April 28, 1931. A. H. MAYNARD 1,802,822

WIRE STITCHING OR STAPLING MACHINE

Filed March 14, 1928 2 Sheets-Sheet 1

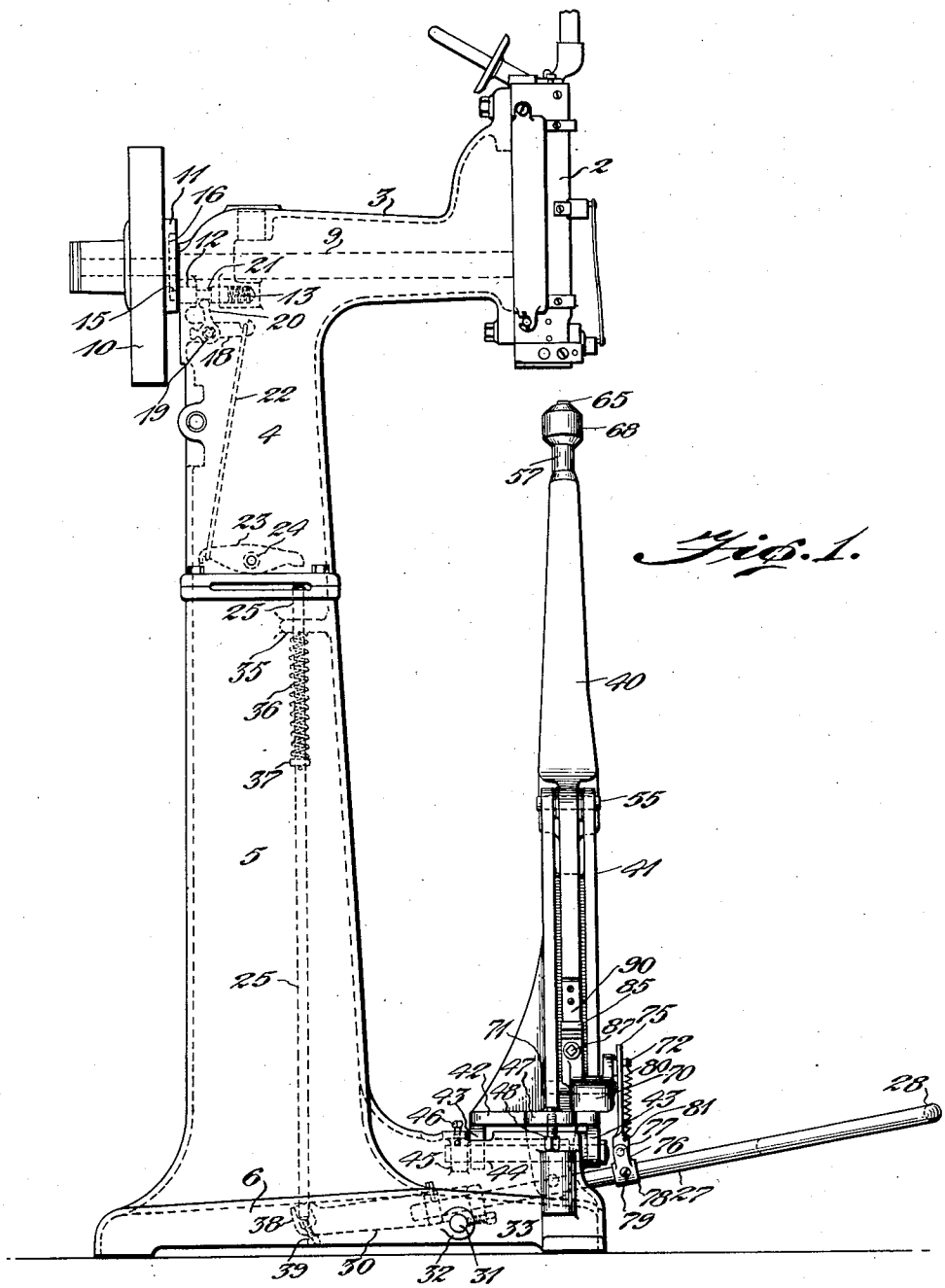


Fig. 1.

