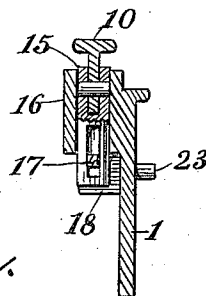
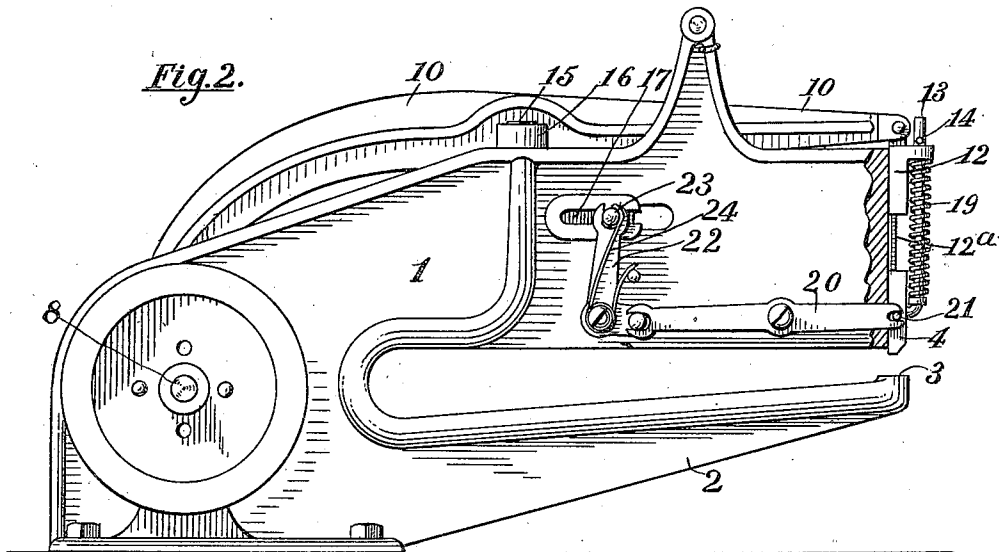
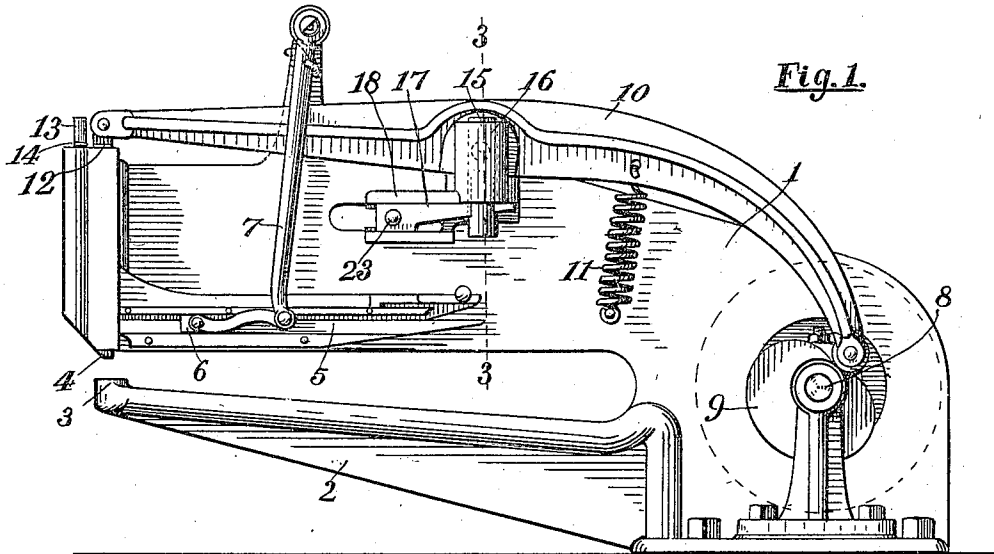


W. E. ELLIOTT.
 POWER OPERATED MACHINE FOR SETTING STAPLES.
 APPLICATION FILED MAR. 12, 1907. RENEWED APR. 26, 1909.

945,769.

Patented Jan. 11, 1910.

2 SHEETS—SHEET 1.



Witnesses
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Georgiana Chace

Fig. 3.

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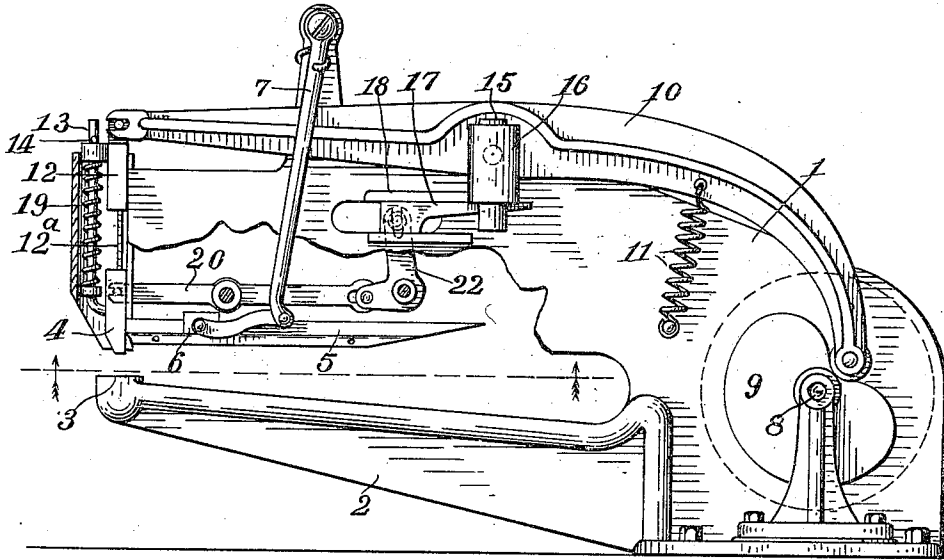


