of the part 258 is a block 260 on which is mounted a follower or roller 261 projecting to one side. A coil compression spring 262 is interposed between the block 253 and the block 260 to normally keep the scissors open.

It will now be understood that when the projection 237 of the cam 236 (Fig. 7) strikes the follower 233, shaft 231 is rotated for lowering the connecting rod 241, thereby rotating the bell crank 243 in a counterclockwise direction for moving the connecting rod 247 to the right, looking at Fig. 3, thereby rotating arm 250 about pivot 249 in a counterclockwise direction, looking at Fig. 2, and thereby bringing the scissors forwardly and towards the nose 69a of the sewing machine. As the arm 250 is moved forwardly, the follower 261 on the block 260 will strike a cam 264 (Fig. 15) attached to the presser foot 74, thereby causing the block 260 to move down toward the block 253 and thereby closing the scissors so that the blades will cut the thread from the glove, so that the glove can be separated or moved away from the sewing machine. As soon as the thread has been cut the projection 237 on cam 236 moves off the follower 233 to reverse the direction of operation, whereby the scissors is retracted and at the same time opened up.

It will be observed that the operation of the scissors is in synchronization with the operation of the sewing machine and the other parts described above, and the cam projection 237 is so placed that the thread is cut just after the glove holder leaves position #1 on its way toward position #5.

Means is provided to rotate the glove holders in a clockwise direction (Fig. 2) about their vertical axes 170 as they move from position #1 to position #5, to swing the glove holders to a position where the fingers of the glove point outwardly so as to facilitate stripping of the sewed gloves from the glove holders. To this end there is fixed to the top of plate 120, in any suitable manner, a horizontal rod 270 located above the turret plate 131. It will be noted that the bar 270 is inclined toward the rear edge of the table 19 and toward the left end thereof, as shown in Fig. 2. Thus, as the glove holder moves from position #1 to position #5, in a counterclockwise direction, looking at Fig. 2, the roller 176 will contact the inner edge of the bar 270. However, since the bar 270 is at an angle to the radius through the follower 176 said glove holder will not be tilted about its horizontal axis, but will be rotated about its vertical axis 170 against the tension of the torsion spring 180. The glove holder will thus be rotated in a clockwise direction so that the fingers of the glove will point outwardly as the glove holder comes to position #5.

Means is provided to strip the gloves from the glove holder in position #5. To this end there is fixed to the rear edge of the table 19 a pair of brackets 280 supporting a transverse rotary shaft 281. On shaft 281 is a sprocket wheel 282 connected by sprocket chain 283 to a sprocket wheel 284 at one end of shaft 29. Thus shaft 281 is rotated continuously from shaft 29. On said shaft 281 is a second sprocket wheel 286. Fixed to table 19 and extending upwardly therefrom is a bracket 287 on which is journaled a pair of parallel horizontal shafts 288 and 289. On shaft 288 is a sprocket wheel 290 connected by sprocket chain 291 to the sprocket wheel 286.

Mounted on shafts 288 and 289 are meshing similar gears 288a and 289a, causing the shafts 288 and 289 to rotate in opposite directions at the same speed. Fixed to the shafts 288 and 289 are radial arms 288b and 289b having curved outer surfaces 288c and 289c. The arms 288b and 289b are so located, and of such radius, that as they rotate they will grip the fingers of the glove 111 in position #5 to pull the glove off the glove holder, said glove being dropped into any suitable hamper, container or box.

As the glove holder moves from position #5 to the next position, which will be called position #4, the follower 176 will move away from the bar 270 permitting the tensioned torsion spring 180 to rotate the glove holder in a counterclockwise direction (Fig. 2) to bring the holder back to a radial position, said glove holder being held in such position by the stop screw 186. When the glove holder reaches position #3 the operator can then slip an assembled glove and wringing thereon.

It will now be understood that the operation of the apparatus is simultaneous instead of being consecutive. While one assembled glove and wringing is being stitched in position #1 the operator slips another glove and wringing on another glove holder, either in position #2 or #3, or therebetween, and at the same time a stitched glove and wringing is being stripped from the glove holder in position #5. Such simultaneous operation increases production and cuts costs. Furthermore, the operator does not have to guide the glove and wringing during the sewing operation. All she has to do is assemble the wringing with the glove and slip them onto the glove holder, and the machine does the rest. For this reason less skilled operators are necessary for this operation.

