C. MILLER.

Sewing Machine.

No. 26,462. Patented Dec. 13, 1859.

Fig. 1,

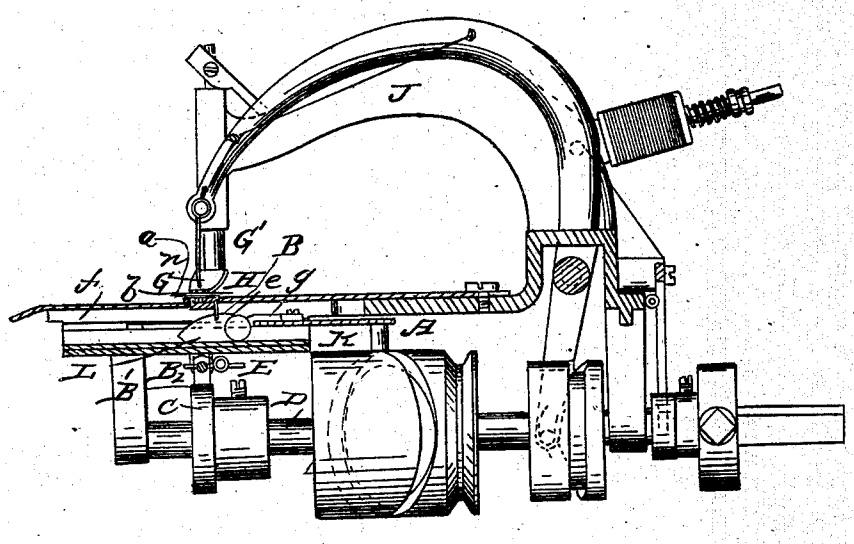


Fig. 3,

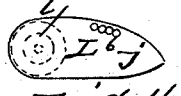


Fig. 4,

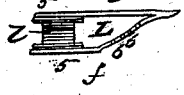
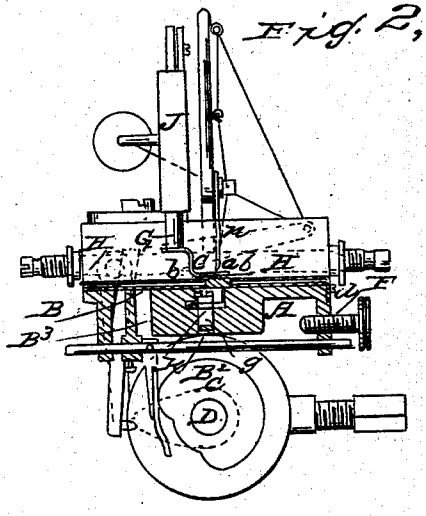


Fig. 2,



Witnesses:
W. M. Sumpton
C. M. Hughes

Inventor:
Charles Miller

UNITED STATES PATENT OFFICE.

CHARLES MILLER, OF NEW YORK, N. Y., ASSIGNOR TO GEORGE RICARDO, OF SAME PLACE.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **26,462**, dated December 13, 1859.

To all whom it may concern:

Be it known that I, CHARLES MILLER, of the city, county, and State of New York, have invented certain new and useful Improvements in Sewing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical section of a machine with my improvements, taken in a plane transverse to the direction of the feed movement. Fig. 2 is a vertical section of the same, taken in a plane parallel with the feed movement. Fig. 3 is a side view of the shuttle, and Fig. 4 is a top view of the same.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists in effecting the releasing movement of the said releasing-plate by means of a wedge-like projection or its equivalent, formed upon or carried by a shuttle-driver; and it further consists in constructing the shuttle of a sewing-machine of two simple springs and a bobbin, so combined that the springs form a sufficient protection to the bobbin and by their own elasticity keep it in place.

To enable others to make and use my invention, I will proceed to describe its construction and operation.

A is the work-plate of the sewing-machine, supported upon a stand of suitable character.

