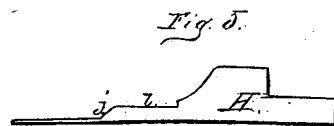
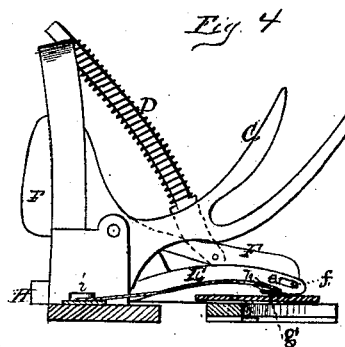
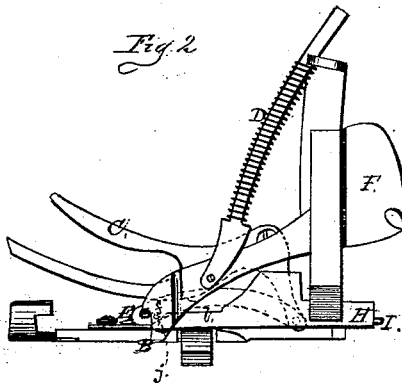
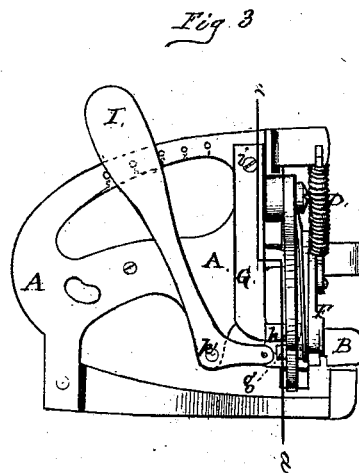
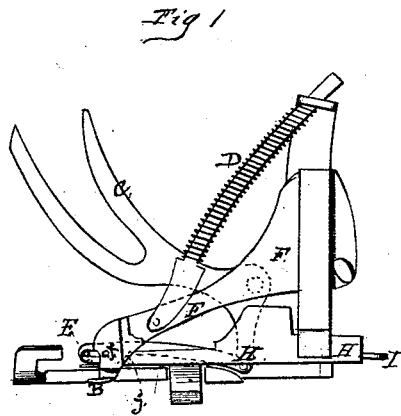


J. A. DAVIS.

Gathering Device for Sewing Machines.

No. 106,788.

Patented Aug. 30, 1870.



Witnesses
John J. Halsted
J. F. Beale

Inventor
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UNITED STATES PATENT OFFICE.

JOB A. DAVIS, OF WATERTOWN, NEW YORK.

IMPROVEMENT IN GATHERING DEVICE FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. **106,788**, dated August 30, 1870; antedated August 17, 1870.

To all whom it may concern:

Be it known that I, JOB A. DAVIS, of Watertown, in the county of Jefferson and State of New York, have invented certain Improvements in Gathering Attachments for Sewing-Machines; and I do hereby declare that the following, taken in connection with the drawing which accompanies and forms part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

My present invention is an improvement upon the sewing-machine gathering apparatus patented to me July 27, 1869, No. 93,063, and has for its object the more positive and certain action of the gathering-knife, and also the providing of means whereby the relative lengths of the band or ungathered fabric, and of the piece or strip to be gathered and secured thereto by stitching, may be determined and made proportionate to the length or degree of gather, as the same may be varied. It consists in the combination of two inclined wedge-edged yielding pieces, the one of which, in its reciprocations, rides over and under the other to assist in giving the movements to the gathering-knife, and in the combination with such knife of an adjustable graduating lever and its slide, and a graduated scale.

Figure 1 is a side view, and Fig. 2 a similar view, of my device, the parts in the first figure being shown as they appear when the knife-edge is forward, and in the latter figure as they appear when forced backward by the downward movement of the needle bar or arm of the sewing-machine. Fig. 3 is a plan or top view, and Fig. 4 is a sectional view in the line *a a* of Fig. 3. Fig. 5 is a detached view, showing the side of the slide which is operated by the graduating-lever.

