

R. WHITEHILL.

TUCK-CREASERS FOR SEWING-MACHINE.

No. 184,939.

Patented Nov. 28, 1876.

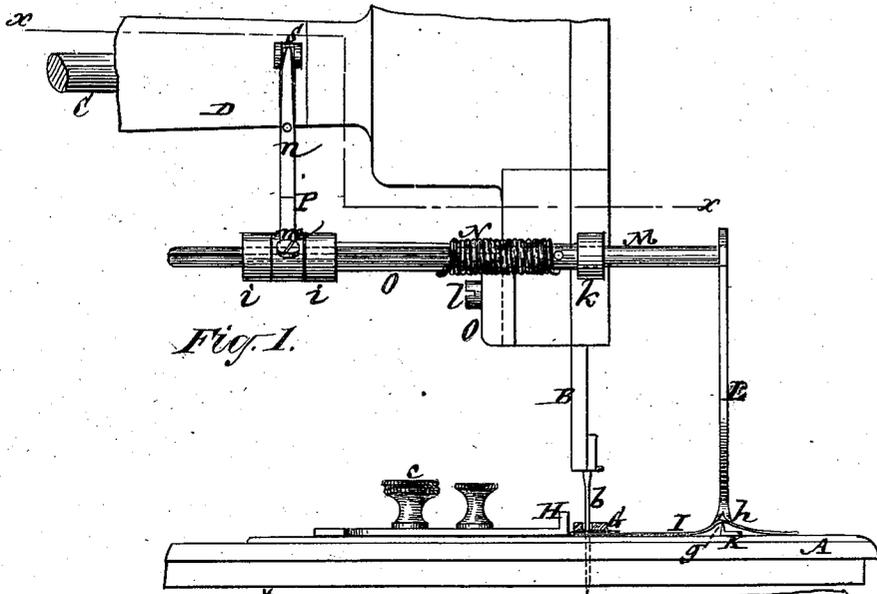


Fig. 1.

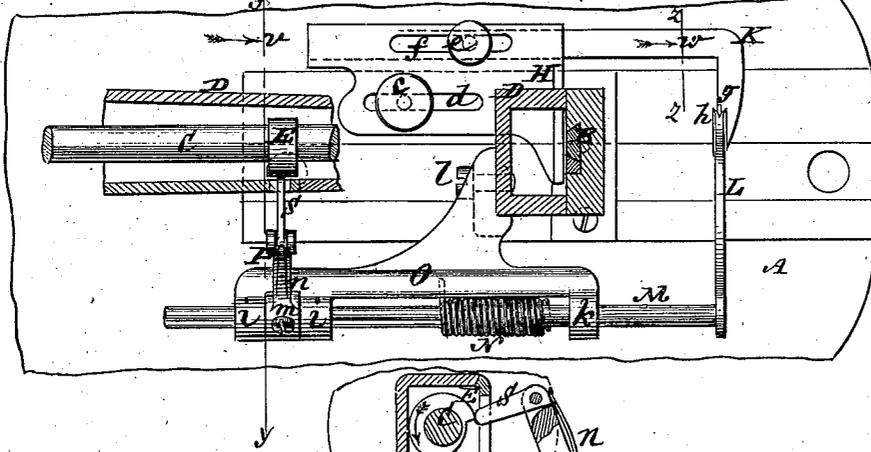


Fig. 2.

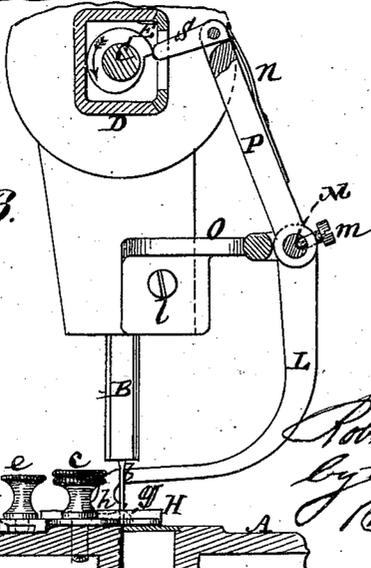


Fig. 3.



Fig. 4.

Witnesses
John Becker
Fred. Haynes

Robert Whitehill
By his Attorney
J. Brown & Allen.

UNITED STATES PATENT OFFICE.

ROBERT WHITEHILL, OF NEW YORK, N. Y.

IMPROVEMENT IN TUCK-CREASERS FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. 184,939, dated November 28, 1876; application filed April 24, 1876.

To all whom it may concern:

Be it known that I, ROBERT WHITEHILL, of the city, county, and State of New York, have invented certain new and useful Improvements in Tuck-Creasers for 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 drawing, which forms part of this specification.

This invention consists in a rocking or vibrating tuck-creaser, operating by spring-pressure with a drawing action to effect the crease, and comprising various combinations of parts, whereby a most perfect action, with every facility of adjustment, is obtained for the creaser.

In the accompanying drawing, Figure 1 represents a side elevation of the forward portion of a sewing-machine with my improved tuck-creaser attached, and as in the act of creasing a piece of cloth. Fig. 2 is a sectional horizontal view of the same on the irregular line *x x*; Fig. 3, a vertical transverse section thereof on the line *y y*, looking in direction of the arrow *v*; and Fig. 4, a vertical view, on the sectional line *z z* looking in direction of the arrow *w*, of the acting portions of the creaser.

