

[54] **MACHINE FOR SEWING UP NETTING WEBS**

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[51] **Int. Cl.** **D05b 35/00, D05b 39/00, D05b 61/00**

[58] **Field of Search** **112/22, 27, 86, 90, 112/98, 102, 118, 121.11, 121.12, 121.14, 121.15, 154, 156, 184, 187, 191, 193, 198, 210**

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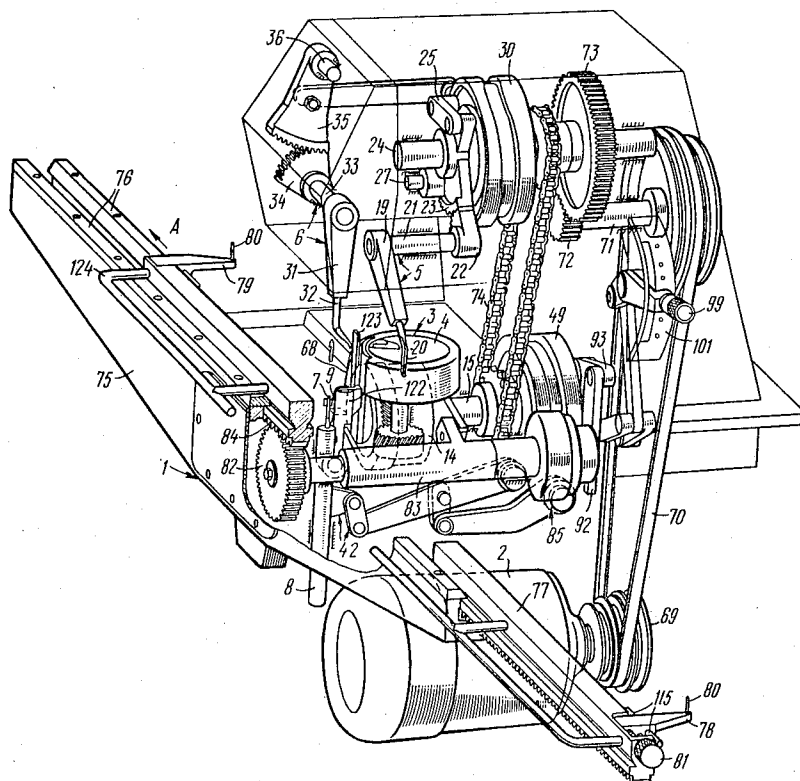
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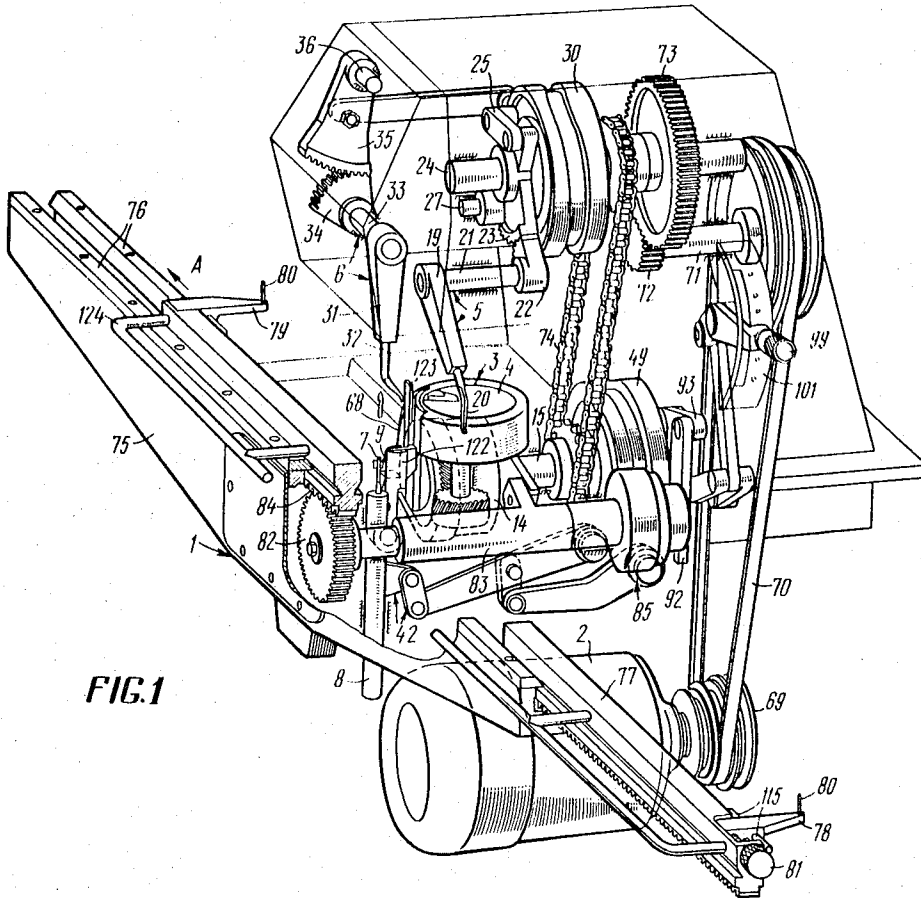
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Attorney—Holman & Stern

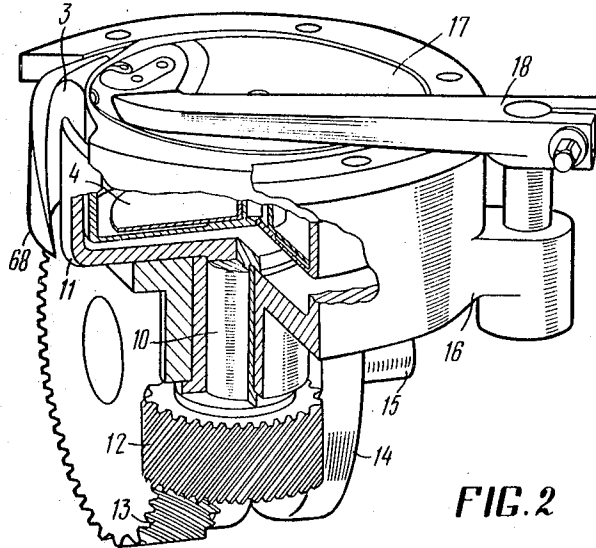
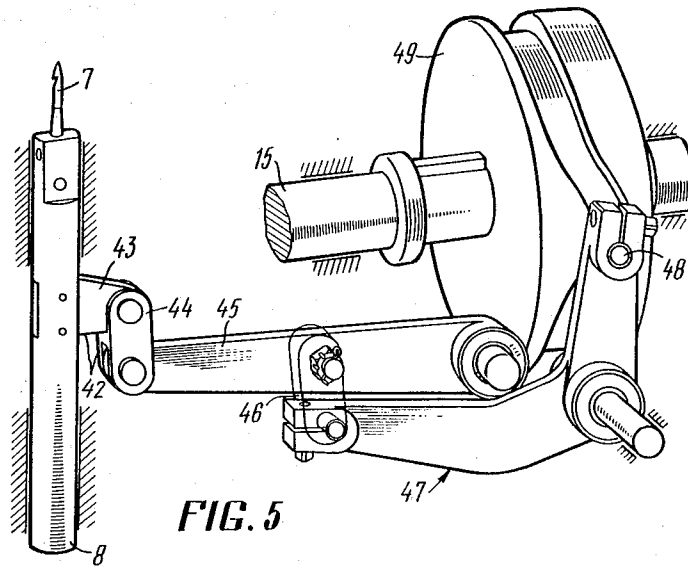
[57] **ABSTRACT**