It will thus be seen that there is provided a device in which the several objects of this invention are achieved and which is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiment above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention I claim as new and desire to secure by Letters Patent:

1. In combination, a sewing machine for sewing a tubular article, and including a round nose provided with a feeder bar, and a presser foot movable down toward the feeder bar and up away from the feeder bar, and drive means for operating the sewing machine, a turret mounted for rotation about a vertical axis in front of the sewing machine, a plurality of arms mounted for rotation about equi-angularly spaced vertical axes on the turret spaced equal radial distances from the axis of the turret, spring means to rotate each arm in one direction about its axis relative to the turret, stop means to limit rotation of each arm relative to the turret, a vertical bar pivoted to each arm for rotation about a horizontal axis, a bracket fixed to said bar, a rotor rotatably mounted on each bracket about a horizontal axis perpendicular to the first horizontal axis, and adapted to receive thereon a tubular article to be stitched, means for intermittently rotating said turret to bring said rotors successively in front of the nose of said sewing machine, means synchronized with the turret rotating means to intermittently operate the drive means for the sewing machine so as to operate the sewing machine when the turret is stationary, and means synchronized with the turret rotating means to tilt each bracket about its horizontal pivotal axis to bring each rotor over the nose of the sewing machine to place the tubular article thereon, to be stitched, over the nose of the sewing machine and over the feeder bar, in position for a stitching operation, and means synchronized with the rotation of the turret to lower the presser foot after the tubular article to be sewed has been moved over the feeder bar, and to raise the presser foot after the sewing operation.

2. In combination, a sewing machine for sewing a tubular article, and including a round nose provided with a feeder bar, and a presser foot movable down toward the feeder bar and up away from the feeder bar, and drive means for operating the sewing machine, a turret mounted for rotation about a vertical axis in front of the sewing machine, a plurality of arms mounted for rotation about equi-angularly spaced vertical axes on the turret spaced equal radial distances from the axis of the turret, spring

means to rotate each arm in one direction about its axis relative to the turret, stop means to limit rotation of each arm relative to the turret, a vertical bar pivoted to each arm for rotation about a horizontal axis, a bracket fixed to said bar, a rotor rotatably mounted on each bracket about a horizontal axis perpendicular to the first horizontal axis, and adapted to receive thereon a tubular article to be stitched, means for intermittently rotating said turret to bring said rotors successively in front of the nose of said sewing machine, means synchronized with the turret rotating means to intermittently operate the drive means for the sewing machine so as to operate the sewing machine when the turret is stationary, and means synchronized with the turret rotating means to tilt each bracket about its horizontal pivotal axis to bring each rotor over the nose of the sewing machine to place the tubular article thereon, to be stitched, over the nose of the sewing machine and over the feeder bar, in position for a stitching operation, and means synchronized with the rotation of the turret to lower the presser foot after the tubular article to be sewed has been moved over the feeder bar, and to raise the presser foot after the sewing operation, and means on each bracket to flatten the top of the article to be stitched.

3. In combination, a sewing machine for sewing a tubular article, and including a round nose provided with a feeder bar, and a presser foot movable down toward the feeder bar and up away from the feeder bar, and drive means for operating the sewing machine, a turret mounted for rotation about a vertical axis in front of the sewing machine, a plurality of arms mounted for rotation about equi-angularly spaced vertical axes on the turret spaced equal radial distances from the axis of the turret, spring means to rotate each arm in one direction about its axis relative to the turret, stop means to limit rotation of each arm relative to the turret, a vertical bar pivoted to each arm for rotation about a horizontal axis, a bracket fixed to said bar, a rotor rotatably mounted on each bracket about a horizontal axis perpendicular to the first horizontal axis, and adapted to receive thereon a tubular article to be stitched, means for intermittently rotating said turret to bring said rotors successively in front of the nose of said sewing machine, means synchronized with the turret rotating means to intermittently operate the drive means for the sewing machine so as to operate the sewing machine when the turret is stationary, and means synchronized with the turret rotating means to tilt each bracket about its horizontal pivotal axis to bring each rotor over the nose of the sewing machine to place the tubular article thereon, to be stitched, over the nose of the sewing machine and over the feeder bar, in position for a stitching operation, and means synchronized with the rotation of the turret to lower the presser foot after the tubular article to be sewed has been moved over the feeder bar, and to raise the presser foot after the sewing operation, and means controlled by the rotation of the turret to sever the thread extending from the sewed article after each sewing operation.

4. In combination, a sewing machine for sewing a tubular article, and including a round nose provided with a feeder bar, and a presser foot movable down toward the feeder bar and up away from the feeder bar, and drive means for operating the sewing machine, a turret mounted for rotation about a vertical axis in front of the sewing machine, a plurality of arms mounted for rotation about equi-angularly spaced vertical axes on the turret spaced equal radial distances from the axis of the turret, spring means to rotate each arm in one direction about its axis relative to the turret, stop means to limit rotation of each arm relative to the turret, a vertical bar pivoted to each arm for rotation about a horizontal axis, a bracket fixed to said bar, a rotor rotatably mounted on each bracket about a horizontal axis perpendicular to the first horizontal axis, and adapted to receive thereon a tubular article to be stitched, means for intermittently rotating said turret to bring said rotors successively in front of the nose of said sewing machine, means synchronized with the turret rotating means to intermittently operate the drive means for the sewing machine so as to operate the sewing machine when the turret is stationary, and means synchronized with the turret rotating means to tilt each bracket about its horizontal pivotal axis to bring each rotor over the nose of the sewing machine to place the tubular article thereon, to be stitched, over the nose of the sewing machine and over the feeder bar, in position

for a stitching operation, and means synchronized with the rotation of the turret to lower the presser foot after the tubular article to be sewed has been moved over the feeder bar, and to raise the presser foot after the sewing operation, and means to rotate each arm and its bar and bracket, together, about the vertical pivotal axis for said arm, after each sewing operation.