The general features of the entire apparatus need not be particularly described, as they are in the main similar to those in my above-named patent, somewhat modified in form to adapt them to the present improvements, A being the bed-plate, B the gathering-knife, and C the slotted lever, receiving its downward motion to force back the knife directly from the needle bar or arm of the sewing-machine, and getting its upward motion indirectly from the spring D, which directly

forces downward and forward the gathering-knife to effect the gathering of the cloth.

Instead of a friction-roller upon the shorter arm of lever C, as in my former patent, and which served the purpose of pushing back the knife, and incidentally lifting it during such back motion, I connect to the outer extremity of such shorter arm, by a pivot, a piece, E, having a longitudinal slot, *e*, in its forward end, which permits it to ride a little upon a pin, *f*, upon one side of the knife bar or shank F, the piece E having a side projection, *g*, which has a slight forward inclination to the horizon, and tapering both at its forward and rear edges, so that its rear edge shall always pass over, and its front edge shall always pass under, a similar inclined projection, *h*, upon a spring-piece, G, secured to the bed-plate, as shown at *i*. By means of this construction a positive action is secured, notwithstanding each wedge-piece has a yielding support.

The slot *e* is so made as to its length and position that the gathering-edge of knife is actually lifted vertically from the cloth before it is moved horizontally, this lift being given by the riding up of the wedge-piece *g* upon the top of the wedge-piece *h*, after which lift, as soon as the forward end of the slot acts upon the pin *f*, the backward movement of the knife commences.

The graduating mechanism is as follows: H is a sliding piece, fitted to slide in suitable ways in the frame, and having toward its forward end an incline, *j*, on its vertical side. This slide is connected by a pivot to a graduating-lever, I, turning on a center pin or screw, *k*, the lever being provided with a detaining or stop pin on its under side, to enter one or other of the holes 1, 2, 3, &c., in the bed-plate. This graduating-lever effects the variation of the size of the gather to be made, thus: The lever, being shifted by hand, carries forward or backward, as desired, the slide and its incline *j*, thus determining the period at which the gathering-knife in its forward movement shall drop down from the ledge *l* and begin its gathering action upon the upper strip of fabric. As long as the knife is lifted by the ledge, no gathering can take place. The traverse or reciprocating motion of the gatherer does not vary in its extent, but is always the same.

The position of the incline alone controls the size of the gather, and by previously graduating the scale properly and accurately with regard to the fineness or coarseness of the gather, the operator is enabled to regulate the apparatus so as to measure with precision the proportion of cloth to be taken up in gathering relatively to the ungathered piece, and therefore so to cut their lengths before they are put into the machine that when the work is done the ends of the two pieces shall come out evenly together. For instance, a given number of stitches to the inch being known, (say twenty,) and the graduating-lever being set at 1 on the scale, it will give a quarter fullness to the gather—that is, four inches will be gathered down to three inches of the band; if set at figure 2 of the scale, it will gather to one-half—that is, two inches of cloth will be gathered down to one inch; if set at figure 3, it will be gathered to one-third; at figure 4, to one-fourth, and so on.

When the pin in the graduator is shifted below or to the left of figure 1, the knife will not gather at all, but both fabrics will be sewed together plain, as is often needed, particularly in a portion of the sewing of shirt-sleeves to the cuff or wristband. When from this zero-point the lever is shifted a little toward the figure 1, the gathering will commence to take place with a very fine gather.

I claim—

1. The combination of the inclined wedges *g h*, each having a yielding support, with the gathering knife, as and for the purpose set forth.

2. The combination of the gathering-knife, the adjustable graduating-lever and its slide, and the graduated scale, substantially as set forth.

JOB A. DAVIS.

Witnesses:

JOHN J. HALSTED,
J. F. BEALE.