In the machine the device for forming a sewing knot includes a shuttle with a spool supporting thereon a supply of the sewing thread; a mechanism for withdrawing the thread from the spool and forming a thread loop; a mechanism with a needle for drawing the thread through the netting webs being sewn up. The loop passes around shuttle and forms a sewing knot that is subsequently tightened about the edges of the netting webs. The machine incorporates means for intermittent feeding of the netting webs toward the sewing knot forming device, ensuring unidirectional motion of the webs. Mounted intermediate of the needle and the shuttle is a seam guiding pin on which the sewing knot is formed, whereby the possibility of the knot being displaced from the seam forming area is prevented.

6 Claims, 12 Drawing Figures







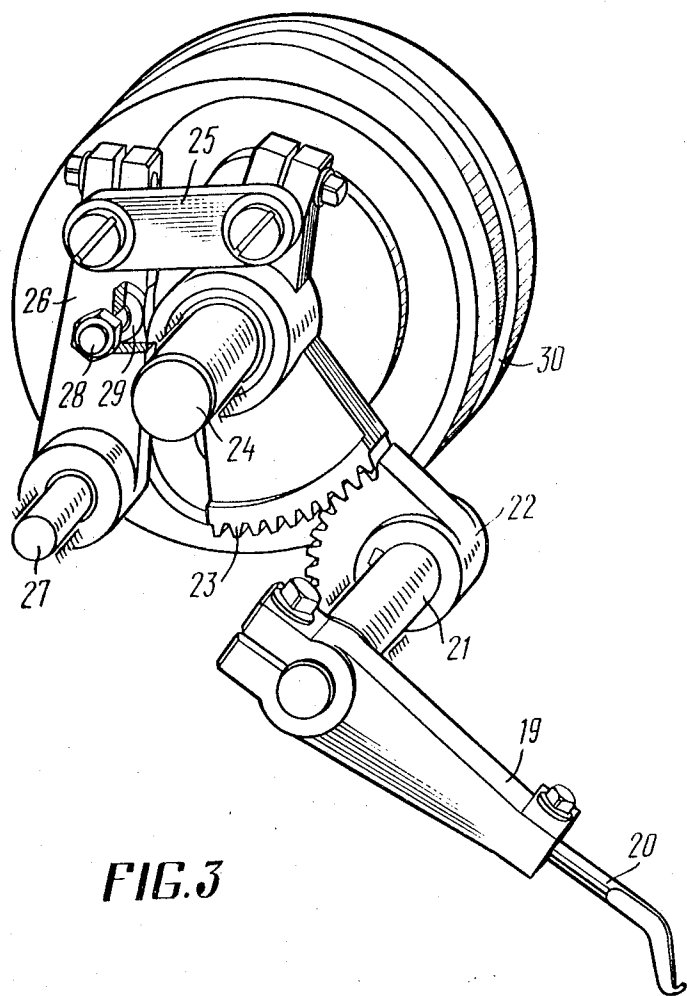
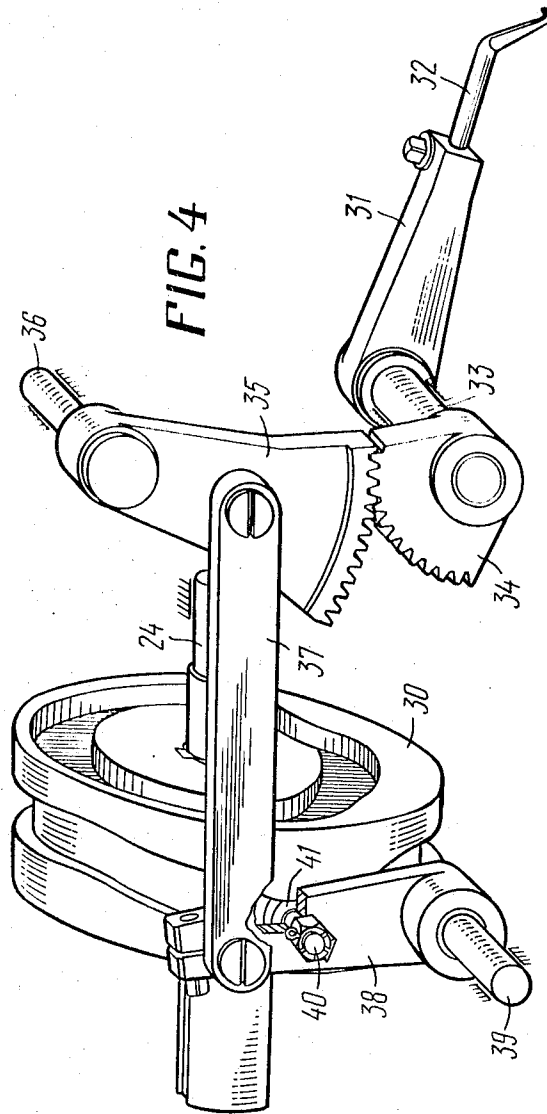
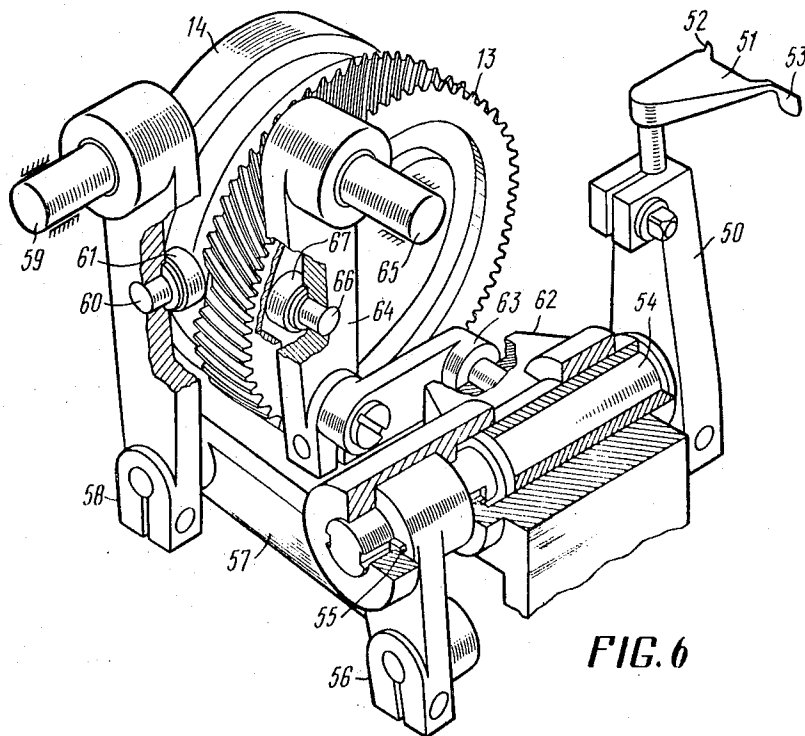