5. In combination, a sewing machine for sewing a tubular article, and including a round nose provided with a feeder bar, and a presser foot movable down toward the feeder bar and up away from the feeder bar, and drive means for operating the sewing machine, a turret mounted for rotation about a vertical axis in front of the sewing machine, a plurality of arms mounted for rotation about equi-angularly spaced vertical axes on the turret spaced equal radial distances from the axis of the turret, spring means to rotate each arm in one direction about its axis relative to the turret, stop means to limit rotation of each arm relative to the turret, a vertical bar pivoted to each arm for rotation about a horizontal axis, a bracket fixed to said bar, a rotor rotatably mounted on each bracket about a horizontal axis perpendicular to the first horizontal axis, and adapted to receive thereon a tubular article to be stitched, means for intermittently rotating said turret to bring said rotors successively in front of the nose of said sewing machine, means synchronized with the turret rotating means to intermittently operate the drive means for the sewing machine so as to operate the sewing machine when the turret is stationary, and means synchronized with the turret rotating means to tilt each bracket about its horizontal pivotal axis to bring each rotor over the nose of the sewing machine to place the tubular article thereon, to be stitched, over the nose of the sewing machine and over the feeder bar, in position for a stitching operation, and means synchronized with the rotation of the turret to lower the presser foot after the tubular article to be sewed has been moved over the feeder bar, and to raise the presser foot after the sewing operation, and means to rotate each arm and its bar and bracket, together, about the vertical pivotal axis for said arm, after each sewing operation, and means to strip the sewed article from each rotor after said arm, bar and bracket have been rotated about the vertical axis for said arm.

6. In combination, a sewing machine for sewing a tubular article, and including a round nose provided with a feeder bar, and a presser foot movable down toward the feeder bar and up away from the feeder bar, and drive means for operating the sewing machine, a turret mounted for rotation about a vertical axis in front of the sewing machine, a plurality of arms mounted for rotation about equi-angularly spaced vertical axes on the turret spaced equal radial distances from the axis of the turret, spring means to rotate each arm in one direction about its axis relative to the turret, stop means to limit rotation of each arm relative to the turret, a vertical bar pivoted to each arm for rotation about a horizontal axis, a bracket fixed to said bar, a rotor rotatably mounted on each bracket about a horizontal axis perpendicular to the first horizontal axis, and adapted to receive thereon a tubular article to be stitched, means for intermittently rotating said turret to bring said rotors successively in front of the nose of said sewing machine, means synchronized with the turret rotating means to intermittently operate the drive means for the sewing machine so as to operate the sewing machine when the turret is stationary, and means synchronized with the turret rotating means to tilt each bracket about its horizontal pivotal axis to bring each rotor over the nose of the sewing machine to place the tubular article thereon, to be stitched, over the nose of the sewing machine and over the feeder bar, in position for a stitching operation, and means synchronized with the rotation of the turret to lower the presser foot after the tubular article to be sewed has been moved over the feeder bar, and to raise the presser foot after the sewing operation, and means to retain each bar and bracket against rotary movement about the horizontal axis for the bar in certain predetermined angular positions of said turret.

7. In combination, a stand, a table thereon, a sewing machine on the table including a drive shaft, said sewing machine having a nose provided with a feeder bar and being adapted to sew tubular articles peripherally, a cam shaft mounted for rotation beneath the table, an electric motor supported on the stand, a motor shaft extending

from the motor, means connected to the motor shaft for continuously rotating the cam shaft, a clutch shaft mounted for rotation coaxially with the motor shaft, mutually contacting friction clutch means on said motor shaft and said clutch shaft, a pulley on said clutch shaft, a pulley on the drive shaft for the sewing machine, a belt interconnecting said pulleys, spring biased means for declutching the friction clutch means and braking the clutch shaft, cam means on the cam shaft for simultaneously releasing the braking means and clutching the clutch means, a turret mounted for rotation about a vertical axis in front of the sewing machine, equi-angularly spaced rotary holders on the turret adapted to receive tubular articles thereon, to be sewed, and means operatively connected to the clutch shaft for intermittently rotating said turret to successively bring the holders to the nose of the sewing machine, means for mounting each rotary holder on the turret for tilting movement about a horizontal axis, and means operatively connected to the cam shaft for tilting each holder about its horizontal axis when the holder comes in front of the sewing machine.

