CHARLES E. ROBINSON.

Improvement in Tuck-Creasers for Sewing-Machines.

No. 114,604. Patented May 9, 1871.

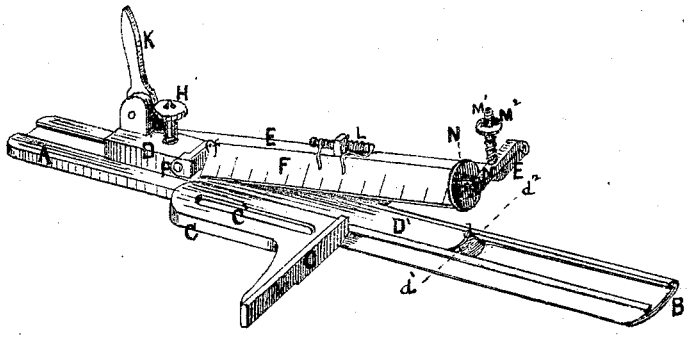

Fig. 1

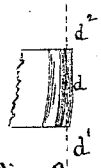

Fig. 2

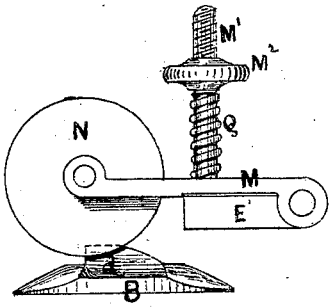

Fig. 3

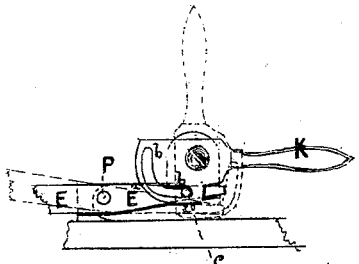

Fig. 4

Witnesses { Frankl. Parker
Jas. L. Lomax

Inventor
Chas. E. Robinson

A.M. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

United States Patent Office.

CHARLES E. ROBINSON, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 114,604, dated May 9, 1871.

IMPROVEMENT IN TUCK-CREASERS FOR SEWING-MACHINES.

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

To all whom it may concern:

I, CHARLES E. ROBINSON, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Tuckers for Sewing-Machine, of which the following is a specification.

Nature and Object of the Invention.

The said device or apparatus is designed for creasing cloth in the proper lines to form tucks or plaits preparatory to being sewed.

The nature of my invention consists in the peculiar construction and arrangement of the several operative parts, as hereinafter described, the object being to render the device simple in construction and positive and effective in operation.

Description of the Accompanying Drawing.

Figure 1 is a perspective view of a tuck-creasing apparatus embodying my invention.

Figure 2 is a view, on an enlarged scale, of the male die-creaser.

Figure 3 is an end view, on an enlarged scale, showing the creasing device in elevation.

Figure 4 is a side view of a part of the apparatus, showing the mechanism for actuating or elevating and depressing the female die or grooved roller.

In the said drawing—

A and B denote the base-plate, which may be of any desirable length, the same having an arm, C, projecting from one side thereof, the said arm having a slot, C′, made through it, by means of which and a screw the said plate may be secured to the top plate of a sewing-machine.

One side of the said arm is formed with a plain vertical face, C″, disposed at a right angle to the base-plate, and serves as an abutment or guide for one edge of the cloth.

D is a head-block, which is attached to a slide-bar, D′, so applied to the base-plate as to be capable of being freely moved longitudinally therein.

On the outer end of the said bar D′, and transversely thereof, a male die-creaser, *d*, is formed, the same consisting of a short knife-edge projection standing out of parallelism with the face of the guide C″, or slightly inclined thereto, as clearly shown in the prolonged line *d′ d″* in fig. 1.

H is a set-screw, by which the block D may be fixed in any desired position.

E is a bar or arm, which is pivoted by a pivot, P, to the head-block, as shown in figs. 1 and 4.

K is a rocker-lever, which is affixed to the head-block by means of a pin or fulcrum, S, on which it freely turns.

