

(No Model.)

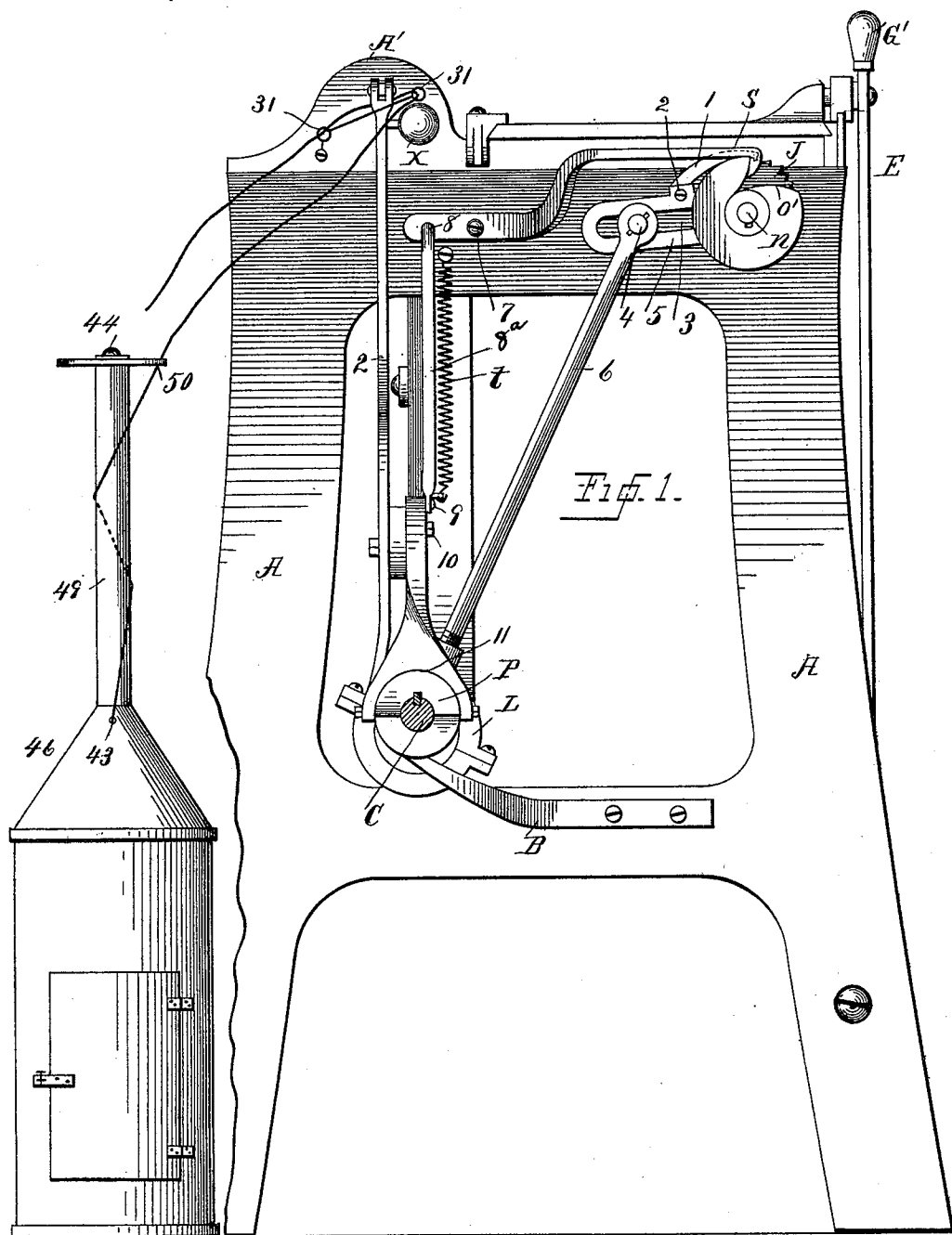
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V. FLECKENSTEIN.