8. In combination, a stand, a table thereon, a sewing machine on the table including a drive shaft, said sewing machine having a nose provided with a feeder bar and being adapted to sew tubular articles peripherally, a cam shaft mounted for rotation beneath the table, an electric motor supported on the stand, a motor shaft extending from the motor, means connected to the motor shaft for continuously rotating the cam shaft, a clutch shaft mounted for rotation coaxially with the motor shaft, mutually contacting friction clutch means on said motor shaft and said clutch shaft, a pulley on said clutch shaft, a pulley on the drive shaft for the sewing machine, a belt interconnecting said pulleys, spring biased means for declutching the friction clutch means and braking the clutch shaft, cam means on the cam shaft for simultaneously releasing the braking means and clutching the clutch means, a turret mounted for rotation about a vertical axis in front of the sewing machine, equi-angularly spaced rotary holders on the turret adapted to receive tubular articles thereon, to be sewed, and means operatively connected to the clutch shaft for intermittently rotating said turret to successively bring the holders to the nose of the sewing machine, each rotary holder being pivotally mounted on the turret for tilting about a horizontal axis, and means operatively connected to the cam shaft for tilting each holder about its horizontal axis when the holder comes in front of the sewing machine, means on each holder for flattening the top part of the tubular article mounted on said holder, said sewing machine including a presser foot and means operatively connected to said cam shaft for raising said presser foot after each sewing operation and for lowering the presser foot after the holder has been tilted to bring the article thereon over the feeder bar.

9. In combination, a stand, a table thereon, a sewing machine on the table including a drive shaft, said sewing machine having a nose provided with a feeder bar and being adapted to sew tubular articles peripherally, a cam shaft mounted for rotation beneath the table, an electric motor supported on the stand, a motor shaft extending from the motor, means connected to the motor shaft for continuously rotating the cam shaft, a clutch shaft mounted for rotation coaxially with the motor shaft, mutually contacting friction clutch means on said motor shaft and said clutch shaft, a pulley on said clutch shaft, a pulley on the drive shaft for the sewing machine, a belt interconnecting said pulleys, spring biased means for declutching the friction clutch means and braking the clutch shaft, cam means on the cam shaft for simultaneously releasing the braking means and clutching the clutch means, a turret mounted for rotation about a vertical axis in front of the sewing machine, equi-angularly spaced rotary holders on the turret adapted to receive tubular articles thereon, to be sewed, and means operatively connected to the clutch shaft for intermittently rotating said turret to successively bring the holders to the nose of the sewing machine, each rotary holder being pivotally mounted on the turret for tilting about a horizontal axis, and means operatively connected to the cam shaft for tilting each holder about its horizontal axis when the holder comes in front of the sewing machine, means on each holder for flattening the top part of the tubular article mounted on said holder, said sewing

machine including a presser foot and means operatively connected to said cam shaft for raising said presser foot after each sewing operation and for lowering the presser foot after the holder has been tilted to bring the article thereon over the feeder bar, and means operatively connected to said cam shaft for severing the thread extending from the sewed article after each sewing operation.

10. In combination, a stand, a table thereon, a sewing machine on the table including a drive shaft, said sewing machine having a nose provided with a feeder bar and being adapted to sew tubular articles peripherally, a cam shaft mounted for rotation beneath the table, an electric motor supported on the stand, a motor shaft extending from the motor, means connected to the motor shaft for continuously rotating the cam shaft, a clutch shaft mounted for rotation coaxially with the motor shaft, mutually contacting friction clutch means on said motor shaft and said clutch shaft, a pulley on said clutch shaft, a pulley on the drive shaft for the sewing machine, a belt interconnecting said pulleys, spring biased means for declutching the friction clutch means and braking the clutch shaft, cam means on the cam shaft for simultaneously releasing the braking means and clutching the clutch means, a turret mounted for rotation about a vertical axis in front of the sewing machine, equi-angularly spaced rotary holders on the turret adapted to receive tubular articles thereon, to be sewed, and means operatively connected to the clutch shaft for intermittently rotating said turret to successively bring the holders to the nose of the sewing machine, means for mounting each rotary holder on the turret for tilting movement about a horizontal axis, means operatively connected to the cam shaft for tilting each holder about its horizontal axis when the holder comes in front of the sewing machine, and means for retaining each holder against tilting movement in various predetermined angular positions of the turret.

11. In combination, a stand, a table thereon, a sewing machine on the table including a drive shaft, said sewing machine having a nose provided with a feeder bar and being adapted to sew tubular articles peripherally, a cam shaft mounted for rotation beneath the table, an electric motor supported on the stand, a motor shaft extending from the motor, means connected to the motor shaft for continuously rotating the cam shaft, a clutch shaft mounted for rotation coaxially with the motor shaft, mutually contacting friction clutch means on said motor shaft and said clutch shaft, a pulley on said clutch shaft, a pulley on the drive shaft for the sewing machine, a belt interconnecting said pulleys, spring biased means for declutching the friction clutch means and braking the clutch shaft, cam means on the cam shaft for simultaneously releasing the braking means and clutching the clutch means, a turret mounted for rotation about a vertical axis in front of the sewing machine, equi-angularly spaced rotary holders on the turret adapted to receive tubular articles thereon, to be sewed, and means operatively connected to the clutch shaft for intermittently rotating said turret to successively bring the holders to the nose of the sewing machine, each rotary holder being pivotally mounted on the turret for tilting about a horizontal axis, means operatively connected to the cam shaft for tilting each holder about its horizontal axis when the holder comes in front of the sewing machine, means for retaining each holder against tilting movement in various predetermined angular positions of the turret, each holder being rotatable on said turret about a vertical axis, spring means to rotate each holder about its vertical axis in one direction, and means fixed relative to the turret for rotating each holder about said vertical axis in an opposite direction.