FIG. 3





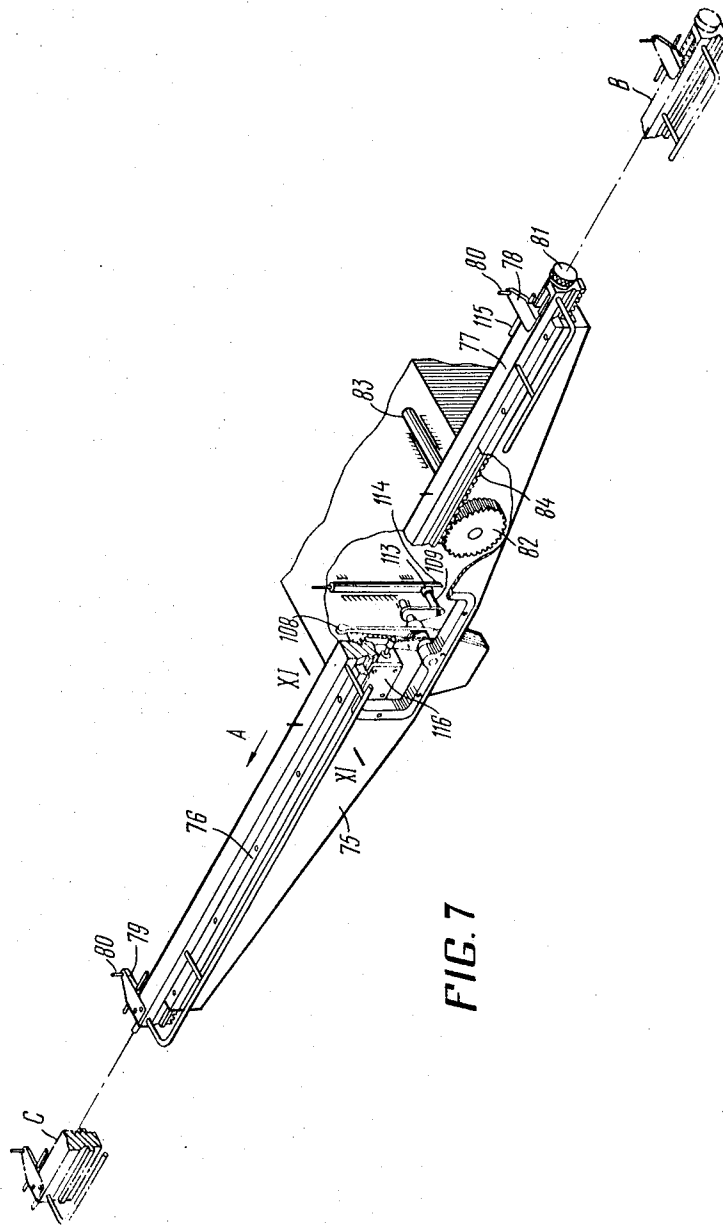


FIG. 7

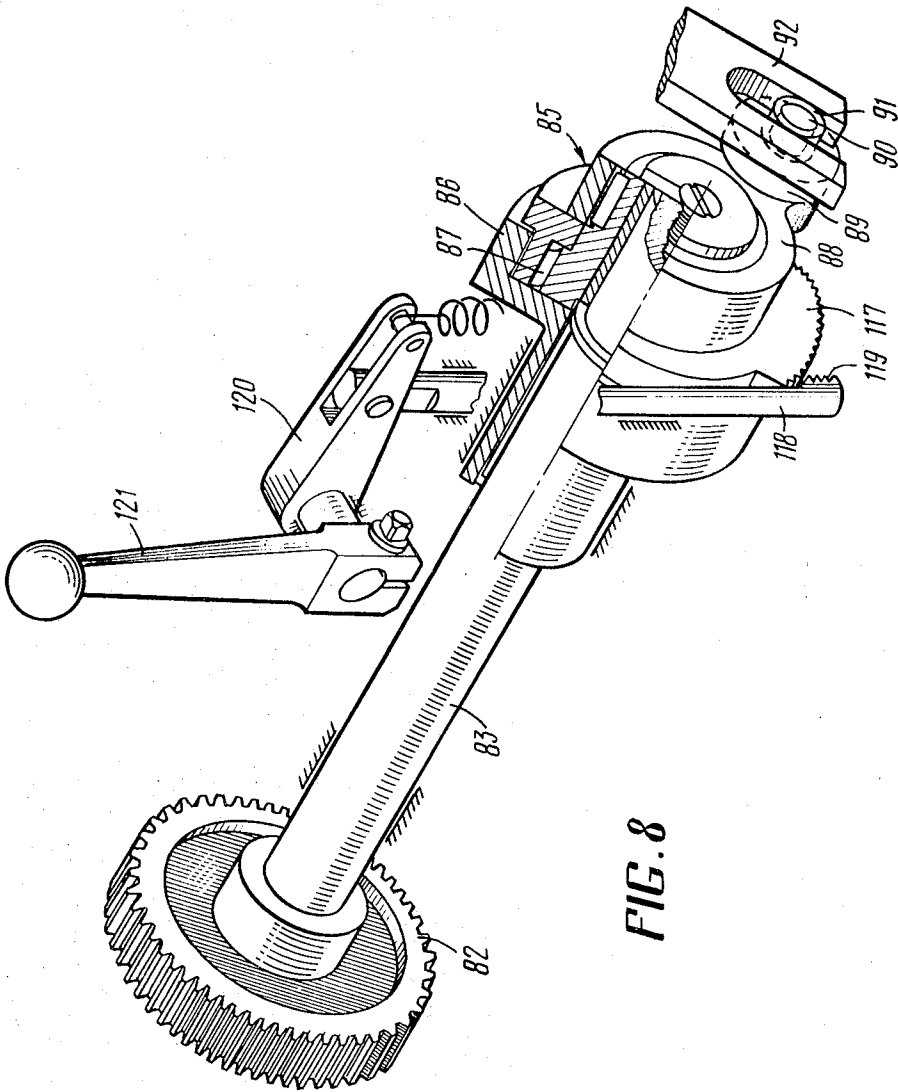
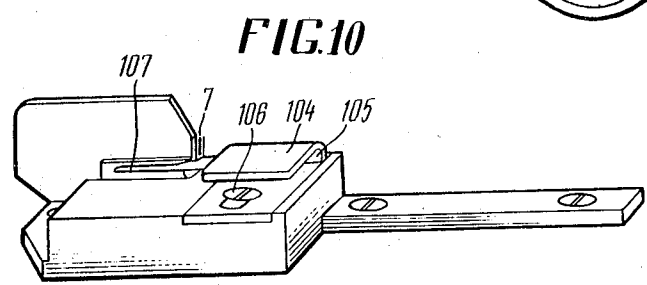
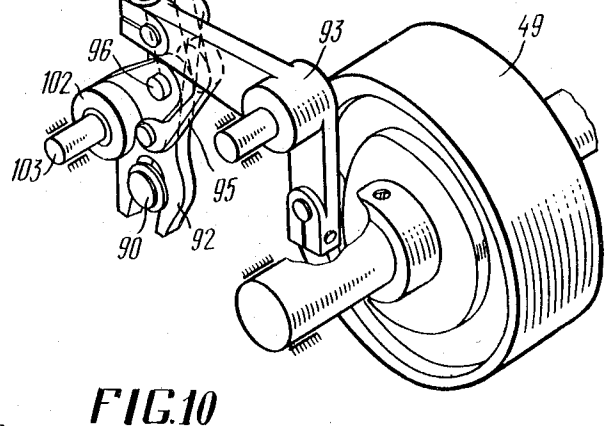
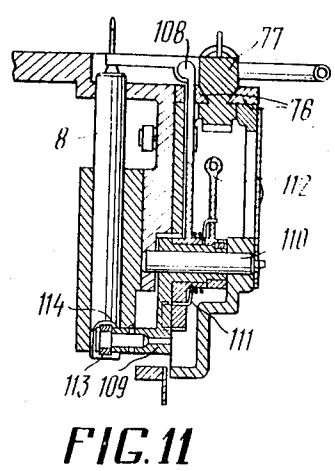
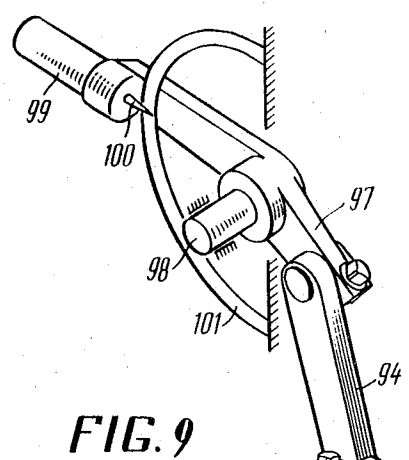
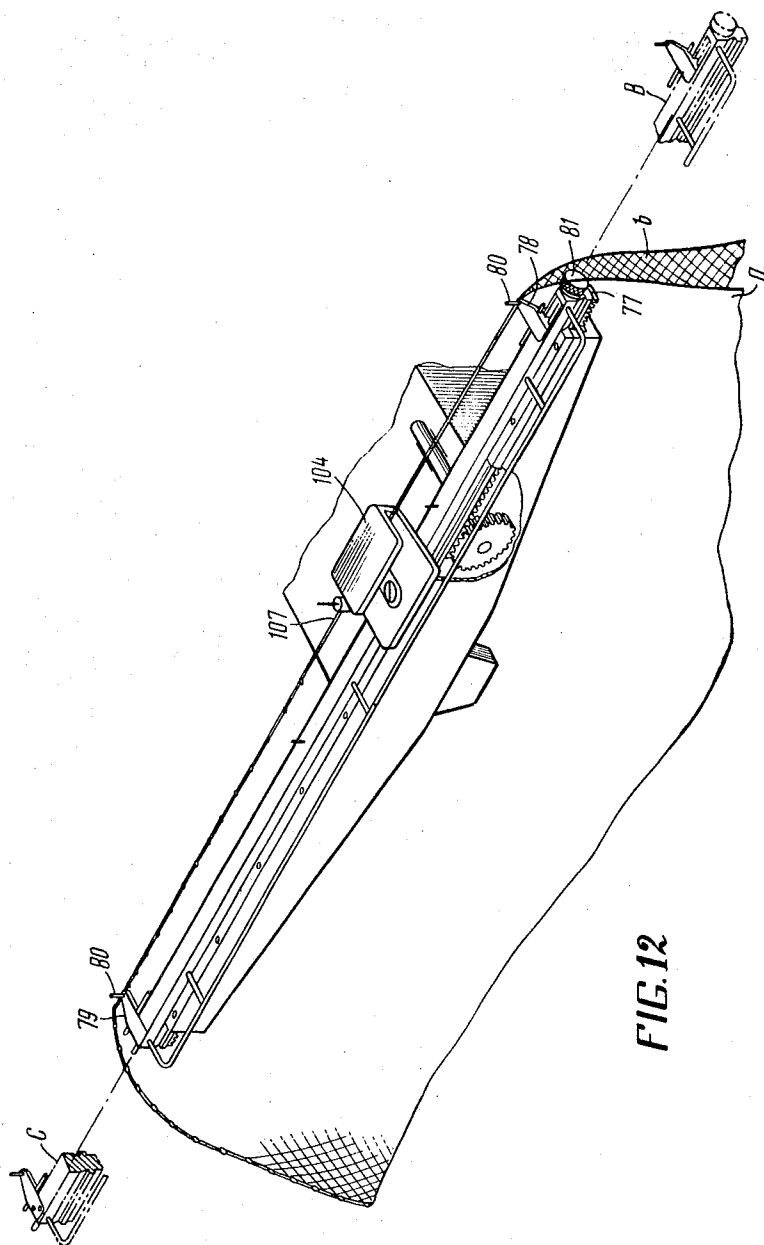


FIG. 8





MACHINE FOR SEWING UP NETTING WEBS

BACKGROUND OF THE INVENTION

The present invention relates to apparatus for making articles from netting webs, and, more particularly, it relates to machines for sewing up netting webs, e.g. for the manufacture of trawls and seines, as well as for making netting bags.

