

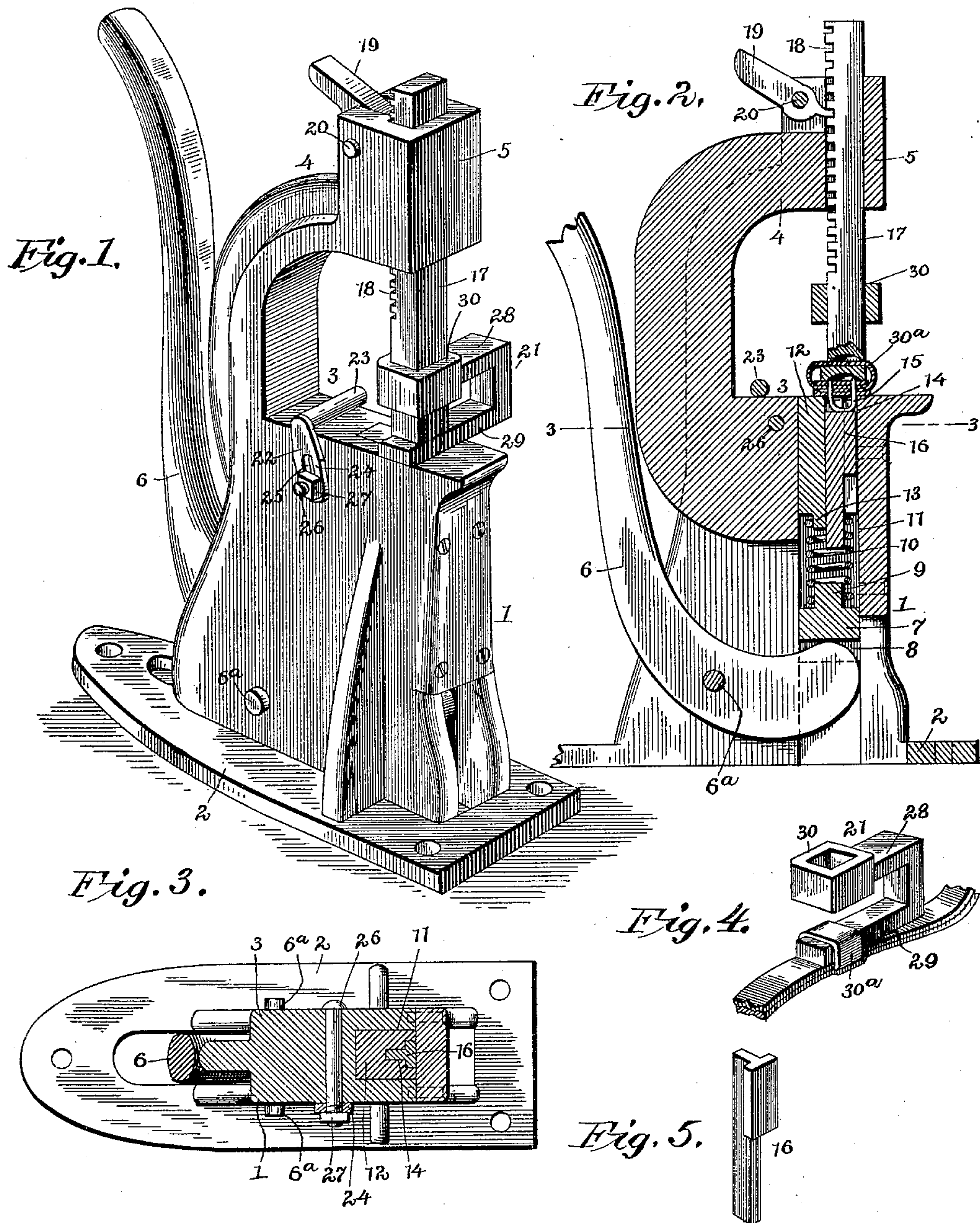
No. 640,781.

Patented Jan. 9, 1900.