12. In combination, a stand, a table thereon, a sewing machine on the table including a drive shaft, said sewing machine having a nose provided with a feeder bar and being adapted to sew tubular articles peripherally, a cam shaft mounted for rotation beneath the table, an electric motor supported on the stand, a motor shaft extending from the motor, means connected to the motor shaft for continuously rotating the cam shaft, a clutch shaft mounted for rotation coaxially with the motor shaft, mutually contacting friction clutch means on said motor shaft and said clutch shaft, a pulley on said clutch shaft, a pulley on the drive shaft for the sewing machine, a belt interconnecting said pulleys, spring biased means for declutching the friction clutch means and braking the clutch shaft, cam means on the cam shaft for simul-

taneously releasing the braking means and clutching the clutch means, a turret mounted for rotation about a vertical axis in front of the sewing machine, equi-angularly spaced rotary holders on the turret adapted to receive tubular articles thereon, to be sewed, and means operatively connected to the clutch shaft for intermittently rotating said turret to successively bring the holders to the nose of the sewing machine, each rotary holder being pivotally mounted on the turret for tilting about a horizontal axis, means operatively connected to the cam shaft for tilting each holder about its horizontal axis when the holder comes in front of the sewing machine, means for retaining each holder against tilting movement in various predetermined angular positions of the turret, each holder being rotatable on said turret about a vertical axis, spring means to rotate each holder about its vertical axis in one direction, and means fixed relative to the turret for rotating each holder about said vertical axis in an opposite direction, and means to strip the sewed article from its holder in a predetermined angular position of each holder.

13. In combination, a sewing machine for sewing tubular articles peripherally, said sewing machine having a nose provided with a feeder bar, and a presser foot movable toward and away from said nose, a plurality of holders on which tubular articles to be sewn may be fitted, means movably mounting said holders on the machine in front of said nose so that they can be moved into alignment therewith, means for intermittently moving successive holders into positions in front of and in alignment with said nose and away from such position, means to move each holder from its position in front of the nose to a position receiving and in alignment with the nose of said machine, to bring the article to be sewn over the feeder bar, means to bring the presser foot down on the portion of the article overlying the feeder bar, and means to operate the sewing machine while the holder is fitted over the nose of the machine for stitching the article peripherally.

14. In combination, a stand, a table thereon, a sewing machine on the table including a drive shaft, said sewing machine having a nose provided with a feeder bar and being adapted to sew tubular articles peripherally, a cam shaft mounted for rotation beneath the table, an electric motor supported on the stand, a motor shaft extending from the motor, means connected to the motor shaft for continuously rotating the cam shaft, a clutch shaft mounted for rotation coaxially with the motor shaft, mutually contacting friction clutch means on said motor shaft and said clutch shaft, a pulley on said clutch shaft, a pulley on the drive shaft for the sewing machine, a belt interconnecting said pulleys, spring biased means for declutching the friction clutch means and braking the clutch shaft, cam means on the cam shaft for simultaneously releasing the braking means and clutching the clutch means, a turret mounted for rotation about a vertical axis in front of the sewing machine, equi-angularly spaced rotary holders on the turret adapted to receive tubular articles thereon, to be sewed, and means operatively connected to the clutch shaft for intermittently rotating said turret to successively bring the holders to the nose of the sewing machine, each rotary holder being pivotally mounted on the turret for tilting about a horizontal axis, means operatively connected to the cam shaft for tilting each holder about its horizontal axis when the holder comes in front of the sewing machine, and means for retaining each holder against tilting movement in various predetermined angular position of the turret, each holder being rotatable on said turret about a vertical axis, spring means to rotate each holder about its vertical axis in one direction, and means fixed relative to the turret for rotating each holder about said vertical axis in an opposite direction, means to strip the sewed article from its holder in a predetermined angular position of each holder, and means for mounting said holders for rotation about their axes to permit the article thereon to rotate as it is being stitched.

15. In combination, a stand, a table thereon, a sewing machine on the table including a drive shaft, said sewing machine having a nose provided with a feeder bar and being adapted to sew tubular articles peripherally, a cam shaft mounted for rotation beneath the table, an electric motor supported on the stand, a motor shaft extending from the motor, means connected to the motor shaft for continuously rotating the cam shaft, a clutch shaft