MACHINE FOR SEWING STRAW COVERS FOR BOTTLES.

No. 480,082.

Patented Aug. 2, 1892.



Witnesses

W. R. Courtland
E. C. Briggs.

Inventor:—

Valentin Fleckenstein
by Russell Head
Att'y

(No Model.)

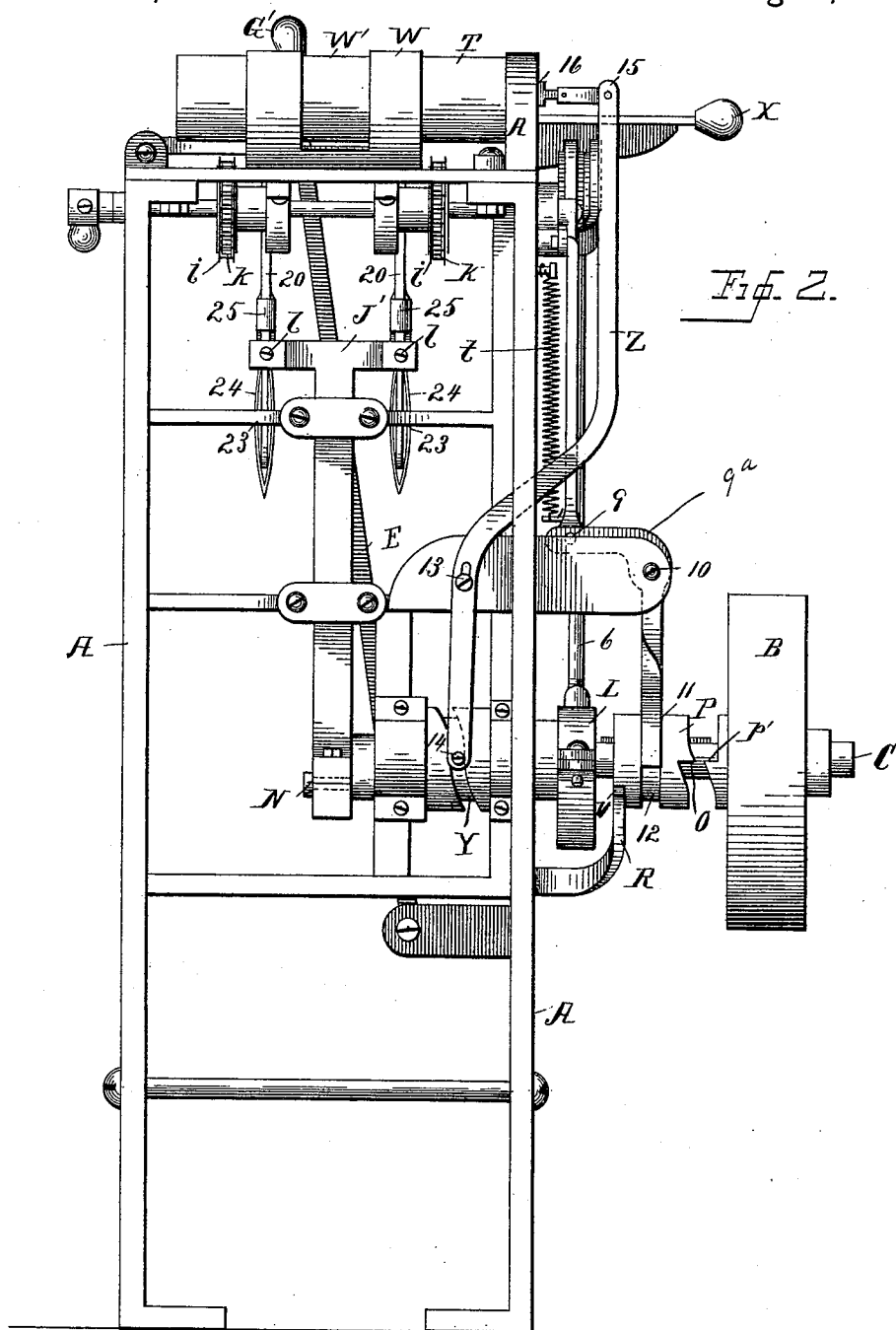
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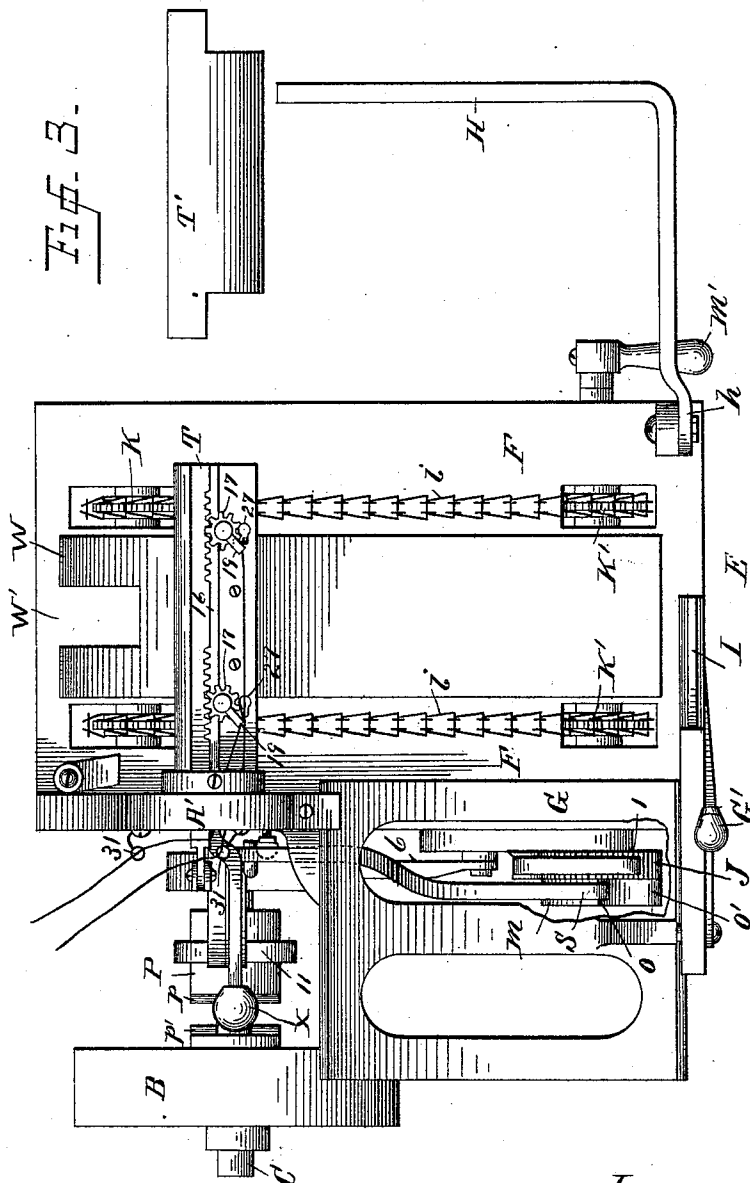