PRIOR ART

There is known a method of sewing up netting webs with a sewing thread forming a linking seam with the help of a shuttle. In accordance with this known method, a part of the thread is paid off or unwound from the shuttle, the thread is driven through the adjacent cells or meshes of the two netting webs being sewn up, after which the shuttle is made to pass through a loop formed of this thread, whereby a knot is formed.

The method can be performed by a machine including a shuttle actuator associated with a shuttle and a spool supporting a supply of the sewing thread, a mechanism for withdrawing the thread from the spool and making a loop of this thread; and mechanism with a needle for drawing the thread unwound from the spool through the superimposed netting webs and a mechanism for expanding the loop for the passage therethrough of the shuttle, in which way a knot is formed in accordance with the known method. The abovementioned mechanisms make up together a device for forming a sewing knot. The machine further includes means for feeding the netting webs intermittently, i.e. stepwise toward the above specified sewing knot forming device. The means includes a pair of operatively interconnected combs, viz. the lower one and the upper one, and a pressure plate. Each of the two combs is mounted for reciprocation in a horizontal plane and in a vertical plane. In the course of a sewing up operation, the netting webs are applied onto the lower comb, and the latter is driven for feeding the webs toward the sewing knot forming device. The upper comb is intended for holding the cells of the netting webs being sewn up in a spread state on the work table throughout the return travel of the lower comb, so that the netting webs can be subsequently reapplied onto the lower comb. The pressure plate holds down and retains the cells of the netting webs being sewn up during the knot forming operation.

The above described means for feeding the netting webs, however, cannot ensure positive retaining of the edges of the netting webs; neither can it ensure uniformity of the sewing pitch, because with the thread still moving on, it can carry away or displace the knot that has been formed. Besides, in this feeding means the netting webs are to be applied manually onto the comb, which fact seriously affects the productivity of the machine.

OBJECTS AND SUMMARY OF THE INVENTION

It is an object of the present invention to eliminate the possibility of the sewing knot being either displaced or carried away and to provide a possibility of feeding the netting webs automatically toward the device forming the sewing knots.

The above and other objects are attained in a machine for sewing up netting webs, comprising a device for forming a sewing knot and means for feeding said netting webs intermittently toward said device, in

which machine, in accordance with the present invention, said intermittent feeding means is adapted for imparting unidirectional translatory motion to said netting webs during the sewing up operation and includes a device for securing said netting webs being sewn up in a superimposed position on said means, and a guide for the edges of said netting webs, mounted in front of said needle on the side from which said netting webs are forwarded toward the sewing knot forming device, there being mounted at the outlet of said edge guide a seam guiding pin positioned along the path of the travel of said netting webs directly adjacent to said needle, intermediate of said needle and the shuttle, said seam guiding pin being adapted to support thereon a sewing knot which, as said netting webs are forwarded in operation, slides off said seam guiding pin and is tightened about said edges of said netting webs.

Owing to the unidirectional motion of the netting webs feeding means and to the fact that the netting webs are positively secured on said means, there is eliminated the labor-consuming operation of applying the netting webs onto the comb, whereby the productivity of the machine is substantially increased. The provision of the seam guiding pin, on the other hand, eliminates the possibility of the sewing knot being either displaced or carried away, whereby the quality of the sewing seam is stepped up.

The edge guide can be made in the form of a bail member with a slot adapted to receive therein said edges of said netting webs, said bail member being mounted for adjustment in a direction transverse in respect of the direction of the motion of said intermittent feeding means, and said bail member being retainable in an adjusted position, whereby the number of the cells or meshes of said netting webs, that are engaged for the sewing up operation, can be adjusted.

Said intermittent feeding means can include a housing with guideways receiving and supporting therebetween a toothed rack carrying brackets mounted for adjustment of the spacing therebetween, said brackets being intended for securing thereon the ends of said netting webs being sewn up and maintaining said netting webs in a tensioned state, the drive of said intermittent feeding means comprising the teeth of said rack and a pinion mounted on a shaft operatively connected with the drive of said machine.

It is advisable that a unidirectional clutch should be mounted on said shaft of said pinion, to provide for unidirectional rotation of said shaft and said pinion, said clutch being operatively connected by means of the roller cage thereof through roller means with a hub carrying a crank engaged by an oscillating bifurcated member drivingly connected through a pivoted arm with a cam connected to receive rotation from the drive of said machine.

In order to provide adjustment of the feeding step, it is further advisable for said machine to include a pair of links connected through a pivot shaft common to both said links, one of said links being connected to a bell crank and being displaceable for adjustment of the position of said common shaft, the other one of said links being operatively connected with said bifurcated member for displacing the same when the position of said common shaft is varied, and said common shaft being associated with an arm adapted to support said common shaft in an adjusted position.

In order to provide a possibility of moving said rack in a direction opposite to the direction of the motion of said rack during the sewing up operation, said unidirectional clutch can be associated with a toothed segment operable by a toothed bar and a pivoted arm.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will be further described in connection with an embodiment thereof, with reference being had to the accompanying drawings, wherein:

FIG. 1 is a general view in perspective of a machine for sewing up netting webs, constructed in accordance with the invention;

FIG. 2 is a view partly in elevation and partly in section showing in more detail the shuttle with the thread supply spool of the machine;

FIG. 3 illustrates in perspective the mechanism for withdrawing the thread from the spool;

FIG. 4 shows in elevation the mechanism for feeding the thread to the needle;

FIG. 5 shows in elevation the mechanism for drawing the thread through the cells of the netting webs;

FIG. 6 shows in perspective and partly broken away the loop expanding mechanism;

FIG. 7 illustrates in perspective and partly broken away the means for intermittent feeding of the netting webs toward the device forming the sewing knots;

FIG. 8 shows in perspective and partly broken away a part of the drive arrangement of the intermittent feeding means;

FIG. 9 shows in perspective a mechanism for adjustment of the length of the feeding step;

FIG. 10 shows in perspective the guides for the edges and the seam;

FIG. 11 is a cross-sectional view taken along line XI—XI in FIG. 7; and

FIG. 12 illustrates in perspective the means for intermittent feeding of the netting webs, with the guides and the netting webs in the course of a sewing up operation.

