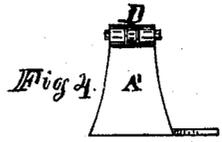
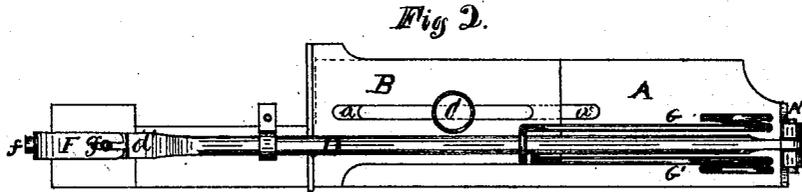


ELIZABETH P. SMITH.

Improvement in Tuck-Creasers for Sewing-Machines.

No. 128,255.

Patented June 25, 1872.



Witnesses

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# UNITED STATES PATENT OFFICE.

ELIZABETH P. SMITH, OF CHICAGO, ILLINOIS.

## IMPROVEMENT IN TUCK-CREASERS FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. 128,255, dated June 25, 1872; antedated June 8, 1872.

*To all whom it may concern:*

Be it known that I, ELIZABETH P. SMITH, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Tuck-Marking Attachments to Sewing-Machines; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 is a side elevation of my said improvement. Fig. 2 is a general plan or top view of the same. Fig. 3 is an end view of the arm, showing the manner of adjusting the spring; and Fig. 4 is an end view of the bed-plate, showing the manner of hinging the arm thereto.

Similar letters of reference indicate like parts in the several figures of the drawing.

My invention relates to that class of tuck-marking attachments which are operated automatically by the needle-bar, and has for its object to form a crease or mark on the fabric parallel to the line of stitch, preparatory to folding the same; and the improvement consists in so curving or bending the forward end of the arm which is operated by the needle-bar of the machine as to receive a vertical pivot which is connected with and actuated by a curved spring affixed to the curved portion of the arm and extending downward and backward to a point slightly above and in advance of the end of the pivot, the said pivot being so arranged as to admit of a slight vertical movement by the yielding of the upper portion of the spring as the lower end of the said pivot is brought in contact with and upon the fabric, thereby holding the same firmly in position jointly with and during the backward movement of the lower end of the spring, whereby the fabric is compressed between the lower end of the spring and pivot by the downward movement of the arm. It also consists in the combination, with the said arm, of springs secured to the bed-plate upon opposite sides of the arm and so arranged as to form a loop through which the arm passes, whereby the proper lateral rigidity of the arm is secured.

In the drawing, A represents the bed-plate, which is made of any sheet-metal of the required thickness, which plate is bent upward at its rear end, forming a vertical upright, A'. B is the

gauge, which is also made of sheet-metal and is loosely fitted upon the upper surface of plate A, and is so arranged as to admit of being moved thereon in the direction of its length. This gauge is provided with a longitudinal slot, *a*, which corresponds with a like slot, *a'*, formed in the said plate, through which is passed a set-screw, C, which engages the bed-plate of the machine, by which the respective parts are firmly secured at the requisite adjusted point upon the machine. D is a horizontal arm, which is hinged at its rear end to the upper extremity of upright A' and extends forward to a point slightly in advance of the forward extremity of plate A. This arm is made of wire of suitable size, and is swedged or made flat at its forward end, which flattened portion is bent in a U-shape, forming two horizontal parts, *d* and *d'*, one above the other, as shown in Fig. 1. E is a vertical pivot which is loosely fitted within apertures formed through the parts *d* and *d'* of the arm, and is so arranged as to admit of a free and easy vertical movement. The lower extremity of this pivot is made flat or wedge-shaped, as shown at *e*, and is arranged in such a manner as to rest upon the fabric transversely with the plate when moved downward by the arm. F is a metal spring, the central portion of which is bent approximating the periphery of the curved portion of the arm, and is firmly secured thereto by a set-screw, *f*, passing through a longitudinal mortise, *f'*, formed in the said spring. The upper portion of this spring extends backward slightly back of the pivot, and is provided at its rear end with a longitudinal slot, *g*, through which the said pivot passes, which pivot is provided on opposite sides, near its upper end, with niches which receive the inner edges of the spring, whereby the said pivot is secured in proper adjustment. The lower extremity of this spring extends downward and backward to a point slightly above and in advance of the lower end of the pivot. Thus, as the said arm is forced downward by the action of the needle-bar, the lower end of the pivot first comes in contact with and upon the fabric, holding the same firmly in position upon the forward portion of the plate, the elasticity of the upper portion of the spring being such as to yield sufficiently to allow the parts *d* and *d'* of the arm to move slightly downward on the pivot, thereby bringing the lower

end of the spring in contact with and upon the fabric, which spring, by the continuous downward movement of the arm, is forced or curved backward, thereby engaging and impinging the fabric between its end and the lower end of the pivot, whereby the requisite crease or mark is formed. G and G' are metal springs, one end of which are each firmly secured to the rear end of plate A and are coiled in an annular form above their point of connection therewith. The opposite end of the said springs extend forward to a point near the center of the arm between its end and the curved portion thereof, and are there united one to the other around the arm or are made of one and the same piece, so arranged as to form an aperture or loop within and through which the arm freely moves. The said springs are so arranged by means of the loop—or by the forward end passing around the arm—as to hold the same in position and thereby prevent any lateral movement of the arm, as an upward movement is imparted thereto by the elasticity of the spring, (as the needle-bar recedes,) by which upward movement of the arm the pivot is removed from the fabric and is forced downward to its normal position by the action of spring F uniformly with the forward movement of the fabric preparatory to the contact of the pivot therewith by the repeated downward movement of the arm. In marking heavy fabric a greater pressure of the pivot is necessary, also a greater space is required between the end of the spring and point of the pivot, both of which are obtained simply by loosening the set-screw and turning the spring upward upon the curved portion of the arm, which enlarges the said space, and also forcing the upper end of the spring downward upon the upper surface of the part *d* of

the arm, thereby increasing the downward thrust of the spring upon the pivot, the shape of the mortise and slot in the said spring being such as to admit of the movement.

It will be observed by reference to the drawing that the portion of the arm forming the parts *d* and *d'* is bent in a U-shape, its forward extremity describing a semicircle, thereby securing a double purpose—first, it forms two separate bearings for the pivot, which holds the same firmly in position and insures a positive vertical movement; second, it enables the spring to be readily turned thereon to any desired point, thereby rendering the same capable of performing its requisite function upon either thick or thin fabric.

I am aware that a vertical spring-pressure pivot and impinging spring are not new.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the curved arm D, pivot E, and adjustable curved spring F, when its upper portion is arranged to press the pivot downward upon the fabric and its lower portion to impinge the fabric against the pivot, substantially as described.

2. The combination of bed-plate A, springs G and G', curved arm D, pivot E, and adjustable curved spring F, all constructed and arranged to operate together, substantially as and for the purpose set forth.

The above specification signed by me this 24th day of October, A. D. 1871.

ELIZABETH P. SMITH.

Witnesses:

J. W. MERRIAM,  
N. H. SHERBURNE.