

H. W. Fuller

Guide for Sewing Mach.

N^o 77972.

Patented May 19, 1868.

Fig 1

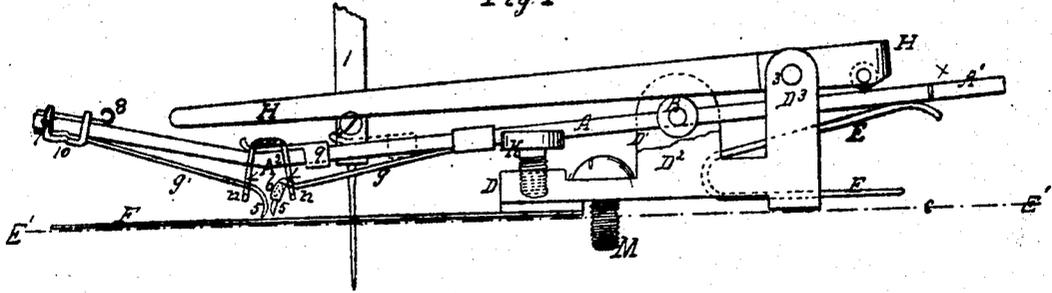


Fig 2

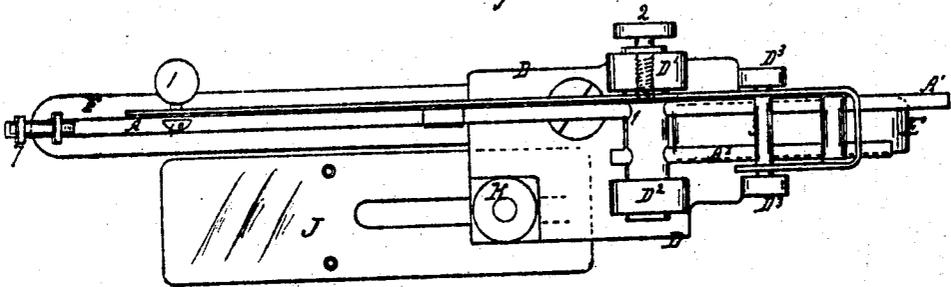
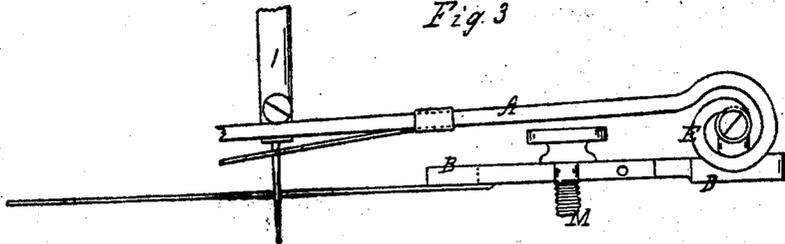


Fig 3



Witnesses

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IMPROVEMENT IN CREASING-APPARATUS FOR SEWING-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Be it known that I, H. W. FULLER, of the State, county, and city of New York, have invented certain new and useful Improvements in Tuck-Creasing Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, which form part of this specification.

My said invention relates to the creasing or marking-apparatus, composed primarily of nipping-fingers or points, and that creases or marks the fabric by producing a succession of nips or pinches thereof while it is moved along in any suitable manner.

The first part of my invention consists in the mode of conveying motion to the marking-device. The second, in combining with the lever carrying the marking-device a fulcrum, or axis of motion, having a fixed position. The third, in having the set-screw for the longitudinal adjustment of said lever placed at the centre of said fulcrum. The fourth, in the combination with such lever, having a fixed fulcrum, of a spring, which may be adjusted in elasticity or power relatively with the said fulcrum. The fifth, in the arrangement of the spring, with respect to the lever and its fulcrum, so that the act of adjusting the lever (longer or shorter) will also adjust the power of the spring. The sixth, in so attaching the points to the lever which carries them, that they may be readily detached, and others substituted, by a person unskilled. The seventh, in guarding and protecting the points by a suitable rest. The eighth, in the combination with such rest of a removable key, to regulate the spread of the points.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same.

Referring to the annexed drawing,

Figure 1 is a side elevation.

Figure 2 is a top view, with a "self-sewer" attached.

Figure 3 shows a modification, of simple construction, though less efficient in action.

The marking or creasing-device is attached to a lever, A. Said lever is capable of a vibrating motion, usually imparted in one direction (either up or down) by a spring, and in the other by the needle-arm or bar, or some other moving part of a sewing-machine, in connection with which it is generally employed.

To or near the outer end of the lever A are attached, in a suitable manner, the nipping-points g . Said points are arranged in diagonal positions, as to the surface of the fabric, and the bed or plate which supports it. The point g' I have set at a greater angle than its mate, g , by bending the lever A at A^2 , or otherwise, the object being to cause the material from which the crease or ridge is formed to be drawn more from this end of the marker than the other.

The axis of vibration of the lever A is in a rock-shaft, it being drilled through at 1, (fig. 2,) for the reception of such lever, which passes through the shaft, and projects beyond. Said rock-shaft has its bearings in uprights D^{1*2} , a part of a frame, D. Between the rear portion, A^1 , of the lever A, and the base of the frame D, is a strong elliptic spring, E, which exerts its force on the lever A, to throw the outward end with the marker towards the fabric, while it is supported on plate F, or the bed of a sewing-machine, indicated by a dotted line, C. The centre of the rock-shaft and fulcrum of the lever A is elevated considerably above the horizontal line of the plate F, the object of which is to give the lever A a downward pitch, when at its lowest position, in order that, when drawn outward from the rock-shaft, such pitch will be altered, and the spring E compressed and stiffened, and, when pushed inward, towards the fulcrum, the spring will be expanded and flexible, thus making a self-compensating arrangement, by which, as the marker is moved farther from the fulcrum, where increased power is wanted, the power of the spring is increased, and decreased when moved towards the fulcrum, where less strength is required. The spring is also movable towards and from the fulcrum, to increase or decrease its strength, and provide for variations in the character of fabrics.

