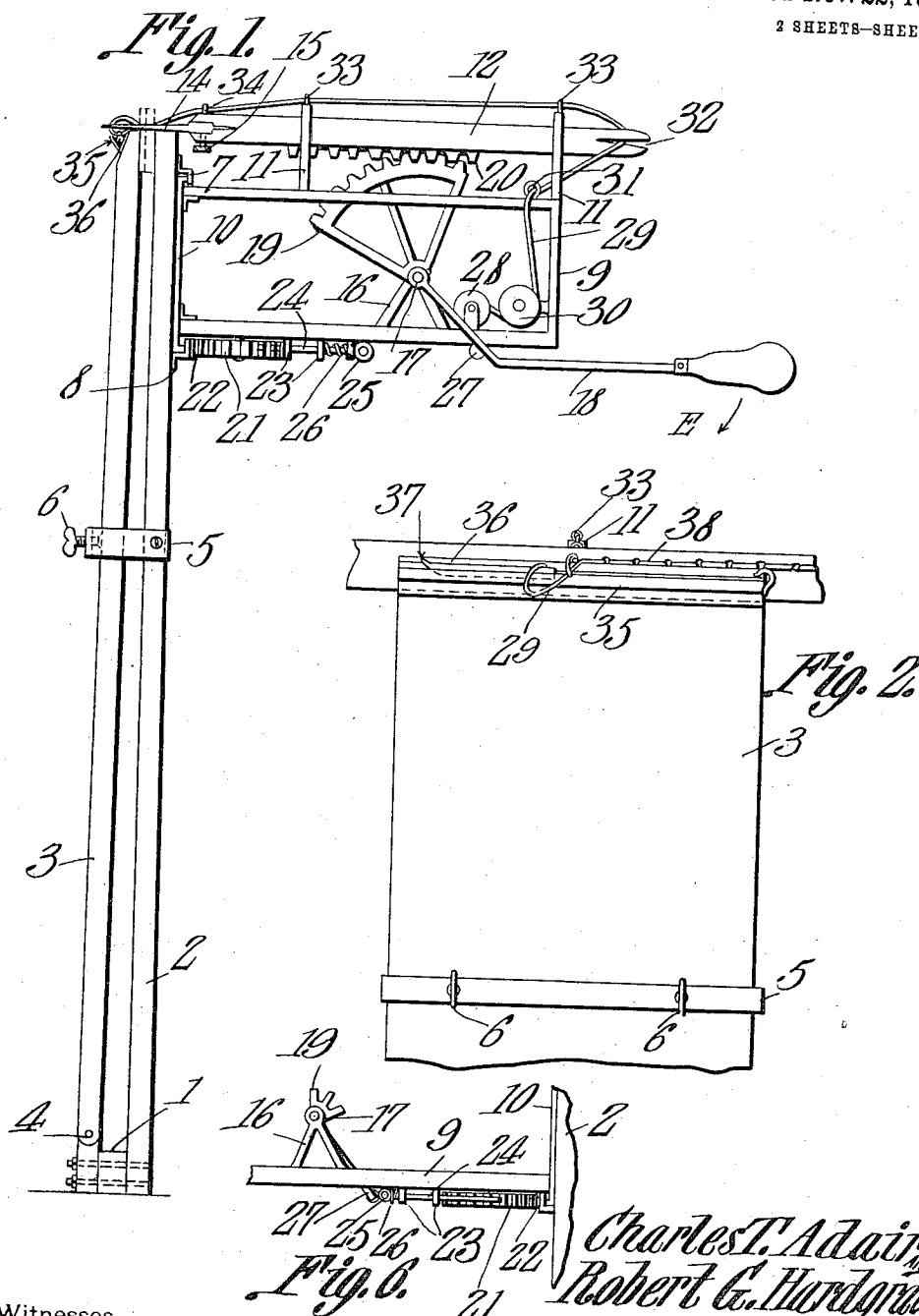


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STITCHING MACHINE.  
APPLICATION FILED APR. 14, 1910

976,330.

Patented Nov. 22, 1910.  
2 SHEETS—SHEET 1.



