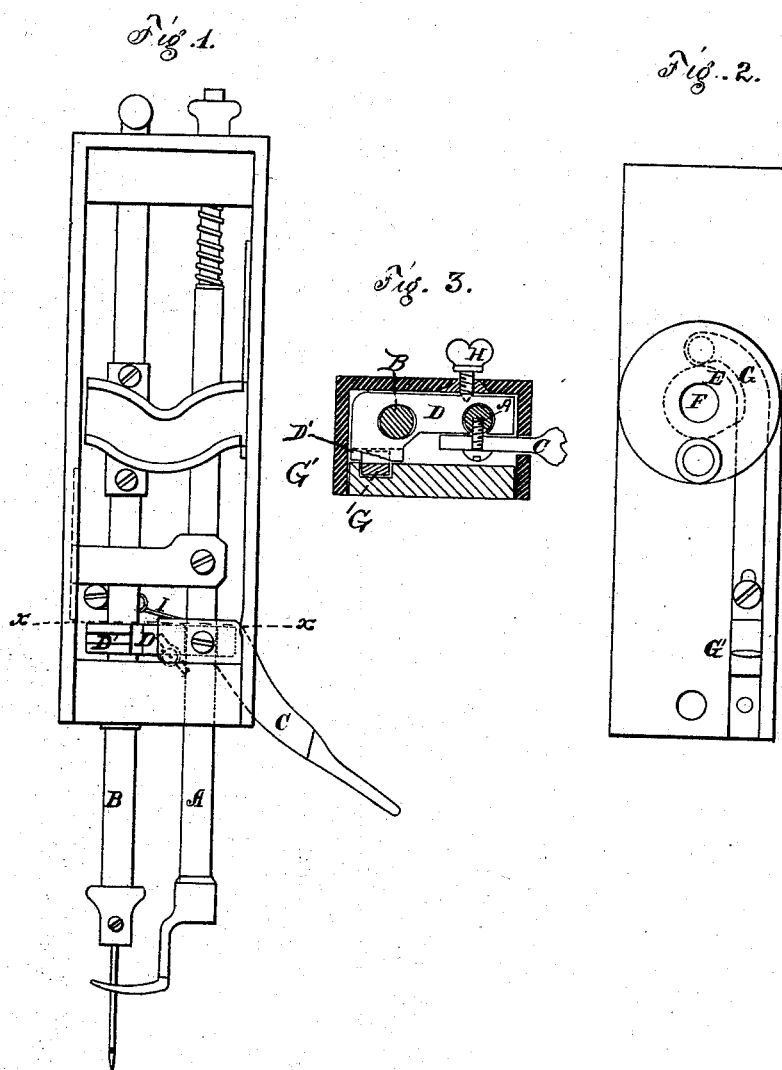


(No Model.)

G. W. BAKER.
SEWING MACHINE.

No. 261,981.

Patented Aug. 1, 1882.



WITNESSES.

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GEORGE W. BAKER, OF CLEVELAND, OHIO.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 261,981, dated August 1, 1882.

Application filed February 8, 1881. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. BAKER, of Cleveland, county of Cuyahoga, State of Ohio, have invented a new and useful Improvement in Vibrators for the Pressure-Bars of Sewing-Machines; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form a part of this specification.

My invention consists in a novel construction and combination of devices, which will be hereinafter particularly described, and pointed out in the claim.

In the drawings, Figure 1 is an interior view of a sewing-machine head, illustrating the engaging mechanism in connection with the pressure-bar; Fig. 2, a view of the sewing-machine head, showing the means for operating the said mechanism. Fig. 3 is a section on line *x x* of Fig. 1.

It is well known that when operating a sewing-machine, and especially when operating it for sewing in zigzag lines or in fancy work—such as braiding, embroidering, &c.—where it is desirable and necessary to almost constantly change the direction of the stitches, it is very difficult to accomplish the change except by stopping the machine and raising the pressure-bar, so as to partially release the goods from the feeding device. To overcome this difficulty the pressure-bar has been caused to vibrate up and down, being always down upon the feed when the needle is up and the feeder in operation, but rising from the goods when the needle is down, so as to prevent displacement of the fabric, at which moments the goods may be turned beneath the pressure-foot; and inasmuch as the vibrations take place as rapidly as the needle stitches the goods are apparently always free to move in any direction the operator may desire.

My vibrator mechanism is constructed as follows:

A is the pressure-bar; B, the needle-bar; C, the lever, by which the pressure-bar may be raised at the will of the operator.

D is a bar, through which the pressure-bar passes snugly, but not sufficiently close to bind upon the latter. At D' the bar is provided with a slot.

E is a cam upon the drive-shaft F. It is embraced by a yoke, G, which extends down and is provided with a projecting lug, G', which engages with the slot D', so that as the cam revolves the yoke is alternately lifted and depressed, thereby lifting and depressing the end D' of the bar D. As the end of this bar is raised, it takes a bite upon the pressure-bar at the point where it embraces the latter and lifts the pressure-bar with it. The cam is so arranged that it lifts the bar when the needle is down through the fabric, and releases it again just before the needle rises from the fabric.

H is a set-screw, with a pointed end, which passes through from the outside and enters with its point just beneath the bar D, while a spring, I, serves to hold the bar down always at the lowest place where it is free. Now, if it is desired to make the upward stroke of the pressure-bar very slight, the screw is run in considerably, so as to lift the bar, and consequently the yoke, nearly to the top of its stroke. It will be observed, however, that the pressure-bar still plays freely through it; but just before the cam E has completed its revolution it will engage the yoke and lift the yoke, and consequently the bar D and the pressure-bar, through the balance of its stroke. So, by forcing in the screw H more or less the pressure-bar is caused to be lifted to a less or greater distance at each stroke of the needle.

In order to give steadiness to the movement of the clutch-bar D, I provide it with an elongated aperture or slot, which embraces the needle-bar, which is thus caused to serve as a guide for the clutch-bar. The aperture or slot is elongated in the direction of the length of the clutch-bar, and its side walls embrace the needle-bar only sufficiently closely to permit a free movement of the needle-bar, while its end walls are far enough from the needle-bar to permit the bar D to be tilted for clutching the pressure-bar without interfering with the movement of the needle-bar.

When the screw H is forced in to its fullest extent the vibrator is entirely inoperative, because the yoke will no longer engage the cam, so that the machine can, if desired, be employed with a steady pressure.

By this construction it will be observed that, no matter whether the machine is operating

upon thick or upon thin goods, the vibrator will cause the pressure-foot to lift from the goods always to the same extent.

I am aware that in a sewing-machine the presser-bar has been caused to vibrate by means of a cramping-clutch connected to a rod operated to tilt the same by a cam on the driving-shaft, and also that a conical-pointed screw has been employed to lift the cramping device to such position that it will not be operated by the cam, and I do not claim either of these inventions.

What I claim is—

The combination, with the pressure-bar and needle-bar, of the clutch-bar D, having an ap-

erture embracing the pressure-bar so closely that when the said clutch-bar is tilted or inclined it will clutch the pressure-bar, and having also an aperture embracing the needle-bar, but elongated in the direction of the pressure-bar, so that the edges of said aperture will not clutch the needle-bar at any point of its movement, and means, substantially as described, for operating said clutch-bar.

In testimony whereof I sign this specification in the presence of two witnesses.

GEORGE W. BAKER.

Witnesses:

HENRY F. QUELCH,
W. M. PORTER.