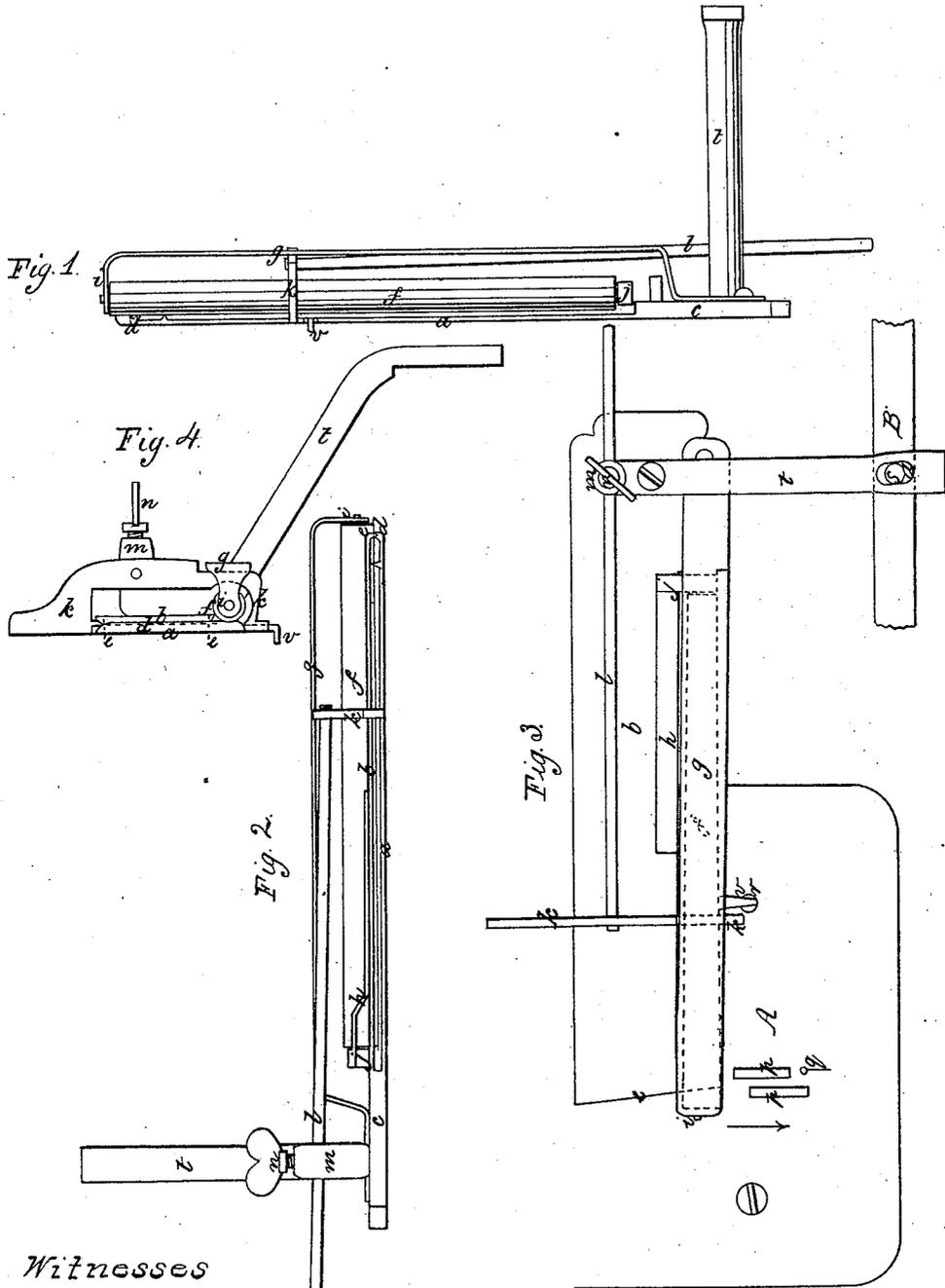


W. L. FISH.  
GUIDE FOR SEWING MACHINES.



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## IMPROVEMENT IN GUIDES FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. 40,464, dated November 3, 1863.

*To all whom it may concern:*

Be it known that I, WARREN L. FISH, of Newark, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Sewing-Machine Guides; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a right-hand-side view of a guide having its parts arranged for what is known as the "Wheeler & Wilson sewing-machine." Fig. 2 is a left-hand-side view of the same. Fig. 3 is a plan of the same. Fig. 4 is a front view of the same.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to the attachment to a sewing-machine guide of a roller having a smooth periphery composed of india-rubber, or other gum or soft material of a similar nature, of sufficient length to press the whole width of a tuck, hem, or plait for the purpose of keeping it smooth and preventing it from puckering, and at the same time preventing it from slipping away from the gage; and it consists in a certain arrangement of such roller, in combination with the gage-plate, as hereinafter described.