mounted for rotation coaxially with the motor shaft, mutually contacting friction clutch means on said motor shaft and said clutch shaft, a pulley on said clutch shaft, a pulley on the drive shaft for the sewing machine, a belt interconnecting said pulleys, spring biased means for declutching the friction clutch means and braking the clutch shaft, cam means on the cam shaft for simultaneously releasing the braking means and clutching the clutch means, a turret mounted for rotation about a vertical axis in front of the sewing machine, equi-angularly spaced rotary holders on the turret adapted to receive tubular articles thereon, to be sewed, and means operatively connected to the clutch shaft for intermittently rotating said turret to successively bring the holders to the nose of the sewing machine, each rotary holder being pivotally mounted on the turret for tilting about a horizontal axis, means operatively connected to the cam shaft for tilting each holder about its horizontal axis when the holder comes in front of the sewing machine, and means for retaining each holder against tilting movement in various predetermined angular positions of the turret, each holder being rotatable on said turret about a vertical axis, spring means to rotate each holder about its vertical axis in one direction, and means fixed relative to the turret for rotating each holder about said vertical axis in an opposite direction, means to strip the sewed article from its holder in a predetermined angular position of each holder, means for mounting said holders for rotation about their axes to permit the articles thereon to rotate as it is being stitched, and means to stop the operation of the machine at the end of the sewing operation.

16. In combination, a stand, a table thereon, a sewing machine on the table including a drive shaft, said sewing machine having a nose provided with a feeder bar and being adapted to sew tubular articles peripherally, a cam shaft mounted for rotation beneath the table, an electric motor supported on the stand, a motor shaft extending from the motor, means connected to the motor shaft for continuously rotating the cam shaft, a clutch shaft mounted for rotation coaxially with the motor shaft, mutually contacting friction clutch means on said motor shaft and said clutch shaft, a pulley on said clutch shaft, a pulley on the drive shaft for the sewing machine, a belt interconnecting said pulleys, spring biased means for declutching the friction clutch means and braking the clutch shaft, cam means on the cam shaft for simultaneously releasing the braking means and clutching the clutch means, a turret mounted for rotation about a vertical axis in front of the sewing machine, equi-angularly spaced rotary holders on the turret adapted to receive tubular articles thereon, to be sewed, and means operatively connected to the clutch shaft for intermittently rotating said turret to successively bring the holders to the nose of the sewing machine, each rotary holder being pivotally mounted on the turret for tilting about a horizontal axis, means operatively connected to the cam shaft for tilting each holder about its horizontal axis when the holder comes in front of the sewing machine, and means for retaining each holder against tilting movement in various predetermined angular positions of the turret, each holder being rotatable on said turret about a vertical axis, spring means to rotate each holder about its vertical axis in one direction, and means fixed relative to the turret for rotating each holder about said vertical axis in an opposite direction, means to strip the sewed article from its holder in a predetermined angular position of each holder, means for mounting said holders for rotation about their axes to permit the articles thereon to rotate as it is being stitched, means to stop the operation of the machine at the end of the sewing operation, and means to move the holder from a position over the nose of the sewing machine back to a position in front of the nose of the machine after the sewing operation.

17. In combination, a stand, a table thereon, a sewing machine on the table including a presser foot, a drive shaft, said sewing machine having a nose provided with a feeder bar and being adapted to sew tubular articles peripherally, a cam shaft mounted for rotation beneath the table, an electric motor supported on the stand, a motor shaft extending from the motor, means connected to the motor shaft for continuously rotating the cam shaft, a clutch shaft mounted for rotation coaxially with the motor shaft, mutually contacting friction clutch means on said motor shaft and said clutch shaft, a pulley on said

clutch shaft, a pulley on the drive shaft for the sewing machine, a belt interconnecting said pulleys, spring biased means for declutching the friction clutch means and braking the clutch shaft, cam means on the cam shaft for simultaneously releasing the braking means and clutching the clutch means, a turret mounted for rotation about a vertical axis in front of the sewing machine, equi-angul- 5 arly spaced rotary holders on the turret adapted to receive tubular articles thereon, to be sewed, and means operatively connected to the clutch shaft for intermittently rotating said turret to successively bring the holders to the nose of the sewing machine, each rotary holder being pivotally mounted on the turret for tilting about a horizontal axis, means operatively connected to the cam shaft for tilting each holder about its horizontal axis when the holder comes in front of the sewing machine, and means for retaining each holder against tilting movement in various predetermined angular positions of the turret, each holder being rotatable on said turret about a vertical axis, spring means to rotate each holder about its vertical axis in one direction, and means fixed relative to the turret for rotating each holder about said vertical axis in an opposite direction, means to strip the sewed article from its holder in a predetermined angular position of each holder, means for mounting said holders for rotation about their axes to permit the articles thereon to rotate as it is being stitched, means to stop the operation of the machine at the end of the sewing operation, means to move the holder from a position over the nose of the sewing machine back to a position in front of the nose of the machine after the sewing operation, and means to lift the presser foot after the termination of the sewing operation.