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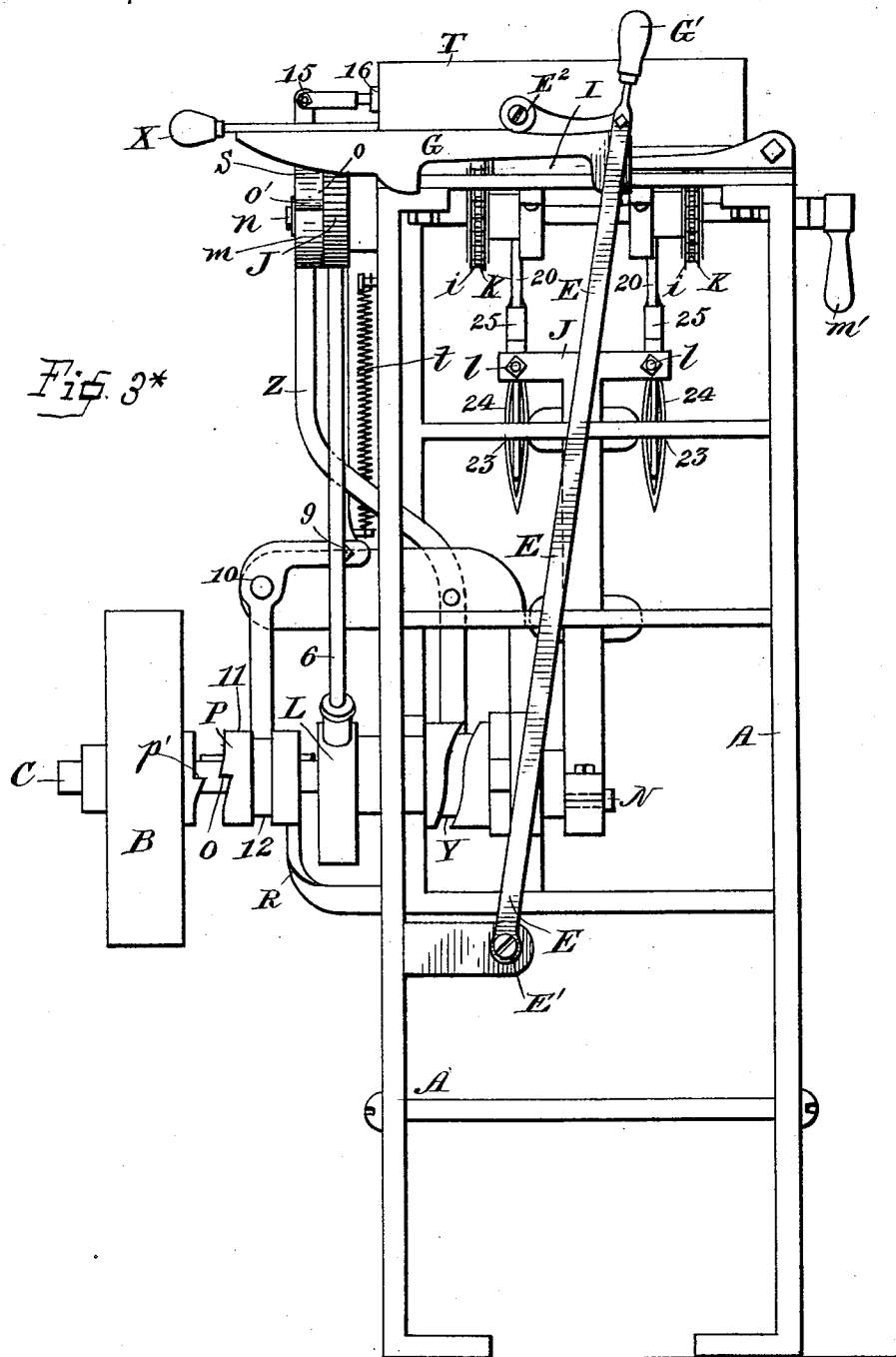
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Patented Aug. 2, 1892.