A is the cloth-bed of a sewing-machine, and B the reciprocating needle-bar, carrying the needle *b*. C is the main shaft, which operates the needle-bar, and which may be arranged to work within the goose-neck D of the machine. On this shaft is a cam, E, which serves to lift the creaser from the cloth when the feeding-dog is being raised and moved to feed the cloth. G is the presser-foot, and H the guide or gage, against which the folded or hem portion of the cloth I moves when being fed. This gage is adjustable toward or from the line of feed on the cloth-bed A by means of a screw, *e*, and slot *d*.

The stationary portion of the tuck-creaser consists of a bent bar, K, adjustable in or out within the gage H by means of a screw, *e*, and slot *f*, to regulate the distance of a cloth-raiser or creasing-blade, *g*, on the forward bent end of the bar, from the line of feed and gage H, according to the depth of tuck required. This creasing-blade *g* is curved in its upper edge and arranged parallel with the feed, the same

projecting to any desired height above the cloth-bed and receiving the cloth I over it.

The movable portion of the tuck-creaser is composed of a bent creasing arm or lever, L, fast on a rock-shaft, M, arranged at any desired height above the cloth-bed in transverse relation with the feed on the delivery side of the latter.

The bent creasing arm or lever L is formed with a V-shaped grooved portion, *h*, at its lower end, which is arranged over the cloth I in line with the stationary creasing-blade *g*, so that when the lever L is operated to bring the grooved creasing portion *h* down on the cloth it receives within it the creasing-blade *g*, and creases the cloth for the tuck as required. This creasing action is a quick, sharp, and positive one, yet elastic, being effected by a spring intermittently or at intervals—that is, when the feeding-dog is making its back stroke or strokes, said spring acts alternately with the cam E, which liberates the creaser from the cloth by raising the grooved creasing portion *h* of the lever L. Furthermore, the creasing arm or lever L, in being brought down upon the cloth, has a drawing as well as a sharp yet elastic action thereon, thus much more effectually and easily making the crease than when the creaser has a direct or dead action on the cloth. This drawing action is due to the movement of the arm or lever L as derived from the rock-shaft M. N is the spring, by which the creasing arm or lever L is operated to crease the cloth on or over the stationary creasing-blade *g*. This spring, which is here shown as a spiral one, is arranged around and made fast at its one end to the rock-shaft M, and bears at its other end against the back of a bracket, O, in which the shaft M has its bearings *i i k*, said bracket being fastened, by a screw, *l*, or otherwise, to the front leg of the goose-neck D of the machine. The rock-shaft M is made capable of sliding longitudinally within its bearings *i i k*, to provide for adjusting the creasing arm or lever L further in or out, according to the depth of tuck required, and so as to correspond with the adjustment of the creasing-blade *g*. This longitudinal adjustment of the rock-shaft M is provided for by temporarily slackening a set-screw, *m*, which latter serves

to lock or hold a lever, P, on the shaft M between the bearings *i i*, said lever being the operating device by which the shaft M is moved by the cam E in one direction, to lift the grooved creasing-lever L from the cloth after the spring N has performed its duty.

The cam E is suitably shaped to give a quick release of the lever P when the spring N is required to act. To prevent injury or breakage consequent on a back motion of the main shaft C, the cam E, instead of being made to act directly on the lever P, is arranged to do so indirectly, through a toe, S, pivoted to the upper end of the lever P, and retained in position against displacement by a back spring, *n*, when the shaft C is rotating in a forward direction. When, however, the shaft C is rotated in a back direction, and the sharp shoulder of the cam abruptly strikes the toe S, then the spring *n* yields and allows the toe to move out of the way. When it is not required to use the tuck-creaser the same may be readily detached, or the lever L be held up free from contact with the cloth by any suitable means.

In further explanation of the action of the tuck-creaser, when constructed to operate as described, it should be observed that not only has the creasing arm or lever L, when thrown by the spring, a sharp and quick or lively pressing action on the cloth, but that in or during such action it throws no strain whatever upon the machine consequent on the resistance it meets with by contact with the fabric, and, if the resistance be excessive, simply yields without straining the machine or endangering breakage. This independent and elastic creasing action of the marking

arm or lever also reduces labor in running the machine, which only positively operates to lift the creaser after its work has been done. This lift, too, is a gradual one, and the same means which operate to lift the creaser serve to gradually give the requisite tension to the spring that throws the creaser when liberated from its lift, thus storing up power in the creaser to perform its work, free from any resistance on the machine.

I claim—

1. The combination, with the grooved creasing arm or lever L and the stationary creasing-blade *g*, of a spring applied to give said creasing arm or lever its downward creasing or marking stroke, and a rock-shaft, M, actuated by the sewing-machine in a positive manner to lift the creasing arm or lever from the fabric, and to give the requisite force or tension to the spring for throw of said arm or lever by the spring when liberated from positive lift by the machine, substantially as specified.
2. The longitudinally-adjustable rock-shaft M, with its attached grooved creasing arm or lever L, in combination with the operating lever P, the cam E, the spring N, and the adjustable bar K, with its attached creasing-blade *g*, essentially as described.
3. The pivoted toe S, in combination with the spring *n*, the lever P, the cam E on the shaft C, and the rock-shaft M, with its attached creasing arm or lever, substantially as specified.

ROBERT WHITEHILL.

Witnesses:

MICHAEL RYAN,
FRED. HAYNES.