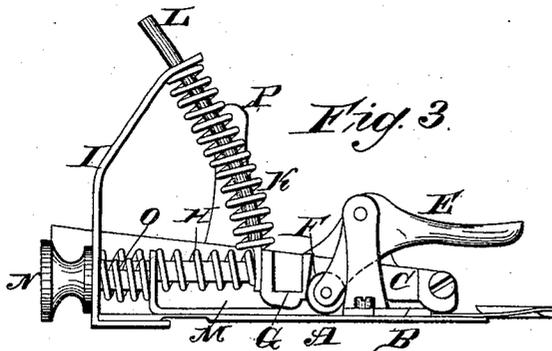
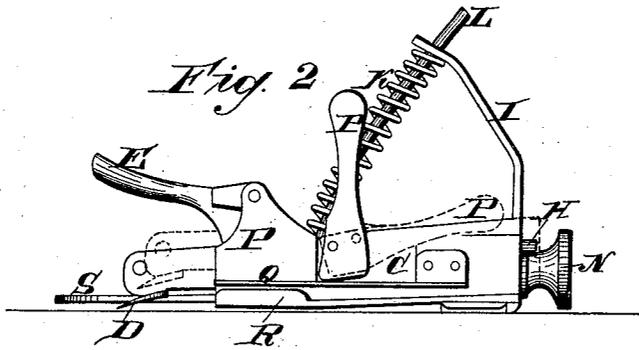
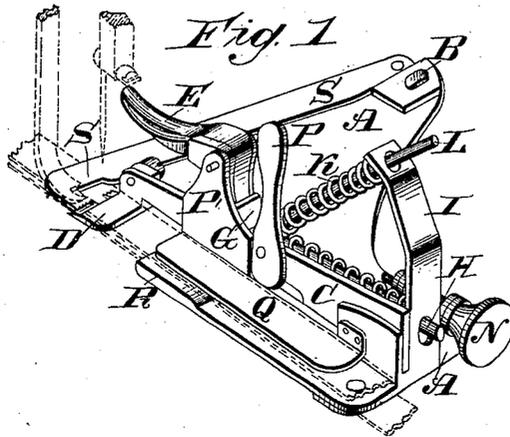


J. A. DAVIS.

Gathering Attachment for Sewing Machines.

No. 93,063.

Patented July 27, 1869.



Witnesses:  
John J. Hallett  
Wm. C. Barnack

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# UNITED STATES PATENT OFFICE.

JOB A. DAVIS, OF WATERTOWN, NEW YORK.

## IMPROVEMENT IN GATHERING ATTACHMENTS FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. 93,063, dated July 27, 1869.

*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 Mechanism for Gathering the Cloth in Sewing-Machines; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

The main object of my improvements in gatherers is to adapt them for use on machines in which a needle-feed is used, and that which I have illustrated in the accompanying drawings is arranged for the use upon the machine known in the market as the "Davis" machine, and in which the needle-feed is employed.

In my device no "separator" is employed at the point where the feed takes place, either between the feeding device and one piece of cloth, or between the two pieces of cloth, and the piece of cloth to be gathered and stitched to the piece which is not gathered is the under one of the two pieces.

In the drawings, Figure 1 represents a perspective view, Fig. 2 a side view, and Fig. 3 a view of the opposite side, of the apparatus.

A is the bed or base of the apparatus, which may be attached to the table of the sewing-machine by means of a screw passing through the slot B, made for this purpose. C is a slide-bar, arranged to move in a way or guide, and whose forward end is furnished with a knife-edge, D, preferably serrated, as shown, which forms the edge which bears upon the upper surface of the lower piece of fabric, and pushes it forward when making the gather therein. In this piece is a notch, to permit the passage of the needle. E is a two-armed lever, the longer arm of which is pressed downward by the nut or a pin on the needle-bar as it descends, as shown in Fig. 1, and the shorter arm of which has a friction-roller, F, thereon, as shown in Fig. 3. G is a projection on the slide C, and its forward face is slightly inclined from the perpendicular, as shown. This slide is constantly pressed forward by a spiral spring on rod H, which plays through a hole in upright I, the slide being also pressed downward constantly by another spiral spring, K, on rod L, this latter rod at one end play-