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(No Model.)

5 Sheets—Sheet 5.

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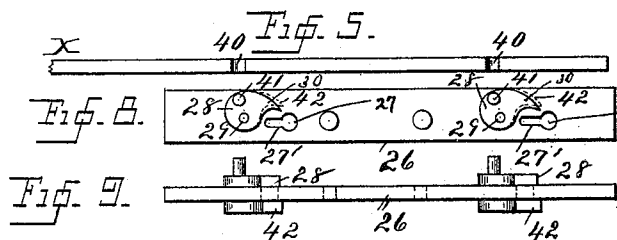
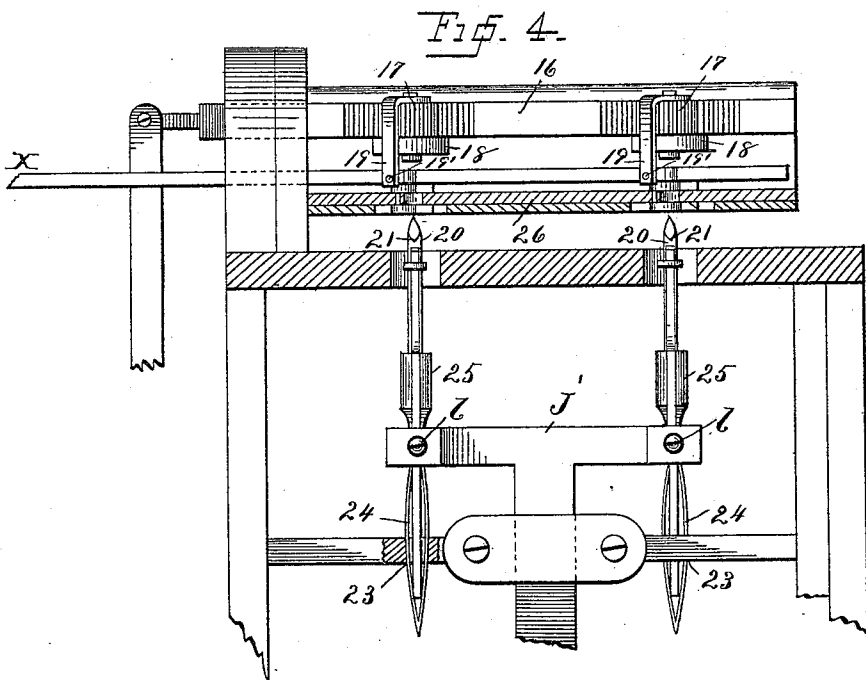
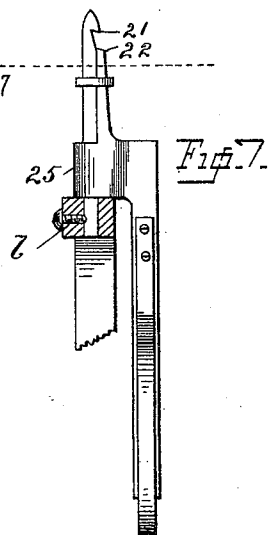
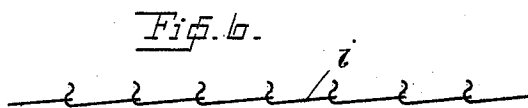


Fig. 6.



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UNITED STATES PATENT OFFICE.

VALENTIN FLECKENSTEIN, OF OSHKOSH, WISCONSIN.

MACHINE FOR SEWING STRAW COVERS FOR BOTTLES.

SPECIFICATION forming part of Letters Patent No. 480,082, dated August 2, 1892.

Application filed October 31, 1890. Serial No. 369,917. (No model.)

To all whom it may concern:

Be it known that I, VALENTIN FLECKENSTEIN, a citizen of the United States, residing at the city of Oshkosh, in the county of Winnebago and State of Wisconsin, have invented certain new and useful Improvements in Machines for Making Straw Packing-Covers for Bottles; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to a machine for sewing straw bottle-covers; and the objects of my invention are, first, to cheapen and simplify the construction of the machine, and, second, to reduce the time necessary to make the cover.

In the accompanying drawings, Figure 1 is a side, Fig. 2 an end, and Fig. 3 a top, view of the machine. Fig. 3^x is a front view of the machine; Fig. 4, a detail view of the needles and threaders; Fig. 6, a detail view of the endless-chain feeder; Fig. 7, a side view of the needle and needle-guard; and Figs. 5, 8, and 9 are representations of the thread-cutting device, Fig. 8 being a top view, Fig. 9 a side view of the device, and Fig. 5 the bar that operates the same.

