(No Model.)

J. W. HYNES.

BOX LOOP ATTACHMENT FOR SEWING MACHINES.

No. 510,792. Patented Dec. 12, 1893.

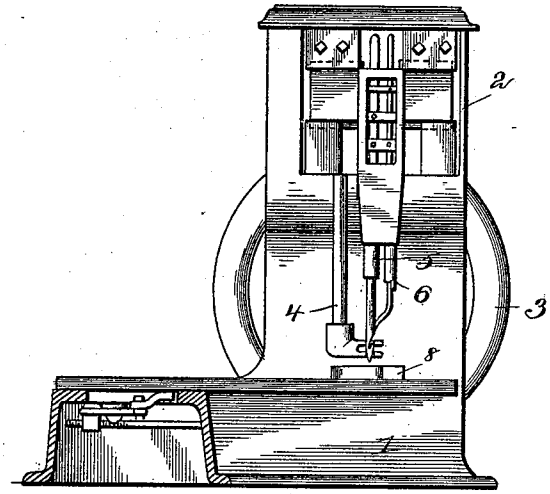

Fig. 1.

Fig. 2.

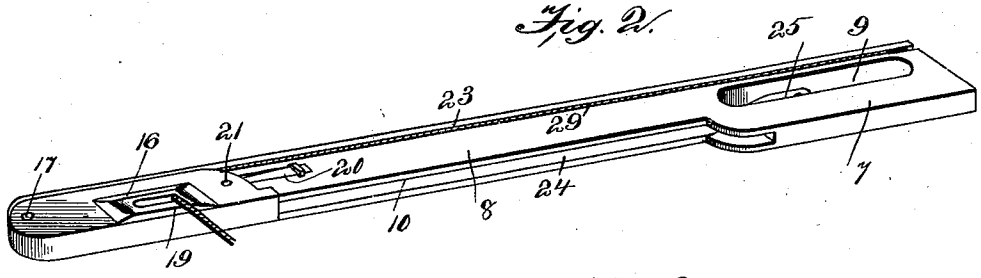

Fig. 3.

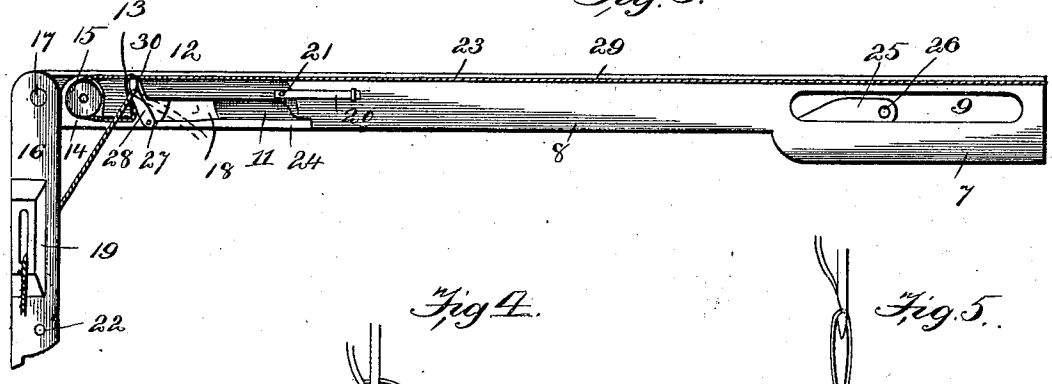

Fig. 4.

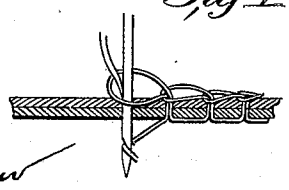

Fig. 5.

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BOX-LOOP ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 510,792, dated December 12, 1893.

Application filed January 12, 1893. Serial No. 458,180. (No model.)

To all whom it may concern:

Be it known that I, JULIUS W. HYNES, a resident of Nashville, in the county of Davidson and State of Tennessee, have invented a new and useful device for carrying the thread, supporting the thread-carrier, and making a loop-stitch or chain-stitch, in machines for sewing in loops on harness and all other things requiring a leather or cloth loop sewed in, for which I desire Letters Patent, and I make the following specification and claim of and to said invention.

My invention relates to box-loop attachments for sewing machines, the objects in view being to provide an attachment so constructed as to compactness as to provide for the stitching of box loops of smaller size than heretofore and to incorporate therein a simple mechanism for presenting or depressing the waxed thread to the path of the needle, at each descent of the needle.

With these and other objects in view the invention consists in certain features of construction hereinafter specified and particularly pointed out in the claim.

Referring to the drawings:—Figure 1 is a front elevation of a machine of ordinary construction, the same having applied thereto an attachment constructed in accordance with my invention. Fig. 2 is a detail in perspective of the attachment. Fig. 3 is a top plan view, the throat-plate being swung to one side to expose the interior of the attachment. Fig. 4 is a longitudinal sectional view through a portion of the loop-box and article to which it is being sewed and illustrating the manner of forming the chain-stitch. Fig. 5 is a similar view, the needle being elevated forming the second portion of the stitch.