Witnesses  
*J. H. Taylor*  
*Mason B. Linton*

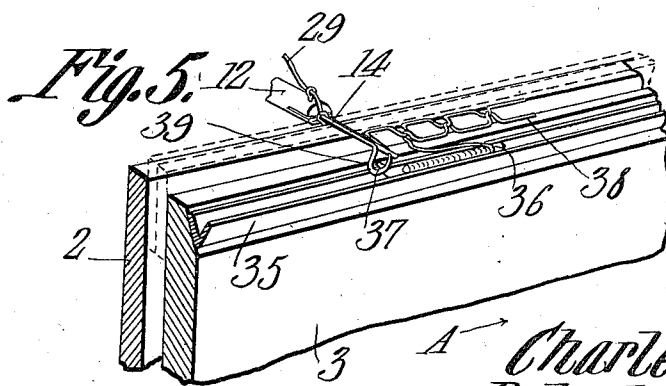
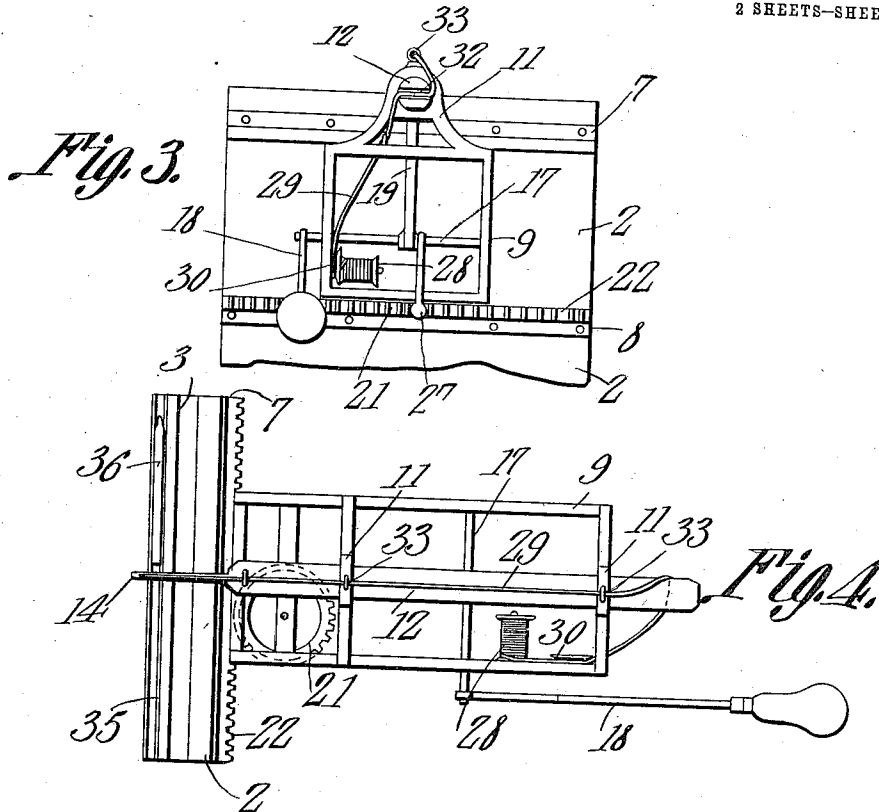
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# UNITED STATES PATENT OFFICE.

CHARLES T. ADAIR AND ROBERT G. HARDGRAVE, OF TUCUMCARI, TERRITORY OF  
NEW MEXICO.

## STITCHING-MACHINE.

976,330.

Specification of Letters Patent.

Patented Nov. 22, 1910.

Application filed April 14, 1910. Serial No. 555,362.

*To all whom it may concern:*

Be it known that we, CHARLES T. ADAIR and ROBERT G. HARDGRAVE, citizens of the United States, residing at Tucumcari, in the county of Quay and Territory of New Mexico, have invented a new and useful Stitching-Machine, of which the following is a specification.

It is the object of this invention to provide in a simple and merchantable form, a stitching machine, the needle-holder of which is advanced and retracted in a novel and improved manner; novel means being provided for advancing the carriage, after one stitch is completed, into a position in which another stitch may be made.