Similar letters refer to similar parts throughout the several views.

A A A A is the frame, and B the pulley attached to the shaft C, which operates the machine.

The operator stands at the end E. The straw is first placed upon the top F or work-support of the machine, all the heads in the same direction resting upon the sliding platform G.

H is a binder pivoted at h, which is brought over upon the straw and the platform G, so as to lie on a plane just below the platform G, and thus as the platform G is moved laterally by the lever G', which is attached to the machine, as illustrated in Fig. 3 of the drawings, and caused to slide over the same upon the track I, the doubling of the straw at its head ends upon the binder is effected and a perfect hold upon the straw and binder

secured, and the straw thereby kept firmly in position upon the platform or supporting-table.

i i are endless chains upon each side of the top running over the cog-wheels K K K' K' at each end and operate to feed the straw to the needles and also to carry the sewed cover gradually around the cylinder between the same and the scroll, they being constructed with small hooks to catch the straw, as shown in Fig. 6. The wheels K' K' are upon the same shaft with and operated by the ratchet-wheel J. The pawl 1 is pivoted to the bar 5 at 2. This bar turns upon the shaft n and is provided with an oblong slot or opening 3, into which the end of the rod 6 is secured by a bolt 4. The rod 6 connects with the eccentric L, operating upon the shaft C. As the shaft revolves the eccentric L forces the rod 6 up and down, and this in turn operates the pawl 1 forward and backward upon the ratchet-wheel J, causing said wheel to revolve. The slot 3 is for the purpose of shortening or lengthening the stitch—that is to say, if the end of the rod at 4 is set in the slot 3 farther from the ratchet-wheel it raises the bar 5 higher at each revolution, and thereby causes the pawl 1 to pick up more cogs upon the ratchet-wheel and revolve the wheels K' K', which operate the feeder-chains i i a greater distance, so as to lengthen the stitch, and the opposite to shorten the stitch.

Upon the ratchet-wheel J is attached another wheel m, revolving therewith and having in its circumference a drop or notch o. Operating upon the circumference of this wheel or disk is the pawl s, which is pivoted to the frame at 7, to a rod 8^a at 8, which rod is pivoted to an elbow-lever 9^a at 9, the elbow-lever 9^a being pivoted to a portion of the supporting-frame at 10 and forked at 11 to enter and partially surround a groove 12 in the clutch-wheel P. This wheel P slides out and in upon the shaft C, but is keyed thereto so as not to revolve thereon. When the wheel P is moved out from the frame, the clutch p engages a corresponding projection p' upon the inside of the wheel B, causing the whole shaft to revolve with the wheel B and the machine to operate. When not engaged by the clutch, the wheel B revolves upon the shaft

C. Upon the opposite side to the clutch *p* is another projection *V*, which as soon as the clutch is removed strikes against the bar *R*, Fig. 2, and stops the shaft instantly. This is necessary in operating the machine. When the wheel *m* has revolved once around, the pawl *s* drops into the notch *o* (the spring *t* serving by its tension on the pivot of the arm to pull it down) and the opposite end of the pawl-lever *s* is raised, thereby raising the arm at 9, which turns upon the pivot 10 and pulls the wheel *P* away from the wheel *B* to stop the operation of the machine. This feature of my invention is important, as it is necessary to stop the machine quickly at the proper time after each cover is sewed and when the needles are down in order to properly cut the thread, as hereinafter described.

When desiring to again start the machine, I revolve the wheel *m* by means of the crank *m'*, attached to the opposite end of the shaft *n*, until the pawl *s* slides up the incline *o'* to the circumference of the wheel, thereby adjusting the clutch *p* to the wheel *B*.

T is a cylinder, inside of which the needles operate and around which the bottle-covers are passed by means of the scroll *W*, an opening being provided on the scroll at *W'*, so that the operator may properly guide the cover with his hand. This scroll *W* is attached to the top of the machine, and the cover as it is stitched passes inside it and is carried around the cylinder to form a circular cover.