Inventor
Arthur H. Maynard
By Fenning Bird & White
Attorneys

April 28, 1931. A. H. MAYNARD 1,802,822

WIRE STITCHING OR STAPLING MACHINE

Filed March 14, 1928 2 Sheets-Sheet 2

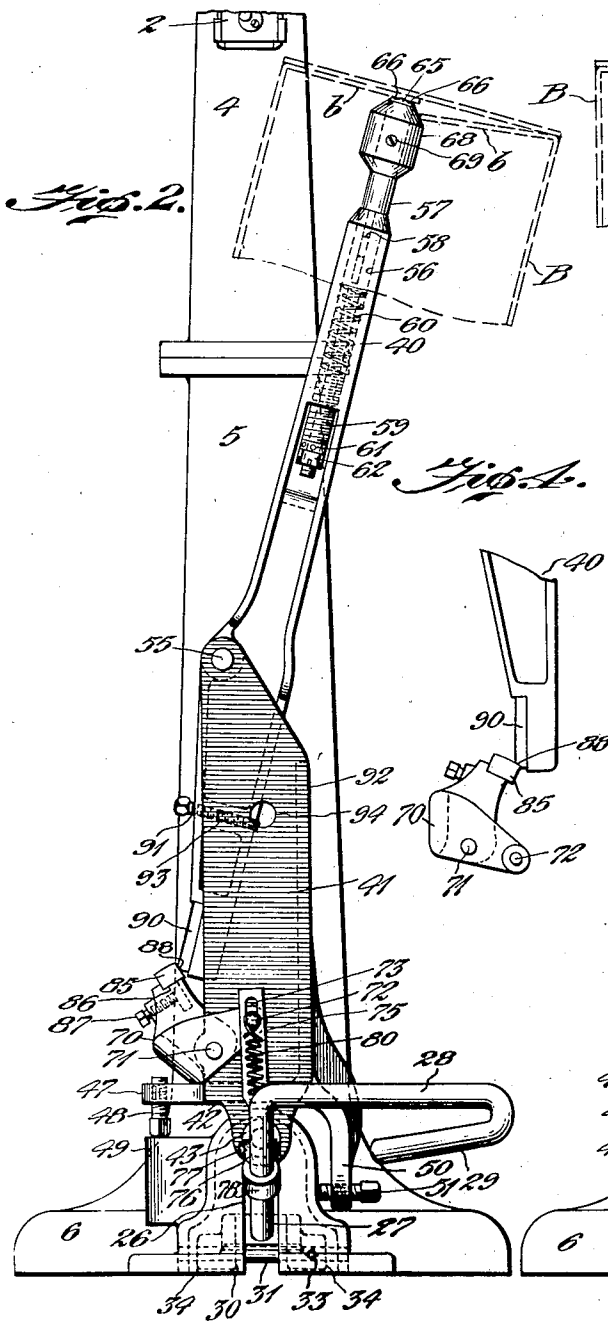


Fig. 2.

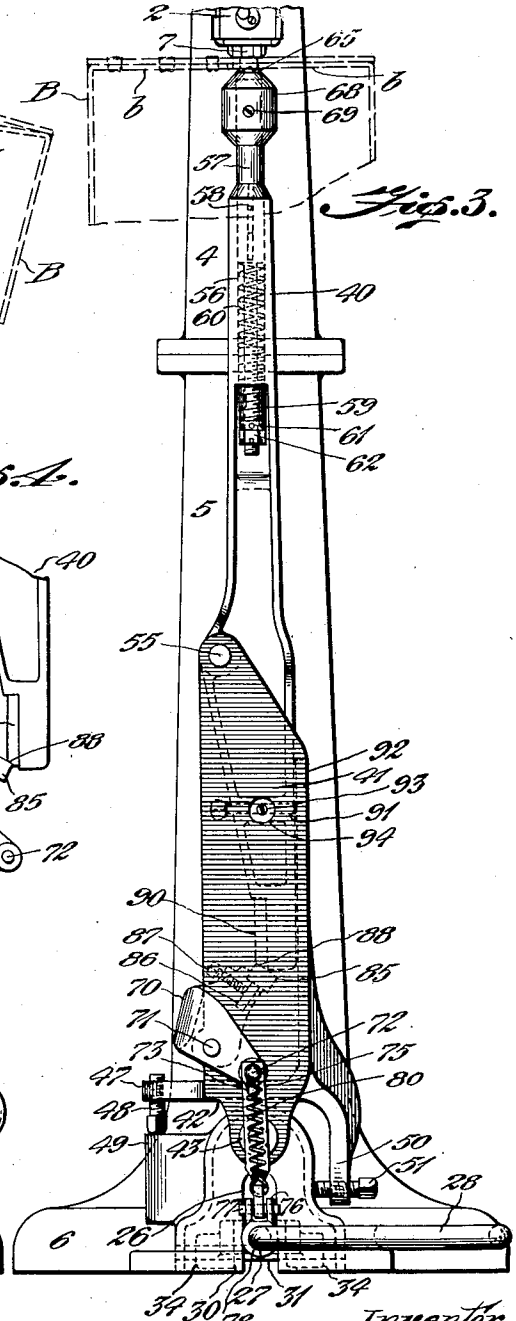


Fig. 3.

Fig. 4.

Inventor
Arthur H. Maynard
By Pennington and White
Attorneys

Patented Apr. 28, 1931 1,802,822

UNITED STATES PATENT OFFICE

ARTHUR H. MAYNARD, OF WARWICK, RHODE ISLAND, ASSIGNOR TO BOSTON WIRE STITCHER COMPANY, OF PORTLAND, MAINE, A CORPORATION OF MAINE

WIRE-STITCHING OR STAPLING MACHINE

Application filed March 14, 1928. Serial No. 261,521.

This invention relates to improvements in wire-stitching or stapling machines, and particularly to box-stitching machines for stitching the flaps in bottoming cardboard cartons and boxes and for other similar work.