Another object of the invention is to provide a means operating both for the manipulation of the needle-holder, and for actuating certain mechanisms whereby the carriage is advanced.

In the drawings, Figure 1 shows the invention in side elevation; Fig. 2 is a fragmental front elevation; Fig. 3 is a fragmental rear elevation; Fig. 4 is a top plan; Fig. 5 is a perspective designed to show the manner in which the parts of the device cooperate to form a stitch in the material which is being sewed; Fig. 6 is a fragmental side elevation designed to show the manner in which certain parts of the device cooperate to advance the carriage.

The device forming the subject matter of this application is adapted, primarily, although not exclusively, to be employed by farmers and others, who find it necessary, occasionally, to do a small job of leather sewing, such as might be occasioned, for instance, by a broken harness. The device herein disclosed, is intended to present a simple, inexpensive structure, adapted to be employed under those circumstances which are of such infrequent occurrence, as to render unnecessary, the outlay called for in the ownership of a complicated, power-operated leather-stitching machine.

The invention includes, as a primary and fundamental element, a base 1, which may be of any form. Secured to, and rising from the base 1, is an upright fixed jaw 2, constituting a support for certain of the movable parts of the device. A movable jaw 3 is pivoted at 4 to the base 1, the movable jaw 3 cooperating with the fixed jaw 2 to engage, at their upper ends, the material

which is to be stitched. The jaws 2 and 3 are surrounded by a band 5, secured to the fixed jaw 2. In this band 5, and bearing against the movable jaw 3, is a wing bolt 6, or like clamping device, adapted to secure a cooperation of the jaws.

Secured to the rear face of the fixed jaw 2, and extended transversely of the same, are brackets 7 and 8, constituting a fixed mounting for the carriage 9, the face plate 10 of which is extended terminally, at its upper and lower ends, beyond the carriage 9, to interlock behind the brackets 7 and 8, the construction being such that, although the carriage 9 is held, as shown in Fig. 1, substantially at right angles to the jaws 2 and 3, the carriage is, nevertheless, free to slide transversely of the said jaws. This carriage 9 is preferably an open, framelike structure, the particular construction of which may be varied to suit the taste of the manufacturer, provided that the carriage furnishes the necessary elements of support and attachment.

Fixed to and rising from the upper face of the carriage 9, are spaced guides 11, in which reciprocates, substantially at right angles to the planes of the jaws 2 and 3, a needle-holder 12, in the end of which is secured the needle 14, by means of a set screw 15 or the like.

Secured to the carriage 9, adjacent its bottom, are bearings 16 in which is journaled for rotation, a shaft 17, provided at one end with an operating lever 18. This shaft 17 carries a segment 19, in mesh with a rack 20 secured to the lower face of the needle holder 12.

Mounted for rotation upon the bottom of the carriage 9, is a pinion 21, and this pinion 21 is in mesh with a rack 22 secured to the rear face of the fixed jaw 2, and preferably, although not necessarily, constituting a part of the lower bracket 8 in which the carriage is mounted for sliding movement. Hangers 23 depend from the bottom of the carriage 9, and in these hangers is mounted for sliding movement at right angles to the planes of the jaws 2 and 3, a plunger 24. This plunger 24 acts as a pawl, which, engaging the pinion 21, causes a rotation of the pinion, the pinion meshing into the rack 22, causing the carriage 9 to be advanced. Upon the end of the plunger 24 is an anti-friction device, a roller 25 or the like; and the plunger 24 is normally maintained out of engagement with

the teeth of the pinion 21 by means of a compression spring 26, surrounding the plunger 24 and bearing against one of the hangers 23.

5 Depending from the shaft 17, intermediate its ends, is an arm 27. This arm 27 is adapted to engage the roller 25 upon the end of the plunger 24, thus advancing the plunger toward the pinion 21, against the action  
10 of the spring 26.