It is desirable that the range of motion of the marker should remain nearly the same under all circum-

stances. I therefore prefer to give the fulcrum of the lever A a fixed position, when attached to a sewing-machine, in order that the place of imparting motion to the lever (as by the needle-screw 4) may remain at the same distance from said fulcrum, and thus avoid any great variation in the range of motion, as aforesaid.

The lever A is held firmly in the rock-shaft by a set-screw, 2, (fig. 2.) This screw, if located on the periphery of the rock-shaft, or in any other place where there is much motion, would be liable to be loosened by the vibrations of the lever and marker. To prevent such loosening, it is placed in the centre of the rock-shaft, whereby its motion is greatly reduced, and rendered harmless.

A³ is a "twin-lever," fixed in the rock-shaft, and serves to equalize the bearing of the spring E. The mode of conveying motion to the lever and marking-device is very important. I use a spring, E, of considerable strength or power, and thereby secure a greater reliability of action of the marker under all circumstances. In order to retain and utilize this power, and also prevent the marker, when attached to a sewing-machine, from offering any unusual impediment to the operation of such machine, I employ a mode of causing the power exerted in overcoming the resistance of the spring, or operating the marker, to be exerted throughout a considerable extent of the motion of that part of the sewing-machine which moves it, and so reduce this amount of movement at least one-half in conveying motion to the marker.

To accomplish this, I combine with the apparatus an actuating-lever, H, which is pivoted at 3, and hence is very short in the rear of the fulcrum, as compared with its length in front thereof. When its outward-end is raised by the screw 4, on the needle-bar I, or otherwise, and the rear end presses on the rear end of the lever A, throwing up the outer end of the said lever and the marker, such marker will have much less movement than the lever H, and this decrease of motion results in a gain in power. The gain in power enables me to overcome easily the resistance of a spring, E, and also furnishes the best mode of forcing the marker down to crease the fabric, with or without a spring to raise it.

The points *g g* of the marker are arranged in a diagonal position as to the fabric they nip and crease, and, in order to have the fold or ridge formed on the fabric as sharp and well defined as possible, the points are shaped as shown at 5, in fig. 1, in order so to nip and pinch the fabric as to compress the ridge at the very point of folding. Without this compression of the edge of the fold, the crease soon vanishes. With it, the crease will remain as long as required.

For family use, the points will seldom or never need renewal; but in manufactories, where tucked work is extensively made, the apparatus often receives rough usage. I therefore provide for attaching them in such a manner that they may be taken off and renewed when it is required, without the aid of a machinist, and by almost any ordinary operator.

7 is a piece of sheet metal, bent up at each end, and provided with slots sufficiently large to receive the end of the lever A and the upper end of one of the points, and still leave sufficient space for the insertion and removal of a key, 8, which is slipped in to hold the parts in place. As a further security, the lever is nicked at 10, and the point *g*¹ bent to fit in said nick, to prevent any endwise motion of said point. Another way of attachment is to have the point to slip in a socket, as at 6. The particular way of attaching the points, however, is not important; the feature is their detachability, no matter what the particular contrivance by which they are fastened to the lever.

On some fabrics, the points will require to be spread apart more than for others, while, at the same time, they need something to hold them from being bent out of line laterally, by accident or otherwise. For such protection, I have devised the guard L, which receives the points in slots at each side, the lower ends of which slots furnish small rests for each one, preventing them from spreading more than a given distance apart. When additional spread is required, the key, 9, is removed, as shown in dotted lines, fig. 1.

In fig. 2 is a "self-sewer," clamped fast by the gauge-screw, and is employed with great advantage in connection with the tuck-creaser. It is not shown in fig. 1, not being necessarily a part of the apparatus proper. To avoid confusion, the guard L and key 9 are omitted in fig. 2.

In fig. 3, I have shown a lever, A, as formed in one piece, with the spring, and made fast to the base, B, which is adjustable on the bed-plate by a screw, M, in a slot, O, in the base. The points *g g* and the construction of the marker would be substantially the same as shown in fig. 1.

In the above invention, I do not confine myself to special construction, when that may be varied without altering the essential attributes of the invention. Any device, acting upon the marker to move it, and moving through a longer space than it, in the same interval of time, to gain power, would be equivalent to that described. And any device permitting the ready detachment and attachment of the points, for their removal in case of derangement or breakage, would be substantially the same as that described, in any combination thereof, with a lever, or its equivalent, for a creasing-apparatus.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The mode, substantially as described, of conveying motion to the creaser or marker.
2. The combination of the means herein described, or the equivalent thereof, for giving motion to the marker, with a marking-device having a fixed fulcrum of vibration, as and for the purpose specified.
3. Placing the set-screw for the adjustment of the said lever at the centre of said fulcrum, for the purpose stated.
4. The combination, with the lever, having a fixed fulcrum or centre of motion, of a spring, which may be adjusted in elasticity or power relatively with said fulcrum.
5. The arrangement of the spring, with respect to the lever and its fulcrum, so that the act of adjusting the lever, long or short, will also adjust the power of the spring, substantially as and for the purpose specified.

6. So attaching the points to the lever which carries them, substantially as described, that they may be readily detached and renewed, or others substituted, as specified.
7. Guarding and protecting the points, by a movable rest, substantially as set forth.
8. The combination, with such, rest of a removable key, to regulate the spread of the points, for the purposes specified.

H. W. FULLER.

Witnesses:

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