Fig. 4.

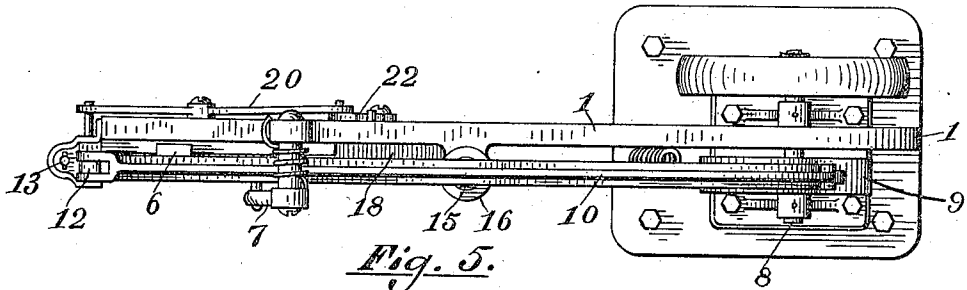


Fig. 5.

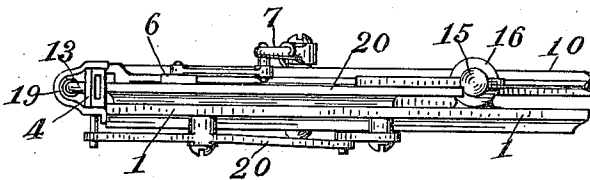


Fig. 6.

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UNITED STATES PATENT OFFICE.

WILLIAM E. ELLIOTT, OF GRAND RAPIDS, MICHIGAN.

POWER-OPERATED MACHINE FOR SETTING STAPLES.

945,769.

Specification of Letters Patent. Patented Jan. 11, 1910.

Application filed March 12, 1907, Serial No. 361,896. Renewed April 26, 1909. Serial No. 492,315.

To all whom it may concern:

Be it known that I, WILLIAM E. ELLIOTT, a citizen of the United States of America, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Power-Operated Machines for Setting Staples; and I do hereby 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.

My invention relates to improvements in power operated machines for setting staples, rivets and other analogous fastenings, and its object is to provide the same with means for automatically adjusting and limiting the movement of the various parts of the machine, and more especially the driver, to conform to variations in thickness of the material in which the said staples, rivets, or fastenings are inserted, whereby the machine will properly drive or set the same in such material regardless of such variation in thickness, and to provide the device with various new and useful features hereinafter more fully described and particularly pointed out in the claims.

My device consists essentially of an adjustable support for the mechanism that operates the driver, and means for adjusting the same operated by the staple guide, as will more fully appear by reference to the accompanying drawing, in which:

Figure 1. is a side elevation of a machine embodying my invention showing the means for adjusting the support; Fig. 2. an elevation of the opposite side of the machine, showing the means for connecting said adjusting means with the staple guide; Fig. 3. a detail in vertical section on the line 3—3 of Fig. 1. Fig. 4. a side elevation the same as Fig. 1, with parts broken away to show the construction; Fig. 5. a plan view of the device; and, Fig. 6. an inverted plan view of a part of the same.

Like numbers refer to like parts in all of the figures.

1 represents the frame of the machine provided with an arm 2 supporting a clenching die 3, opposite which die is the vertically movable guide 4.

5 represents the reservoir for staples, which staples are fed to the guide by a slide 6 operated by a spring actuated arm 7.

8 is the driving shaft provided with a cam

9, which cam actuates the lever 10 provided with a roll at one end to engage the cam 9 and held in contact therewith by a contractile spring 11 attached to the frame and lever. This lever is pivoted intermediate its ends and is connected to and operates a slide 12 to which slide is attached the driver 12^a slidable in the guide 4 to drive the staple. The said guide is yieldingly forced toward the die 3 by a spring 19 surrounding a rod 13 attached to the guide. Said rod is slidable in an arm on the slide 12 and limited in its downward movement therein by a pin 14, whereby the guide is lifted away from the die as the slide 12 is raised by the lever.

As so far described, the device is a common form of power stapling machine.