Journalled for rotation in any desired manner upon the bottom of the carriage 9, is a spool 28, carrying a thread 29, extended through a tension device 30, mounted upon  
15 the carriage 9. After the thread 29 is carried through the tension device 30, the thread is carried through an eye 31 mounted upon the upper face of the carriage 9, thence through a notch 32 in the rear end of the  
20 holder 12, thence through eyes 33 upon the upper ends of the guides 11, thence through an eye 34 mounted upon the needle holder 12 adjacent the forward end thereof, and thence through the eye of the needle 14.

25 Secured transversely to the movable jaw 3 adjacent the upper end thereof, is a trough-shaped shuttle holder 35, in which reciprocates the shuttle 36, the shuttle terminating in a beak 37, adapted to engage a loop in the thread 29, as hereinafter described. The  
30 shuttle thread 38 is carried by the shuttle 36 in any of the common and approved methods of the art.

In practical operation, the material which  
35 is to be stitched is inserted between the upper ends of the jaws 2 and 3. By manipulating the wing bolt 6, the movable jaw 3 may be made to cooperate with the fixed jaw 2 in holding the material which is to be  
40 sewed. Presupposing that the parts of the device are positioned as shown in Fig. 1, the operating lever 18 is moved at its free end in the direction of the arrow E. As the free end of the operating lever 18 is thus swung  
45 toward the front of the machine, the segment 19, meshing into the rack 20 of the needle-holder 12, will slide the needle-holder rearwardly, reeling off the thread 29 from the spool 28. The needle-holder 12 will, by  
50 the foregoing operation be retracted, and disposed in a position operative to be advanced to make the stitch. As the free end of the operating lever 18 is moved in the direction of the arrow E, the lower end of  
55 the arm 27 will be brought into engagement with the roller 25 at the end of the plunger 24, thrusting the plunger 24 forwardly, and compressing the spring 26, the forward end of the plunger engaging one of the teeth of  
60 the pinion 21 and, through the cooperation between the pinion 21 and the rack 20, advancing the carriage 9 a single step beyond the stitch last made. The free end of the operating lever 18 is now positioned adjacent the front of the machine, and the needle

holder 12 is retracted. When the free end of the operating lever 18 is thrown into the position shown in Fig. 1 of the drawings, the needle holder 12 will be advanced into the position shown in the said figure, the  
70 needle 14 being thrust through the material which is to be stitched. By manipulating the operating lever 18, the needle 14 is retracted slightly in the material, thus forming a loop 39 in the thread 29. The shuttle  
75 36 is then thrown manually, the beak 37 of the shuttle engaging the loop 39 and guiding the shuttle through the said loop. The needle-holder 12 is then retracted to its full extent, drawing the thread 29 tight and  
80 forming a lock stitch with the shuttle thread 38. The shuttle is then shot back in the direction of the arrow A, whereupon the needle 14 may again be thrust through the material to form another loop 39, through  
85 which the shuttle 36 is again shot, the operating being continued until the stitching has been carried to the desired point.

Having thus described the invention, what is claimed is:—

1. A device of the class described comprising a support; a carriage slidable upon the support; a rack carried by the support; a pinion upon the carriage meshing with the  
90 rack; a pawl mounted upon the carriage and engaging the pinion; a needle holder slidable upon the carriage; and a device for operating the holder, arranged to engage the pawl.

2. A device of the class described comprising a support; a carriage slidable upon the support; a rack carried by the support; a pinion upon the carriage meshing with the  
100 rack; a pawl mounted upon the carriage and engaging the pinion; a needle-holder slidable upon the carriage; a device for operating the holder, arranged to engage the pawl; resilient means for normally holding the pawl out of engagement with the pinion; and anti-friction means upon the pawl engageable by said operating device.  
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3. A device of the class described comprising a support; a carriage slidable upon the support; a rack carried by the support; a pinion upon the carriage meshing with the  
110 rack; a pawl mounted upon the carriage and arranged to engage the pinion; a needle holder slidable upon the carriage and provided with a rack; a gear segment pivoted upon the carriage and meshing with the rack of the needle holder; and means for operating the segment, arranged to engage the  
120 pawl to advance the same toward the pinion.

In testimony that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses.

CHARLES T. ADAIR.

ROBERT G. HARDGRAVE.

Witnesses:

HARRY H. McELROY,  
W. HERRLE.