B is a straight slide fitted to a groove in the upper surface of the plate A, and having attached to or formed upon its upper side the feeding-dog *a*, which projects upward above the level of the surface of the plate. The said slide B and dog *a* derive a reciprocating longitudinal motion from the combined action of a cam, C, on the main shaft D, and a spring, E, the cam acting upon an arm, B′, that is secured upon a sliding bar, B^2, to which the slide is connected by an arm, B^3, to move the slide in the direction in which the dog is to move the material to be sewed, and the spring drawing the slide back again.

F is a stop-screw for regulating the length of movement of the bar B^2, and so regulating the movement of the slide.

G is the pressure-pad, which may be applied in any well-known or convenient manner to press the material against or toward the teeth or face of the dog *a* with an elastic or yielding pressure. It is represented as made with a straight stem, G′, fitted to the stationary arm J of the machine, and supposed to have a spiral spring applied within the said arm to produce the pressure.

H is the releasing-plate, made of steel and elastic, and provided with an opening, *b*, for the dog *a* to pass through, and a slot for the needle *n*. One end of this plate is secured firmly to the bed-plate by a screw, *d*, Fig. 3, and the remainder of the said plate, though unattached to the work-plate or feed-slide, rests on the top of the work-plate when not lifted therefrom to release the material from the dog, whose teeth project upward a short distance through the said plate when the said plate is flat upon the work-plate. On the under side of this releasing-plate is a projection, *e*, which enters a recess, *f*, that is formed in the work-plate at one side of the shuttle-race, for the reciprocating shuttle-driver K to work in.

g is a wedge-pointed cam-like piece of steel secured to the top of the shuttle-driver, for the purpose of operating on the projection *e* to raise the releasing-plate to effect the release of the material from the feeding-dog. The wedge-like portion of the piece *g* comes into operation on the releasing-plate H as the shuttle-driver advances, while the feed-slide is at rest, after having moved in the direction to feed the cloth, and lifts the releasing-plate high enough to bring its upper surface entirely above the teeth or face of the dog. The flat portion of the upper surface of the said piece *g* remains under the projection *e* of the releasing-plate while the feeding-slide moves back, and so the material is kept released from the dog and held between the releasing-plate and pressure-pad; but before the movement of the feeding-slide in a direction to feed the material is repeated, the piece *e* is withdrawn from under the projection *g*, and the releasing-plate allowed to descend for the purpose of permitting the pressure-pad to force down the material into contact with the dog, preparatory to the next feeding movement.

L is the shuttle, whose case consists simply

of two springs, *i* and *j*, (best shown in Fig. 4,) united at one extremity, where they form a point, by riveting, welding, or other means, or both formed out of the same piece of metal. The spring *i*, which forms the side of the case working next the needle, is made flat, or nearly so. The other, *j*, is bent to form the point of the shuttle, but a portion of it is parallel with *i*. The bobbin *l* is made with two male centers, 55, one at each side or end, to enter the female centers in the springs *ij*, and the elasticity of the springs pressing toward the bobbin confines the centers thereof in place, and produces thereon nearly enough friction to produce the requisite tension of the shuttle-thread for most kinds of sewing; but to provide for an increased tension, holes 6 6 are provided in the spring *j*, through which to lace the thread in the same manner as in most other sewing-machine shuttles. This kind of shuttle is of much less costly construction than those commonly employed, while it is superior on account of its greater lightness, and of its bobbin being better secured. The driver K, for driving this kind of shuttle, is substantially like that used for other kinds.

I claim—

1. The combination, with the shuttle-driver K, of the releasing-plate and lifter *g*, as and for the purpose herein shown and described.

2. The employment of a shuttle made of two springs, *i j*, in the peculiar manner herein shown and described, in combination with the bobbin *l*, as set forth.

CHARLES MILLER.

Witnesses:

M. M. LIVINGSTON,

C. M. HUGHES.