W. F. ENSIGN.

Felling Guide.

No. 35,972. Patented July 22, 1862.

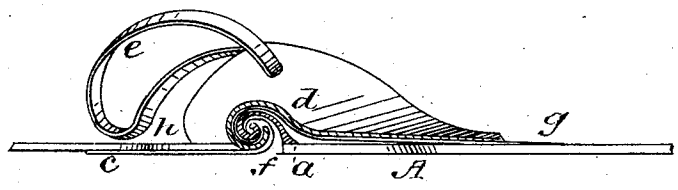


Fig. 2

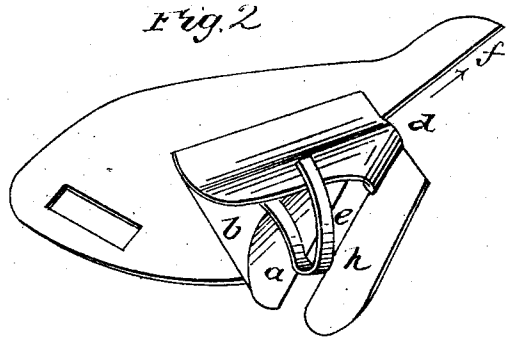


Fig. 3

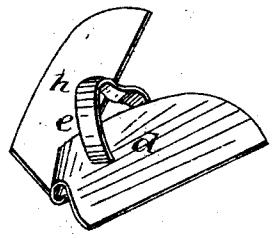


Fig. 4

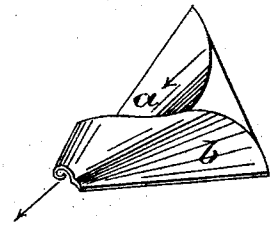
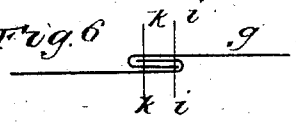


Fig. 5

Fig. 6



Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM F. ENSIGN, OF RENSSELAER COUNTY, ASSIGNOR TO JAMES WILLCOX, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN FELLING-GUIDES FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. **35,972**, dated July 22, 1862.

To all whom it may concern:

Be it known that I, WILLIAM F. ENSIGN, of the county of Rensselaer and State of New York, have invented a new and useful improvement in devices for turning and guiding the edge or edges of cloth and other material in sewing-machines, the whole constituting, when combined, a felling-guide; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 represents a front or advance end view of my improved felling-guide; Fig. 2, a view in perspective thereof, seen from the rear. Figs. 3 and 4 views in perspective of details detached; and Figs. 5 and 6, diagrams in illustration of the production of a felled seam by this my invention.

Similar letters indicate similar parts throughout the figures.

Numerous devices have before been devised for hemming, cording, and tucking automatically as the material has been fed across the path of the needle in sewing-machines. These guides have been variously constructed to turn the edge of the cloth, and have in some instances been more or less twisted and made adjustable by means of screws or their equivalents, to secure the proper fold or lap and to adapt the guide to different thicknesses of material. None of these devices, however, have been applicable to what is termed in sewed work "felling," and they have importantly differed in the construction of the "former" for turning the edge of the cloth from that comprised in the device represented in the accompanying drawings, and from its adaptation to "work" different thicknesses of material, whether the said former or formers be used for felling or for hemming or otherwise folding the edge of the cloth. By "felling" or "producing a felled seam" is meant the interlocking of two folded edges of the same material or two folded edges of different material by turning the two edges so that they will receive within them the lap or overlapping portion of each other, and then binding the same together by stitching.

The instrument, taken as an entirety, is or may be arranged on the cloth-bed of a sewing-machine much in the same manner as "hemmers" are usually combined therewith, and it may be attached thereto or thereon by means of a plate, A, having a slot in it that admits of its adjustment relatively to the needle and feed, which latter is here supposed to be in the direction of the arrow shown in Fig. 2, the advance edge *f* of the plate being the guiding-edge for the seam as it issues from the formers. The one former *a* is made with a wing projecting in the rear and lying at an angle across the path of the feed and scooped or shelving upward, from whence it is connected by an extension or back, *b*, to the plate A, and made gradually of a taper spiral or convolute from toward its front end, the contraction of the spiral being from rear to front. The other former, *d*, is also a wing arranged to lie a little above or over the off side of the back piece, *b*, to which piece it may be connected by a bent arm, *e*, that permits of spring to said wing and forms of it an elastic blade. It likewise is made of taper, spiral, or convolute form at its forward end, corresponding to the forward end of the other former and surrounding the latter, so as to leave an intervening cloth space between them; and it is further provided at its forward end (or the same is otherwise suitably attached) with an elastic blade, *h*, extending backward and lying slightly above the lower cloth-surface, also set at a suitable distance from the wing of the first-mentioned former *a*. This construction of either former makes of each an elastic blade, as it were, to accommodate different thicknesses of cloth, the one former, *d*, being a spring held or hung by the arm *e*, and the wing *h* springing to admit the cloth under it onto the inner former, *a*, and the convolute ends of both formers being left free to adjust themselves.

From the foregoing description and by reference to the drawings the operation of the instrument as a felling-guide needs but little further explanation. The arrows in Fig. 4 indicate the direction in which the material or materials are passed through or round either former, and the red lines *c* and *g* in Fig. 1 represent two pieces of different materials or two edges of the same material under operation in the feller, as seen transversely to the line of feed. Thus, supposing both edges of the material or both materials, *c* and *g*, to be fed simultaneously, the one entering under *h*,

and one on or over the wing of the former *a*, and the other entering under the wing of the other former, *d*, the two edges or materials will be caused, as they pass through the spiral ends of the former, to be lapped, so as to lie when flattened within each other, Fig. 5 in the drawing representing the relative positions of *c* and *g* as they leave the formers, and Fig. 6 their positions when afterward flattened by passing under a pressure-bar or otherwise during the progress of the feed. The vertical red lines *k* and *i* in Fig. 6 indicate the lines of stitching to hold together the seam, which, however, at least so far as concerns any particular mode of sewing the turned and interlocking edges together, forms no part of this invention.

Having now described my invention, I claim as new and useful in sewing-machines—

1. Guides which serve to fold or turn the edge of the material being sewed, constructing the former or formers of said guides of an elastic blade or blades capable of springing to adapt themselves to different thicknesses of material, substantially as herein specified.

2. The combination and arrangement in one instrument, and relatively to each other, either of the surfaces of the former or formers, so that two edges engaged simultaneously within said surfaces, of the same or different material, shall, by the feed, be presented to the needle and across its path folded and interlocked, substantially as described and shown.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

WM. F. ENSIGN.

Witnesses:
DANIEL KING,
JAMES DAUGREZ.