C. LEE.
STAPLING MACHINE.

(Application filed May 12, 1899.)

(No Model.)



Witnesses

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UNITED STATES PATENT OFFICE.

CHARLES LEE, OF ASTORIA, ILLINOIS, ASSIGNOR OF ONE-HALF TO WILLIAM SCRIPPS, OF SAME PLACE.

STAPLING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 640,781, dated January 9, 1900.

Application filed May 12, 1899. Serial No. 716,565. (No model.)

To all whom it may concern:

Be it known that I, CHARLES LEE, a citizen of the United States, residing at Astoria, in the county of Fulton and State of Illinois, have invented a new and useful Machine for Repairing Harness, of which the following is a specification.

The invention relates to improvements in machines for repairing harness.

The object of the present invention is to improve the construction of harness-repairing machines and to provide a simple and comparatively inexpensive one capable of being easily operated and adapted to unite the ends or portions of a broken piece of harness without materially affecting the flexibility of the same by the use of transversely-disposed staples.

A further object of the invention is to provide a machine of this character which will be adapted to operate on and adjacent to box-loops without destroying or closing the same.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of a harness-repairing machine constructed in accordance with this invention. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a horizontal sectional view on line 3 3 of Fig. 2. Fig. 4 is a detail perspective view of the loop-holder. Fig. 5 is a detail view of the plunger.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a frame provided at its bottom with a base plate or flange 2, adapted to be secured to a bench or other suitable support, and the said frame is composed of a lower portion or anvil 3 and an upper arm or portion 4, which curves over the anvil or lower portion and terminates in a guide 5. The lower portion 3, which is adapted to receive the work to be operated on, is hollow to form a casing, and it is slotted or bifurcated at the

bottom to receive an operating-lever 6, which is fulcrumed on a bolt 6^a. The inner end of the operating-lever is curved, as shown, and it engages a head or block 7, provided with a recess 8 at its lower face to receive the lever. This cross head or block 7 is provided at its upper face with a stud 9 to receive the lower end of a coiled spring 10, and it is capable of vertical movement in a vertical opening 11 of the frame, and the vertical opening has its upper portion contracted to receive a spring-actuated staple-supporting bar 12, which is adapted to engage the work and to form a guide for the staple. The lower end of the spring-actuated bar or block 12 is reduced at 13 to receive the upper end of the coiled spring, which presses the said bar or block upward and which is also adapted to return the operating-lever to its initial position.

The spring-actuated or spring-pressed staple-supporting block or bar 12 is provided with a longitudinal slot or groove 14, which is T-shaped in cross-section to enable it to receive a staple 15 and to permit the same to be placed in position with its connecting portion or head either longitudinally or transversely of the anvil portion of the frame, whereby the staple may be driven into a strap transversely or longitudinally thereof. The groove 14 also receives a vertically-movable plunger or follower 16, having a flange at its upper portion to fit in the transverse portions of the T-shaped groove and adapted to be engaged by the stud of the cross head or block 7 when the lever is operated, whereby the sides or prongs of the staple will be driven through the work. When the plunger or follower is in its lowermost position, there is sufficient space between its upper end and the upper face of the spring-pressed block or bar to receive the staple, and as staples of different sizes are constructed of the same width various sizes of staples may be employed in the repairing-machine.

The legs of the staple are upset or clenched against the work by being forced against a vertically-adjustable bar 17, mounted in the guide 5 of the arm 4 of the frame and pro-

vided at its rear face with notches or teeth 18, adapted to be engaged by a pivoted catch or dog 19, mounted in a slot or bifurcation of the arm 4, as clearly illustrated in Fig. 2 of the accompanying drawings, and adapted to hold the bar 17 against upward movement. The lower end of the bar is grooved or recessed to present slightly inclined or curved faces to the ends of the staple to bend the same inward, and the catch or dog 19 is mounted on a pivot 20.