The present invention is directed to the work-support for holding the boxes during the operation of stitching their flaps together and a particular object of the improvement is to provide a work-support which may be automatically thrown into or out of operative position under the control of the starting-means for the stitcher.

Another object of the invention is to provide a swiveled post or work-support which may be swung to one side to facilitate the placing of the box thereon, and afterwards thrown into cooperative relation with the stitching-mechanism under the control of a treadle or other manually-manipulated means which is employed to start and arrest the operation of the machine.

Another object of the invention is to provide a control-device for the stitching machine which may be moved to start or stop the operation of the stitching-mechanism without displacing the work-support from operative position so that the work may be manipulated to apply successive staples thereto without readjusting the work-support.

Another object of the invention is to provide a control-device for the machine which operates automatically to invariably maintain the work-support in cooperative relation with the stitching-mechanism during the stitching operation to guard against the danger of the operator's hands being injured by the staple driving and clinching means.

Another object of the invention is to provide a control-device of the type specified that is more convenient to operate, and which generally facilitates the handling of the work while increasing the speed of production of the whole machine.

Further objects of the improvement are set forth in the following specification which describes a preferred form of construction of the invention by way of example, as illustrated by the accompanying drawings. In the drawings:

Fig. 1 is a side elevation of the complete box-stitching machine;

Fig. 2 is a front elevation of the same showing the work-support thrown out of operative position to facilitate the placing of the box thereon;

Fig. 3 is a similar view showing the work-support thrown back into cooperative relation with the stitching-mechanism; and

Fig. 4 is an enlarged detail view of the operating means for shifting the work-support into its different positions.

Referring to the drawings, the machine in general comprises a stitcher-head 2 mounted at the end of an arm 3 which overhangs the side of a support or standard 4. The standard 4 is bolted or otherwise suitably attached to the top of a column 5 which is provided with a base 6 adapted to be supported from the floor.

The stitcher-head 2 is usually constructed with a casing or bonnet enclosing the stitching-mechanism which, as is well known to those versed in the art, comprises means for feeding appropriate lengths of wire, forming them into staples and successively driving the staples into the work. Such a form of stapling- or stitching-mechanism is disclosed in my U. S. Letters Patent No. 1,302,402, granted April 29, 1919, and the specific construction of this part of the machine need not, therefore, be herein shown and described. Suffice it to state that the staples are formed with opposite parallel legs which are driven through the work, and usually a clincher-block or anvil is arranged beneath the stapling-head 2 for supporting the work to be stapled, and coacting with the staple-driving means to bend over the legs of the staple after they have been driven through the work. As before indicated, the work-support comprising the clincher-block or anvil constitutes an essential element of the present invention and will be referred to hereinafter more in detail.

The stapling-mechanism in the head 2 is operated from a horizontal shaft 9 journalled in suitable bearings in the arm 3 and adapted to be driven from the usual belt passing over

a driving-pulley 10 carried on the end of the shaft. The belt-pulley 10 is usually driven continuously from a suitable source of power, such as a line shaft or motor, and a suitable clutch-device is provided for connecting the pulley with and disconnecting it from the shaft 9 in starting and stopping the machine. A preferred form of clutch-device for this purpose is shown and described in my U. S. Letters Patent No. 1,495,342, granted May 27, 1924, and in Fig. 1 of the present drawings the clutch-element is indicated by the reference numeral 11. The means for operating the clutch-device to connect the pulley 10 with or disconnect it from the shaft 9 may comprise a plunger pin or stud 12 as shown in dotted lines in Fig. 1. The plunger 12 slides in suitable bearings at the top of the standard 4 and is urged toward the clutch 11 to engage its end therewith through the means of a coil spring 13 held in a pocket in the standard 4 to act against the end of the plunger. The plunger 12 has a reduced end 15 which is carried into an annular recess 16 in the face of the clutch-member 11 to cause it to act to declutch the pulley 10 in the manner as described in Patent No. 1,495,342 referred to above.

The plunger 12 is withdrawn from engagement with the clutch-member 11 to effect the clutching of the pulley 10 with the shaft 9 through the operation of a bell-crank lever 18. The bell-crank 18 is pivoted at 19 on the standard 4 and has an arm 20 reaching upwardly to engage a peripheral groove 21 in the plnger 12 whereby to slide the latter against the force of its spring 13. The main arm of the lever 18 is connected by a link 22 to a rocker-arm or lever 23 pivoted at 24 adjacent the base of the standard 4; it being noted that the levers 18 and 23 and their connections together with the plunger 12 are enclosed within the walls of the standard to protect them from outside interference. The rocker-arm or lever 23 is operated from a push-rod 25 connected to a treadle-motion carried on the base 6 of the column 5, these connections providing for starting and stopping the machine underfoot-control so that the operator's hands are left free for holding and feeding the work.