18. In combination, a stand, a table thereon, a sewing machine on the table including a presser foot, a drive shaft, said sewing machine having a nose provided with a feeder bar and being adapted to sew tubular articles peripherally, a cam shaft mounted for rotation beneath the table, an electric motor supported on the stand, a motor shaft extending from the motor, means connected to the motor shaft for continuously rotating the cam shaft, a clutch shaft mounted for rotation coaxially with the motor shaft, mutually contacting friction clutch means on said motor shaft and said clutch shaft, a pulley on said clutch shaft, a pulley on the drive shaft for the sewing machine, a belt interconnecting said pulleys, spring biased means for declutching the friction clutch means and braking the clutch shaft, cam means on the cam shaft for simultaneously releasing the braking means and clutching the clutch means, a turret mounted for rotation about a vertical axis in front of the sewing machine, equi-angul- 5 arly spaced rotary holders on the turret adapted to receive tubular articles thereon, to be sewed, and means operatively connected to the clutch shaft for intermittently rotating said turret to successively bring the holders to the nose of the sewing machine, each rotary holder being pivotally mounted on the turret for tilting about a horizontal axis, means operatively connected to the cam shaft for tilting each holder about its horizontal axis when the holder comes in front of the sewing machine, and means for retaining each holder against tilting movement in various predetermined angular positions of the turret, each holder being rotatable on said turret about a vertical axis, spring means to rotate each holder about its vertical axis in one direction, and means fixed relative to the turret for rotating each holder about said vertical axis in an opposite direction, means to strip the sewed article from its holder in a predetermined angular position of each holder, means for mounting said holders for rotation about their axes to permit the articles thereon to rotate as it is being stitched, means to stop the operation of the machine at the end of the sewing operation, means to move the holder from a position over the nose of the sewing machine back to a position in front of the nose of the machine after the sewing operation, and means to lift the presser foot after the termination of the sewing operation, and means to sever the thread extending from the stitching after the sewing operation.

19. In combination, a stand, a table thereon, a sewing machine on the table including a presser foot, a drive shaft, said sewing machine having a nose provided with a feeder bar and being adapted to sew tubular articles peripherally, a cam shaft mounted for rotation beneath the table, an electric motor supported on the stand, a motor shaft extending from the motor, means connected

to the motor shaft for continuously rotating the cam shaft, a clutch shaft mounted for rotation coaxially with the motor shaft, mutually contacting friction clutch means on said motor shaft and said clutch shaft, a pulley on said clutch shaft, a pulley on the drive shaft for the sewing machine, a belt interconnecting said pulleys, spring biased means for declutching the friction clutch means and braking the clutch shaft, cam means on the cam shaft for simultaneously releasing the braking means and clutching the clutch means, a turret mounted for rotation about a vertical axis in front of the sewing machine, equi-angul- 5 arly spaced rotary holders on the turret adapted to receive tubular articles thereon, to be sewed, and means operatively connected to the clutch shaft for intermittently rotating said turret to successively bring the holders to the nose of the sewing machine, each rotary holder being pivotally mounted on the turret for tilting about a horizontal axis, means operatively connected to the cam shaft for tilting each holder about its horizontal axis when the holder comes in front of the sewing machine, means for retaining each holder against tilting movement in various predetermined angular positions of the turret, each holder being rotatable on said turret about a vertical axis, spring means to rotate each holder about its vertical axis in one direction, means fixed relative to the turret for rotating each holder about said vertical axis in an opposite direction, means to strip the sewed article from its holder in a predetermined angular position of each holder, means for mounting said holders for rotation about their axes to permit the articles thereon to rotate as it is being stitched, means to stop the operation of the machine at the end of the sewing operation, means to move the holder from a position over the nose of the sewing machine back to a position in front of the nose of the machine after the sewing operation, means to lift the presser foot after the termination of the sewing operation, means to sever the thread extending from the stitching after the sewing operation, and means to remove the sewn articles from the holders which have been moved away from in front of the nose of the machine.

20. In combination, a sewing machine for sewing tubular articles peripherally, and including a horizontal arm having a nose provided with a feeder arm, a turret mounted for rotation in front of the sewing machine about a vertical axis, a plurality of equiangularly spaced radial holders movably mounted on the turret, means for intermittently rotating said turret through said equal angles to successively bring said holders to positions in alignment with and spaced from said arm, said holders being each mounted for rotation about its axis, each of said holders being adapted to receive a tubular article thereon to be stitched on said sewing machine, and means to move each holder aligned with said arm toward said arm to bring the tubular article thereon over the nose of said arm and overlying said feeder bar to permit stitching of said article peripherally.

21. The combination of claim 20, in combination with means for operating the sewing machine while the turret is stationary, and for stopping the operation of the sewing machine while the turret is being rotated.

22. The combination of claim 21, in combination with means for stripping the sewed articles from said holders after said articles have been stitched.

23. The combination of claim 21, and means for severing the thread extending from the stitching on the sewed article as the holders leave the posts in alignment with the arm of the sewing machine.

24. In combination, a sewing machine having a horizontal arm provided with a front nose, a feeder bar on the nose, a turret mounted for rotation about a vertical axis and located in front of the sewing machine, a plurality of rotary holders on each of which is adapted to be fitted in a pair of tubular articles to be stitched together, said holders being movably mounted on and equiangularly spaced apart on said turret, means for intermittently rotating said turret through said equal angles to successively bring the holders in alignment with and spaced from said arm, means to move each holder in alignment with the arm toward the arm to bring the articles thereon over the nose and overlying the feeder bar, means on the sewing machine for stitching the articles over the nose together peripherally, said holders rotating during the stitching operation.