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

*a* is a long narrow flat plate, which may be termed the "base-plate" of the guide, and *c* is another flat plate, arranged above the said plate *a*; and united therewith at one end, as shown at *c* in Figs. 2 and 3, in such manner as to leave a space between the two for the passage of the cloth of about one-sixteenth of an inch in depth, the length of the said space from the point where their junction commences to the opposite ends of the plates being equal to the greatest desirable width of hem, tuck, or plait. The base-plate is intended to lie flat upon the work-plate or bed of the sewing-machine, with its length at right angles to the direction of the feed. The upper plate, *b*, is thin enough to be flexible to permit the introduction of the cloth between the double and single lips *d* and *e*, which are formed at the open ends of the two plates by turning up the lower one and turning down the upper one.

The upper plate, *b*, is made sufficiently narrower than the lower one, *a*, to make room for the smooth-faced india-rubber-covered roller *f*, above the latter plate, and outside of that edge of the former one from which the cloth is moved in the feeding operation. This roller is made long enough to extend from near the union of the two plates at *c* beyond the lipped extremities of the plates, and the journals of the said roller are fitted to bearings *i* and *j*, attached to the two springs *g* and *h*, which are secured, the latter to the plate *b* and the former to the plate *a*, and which exert a downward pressure upon the roller.

*k* is the gage-plate, against which the folded edge of the hem, tuck, or plait runs in the sewing operation, and which regulates the width of the hem, tuck, or plait. This plate is arranged in an upright position parallel with the feed movement, and extends across the plates *a* and *b* and roller *f* to bear upon the work-plate or bed of the sewing-machine, and a portion of it enters between the plates *a* and *b*. The said plate is firmly secured to a rod, *l*, which is arranged at right angles to it, and fitted to slide through a fixed post, *m*, which is secured to the united portions of the plates *a* and *b*, and this post is fitted with a set-screw, *n*, to fasten the rod *l* and secure the gage-plate at a suitable distance from the ends of the plates *a* *b* and from the line of stitching, according to the desired width of hem, tuck, or plait.

In Fig. 3 there is shown in red outline a portion of the work-plate *A* and a portion of the stationary arm *B* of a Wheeler & Wilson sewing-machine, illustrating the arrangement of my guide. *pp* are the slots through which the teeth of the feeder work, and the direction of the feed is indicated by an arrow. *q* is the needle-hole. *r* is the screw-hole in the plate *A*, in which is inserted the screw for the attachment of what is known as the "small gage" of that machine, and *s* is the screw-hole in the arm for what is known as the "large gage." *t* is an arm attached rigidly to and standing out at a right angle from the connected portion *c* of the plates *a* *b* of my guide, and having provided in it a screw-hole, *u*, for the reception of a screw screwing into the hole *s* to secure the said arm *t* to the arm *B*. *v* is a small lug projecting downward from the plate *a* in a position to enter the hole *r* (the screw being

removed from the said hole) when the arm *t* is secured to B, as above described, for the purpose of steadying the plate *a* on the work-plate A, and preventing the friction of the cloth passing between the plates *a* *b* from displacing the guide, which, owing to the distance from the screw at *s* *u* and the leverage produced on the said screw, it would otherwise be very liable to do.

The operation of my guide is as follows: The gage-plate *k* is adjusted at a suitable distance back from the needle-hole *g*, according to the desired width of the hem, tuck, or plait, and the cloth, having been doubled, is inserted between the plates *a* and *b*, with the edge of the fold against the gage-plate *k*, and on the machine being set in operation the cloth is drawn along in the direction of the arrow shown in Fig. 3, and by its friction upon the bottom of the roller *f* produces a rotary motion of the said roller, which, owing to its smooth surface, presses out the cloth smoother than a corrugated or toothed metallic roller, which has been employed in some guides arranged in a similar

manner, and, owing to the adhesive character of the said surface, prevents the cloth from running away from the gage-plate. The lips *d* *e* on the plates *a* *b* prevent any other portions of the said plates from producing friction on the cloth, and the upper obliquely arranged single lip, *e*, matching in the groove in the lower correspondently-arranged double one, *d*, the said lips tend to lead the cloth toward the guide; while the greater friction produced by the double lip counteracts the tendency of the feeding device to move the lower thickness of the cloth faster than the upper one, and thereby producing a puckering of the hem, tuck, or plait.

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

The arrangement of an india rubber roller, in combination with the gage-plate *k*, substantially as herein specified.

WARREN L. FISH.

Witnesses:

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