The arm *Z*, Fig. 2, is pivoted at 13 to the frame, and the end 14 is provided with a small wheel pivoted thereto, which travels in the grooved wheel *Y* as the machine is operated, and thereby causes the opposite end 15 to play out and in, moving the bar 16, Fig. 4, horizontally. This bar 16 is provided with cogs to engage corresponding cogs upon the cog-wheels 17 17, which are pivoted to the brackets 18 18 and revolve as the bar 16 moves and carry the thread-carriers 19 19 forward and backward around and in front of the needles 20 20 as they arrive at their upper position. The cord or thread running through the eye 19' 19' of each thread-carrier is thereby passed under the hook of the needle 21, Fig. 7, each time as the needle comes to its upper position.

J' is the needle-bar, in which the needles are set at *l l*, and is operated up and down by means of the crank *N*, Fig. 2, upon the end of the shaft *C*.

Fig. 7 is a side view of the needle at its upper position, the straw being at *E'*. The needle is grooved longitudinally to admit the guard 22 and slides up and down in the ring or ferrule 25, integral with the guard. As the needle descends, the hook 21 catches the end of the guard 22 and brings that down with it, the guard sliding in the cross-piece 23. This guard prevents the straw from catching in the hook. As the needle descends below the straw, the endless-chain feeders, operated by means of the pawl 1, as hereinbefore de-

scribed, carry the straw forward, forming a loop around the needle, and as the needle is again forced up through the straw at a new place the needle-bar *J* catches up the guard-ferrule 25 and carries the top of the guard 22 just above the straw to the position shown in Fig. 7, the loop remaining below the straw and surrounding the needle and guard. When the needle again descends, it brings the next loop down through the former one to form a chain-stitch. The springs 24 24 upon the guard press against the sides of the openings in the cross-piece 23 23 sufficiently to prevent it from dropping until pressed down by the hook 21.

The device for cutting the thread, Figs. 5, 8, and 9, is located beneath the brackets 18 18 in the cylinder. Fig. 8 shows top of the plate 26, with holes 27 27 therein to admit passage of the needles. 28 28 are the grips pivoted at 29 29 and are operated by the bar *x*, the pivots 41 41 operating in the sockets 40 40. By pushing upon the end *x* the grips 28 28 revolve and the hooks 30 30 catch the threads and grip them against the narrowed ends 27' 27' of the openings 27 27, so that the threads are drawn tightly. Upon the opposite side of the plate 26 are pieces of steel 42 42, similar to 28 28, and pivoted to the same pivots 29 29 and revolve therewith a little behind the grips. The hooks thereon are sharpened to an edge and operate to cut the threads after the grips have drawn them tightly. The needle-holes 27 27 are constructed oblong, so that the grips need not interfere with the passage of the needles. When the needles are down, the threaders 19 19 are at the position shown in Fig. 4 and hold the threads at the ends 27' 27' of the needle-holes. After the threads are cut the grips retain the ends, so that they do not slip through the threaders and at the same time do not interfere with the passage of the needles, so that two or three stitches may be taken and the thread thoroughly secured before the device is restored to its original position by pulling upon the handle *x*.

It is not necessary with my construction to wind the cord upon a spindle, which requires considerable time and extra work. I provide a device whereby the cord or thread may be used from the original ball or skein. The balls or skeins are placed in cans, one of which is shown at 46, Fig. 1. The thread passes through an opening 43 in the top of each can and winds around the tube 49, passes through the hole 50, and then through the eyes in the springs 31 31 and into the cylinder, thence passing through the eyes 19' 19' of the threaders, and then down through the needle-holes 27 27 in the path of the grips. The cross-piece 50 is attached to the pipe 49 by the set-screw 44, and to increase or decrease the tension of the thread I have only to revolve the cross-piece 50 and wind or unwind the thread around the pipe 49.