25. The combination of claim 24 in combination with means to move the holder in alignment with the said arm

away from the nose of the arm after the stitching operation.

26. The combination of claim 24, and means for severing the thread extending from the stitching on the sewed together articles as the holder with the stitched together articles leaves the sewing position in alignment with said arm.

27. The combination of claim 24 and means for stripping the sewed together articles when the holder carrying the same reaches a position beyond sewing position in alignment with said arm.

28. In combination, a sewing machine for sewing tubular articles and including a round nose provided with a feeder bar and a presser foot movable down toward the feeder bar and up away from the feeder bar, and drive means for operating the sewing machine, a turret mounted for rotation about a vertical axis in front of the sewing machine, a plurality of holders movably mounted on and equiangularly spaced on the turret and disposed radially thereof, each holder being adapted to receive thereon a tubular article to be stitched peripherally, means for intermittently rotating said turret to bring said holders successively in front of and spaced from the nose of said sewing machine, means synchronized with the turret rotating means to intermittently operate the drive means for the sewing machine so as to operate the sewing machine when the turret is stationary, and means synchronized with the turret rotating means to move each holder over the nose of the sewing machine to place the tubular article thereon to be stitched, over the nose of the sewing machine, and over the feeder bar, in position for a stitching operation, and means synchronized with the rotation of the turret to lower the presser foot after the tubular article to be sewed has been moved over the feeder bar and to raise the presser foot after the sewing operation.

29. In combination with claim 28, means synchronized with the rotation of the turret to sever the thread extending from the sewed article after each sewing operation.

30. The combination of claim 29, in combination with means to strip the sewed article from each holder after said article has been stitched and its thread severed.

31. In combination, a sewing machine for sewing tubular articles peripherally, and including a round nose, a movable member, a member rotatable about its longitudinal axis, mounted on said movable member and adapted to receive a tubular article to be sewed, fitted thereover, means for moving the movable member to bring said rotary member in front of the sewing machine, and in alignment with said nose and spaced therefrom, means to mount said rotary member for oscillation about an axis perpendicular to its axis of rotation for movement to bring the article to be sewed and which is fitted thereon, into position over said nose of the sewing machine for a sewing operation, means for moving said rotary member about said axis of oscillation to a position for bringing said article fitted thereon into sewing position over said nose, and means for operating the sewing machine when the article fitted on said rotary member has been moved into sewing position over said nose, to rotate said rotary member about its longitudinal axis during said sewing operation.

32. In combination, a sewing machine for sewing tubular articles peripherally and including a round nose, a movable member, a member rotatable about its longitudinal axis mounted on said movable member and

adapted to receive a tubular article to be sewed, fitted thereover, means for moving the movable member to bring said rotary member in front of the sewing machine and in alignment with said nose and spaced therefrom, means to mount said rotary member on said movable member for oscillation about an axis perpendicular to its axis of rotation, for movement to bring the article to be sewed and which is fitted thereon, into position over said nose of the sewing machine for a sewing operation, means for moving said rotary member about its axis of oscillation to a position for bringing said article fitted thereon into sewing position over said nose, and means for operating the sewing machine when the article fitted on said rotary member has been moved into sewing position over said nose to rotate said rotary member about its axes of rotation during the sewing operation, said sewing mechanism including a presser foot, means for moving the presser foot down onto the article to be sewed after said article has been moved into sewing position over said nose, and means for raising said presser foot after the sewing operation.

33. In combination, a sewing machine for sewing tubular articles, including a nose, a rotary turret, a plurality of members rotatable about their axes, mounted on said rotary turret and each adapted to receive a tubular article to be sewed, fitted thereover, means for rotating the turret to bring said rotary members seriatim in front of and in alignment with and spaced from the nose of the sewing machine, means to mount each said rotary member on said turret for oscillation to bring the article to be sewed and which is fitted thereon, into position over the nose of the sewing machine for a sewing operation, means for moving said turret to a position for bringing said article to be fitted hereon into sewing position over said nose, means for operating the sewing machine when the article fitted on said rotary member has been moved into sewing position over said nose, and means for severing the thread extending from the sewed article after the sewing operation.

34. In combination, a sewing machine for sewing tubular articles, and including a round nose, a movable member, a member rotatable about its axis, and mounted on said movable member and adapted to receive a tubular article to be sewed, fitted thereover, means for moving the movable member to bring said rotary member in front of the sewing machine and in alignment with and spaced from said nose, means to mount said rotary member on said movable member for movement to bring the article to be sewed thereon, into position over said nose of the sewing machine for a sewing operation, means for moving said movable member to a position for bringing said article to be fitted thereon into sewing position over said nose means for severing the thread extending from the sewed article after the sewing operation, and means for stripping the sewed article from said rotary member after said thread has been severed.

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