The foot-control for the machine which, as before indicated, may be manipulated to regulate the position of the work-support, is constituted in a treadle constructed and arranged as next described. The base 6 of the column 5 is narrowed toward the front and bifurcated at its forward end, see Figs. 2 and 3, to provide a slot or opening 26 for the treadle-lever 27. This lever may conveniently consist of a bar or rod bent at right-angles at its outer end to form a foot-rest 28 terminating in a reverse bend 29. Preferably, the foot-rest 28 is extended a considerable distance to the side of the lever 27 so that the operator may slide his foot there-along to accommodate the different postures which are taken in handling and placing the boxes on the work-support and feeding them beneath the stitching-head. The treadle-lever 27 is connected to an arm 30 which is pivoted on a rod 31 extending crosswise of the slot in the base 6. The rod 31 is mounted to rock in suitable bosses 32 formed integral with the sides of the base 6, while the arm 30 is secured fast to the rod by means of one or more set-screws 33 inserted through its end hubs 34.

The push-rod 25 which forms the connection between the rocker-arm 23 and the treadle-arm 30 is mounted to slide in a bearing in a lug 35 projecting from the inner wall of the column 5. The upper end of the rod 25 is located beneath one end of the rocker-arm 23, and a coiled spring 36 surrounding the rod acts between the lug 35 and the collar 37 to urge the rod downwardly to normally maintain its end some distance away from the rocker-arm. The bottom of the rod 25 is inserted in a socket 38 at the end of the treadle-arm 30 and bears against a set-screw 39. The set-screw 39 serves as a means for adjusting the distance between the upper end of the rod 25 and the rocker-arm 30 to effect the proper coaction between the treadle and the stopping-mechanism of the machine in the manner as hereinafter more fully explained.

The work-support or post 40, which carries the clincher-block or anvil for cooperation with the stitching-mechanism, is swiveled in a bearing on an upright arm or bracket 41 mounted on the base of the column 5. As illustrated in Fig. 1 of the drawings, the arm or bracket 41 is preferably of channel shape and is formed with a foot 42 having ears 43 projecting downwardly at its ends.

A pin or bolt 44 projects through the ears 43 and is inserted through suitable bearings or lugs 45 formed above and integral with the base 6 of the column 5, the rearward end of the bolt 44 being secured in the lug 45 by means of a set-screw 46. Through this means the arm or bracket 41 is hingedly mounted above the base 6 of the column 5 so that it may be adjusted in vertical position to set the work-support or post 40 in alinement with the vertical axis of the stitching-mechanism of the machine. For this purpose the bracket 41 is provided with a laterally extending lug 47 carrying a set-screw 48 which bears against the top of a lug or abutment 49 projecting from the side of the base 6 of the column 5. A second lug or ear 50 extends downwardly from the bracket 41 at the side of the narrowed portion of the base 6, see Figs. 2 and 3, and a set-screw 51 projects therethrough to bear against the side of the base-extension. By adjusting the two screws 48 and 51 the arm or bracket 41 may be rocked or canted to one side or the other to

substantially aline the post or work-support with the stitching-mechanism of the machine.

The work-support or post comprises an arm 40 pivoted on a pin or stud 55 extending through the sides of the channeled portion of the bracket 41. The upper end of the post 40 is bored longitudinally at 56 to receive a plunger-rod 57 which is held from turning in the bar by means of a slot and key connection shown at 58. The plunger-rod 57 is reduced in diameter throughout the greater portion of its length and its lower end is adapted to slide through the bore of a bushing or sleeve 59 threaded into the lower end of the bore 56 in the post 40. A helical spring 60 surrounds the reduced portion of the plunger-rod 57 between its shoulder and the upper end of the sleeve 59, thereby tending to slide the plunger upwardly. The sleeve 59 may be turned to adjust it in the bore 56 by inserting a wrench in its radial holes 61. A nut 62 screwed onto the lower end of the rod 57 limits the upward sliding movement thereof, the sleeve 59 being adjusted vertically to set the upper end of the rod 57 in proper relation with respect to the stitching-mechanism. The nut 62 is preferably of castellated form and locked from turning by the usual expedient of a cotter-pin. The upper end of the plunger-rod 57 carries a hardened block 65 formed on its upper face with opposite recesses or indentations 66, see Fig. 2, against which the legs of the staples impinge to adapt them to be bent over and clinched upwardly on the under side of the work, the block 65 constituting a clincher or anvil of well known type.

The upper end of the plunger-rod 57 carries an enlarged circular boss or head 68 secured thereto by a set-screw 69 passing through its side. The boss or head 68 is beveled at its ends, the purpose of this construction being to provide sloping shoulders which will pass smoothly under the edges of the flaps on the boxes or cartons B, illustrated in dash lines in Figs. 2 and 3, whereby the flaps will be caused to ride over the end of the post to assume a position above and resting against the clincher-block or anvil 65.

The post or work-support 40 is rocked on its support or bracket 41 through instrumentalities operated from the treadle-lever 27 and constructed and arranged in the manner as next described. A yoke-shaped lever 70 straddles the forward side of the channeled portion of the bracket 41 and is pivoted thereto through the means of a cross-pin or stud 71 driven through both sides of the bracket. The forward arm of the lever 70 carries a pin 72 engaging through a slot 73 in a bar or link 75 which is connected to the treadle-arm 27. As a convenient form of construction, the link 75 may be of flat bar-stock twisted at its lower end to form a tongue which is pivoted to a shackle 76 by means of a cross-pin 77. The shackle 76 is formed with a hub or collar 78 surrounding the arm 27 and secured fast thereon by means of a set-screw 79. A helical spring 80 has a loop at its upper end engaging a peripheral groove in the end of the pin 72, and its lower end is hooked through a hole 81 at the lower end of the link 75. Through this arrangement the treadle is connected to rock the lever 70, and it is to be noted that a certain amount of play or lost-motion between these two parts is provided for through the means of the slotted connection of the link 75 with the pin 72; the spring 80 normally tending to hold the pin at the bottom of the slot 73 as shown in Fig. 2.