DETAILED DESCRIPTION OF THE DRAWINGS

Referring now in particular to the appended drawings, a machine for sewing up netting webs comprises a sewing apparatus, i.e. an apparatus for forming a sewing knot in which means 1 (FIG. 1) is provided for effecting an intermittent feed of the netting webs toward the sewing apparatus and an electric motor 2 serves for imparting motion to the mechanisms through respective drive means.

The sewing apparatus includes shuttle 3 carrying spool 4 with a supply of a sewing thread; mechanism 5 for withdrawing the thread from the spool 4 and forming a loop of this thread; a mechanism 6 for feeding the thread to a needle 7 mounted in a needle holder 8, the needle 7 being intended to draw the thread through the netting webs being sewn up and loop expanding mechanism 9 (which is shown in more detail in FIG. 6 of the appended drawings) mounted, as it can be seen from FIG. 1, behind the needle 7.

The shuttle 3 (FIG. 2) and the spool 4 are imparted rotation by shaft 10 with driving arm 11, the rotation being transmitted through helical pinion 12 meshing with helical gear 13 fast with cam drum 14. The cam drum 14 is rigidly mounted on lower shaft 15 (see also FIG. 1). The number of the teeth, respectively, of the pinion 12 and of the gear 13 is so selected that the shut-

tle is driven for two revolutions during each revolution of the shaft 15, one of the two revolutions being a working revolution during which the shuttle passes through the thread loop after the latter has been expanded, and the other one of the two revolutions being an idle one. The shuttle 3 is received within housing 16, and the spool 4 is protected from above by lid 17 through which there are made corresponding openings for the passage of the thread. The housing 16 has arm 18 attached thereto, the arm 18 preventing rotation of the lid 17, for the thread not to be carried away from the loop formation area.

The mechanism 5 (FIG. 3 and FIG. 1) for withdrawing, i.e. unwinding the thread from the supply spool 4 includes pivotable arm 19 carrying hook 20 on the free end thereof. The arm 19 is driven for oscillations about the axis of a shaft 21 on which the arm is non-rotatably mounted, by means of a toothed segment rigidly mounted on the shaft 21 and meshing with another toothed segment 23 rotatably mounted on upper shaft 24. The toothed segment 23 is operatively connected via pivoted link 25 with arm 26 pivotable about axis 27 and carrying spindle 28 with follower 29 engaging a cam surface in the face of cam drum 30 non-rotatably mounted on the shaft 24.

The mechanism 6 (FIGS. 1 and 4) for feeding the thread to the needle 7 performs the following operations: it places the thread loop beneath the needle 7, applies the loop onto the hook of the needle 7 and draws the loop after the shuttle has passed there-through.

This mechanism 6 includes an arm 31 carrying hook 32 on the free end thereof, the arm 31 being non-rotatably mounted on pivot shaft 33. The arm 31 is driven for oscillations about the axis of the shaft 33 by means of toothed segment 34 rigidly mounted on the shaft 33 and meshing with another toothed segment 35 mounted for free pivoting motion about shaft 36, the segment 35 being connected via pivoted link 37 to driving arm 38 mounted for free pivoting motion about shaft 39. The arm 38 carries spindle 40 with follower 41 engaging the peripheral cam groove of the cam drum 30 non-rotatably mounted on the shaft 24.

Mechanism 42 for driving the needle 7 (FIGS. 1 and 5) through the cells of the netting webs being sewn up effects reciprocation of the needle holder 8 with the needle 7 in a vertical plane. This vertical reciprocation is effected by means of the needle holder 8 being provided with lobe 43 operatively connected via pivoted link 44 to arm 45 connected, in turn, via another pivoted link 46 to bell crank 47 carrying spindle 48 with a follower (not shown) engaging the peripheral cam groove of cam drum 49 non-rotatably mounted on the lower shaft 15.

The mechanism 9 (FIG. 6) for expanding the thread loop after the latter has been drawn by the needle 7 through the netting webs being sewn up includes pivoted arm 50 carrying on the free extremity thereof an expander member in the form of platform 51 integral with claw-like projection 52 for expanding the loop and tail piece 53 for removing the loop off the hook of the needle 7. Oscillations of the arm 50 are effected by the arm being non-rotatably mounted on one end of a shaft 54 of which the other end has non-rotatably mounted thereabout (with the help of keys 55) an arm 56 connected via a pivoted link 57 to another pivoted arm 58 mounted for free rotation about shaft 59. The arm 58

carries spindle 60 with a follower 61 engaging the peripheral cam groove of the cam drum 14. Axial reciprocation of the expander member 51 along the axis of the shaft 54 is effected by the last-mentioned shaft carrying slide 62 connected via a pivoted link to arm 64 mounted for free oscillation about stationary shaft 65, the arm 64 carrying spindle 66 with follower 67 engaging the cam surface in the face of the helical gear 13 integral with the cam drum 14. The oscillation of the platform 51 of the expander member effects expansion of the loop, while the axial reciprocation of the same member results in the thread being fed onto a beak 68 (of the shuttle), after which the shuttle passes through the loop.

Rotation of the abovementioned lower shaft 15 and upper shaft 24 (FIG. 1) driving all the abovementioned mechanisms of the machine is effected by the output shaft of the electric motor 2 having mounted thereon a three-pulley block 69 connected by endless driving belt 70 with intermediate shaft 71 carrying pinion 72 meshing with gear 73 mounted on the shaft 24. This upper shaft is operatively connected with the lower shaft 15 via driving chain transmission 74.

The means for effecting intermittent feed of the netting webs being sewn up to the sewing apparatus includes housing 75 (FIGS. 1 and 7) with guides 76 supporting a toothed rack 77 driven during a sewing up operation for a unidirectional translatable motion, as indicated by the arrow line "A." The rack 77 carries pair of brackets 78 and 79 provided with pins 80 by means of which the netting webs are secured. The spacing between the two brackets can be adjusted by means of the bracket 78 being mounted with the help of an adjustment screw 81, whereby tensioning of the edges of the netting webs can be effected. The rack 77 is driven by a pinion non-rotatably mounted on shaft 83 and meshing with the teeth of the rack. The shaft 83 (FIG. 1) is operatively connected with the cam drum 49 through a unidirectional clutch 85 non-rotatably mounted on the shaft 83. As it can be seen from FIG. 8, the unidirectional clutch 85 includes a cage 86 and a plurality of rollers 87. The rollers 87 establish a driving relationship between the cage 86 of the clutch 85 and hub 88 mounted for free rotation about the shaft 83 and carrying crank 89. The crank 89, in turn, carries spindle 90 with follower 91 received between the prongs of bifurcated member 92.