The staples are upset against the bar 17 when ordinary straps or pieces are united, and when working on a box-loop or adjacent to the same a loop-support 21 is employed. A substantially L-shaped gage 22 is provided for use, so that the work may be properly placed on the anvil portion of the frame. One arm 23 of the gage is rounded and extends transversely of the anvil portion of the frame or casing, and the other arm 24, which is arranged at one side of the frame, is provided with a longitudinal slot 25, through which passes a bolt 26, having a clamping-nut 27, adapted to secure the gage at any desired adjustment. The gage is adapted to be raised and lowered, and it may be moved backward and forward to bring the transverse arm in the desired position relative to the staple-receiving slot.

The loop-holder, which is substantially U-shaped, is composed of upper and lower horizontal arms 28 and 29 and a vertical connecting portion at the outer ends of the arms. The upper arm 28 is provided with a rectangular opening or eye 30 to receive the lower portion of the bar 13, and the lower arm 29, which is adapted to extend through a box-loop 30^a, is arranged adjacent to the strap to which the box-loop is secured, so that a staple may be driven through the strap or straps and the ends of the loop without being forced through the top of the latter. The lower arm of the loop or holder is provided with a groove or recess to facilitate the upsetting or clenching of the staple. After the staple has been placed in the groove of the spring-pressed bar and the work placed on the anvil portion of the frame the bar 17 is moved downward and pressed upon the work, being locked in such position by the pivoted catch or dog, and the spring-actuated bar or block will engage the lower face of the work and hold it firmly in position while a staple is being forced through it.

The invention has the following advantages: The harness-repairing machine, which is simple and comparatively inexpensive in construction, is designed for the use of farmers and various other persons, and it will enable an unskilled person to unite readily the ends of a broken strap or portion of a harness by means of a staple, which will not affect the flexibility of the broken part like a rivet. The loop-supporting device is adapted to enable a

box-loop to be stapled without driving the staple through the upper or outer portion of the loop.

Changes in the form, proportion, size, and the minor details of construction within the scope of the appended claims may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

What is claimed is—

1. A machine of the class described comprising a frame, a vertically-movable block or bar mounted in the frame and arranged to support a fastening device, a plunger guided on the block or bar and adapted to drive the fastening device into the work, actuating means located at a point below the block or bar and the plunger and normally separated from the same by an intervening space and adapted to directly engage the said plunger when operated, and a coiled spring located in the space between the said actuating means and the block or bar and interposed between the same, substantially as described.

2. A machine of the class described comprising a frame, a vertically-movable block or bar mounted in the frame and arranged to support a fastening device, a plunger guided on the block or bar and arranged to engage the fastening device, a cross-head normally located a considerable distance below the plunger and the block or bar and separated from the same by an intervening space, said cross-head being provided with a stud, a coiled spring interposed between the block or bar and the cross-head, the stud of the latter being arranged to project through the spring and engage the plunger, and means for operating the cross-head, substantially as described.

3. A machine of the class described comprising a frame, a vertically-movable block or bar mounted in the frame and provided with a longitudinal groove arranged to receive a fastening device, a plunger guided in the groove and extending a short distance below the block or bar when a fastening device is placed in position, a cross-head located below the block or bar and the plunger and normally separated from the same by a considerable space, and provided with a stud, a coiled spring interposed between the block or bar and the cross-head, and arranged to receive the stud, whereby the latter is adapted to engage the plunger when the machine is operated, and a lever for actuating the cross-head, substantially as described.

4. A machine of the class described comprising a frame, a substantially U-shaped holder consisting of a rigid frame provided at its upper portion with an eye and having its lower portion extended beneath the eye and adapted to be introduced into a loop, a vertically-adjustable bar passing loosely through the eye and arranged to engage the top of the

loop to be mended, and adapted to hold the
lower portion of the said holder rigidly against
the main frame, means for locking the said
bar against upward movement, and a plunger
5 mounted on the lower portion of the main
frame and operating beneath the loop-holder,
substantially as described.

In testimony that I claim the foregoing as

my own I have hereto affixed my signature in
the presence of two witnesses.

CHARLES LEE.

Witnesses:

E. E. DAVID,

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