The opposite arm of the lever 70 carries a hardened block 85 which is fitted to a recess at the end of the arm and held in place by a stem or shank 86 engaging a bore therein, a set-screw 87 passing through the side of the arm to clamp against the shank 86. It is to be particularly noted that the top of the block 85 is rounded off or convexed on an arc concentric with the axis on which the lever 70 pivots, while the forward side of the block is formed square. This side of the block 85 is adapted to impinge against a beveled face 88 at the end of a hardened block 90 fastened to the side of the post 40 near the lower end thereof, see Fig. 4. The beveled face 88 at the end of the block 90 stands at an angle of substantially thirty degrees to the horizontal when the post 40 is in its vertical position as illustrated in Fig. 3, and the rounded or crowned top of the block 85 is adapted to slide across the face 88 to hold the post in this relation when the lever 70 is rocked downwardly by the depression of the treadle-lever 27.

A stop-screw 91 is threaded through a bearing in the lower portion of the post 40 with its end adapted to bear against the web 92 which connects the channeled sides of the bracket 41. The screw 91 thus serves as a stop to limit the swinging motion of the post 40 as the anvil 54 at its upper end is brought into position beneath the stitcher-head 2. The screw 91 is adjusted in position to prevent the lower end of the post 40 from swinging away from the yoke-lever 70 after the work-support has been moved into cooperative position with respect to the stitching-mechanism. That is to say, the engagement of the screw 91 with the web 92 on the bracket 41 maintains the post 40 in position with the block 85 on the lever 70 in wedging engagement with the block 90 on the post. A set-screw 93 screws through the side of the post 40 to clamp against the adjusting-screw 91 to secure it in adjusted position, the set-screw being adjusted by inserting a screw-

driver through a hole or opening 94 in the forward side of the bracket 41.

Having now described in detail the construction and arrangement of the work-support and its control-means the method of operation of the complete machine will next be explained.

Figs. 1 and 2 of the drawings illustrate the machine with the work-support thrown out of operative relation with respect to the stitcher-head 2 to adapt it to receive the box, carton or other work to be placed thereon. It is to be noted that the post 40 is pivoted at a point below its center so that it is balanced to swing to the right as viewed in Fig. 2 under the action of gravity. In this position the beveled face 88 of the block 90 at its lower end bears against the side of the block 85 on the lever 70 so that this lever is tilted into the position shown in Fig. 2 with the lower edge of its yoke portion resting against the top of the step or foot 42 of the bracket 41. The lever 70 thus acts as a stop to hold the post 40 from further swinging movement, and the forward leg of the lever is tilted upwardly with its pin 72 and the spring 80 tending to hold the treadle-lever 27 in raised position; the pin 72 engaging against the bottom of the slot 73 in the link 75 as shown in Fig. 2.

The operator places the cardboard box B in inverted position across the top of the post 40, bringing its bottom flaps *b*, *b* into position to slide across the beveled shoulder on the boss or head 68 so that they will overlap across the anvil 65 as illustrated in Fig. 3. Meanwhile the treadle-lever 27 is pressed downwardly by placing the foot on the rest 28, this action being carried out simultaneously with the placing of the box-blank on the work-support. The initial movement of the treadle-lever 27 is caused to rock the elbow-shaped lever 70 to the right as viewed in Figs. 2 and 4, the spring 80 being of sufficient strength to draw the pin 72 downwardly without recourse to its connection with the link 75. In other words, as the treadle-lever 27 is depressed the yoke-lever 70 is rocked downwardly by the spring 80 with its pin 72 remaining at the bottom of the slot 73 while the link 75 slides downwardly. As the lever 70 is operated in this manner the side of its block 85 slides across the beveled face 88 of the block 85 to act with a wedging or camming effect to tilt the post 40 toward its upright position. As the lever 70 continues its rocking motion the crowned or convexed upper face of the block 85 comes into contact with the beveled face 88 on the block 90 as shown in Fig. 4. At this injunction the post 40 is brought into vertical position with its stop-screw 91 bearing against the web 92 of the bracket 41 as shown in Fig. 3. The treadle-lever 27 will have then been pressed down nearly to its extreme position and the block 85 on its rearward arm will be maintained in wedging contact with the edge of the block 90 to rigidly support the post in vertical position.