The bifurcated member 92 (FIG. 1) is connected via bell crank 93 with the cam surface in the face of the cam drum 49. With the cam drum 49 rotating, the bell crank 93 is oscillated together with the bifurcated member 92. These oscillations drive the carrying crank 89 (FIG. 8) of the hub 88. When the bifurcated member 92 rocks in one direction, the rollers are wedged between the race 87 and the hub 88, and the shaft 83 is rotated to effect a single feeding step of the rack. When the bifurcated member 92 is rocked in the opposite direction, the hub 88 freely rotates about the shaft 83, and the rack is not driven. The hereinabove described structure of the intermittent feed drive effects feeding of the netting webs through successive steps of a definite constant length, to correspond to a given size of the cells of the netting.

To readjust the feeding mechanism for a different size of the netting cells, it is necessary to vary the length of the feeding steps. This can be effected with the help of the feed adjustment mechanism illustrated in FIG. 9.

The last-mentioned mechanism includes a pair of pivoted links 94 and 95 having their adjacent ends mounted about common pivot shaft 96. The link 95 is pivotally connected with the bifurcated member 92, while the link 94 is pivotally connected with bell crank 97 mounted for pivoting motion about shaft 98. The bell crank 97 is provided with handle 99 associated with retainer 100 by means of which the bell crank can be set in respect of segment 101 carrying a dial calibrated in the size of the netting cells, e.g. expressed in mm. To adjust the feeding step, the handle 99 is rotated manually into the corresponding position, whereby the bell crank 97 is rotated about the shaft 98, and the link 94 is correspondingly displaced. Consequently, the link 95 displaces the bifurcated member 92, thus varying the angle of oscillation of the follower 90 under the driving action of the bell crank 93. In this way the length of the feeding step is varied. In order to support the shaft 96 in a selected position corresponding to the desired feeding step, there is provided pivotable arm 102 mounted for pivoting motion about shaft 103.

Mounted in front of the needle 7 on a stationary part of the machine, e.g. on the framework, is guide 104 (FIG. 10) for the edges of the netting webs being sewn up. The guide includes a bail 104 with a slot 105 for the passage of the respective edges of the two netting webs being sewn up.

The height of the slot is selected in accordance with the thickness of the netting webs. The bail is secured by screw 106 with provisions for adjustment of the bail in a direction perpendicular to the direction of the travel of the rack 77, in which way the number of the cells of the netting webs that are engaged in the sewing up operation can be adjusted.

Mounted on the bail adjacent to the needle 7 is pin 107 with a pointed end, which pin acts as the guide of the seam being formed. This guiding pin 107 is disposed intermediate of the needle 7 and the shuttle 3 in the direction of the travel of the netting webs being sewn up. It has been found that the quality of the seam is at its best, when the spacing between the needle 7 and the pin 107 equals a double thickness of the thread of the netting.

The machine includes an automatic stop motion including bell crank 108 (FIG. 11) freely pivotable about a hub formed on arm 109 freely pivotable about shaft 110. The lower end of the bell crank 108 has attached thereto one end of a coiled torsion spring of which the other end is connected to arm 112 non-rotatably secured on the hub of the arm 109. The free extremity of the arm 109 supports follower 113 which is closely adjacent to the external surface of the holder 8 of the needle 7. The needle holder 8 has a groove 114 cut in the lower portion thereof.

The bracket 78 (FIG. 7) carries a limit switch actuator in the form of screw 115 adapted to engage the upper extremity of the bell crank 108. Electric switch 116 wired into the supply circuit of the electric motor 2 is mounted within the housing 75. The machine is stopped in the following manner. At the end of a sewing up operation the screw 115 engages the extremity of the bell crank 108 and makes it pivot about the axis of the hub of the arm 109. The spring 111 is additionally tensioned, and the follower 113 is made to engage the needle holder 8, whereby the follower enters the groove 114, as the needle holder 8 moves upwardly. In this case the end of the arm 112 operates the electric

switch 116, whereby the power supply circuit of the electric motor 2 is broken, and the needle 7 dwells in the uppermost position of its travel.

In order to effect rapid retraction of the rack 77 into its initial position (at the extreme right in the appended drawings), it is necessary to release first the unidirectional clutch 85, i.e. to prevent jamming of its rollers 87. For this purpose there is provided exteriorly of the roller cage 86 (FIG. 8) toothed segment 117 integral with the cage, the segment 117 being operatively connected with rod 118 by meshing with the teeth 119 on the lower end of the rod, and the opposite end of the rod 118 is pivotally connected with spring-biased arm 120. Handle 121 is provided for rotating the arm 120, so as to operate the clutch 85 through the rod 118 and the toothed segment 117 and thus to positively prevent jamming of the rollers of the clutch, whereby the rack may be moved in a direction opposite to that indicated by the arrow line "A."

The machine operates, as follows.

The handle 99 is set in respect of the segment 101 to pre-set, as it has been described hereinabove, the required feeding step of the means 1 forwarding the netting webs being sewn up. The two netting webs "a" and "b" (FIG. 12) are placed onto the respective pins 80 of the brackets 78 and 79, their respective free edges being straightened and superimposed. Simultaneously, the edges of the netting webs "a" and "b," which are superimposed and slightly overlapping, are positioned into the bail 104, so that the guiding pin 107 should be positioned between the two edges. Then the screw 81 is rotated to tension the two netting webs. The means 1 for feeding the netting webs is shown in FIG. 12 in an intermediate position, the two extreme positions "B" and "C" being shown by dotted lines.

The travel of the rack 77 should be pre-set to correspond to the size (i.e. the length) of the netting webs to be sewn up. This is effected by setting the screw 115 into the corresponding position.

When the abovementioned adjustments are completed the spool 4 with the supply of the sewing thread thereon is placed into the shuttle 3, and the end of the thread is withdrawn manually, so as to unwind a length of the thread, sufficient for sewing up manually the first two or three of the meshes, or cells of the netting webs.

The manual sewing up completed, the electric motor 2 is switched on to drive the upper shaft 24 and to transmit the rotation through the chain transmission 74 to the lower shaft 15.

