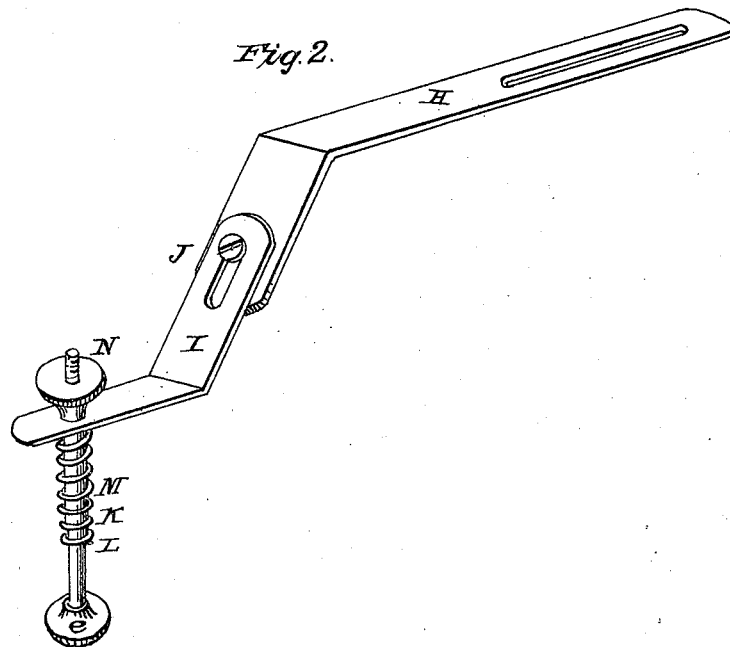
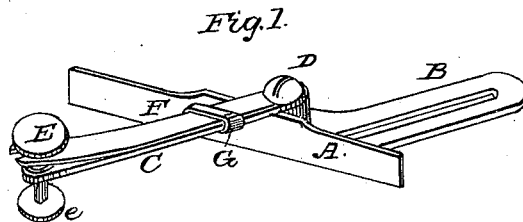


E. H. KNIGHT.
Sewing Machine Guide

No. 54,367.

Patented May 1, 1866.



WITNESSES.

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IMPROVEMENT IN SEWING-MACHINE GUIDES.

Specification forming part of Letters Patent No. 54,367, dated May 1, 1866.

To all whom it may concern:

Be it known that I, EDWARD H. KNIGHT, of Washington city, District of Columbia, have made new and useful Improvements in Sewing-Machine Guides; and I do hereby declare the following to be a full, clear, and exact description of the nature, construction, and operation of the same, sufficient to enable one skilled in the art to which it appertains to construct and use the same, reference being had to the accompanying drawings, which form part of this specification, and in which—

Figure 1 is a perspective view of a guide adapted to be attached to the cloth-plate of the machine. Fig. 2 is a perspective view of a guide adapted to be attached to the bridge-piece or stationary arm of the machine.

The same letters refer to corresponding parts in the different figures.

In the drawings, Fig. 1 represents a guide-edge, A, with a slotted portion, B, to be secured by a set-screw into the cloth-plate, the slot admitting of the guide-edge being set at the required distance from the needle, according to the desired distance of the seam from the edge of the cloth.

C is a plate so secured to the top of the guide-edge as to be adjustable in a horizontal plane thereupon, being fixed at the required position by the tightening of the screw D, or by any other equivalent means, such as a square or polygonal aperture in the plate C and a stud of corresponding shape in the place of the screw D.

E is a pin or plunger, which may be shod with a button, *e*, if necessary, and F is a spring held in position by the set-screw D, and bearing down upon the plunger E by means of the engagement of its slotted or perforated end with a shoulder upon the plunger. The strength of the spring is adjustable by any suitable means, such as a strap, G, which embraces the spring F and plate C, increasing the pressure as it is pushed out from the guide-edge.

Fig. 2 shows a sewing-machine guide similar in principle to Fig. 1, but intended for attachment to the bridge or arch of the machine, instead of to the cloth-plate. The slotted plate H is secured underneath the arch by a set-screw in the usual manner, the slot admitting of the change of the center of vibration of the plate H upon the set-screw as a pivot, so that by the

effective length of the plates H I, and their capacity for adjustment in a horizontal plane, any portion of the cloth can be reached by the lower end of the plunger within the definite and required range.

The screw J attaches the plates H and I, which have capacity of vertical adjustment for the evident purpose of adapting the guide to varying thicknesses of cloth, or to different machines whose arches are at different elevations above the cloth-plate.

As in Fig. 1, a plunger, E, is provided, and the height of the plate I above the cloth-plate admits of the use of a spiral spring, K, which bears upon a pin, L, on the plunger, and upon the under side of the plate I. The plunger, for the sake of lateral steadiness, passes through a pipe, M, and its upper end is threaded and provided with a set-nut, N, which regulates the limit of downward motion of the plunger relatively to the plate I and the effective force of the spring, the exact strength and range required being obtained by means of the set-nut N and the relative vertical adjustment of the plates H I, retained by the set-screw J.

When required, a guide-edge similar to A in Fig. 1 may be attached to the plate I, and a similar spring-pin arrangement to that shown in Fig. 1 be mounted upon it.

This is probably sufficiently descriptive of the device, which, in its various described forms, consists of an adjustable spring-pressure pin, shod or otherwise, which has a capacity for horizontal adjustment, so as to bring the pressure to bear upon the required portion of the cloth, it being understood that my device is not intended as a substitute for, but to be used in machines employing the ordinary pressure foot or pad of any well-known form.

I do not by this device at any time hold the cloth firmly by the pressure of the spring-pin thereupon, so as to make the cloth revolve upon the said pressure-point as a center when moved by the feed; but my device is designed to bring a moderate pressure upon the cloth, which slips under the said pin, and when used without a guide-edge is, by the partial detention, deflected to such an extent as to make a circular seam of a radius greater than the distance between the needle and the said pressure-pin, and the greater the pressure the shorter the radius. When used with a guide-edge the

graduation of pressure adapts the device to the requirements of the shape or quality of the fabric under treatment.

Fig. 1 shows a guide-edge, and Fig. 2 shows the spring-pin without my guide-edge. The latter-mentioned feature, however, may be added to the Fig. 2 if needed, as has been already mentioned.

The general feature of the deflection of the path of the cloth out of a straightforward course by pressure upon one side of the seam, or, rather, of the line of direction of the feed, has been referred to by other parties. The effect is to deflect the cloth toward the opposite side, and the practice has been to put a guide-edge to arrest it at a determinate point, the guide-edge being parallel to the seam when the latter is straight, and, whether the same be straight or otherwise, determining, by its distance from the needle, the distance of the seam from the edge of the cloth.

I do not claim a pointed foot or pin which penetrates the cloth to form a center of revolution of the cloth to sew a circular seam, the radius being the distance between the needle and the pointed foot, as this feature is

found in many machines adapted to sew circular seams of varying radii.

My invention is confined to a pressure pin or foot under which the fabric may slip with more or less freedom, according to the degree of deflection required, the foot pressing at one point only, and being incapable of penetrating the fabric, or of so pressing thereupon as to fasten it and form a center on which the fabric rotates under the action of the feed mechanism.

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

1. An adjustable spring pressure pin or foot constructed substantially as described, and adapted to press at one point upon the cloth outside of its line of seam to deflect the same, but not by extreme pressure or penetration to form a center of revolution.

2. The said spring pressure pin or foot as adjustable in a horizontal plane, substantially as described.

EDWARD H. KNIGHT.

Witnesses:

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W. F. HALL.