During the downward movement of the treadle-lever 27 its connected arm 30 is rocked upwardly to slide the push-rod 25 against the force of the spring 36 whereby to bring it into engagement with the rocker-arm 23. The rocker-arm 23 is then caused to act to draw down the link 22 to rock the bell-crank lever 20 whereby to withdraw the plunger-pin 12 from engagement with the clutch 11. It is to be noted, however, that the movement imparted from the treadle-lever 27 to the bell-crank lever 20 through the connections last recited is delayed so that the clutch is not operated to connect the pulley 10 with the drive-shaft 9 to start the operation of the stitching-mechanism until the work-support is in position. It has been stated that there is play or lost motion between the push-rod 25 and the rocker-arm 23, and consequently, the clutch 11 is not released by the plunger-pin 12 until the treadle-lever 27 has been carried throughout its complete downward stroke. Stated briefly, the movement of the treadle-lever 27 to bring the work-support or post 40 into vertical position with its anvil 65 in cooperative relation with the stapling-mechanism is not sufficent to operate the clutch-device to connect the driving pulley 10 with the shaft 9, the movement of the treadle being continued for this purpose as next explained.

The operator first makes sure that the carton or box-blank B is placed across the work-support with its flaps overlapped on the clincher-block or anvil 65 and in proper position beneath the stitcher-head to receive the first staple. He then continues the downward pressure on the treadle-lever 27 to operate the rocker-arm 23 and bell-crank 18 to withdraw the plunger 12 from the clutch 11. This further depression of the treadle-lever 27 draws the link 75 down with the pin 72 sliding in the slot 74 until it reaches the upper end thereof as shown in Fig. 3. As the pulley 10 is thus caused to be clutched with the shaft 9 the stapling-mechanism in the head 2 is operated to form and drive the staple through the work in the usual manner as well known to those versed in the present art; Fig. 3 illustrating the staple-driver 7 as having descended against the overlapped flaps *b*, *b* of the box B to drive the staple therethrough while causing its legs to be clinched against the under side thereof as their points impinge against the curved depressions in the top of the anvil.

It has been noted that the clincher-block or anvil 65 is supported at the end of the plunger 57 which is normally maintained projecting above the top of the post 40 by means of the spring 60. The spring 60 is of sufficient

tension to normally resist the pressure of the staple-driver 7 as it descends to drive the staple through the work, but should the staple be obstructed, for example, by being driven on top of another staple, or through other cause, then the spring will yield to allow the plunger to slide downwardly in the post. This arrangement of the yielding plunger guards against the danger of damage to the stapling-machine through misapplication of the staples or through the use of work of too heavy stock.

The operation of the stitching-head may be maintained continuous as the operator slides the box-blank across the anvil 65 to stitch a seam; but if the time elapsed in forming and driving the staples is not sufficient for this purpose, or if the feed is prevented for any reason, the operator may manipulate the foot-control to arrest the stitching operation for a greater or less interval as required. This is accomplished without throwing the work-support or post 40 out of operative position, the treadle-lever 27 being manipulated to a slight extent only as permitted by the play of the pin 72 in the slot 73 of the link 75. That is to say, by releasing the treadle-lever 27 to permit it to be raised to a slight extent under the action of the spring 80 the push-rod 25 is lowered sufficiently to allow the rocking of the arm 23 and the bell-crank 18 as the plunger 12 is slid into engagement with the clutch-member 11 under the action of its compression spring 13. In this manner the operator maintains a very sensitive control to stop and arrest the operation of the stitching-mechanism through manipulation of the treadle-lever 27.

After the stapling of the box or other work has been completed the operator releases the treadle-lever 27 to allow it to be raised to the full extent as shown in Fig. 1 whereby to throw the work-support or post 40 out of operative position as illustrated in Fig. 2. Upon release of the treadle-lever 27 the spring 36 acting through the push-rod 25 will rock the treadle-arm 30 downwardly, the bell-crank lever 18 being immediately released to allow the plunger 12 to be slid into engagement with the clutch element to declutch the pulley 10 to arrest the operation of the stitching-mechanism in the stitching-head 2. As the treadle-arm 30 continues its downward movement under the action of the spring 36 the treadle-lever 27 is raised to slide the link 75 upwardly, thereby engaging the lower end of its slot 73 with the pin 72 and rocking the yoke-lever 70 upwardly. This rocking movement of the lever 70 slides the block 85 across the beveled face 88 of the block 90, thereby releasing the lower end of the post 40 to adapt its upper end to swing to the right under the action of gravity. When the yoke portion of the lever 70 brings up against the foot or ledge 42 on the bracket 41 the beveled face of the block 90 will have been carried onto the side of the block 85 as shown in Fig. 2 and the post 40 comes to rest to be held in this position until the treadle is once more pressed downwardly. As the post 40 is swung out of operative position the operator lifts the box or carton off therefrom and applies a new piece of work thereto. The cycle of operation is then repeated, the treadle-lever 27 being pressed downwardly to first throw the work-support into operative relation with respect to the stitcher-head and finally to start the operation of the stitching-mechanism in the manner as previously explained.