Like numerals of reference indicate like parts in all the figures of the drawings.

1 designates the base of the machine, 2 the head, and 3 the fly-wheel.

4 represents the presser-bar and its foot, 5 the needle-bar and its needle, 6 the shipper-bar and the shipper which as usual is curved as shown.

The box-loop supporting bar 7 is reduced from its butt portion forming the billet-loop carrying portion 8, the purpose of such reduction being to adapt said bar to receive box-loops of less width than ordinarily. The butt portion is provided with a longitudinal slot 9 for a purpose hereinafter specified, and the inner side or edge of the reduced portion of the bar is provided with a longitudinal way or groove 10. Toward its front end the said bar is provided with an irregular recess 11 with which the way or groove 10 communicates, and the said way or groove 10 also at its rear end is continued through the butt portion and communicates with the front end of the elongated slot 9. The front end of the recess 11 is provided with an extension 12, the front wall of which is rounded to form a cam shoulder or face 13. Beyond this point a second recess 14 is formed, and loosely mounted upon a pin therein is a grooved pulley 15. The upper face of the bar above the recesses 11 and 14 is provided with a shallow recess within which fits a cover 16, this cover being L-shaped in cross-section and adapted at its outer side to form one wall of the recess 11, or in other words, a continuation of the bar. The cover is pivoted by a pin 17 to the front end of the bar, and, above the opening 18 in the bottom of the recess 11 immediately in rear of the cam shoulder 13, is provided with the usual throat-plate 19. A spring detent 20 is secured to the bar upon its upper side and is let therein and its outer extremity is provided with a small lug 21 designed to spring into a corresponding opening 22 formed in the free end of the swinging cover 16, and thus lock the same in position over the recesses 11 and 14. The upper side of the box-loop supporting bar along its outer edge is provided with a narrow groove 23, which groove extends from the butt end of the bar to the recess 14 where it terminates.

24 designates the looper-bar, which is mounted for reciprocation in the groove or way 10, and the same has its rear end extended or offset, as at 25, and perforated to receive a pin 26, through the medium of which it is operated or reciprocated as in the ordinary manner. The front end of the bar 24, has by means of a knuckle-joint 27, a loosely

connected looper 28, whose front or outer end is rounded, and when the looper-bar moves forward it is by reason of the curvature of said looper in connection with the rounded cam face 13, directed into the recess 12 and therefore at an angle to the looper-bar.

29 designates the waxed thread whose leading end passes from the ball along the groove 23, around the pulley 15, thence between the vertical side of the cover 16 and the bottom of the front end of the groove 10 to and through a perforation 30 with which the looper-finger is provided, and thence out through the opening in the throat-plate.

It will be seen that the front end of the bar as a whole is rounded and also reduced for the purpose, as before stated, of receiving the smallest box-loop necessary and over this said box-loop is passed in the usual manner. As the needle descends and previous to its passage through the throat-plate, the looper-bar moves forward, thus deflecting the looper or finger at an angle thereto and at an angle to the opening in the throat-plate, thus causing the waxed thread to be disposed at an angle between the two points, namely, the perforation 30 in the looper and the rear end of the opening in the throat-plate. The needle descending passes through the opening in the throat-plate and the opening 18 in the bottom of the bar 8, and down through the fabric, and as it ascends it engages with that portion of the waxed thread that is between the looper-finger and the throat-plate, drawing the same up and forming a loop through and above the box-loop. As the needle ascends, the loop thus formed, which is best shown in Fig. 5, is manipulated by the shipper which engages the loop, takes it from the needle as the same continues its ascension and carries the loop to one side, where it is held during a redescension of the needle, so that the needle passes through its own loop, as shown in Fig. 4, and re-engages with the waxed thread, which has again been placed in proper position for engagement with the needle through the medium of the looper-bar and looper-finger, which it will be understood has been reciprocated in the interim. In this manner it will be seen that a chain-stitch is formed and the box-loop becomes sewed to the article.

From the foregoing description, in connection with the accompanying drawings, it will be seen that I have provided an exceedingly compact device of very simple construction and consisting of few parts, the same being adapted to be applied to any of the ordinary single-thread machines and to accurately and with facility operate in connection with the needle thereof for the purpose of forming the ordinary chain-stitch and applying the same to box-loops.

Having described my invention, what I claim is—

In a box-loop attachment for sewing machines, the combination with the bar having its front end reduced and its butt end provided with a slot, one edge of the bar having a narrow groove or recess communicating with the slot and terminating at its front end in a recess having an opening, and a lateral extension provided with a cam wall and beyond the same provided with a second recess, a pulley arranged in the second recess, a narrow groove formed upon the upper side of the bar and communicating with the pulley recess, and a pivoted throat-carrying cover adapted to cover these recesses and let into the upper side of the bar, of a looper-bar mounted for reciprocation in the groove or way, and having its rear end provided with a lateral extension, perforated and extending into the slot of the bar, means for operating said looper-bar and a looper-finger pivoted to the front end of the looper-bar and adapted to be deflected by the cam wall of the recess and provided with a perforation, substantially as specified.

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