With the upper shaft 24 rotating, the hook 20 of the thread withdrawing mechanism 5 engages the thread and unwinds it from the shuttle 3 to a sufficient length, with a loop being formed. As the lower shaft 15 is rotating, reciprocating rod 122 supporting thread holder 123 in the form of a bar with a shoulder is raised to lift one side of the loop to a position at which the hook 32 of the thread feeding mechanism 6 engages the thread and places it onto the hook of the needle 7. Then the rod 122 with its thread holder 123 is returned into its bottommost position, and the hook 20 also returns into its initial position, slackening the thread. Simultaneously the needle 7 draws the thread downwardly through the adjacent cells of the two netting webs. As the needle 7 moves downwardly, the hook 32 of the mechanism 6 reverses its motion, releasing the thread. As the needle 7 reaches its lowermost position, the loop expanding mechanism 9 starts operating. The claw-like

projection 52 of the expanding member is first driven axially to enter the loop, whereafter it is rocked to expand the loop, so as the latter can be engaged by the beak 68 of the shuttle 3. This completed, the expanding member is returned into its initial position.

At the moment when the thread is engaged by the beak 68 of the shuttle 3 the needle 7 moves upwardly, slackening the thread, and the tail piece 53 of the expanding member removes the loop off the hook of the needle 7. The needle 7 is again returned into its lowermost position. The beak 68 of the shuttle 3 rotates and draws the loop therearound, forming a knot. After the thread has passed about the shuttle 3, the hook 32 of the mechanism 6 removes the slack in the thread, and the knot is tightened about the guiding pin 107, on account of the latter being positioned intermediate of the needle 7 and the shuttle 3. The hook 32 is returned into its initial position, and simultaneously the hook 20 tightens the thread, e.e. removes the slack. The rack 77 is fed through one step, and the knot formed about the guiding pin 107 slides off the latter. In this manner, with the hook 20 and the rack 77 moving in the opposite directions, the knot is finally tightened about the edges of the two netting webs being sewn up. Then the above described knot formation cycle is repeated. The sewing up operation is continued until the rack 77 is driven into the extreme left-hand position thereof, upon which the above described stop motion deenergizes the electric motor 2 and stops the machine.

The machine stopped, the sewn up netting webs are taken off the pins 80. The sewn up webs hang down about the railing 124 and are still held about the needle 7. Then the unidirectional clutch 85 is released in the manner described hereinabove, and the rack 77 is returned manually into its initial position at the extreme right. In cases when the netting webs are sewn up by successive portions, the last pair of the sewn up cells is placed about the pin of the bracket 79, and the unsewn part of the two netting webs is placed about and tightened with the help of the pin of the bracket 78, after which the machine is switched on, and the sewing up operation is continued.

We claim:

1. A machine for sewing up netting webs, comprising a rotatable shuttle provided with a spool carrying a supply of sewing thread, thereon, means mounting the shuttle laterally with respect to said webs to be sewn, a withdrawing mechanism in operative relationship to the shuttle for engaging the thread and unwinding the thread of the spool to form a loop, a needle mounted adjacent said webs to be sewn for movement in a first direction through the webs and in a second direction away from the webs, means between the withdrawing mechanism and needle for feeding the thread to the needle so that needle movement in the first direction draws the withdrawn thread through the webs, loop expanding means located in the direction of movement of the needle and thread operative when the needle reaches the limit of movement in the first direction, to enter and expand the loop so that the loop can be engaged by the shuttle after which the needle moves in the second direction slackening the thread which leaves the needle and upon rotation of the shuttle the loop is drawn therearound forming a knot, means for intermittently feeding said webs towards the shuttle, withdrawing mechanism, needle, thread feeding means and loop expanding means in a unidirectionally transla-

tory motion in the course of a sewing up operation, a device securing the webs in a superposed relationship on the intermittent feeding means, a guide for the moving edges of the webs, means mounting the guide in front of the needle on the side from which the webs are forwarded for the sewing up operation, said guide having an outlet for the edges, a seam guiding pin mounted at the outlet and arranged in the direction of forwarding of the webs adjacent the needle intermediate the needle and the shuttle, and the seam guiding pin serving to support thereon a sewing knot when slides off the pin so the webs are forwarded by the translatory motion of the intermittent feeding means, with the knot being subsequently tightened about the edges of the webs.

2. The sewing machine as claimed in claim 1, in which said guide includes a bail member provided with a slot for receiving therein the edges of the webs, and means mounting the bail member for adjustment in a direction transversely of the direction of motion of the intermittent feeding means for the webs, whereby the number of cells of the webs to be engaged in the sewing up operation can be adjusted.

3. The sewing machine as claimed in claim 1, in which the intermittent feeding means for the webs includes a housing, guides for the housing, a reciprocable toothed rack received and supported by the guides, adjustable brackets mounted on the rack for having secured thereto in a tensioned condition the ends of the webs, a driven shaft, and a pinion on the driven shaft meshing with the teeth of the rack for driving the rack.

4. The sewing machine as claimed in claim 3 including a drive for the machine, a unidirectional clutch on the driven shaft for allowing rotation of the driven shaft

and pinion in one direction only, said clutch being provided with a cage and a plurality of rollers, a rotatable cam driven by the machine drive, a hub engaging the rollers, a crank on the hub, an oscillating bifurcated member engaging the crank, and a pivoted arm connecting the bifurcated member with the cam, the arrangement being such that on rotation of the cam, in one direction, the bifurcated member is oscillated and the rollers are wedged between the cage and the hub to rotate the driven shaft, while on rotation of the cam in the other direction, the hub is freely rotatably.

5. The sewing machine as claimed in claim 4 in which there is provided a mechanism for adjusting the length of the feeding step of the webs, said mechanism including a pair of links, a common pivot axis on which the pair of links is pivoted, a bell crank, means operably connecting one of the links to the bell crank, means for displacing the bell crank and hence said one link for adjusting the position of the common axis, means operably connecting the other link to the bifurcated member for displacing the bifurcated member when the position of the common axis is varied, and a pivoted arm for supporting the common axis in an adjusted position thereof.

6. The sewing machine as claimed in claim 4 in which the unidirectional clutch is provided with a toothed segment, a rod having teeth thereon for engagement with the teeth of the segment, and means operably connected to the rod to reciprocate the rod and operate the clutch via the teeth thereon and the toothed segment for preventing jamming of the rollers so that the rack can move in a direction opposite to its direction of travel during a sewing up operation.

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