My invention is comprised in the following features, to-wit: 16 is a socket in the frame in which is a vertically movable pivot member 15, in which is pivoted the lever 10. Beneath the socket and engaging the lower end thereof is a wedge 17 which extends through a transverse slot in the pivot member 15 and engages the lower end of the slot to limit the upward movement of the said member, the downward movement being limited by engagement of the lever with the socket. This wedge is slidable longitudinally in ways 18 on the frame, and is adjusted by a bell-crank lever 22 having a forked end engaging a stud 23 in the wedge and operated by an intermediately pivoted lever 20 connected thereto at one end and engaging a pin 21 in the guide 4 at the other end. A spring 24 engages the stud 23 and serves to take up all lost motion in these parts and insure accurate operation of the same.

In operation, as the guide 4 descends the wedge is moved with its wider end toward and within the slot of the pivot member 15, whereby the said member is held down more or less according to the adjustment of this wedge. The farther toward the die that the guide 4 moves, the farther the wedge is moved toward its wider end and thus the less the pivot of the lever can rise, and the less this pivot rises, the farther down the driver will be forced by the lever, so that at all times the driver movement is automatically determined to conform to the thickness of material upon which the guide is stopped in its movement toward the die.

By modifying the taper of the wedge, the driver may be adapted to drive the fasteners

farther down proportionately on the thicker material, thus adapting the machine to properly operate on soft stock, as occasion requires, and by properly tapering the 5 wedge, the machine may be adapted to drive the staples uniformly relative to the thickness of the stock.

I have shown and described a preferred form of stapling machine, but obviously my 10 device may be readily adapted to a great variety of machines without departing from my invention.

What I claim is:

1. A machine of the class described, comprising a rigid frame, a die supported by the 15 frame, a guide movable on the frame toward and from the die, a driver movable in the guide toward and from the die, and means mounted on the frame for limiting the movement of the driver toward the die, said 20 means being automatically adjusted by the guide.

2. A machine of the class described, comprising a rigid frame, a die supported by the 25 frame, a guide slidable on the frame toward and from the die, a driver slidable in the guide, a lever to operate the driver, means adjustable on the frame for limiting the movement of the lever toward the die, and 30 mechanism for adjusting said means operated by the guide, whereby the stroke of the driver is modified by variation in thickness of the material engaged by the guide.

3. A machine of the class described, comprising a rigid frame, a die supported by the 35 frame, a guide slidable on the frame toward and from the die, a driver slidable in the guide, a lever to operate the driver, means adjustable on the frame for limiting the movement of the lever toward the die and a 40 lever operated by the guide and connected to said means to adjust the same.

4. In a machine of the class described, the combination of a guide, a driver, means for 45 operating the driver, a movable support for said means, a wedge to limit the movement of said support, and means for connecting the wedge and guide, whereby the wedge is 50 automatically adjusted by the guide.

5. In a machine of the class described, a 55 die, a guide movable toward and from the die, a driver also movable toward and from the die, a lever to operate the driver, a pivot for the lever, said pivot being adjustable in the same direction as the movement of the driver, means for positively moving the lever, and mechanism connecting the guide 60 and pivot, whereby the pivot is adjusted by the guide.

6. In a machine of the class described, a 65 die, a vertically adjustable guide above the die, a vertically movable driver in the guide, a lever to operate the driver, a vertically ad-

justable pivot for the lever, means for positively actuating the lever, and means for 65 simultaneously adjusting the guide and pivot.

7. In a machine for setting staples, or analogous fastenings, a die, a guide movable toward and from the die, a driver slidable in 7 the guide, a lever to operate the driver, means for operating the lever, a movable pivot member for the lever, a longitudinally movable wedge to limit the movement of said member and a lever connecting the 75 wedge and the guide, whereby the wedge is adjusted by the guide.

8. In a machine for setting staples, rivets or the like, a fixed clenching die, a guide movable toward and from the die, a driver 80 slidable in the guide, a lever connected to the driver, a movable member in which the lever is pivoted, said member also having a transverse slot, a longitudinally movable wedge in said slot and means for connecting the 85 wedge and guide whereby the guide automatically adjusts the wedge.

9. In a machine for setting staples, rivets or the like, a fixed clenching die, a guide movable toward and from the die, means for 90 yieldingly forcing the guide toward the die, a driver slidable in the guide, a lever connected to the driver to operate the same, means for oscillating the lever, a movable member to which the lever is pivoted, said 95 member also having a transverse slot, a longitudinally movable wedge in the slot, a bell-crank lever connected to the wedge to adjust the same, and a lever connecting the bell-crank lever and the guide and operated by 100 the guide.

10. In a machine for setting staples, rivets or the like, a frame having an arm supporting a fixed clenching die, also having ways for a wedge and a socket for a pivot member 105 arranged at substantially right angles to each other, a guide movable toward and from the die, a driver slidable in the guide, a lever connected to the driver to operate the same, means for yieldingly forcing the 110 guide toward the die, a pivot member for the lever and movable in the socket, said member also having a transverse slot opposite the ways, a wedge longitudinally movable in the ways and extending through the 115 slot, a bell crank lever connected to the wedge, a spring engaging a stud on the wedge and an intermediately pivoted lever connecting the bell-crank lever and the 120 guide.

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

WILLIAM E. ELLIOTT.

Witnesses:

GEORGIANA CHACE,
LUTHER V. MOULTON.