It will be observed that my invention provides a particularly convenient and efficient control-means for adjusting the work-support into and out of operative position while at the same time acting as a starting-and stopping-device for controlling the operation of the stitching-mechanism of the machine. It is to be noted that with the present improved device the stitching operation cannot be started until the work-support has been thrown into position to hold the work in proper relation with the stitching-mechanism; and furthermore the work-support cannot be displaced from operative position until after the operation of the stitching-mechanism has been arrested. This provision guards against careless operation of the machine liable to endanger the worker's hands, since the maintenance of the work-support in cooperative relationship with the stitcher-head prevents the operator from getting his hands beneath the stitching-mechanism.

As another advantage of the present invention the machine may be operated under foot-control so that the operator's hands are free to manipulate and feed the work and therefore a considerable saving of time is effected and the rate of production of the machine materially increased.

Moreover, the present improved device is extremely simple in construction, proof against derangement and getting out of order and durable in use over long periods.

While I have herein shown and described a preferred embodiment of the invention it is to be understood that various modifications may be made in the construction and arrangement of the parts of the device without departing from the spirit and scope of the appended claims. Therefore, without limiting myself in this respect, I claim:—

1. In a wire-stitching or stapling machine, the combination with the stitching-mechanism, of starting- and stopping-means for controlling the operation of the stitching-mechanism, a work-support adapted to move laterally with respect to the stitching-mechanism to carry it into position to hold the work in cooperative relation therewith and to be moved laterally away therefrom to fa-

cilitate the placing of the work thereon, manually-controllable means for operating the starting- and stopping-means, and means operated therefrom for moving the work-support laterally into operative position before the machine starts to operate and to permit it to move from operative position after the operation of the machine has been arrested.

2. In a wire-stitching or stapling machine, the combination with the stitching-mechanism, of starting- and stopping-means for controlling the operation of the stitching-mechanism, a shiftable work-support adapted to be moved laterally with respect to the stitching-mechanism to carry it into or out of cooperative relation therewith, manually-operable means for moving the work-support laterally into cooperative relation with the stitching-mechanism, and means operated by further movement of the manual means to start the operation of the stitching-mechanism.

3. In a wire-stitching or stapling machine, the combination with the stitching-mechanism, of power-controlling means for starting and stopping the operation of the stitching-mechanism, a work-support adapted to be shifted laterally into and out of cooperative relationship with the stitching-mechanism, manually-operable means for shifting the work-support laterally into and out of operative position, and means connecting said manually-operable means with the power-controlling means to start the operation of the stitching-mechanism after the work-support has been shifted into operative position and to arrest the operation of the stitching-mechanism before the work-support is shifted out of operative position.

4. In a wire-stitching or stapling machine, the combination with the stitching-mechanism, of controlling-means for starting and arresting the operation of the stitching-mechanism, a work-support adapted to be shifted laterally into and out of cooperative relationship with the stitching-mechanism, a treadle for shifting the work-support, and means connecting the treadle with the controlling-means to start the operation of the stitching-mechanism after the work-support has been shifted into operative position and to arrest the operation of the stitching-mechanism before the work-support is shifted out of operative position.

5. In a wire-stitching or stapling-machine, the combination with the stitching-mecha- of a work-support comprising a post swiveled to swing into and out of cooperative relationship with the stitching-mechanism, a lever for swinging the post, manually-operable means for moving said lever and adapted to move independently of said lever, controlling-means for starting and arresting the operation of the stitching-mechanism, and means operated from said manual means to actuate the starting- and stopping-means during the movement of the manual means independently of the shifting of the work-support.

6. In a wire-stitching and stapling machine, the combination with the stitching-mechanism, of power-operated means for actuating the stitching-mechanism, a clutch-device for connecting the power-means with the stitching-mechanism, manually-controlled means for operating said clutch-device, a work-support adapted to be shifted laterally into and out of cooperative relationship with the stitching-mechanism, and means operated from the manually-controlled means to shift the work-support into operative position before operating the clutch-device to start the operation of the stitching-mechanism and to arrest the operation of the stitching-mechanism before the work-support is shifted out of operative position.

7. In a machine of the type specified, the combination with a stitching-mechanism thereof, of a work-support comprising a swiveled post adapted to be swung into cooperative relationship with the stitching-mechanism, a lever for swinging the post, and wedging means between the lever and the post for maintaining the latter in operative position.

8. In a machine of the type specified, the combination of stitching-mechanism, a work-support comprising a post, means for pivoting the post to adapt it to be maintained in cooperative relationship with the stitching-mechanism and to swing laterally with respect thereto, and manually-operable means for swinging said post including a wedge adapted to bear against the side of the post to tilt the latter and to wedge beneath its lower end to maintain the post in operative position.

9. In a machine of the type specified, the combination of stitching-mechanism, a work-support swiveled beneath the stitching-mechanism to adapt it to be swung into and out of alinement with respect thereto, a rockable lever, a block on said lever adapted to engage the lower end of the post to swing the latter and to be wedged thereagainst to hold the post in operative position, and manually-operable means for actuating the lever.

10. In a machine of the type specified, the combination of stitching-mechanism, a pivoted work-support arranged below the stitching-mechanism to adapt it to be swung into and out of alinement with respect thereto, said post formed with a beveled face at its lower end, and a lever for swinging the post provided with means bearing against the beveled face on the post to swing the latter and adapted to wedge thereagainst to sustain the post in operative position.