The said lever has an eccentric or cam-groove, *b b*, into which a stud, *c*, on the rear end of the arm E, projects, so that (by the conjoint action of the said groove and stud) if the lever K be thrown upward the adjacent end E″ of the arm E will be depressed, and consequently the other end of such arm be elevated, as shown in fig. 1.

Furthermore, there is pivoted to the said arm E a presser-bar or apron, F, one of whose pivots is shown at *f* in said latter figure, the said bar or swinging apron being so disposed that its lower edge shall always rest on the cloth or fabric, whether of greater or lesser thickness.

The said bar or apron has formed on its upper or beveled surface a scale of divisions denoting inches and fractions thereof, by which the creasing-dies may be set or gauged at any desired distance from the guide C″.

L is a spring, which is arranged upon the arm E, and has its two arms resting upon the presser-bar or apron, the tension of the said spring being such as to maintain the presser-bar in contact with the fabric, whether it be the finest muslin or the coarsest linen.

The object of the spring presser-bar or apron is to so press upon the fabric of greater or lesser thickness as to preserve it, as it passes under the bar, from wrinkling or puckering, and by maintaining a steady and uniform pressure to give a proper tension to the cloth or fabric while being creased or creased and sewed.

N is a grooved wheel or female die-creaser, which is pivoted to the arm or link M, which, in turn, is pivoted to the arm E, as shown in fig. 3. The said link or arm is not arranged at a right angle with its carrying-arm, or in parallelism with the guide C″, but is inclined thereto, such inclination corresponding with the line of convergence of the lower member *d*, as shown in fig. 1.

The said wheel N is disposed directly over the male die-creaser or knife-edge *d*, and acts conjointly therewith in forming a crease in the cloth.

Q is a spring coiled around a rod, M′, which extends vertically upward from the arm E through a slot in the arm M.

This rod has a thumb-nut, M″, by which the tension or pressure of the wheel upon the fabric may be duly regulated.

The said wheel N is so disposed with respect to the face of the guide C″ that its plane of revolution, though vertical, is at a slight inclination therewith, the same being in exact coincidence with the increment of convergence of the male die-creaser *d* in relation to the said guide.

The object of so disposing the male and female die-creasers with respect to the guide is to compensate for

the frictional tendency of the creasers to draw the cloth or fold away from the guide while the fabric is passing through the device, and thereby maintain it in its true path of movement.

Thus it will be seen that by my peculiar arrangement of the wheel N and its counterpart *d* with respect to the guide E such wheel and its counterpart perform two distinct functions, viz., creasing the cloth or material, and so acting upon the material as to crowd it toward the guide and keep its fold in contact therewith, whereby the line of creasing will always be preserved in parallelism with the gauge and the line of feed.

I do not claim, broadly, a crease-forming device composed of a grooved wheel and a male counterpart, as I am aware that such, *per se*, is not new. Neither do I claim so arranging the said device that the line of bearing of the male die-creaser and the plane of revolution of the said wheel shall be coincident and in parallelism with the face of the cloth-guide. Nor do I claim arranging the stationary or lower member of the creaser in a plane converging toward the cloth-guide and in the direction of the feed while the upper member has its plane of revolution and action on a plane parallel with such cloth-guide, as such arrangement of parts is shown in Letters Patents No. 65,141, 74,323, and 89,492. Such arrangement of the part of the creaser will not attain the result produced by my invention.

By repeated experiment I have found that by arranging the male and female die-creasers in the same vertical plane and making such plane to converge toward the cloth-guide and in the direction of the movement of the material, a due compensation is obtained to offset the said inherent frictional action of the creasing device, and thus automatically preserve the material in its normal path of movement.

Having described my invention,

What I claim is as follows:

1. The base-plate A B and its arm C with the adjustable wheel and edge-carrying devices, the edge and axle of the wheel being inclined to the face of the guide, and all combined and operating as and for the purpose set forth.

2. The tuck-creasing apparatus above described, the same consisting of the base-plate A B, head-block D, cam-lever K, guide C″, arm E, arm M, wheel N, slide D, male die-creaser *d*, and swinging apron E, combined and arranged together, substantially as above set forth.

CHAS. E. ROBINSON.

Witnesses:

FRANK G. PARKER,

JAS. S. CONANT.