The cylinder *T* is provided with a sliding

cover T', Fig. 3, inclosing the top to keep the straw from interfering with the operation of the needles. After the cover is sewed it surrounds the cylinder and is slipped from the end at T, Fig. 3. The cylinder is secured at the opposite end to the bracket A' of the frame.

In operating the machine I first spread the straw upon the top F F, the heads upon the platform G, then bring over the binder H and operate the lever G', which is pivoted at E' to the frame A and linked to the sliding platform G, as shown at E², and thereby is connected to the platform G in the manner shown in the drawings, and by its movement slide the platform. This bends over the heads and spreads the straw upon the feeders *i i*. I then operate the crank *m'* and start the machine. As soon as the machine stops automatically I push upon the handle *x* to cut the thread and pull the cover from the cylinder T. The cover then consists of a cylinder of straw, and to complete the cover I close one end of the straw cylinder by tying it at any time afterward. After the cover is removed I then slide the platform G back and raise the binder H, thereby restoring the machine to its original position, ready for the starting of another cover. After the machine is started on the next cover, so as to sufficiently fasten the thread, I can restore the cutting device to its original position by pulling upon the handle *x* or pushing upon a handle provided at the opposite end.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination of a forming-cylinder, a guiding-scroll, a stationary straw-supporting table, an endless-chain straw-carrier extended far enough to carry the sewed cover around the cylinder between the same and the scroll, mechanism for automatically stopping the stitch-forming mechanism and the endless straw-carrier mechanism for varying the length of the stitch, and a hand mechanism for restarting the machine when a new cover is to be made, substantially as described.

2. The combination of stitch-forming mechanism, the forming-cylinder, the guiding-scroll, a straw-carrier, a binder H, pivoted at *h* to the frame and swinging over upon the top of the feed-table for holding the straw down, the horizontal sliding platform G, and a lever G', connected thereto and to the frame, the said platform being on a plane above the

binder and serving for doubling the straw and holding it upon the binder, substantially as described.

3. The combination of stitch-forming mechanism, a forming-cylinder, a guiding-scroll, a straw-carrier, a ratchet-wheel and pawl, a notched wheel and pawl, a slotted arm, an adjustable connecting-rod 6, and mechanism for operating the stitch-forming devices, and the endless-chain straw-carrier whereby the length of the stitches can be varied and the machine automatically stopped when the cover is finished and the cutting of the threads is to be performed, substantially as described.

4. The combination of stitch-forming mechanism, a forming-cylinder having a removable cover, a guiding-scroll provided with an opening intermediate of its length for admitting access to the straw-cover, the straw-feeding mechanism, and mechanism for operating the stitch-forming and straw-feeding devices, substantially as described.

5. The combination of stitch-forming mechanism comprising a reciprocating hooked needle, arm 19, carried by wheel 17 and carrying the thread, toothed bar 16, toothed wheel 17, and means for operating said bar 16, the forming-cylinder, a guiding-scroll, a straw-carrier, and mechanism for operating said carrier and the other parts of the stitch-forming mechanism, substantially as described.

6. The combination of the stitch-forming mechanism comprising the hooked needle, rocking thread-carrier 19, thread-gripper 28, lever *x* for operating the same, slotted plate 26, through which the thread and needle pass, and knife 42, applied to the gripper and operated by the lever which operates the gripper, a forming-cylinder, a guiding-scroll, a straw-carrier, mechanism for operating said carrier, and mechanism for operating the stitch-forming mechanism, substantially as described.

7. The combination of stitch-forming mechanism, feeding mechanism, plate 26, provided with a slot 27, gripper 28, knife 42, mounted on the same pivot as the gripper, but set at a different angle so as to engage the wall of the slot later, and lever *x*, as and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

VALENTIN FLECKENSTEIN.

Witnesses:

CHARLES J. SCHMITT,
JOHN W. EVERETT.