11. In a machine of the type specified, the

combination of a work-support comprising a pivoted post having an inclined face at its lower end, and a lever for swinging the post having one face engaging the inclined face on the post when the latter is swung out of vertical position and a cam face adapted to wedge against said inclined face on the post to support the latter in erect position.

12. In a machine of the type specified, the combination of a work-support comprising a post pivoted to swing into and out of vertical position, a block at the lower end of the post formed with a beveled face, a manually-operable lever for swinging the post, and a block on said lever arranged with its side bearing against the beveled face of the block on the post when the latter is swung out of vertical position and also provided with a cam-face adapted to be moved into position to wedge against the beveled face on the block to hold the post in vertical position.

13. In a machine of the type specified, the combination of a work-support comprising a post, means for pivoting said post to adapt it to swing out of vertical position under the action of gravity, a stop for limiting the movement of the post when it is swung into vertical position, a block at the lower end of the post formed with an inclined face, a lever pivoted beneath the lower end of the post, and a block on said lever arranged with its side adapted to bear against the inclined face on the block on the post when the latter is swung out of vertical position and also provided with a cam-face adapted to slide across the wedge against the inclined face on the first block when the lever is moved to swing the post into vertical position.

14. In a machine of the type specified, the combination of a work-support comprising a post, means for pivoting the post to adapt it to swing into and out of vertical position, a lever adapted to engage the lower end of the post to swing it into vertical position and to wedge thereagainst to maintain the post in this position, a treadle-lever, and means connecting the treadle-lever to rock the post-operating lever.

15. In a machine of the type specified, the combination with a stitcher-head containing the stitcher-mechanism, of means for starting and stopping the operation of the stitching-mechanism, a work-support comprising a post pivoted to swing into and out of cooperative relationship with the stitching-mechanism, a lever for swinging the post, a treadle-lever, means connecting the treadle-lever to rock the post-operating lever while permitting lost motion therebetween, and means connecting the treadle-lever to operate the starting- and stopping-means after it has been moved to shift the post into operative position.

16. In a machine of the type specified, the combination with the stitching-mechanism, of means for starting and stopping the operation of the stitching-mechanism, a work-support comprising a post pivoted to swing into and out of cooperative relationship with the stitching-mechanism, a lever for swinging the post, a treadle, a link connecting the lever with the treadle to allow lost motion therebetween, a spring connecting the lever with the treadle, and means connecting the treadle to operate the starting- and stopping-means after the treadle has been moved to the extent required to carry the post into operative position.

17. In a machine of the type specified, the combination with the stitching-mechanism, of means for starting and stopping the operation of the stitching-mechanism, a work-support comprising a post swiveled to swing into and out of cooperative relationship with the stitching-mechanism, a lever adapted to swing the post and to wedge thereagainst to maintain it in operative position, a treadle, a link carried by the treadle and formed with a slot at its upper end, a pin on the lever engaging the slot in the link, a spring extending between the lever and the treadle, and means connecting the treadle to operate the starting- and stopping-mechanism after it has been depressed to act through the spring to rock the lever to carry the work-support into operative position.

18. In a machine of the type specified, the combination with the stitching-mechanism, of driving-means for operating the stitching-mechanism, a clutch-device for connecting the driving-means to operate the stitching-mechanism, a work-support adapted to be shifted into and out of cooperative relationship with the stitching-mechanism, a lever for moving said work-support into operative position, a treadle, means connecting the treadle to actuate the lever to carry the work-support into and out of operative position, said connecting-means arranged to permit a limited movement of the treadle after it has operated the lever to move the work-support into operative position, and means connecting the treadle with the clutch-device to effect clutching and declutching of the driving-means when the treadle is manipulated to a slight extent after it has been carried into position to move the work-support into cooperative relationship with the stitching-mechanism.

19. In a machine of the type specified, the combination of a stitcher-head containing stitching-mechanism, of a work-support comprising a pivoted post, a clincher-block carried at the upper end of the post to adapt it to be swung into cooperative relationship with the stitching-mechanism, a pivoted support for the post, means for adjusting the support on its pivot to aline the post with the stitching-mechanism, means for limiting the movement of the post on its support to

maintain it in cooperative relationship with the stitching-mechanism, and manually-operable means for swinging the post into and out of operative position.

20. In a work-support for wire-stitching or stapling machines, the combination of a post having a longitudinal bore, a plunger slidable in the bore, a sleeve adjustable longitudinally of the bore and arranged to engage the plunger, a spring held by the sleeve to act on the plunger to slide the latter, means to limit the sliding movement of the plunger, and a clincher-device carried at the upper end of the plunger.

21. In a work-support for wire-stitching or stapling machines, the combination of a post, a plunger slidable on said post, a clincher-device carried at the upper end of the plunger, an enlarged cylindrical head on the plunger having a beveled shoulder arranged beneath the clincher-device, and resilient means acting against the plunger to maintain the clincher-device in elevated position on the post.

In testimony whereof I affix my signature.

ARTHUR H. MAYNARD.