ing through a hole in the upright I, and at its other spanning the rod H. M is a gage-piece, adjustable forward and backward by means of nut N and spiral spring O, and having at its forward edge an incline or wedge, this piece serving to adjust the length of the gather, in a manner hereinafter explained. P is a hand-lever, which, when in the position shown in black lines, performs no duty, but when in the position shown in red lines, performs the duty of forcing back and lifting up from the cloth and out of operative action the gathering-edge D, and at the same time dropping the lever E too low for the needle-bar to actuate it. This back and upward movement is due to the form and center of motion of the lever, the lever bearing against the upright P' to press the slide back, and the increased distance between the pivot of the lever and its lowest edge when turned down causing it to be lifted, while the greater weight of the longer arm of lever E, when G is drawn away from its lower and shorter arm, permits the same to drop by gravity beyond the reach of the nut on the needle-bar. Q is a spring-piece, secured to an upright on the frame, and R is a thick piece of metal located immediately beneath it, attached at one end only to the bed-plate, and loosely, so that its forward end may drop by its own weight upon the cloth. The piece R is made thick enough to separate the two pieces of cloth passing through the machine far enough to permit the knife-edged gatherer to play freely without any risk of acting upon the upper piece, and it is made heavy enough to act as a smoother of the lower fabric, while the spring Q is made to press upon it sufficiently to act as a smoother for the upper piece of cloth which passes between. The upper fabric is designated in blue in the drawings, and the lower one in red lines.

Such an arrangement of self-acting smoothers operating, as they do, upon both fabrics before they reach the gathering devices, relieve the operator from constantly watching and attending to keeping them smooth, as is customary, while it will be observed that they do not perform any duty such as separators heretofore used, which, at the point where the feed takes place, have been employed to prevent the feed-dog while acting on the upper

fabric from taking any hold upon the lower one.

It should be here remarked that these parts Q and R, while desirable in the apparatus, may both be dispensed with, and yet the gathering devices would work perfectly.

S is a long spring, secured at one end to the bed, as shown, and free at the other end, which is of such shape and size and so located as to come directly beneath the presser-foot of the sewing-machine, as seen in Fig. 1, and serve as a presser upon the cloth and a shoulder, against which the knife-edge may crowd the cloth, and form a more perfect gather than if the ordinary presser-foot were used for this purpose. If, however, this spring-piece and its shoulder were not employed, the devices could operate to gather successfully but not so satisfactorily, as the presser might come in contact with the gatherer, and the goods would have a tendency to be pulled back in a measure.

The apparatus being applied to the sewing-machine, the hand-lever P is turned down, as shown in red, to lift the knife from the table to facilitate the introduction of the cloths to be operated upon, the same action also being had to remove them from the machine. At this stage, in many kinds of work where gathered goods are stitched to ungathered goods—as, for instance, in stitching and gathering a shirt-sleeve to its band or cuff—it is often required to sew both fabrics together for a little distance before gathering at all, and also to do the same after the gathered portion is finished.

By my apparatus no impediment is offered while the knife-edge is up and back, as above mentioned, to using the sewing-machine for any required distance of plain sewing, and until the gathering device is needed to be brought into action, and which may then be done immediately by simply turning up again the hand-lever. The descent of the needle-lever, as before stated, forces down the lever E, which, through the action of roller F, pushes back G, carrying the slide C and its knife-edge with it, the continued back movement causing the lower face of G to rise up the incline or bevel on the gage M, and so lift the knife-edge off the goods; and when the needle rises and releases E the force of the two spiral springs, which, as before described, act upon the slide, suddenly presses it forward and downward, the period of its descent being previously determined by the adjustment of the position of the inclined edge of the gage, and this determining the size or length of each gather.

The object of the incline on G and the roller

on E is as follows: The incline permits the lever E, through its shorter arm, slightly to lift the knife-edge to clear the cloth, even before the part G has risen upon M, and during the forward motion of the knife and its slide the roller offers no resistance to the proper action of the inclined coiled spring in forcing down the slide.

By means of this apparatus the needle and thread are not carried directly through the gather, as is customary; but the perforation takes place in rear of each successive gather, so that, in fact, each stitch embraces or envelops a gather.

I do not claim the use of a separator at the point of sewing, as such a device has been heretofore used.

I claim—

1. In combination with the reciprocating gatherer, springs to give a downward pressure and a forward movement to the gatherer, and a lever for imparting to it its backward movement, and which receives its motion directly from the descending needle-bar, substantially as shown and described.

2. The combination of the inclined-surfaced slide with the lever and its friction-roller on the short arm of the lever, substantially as and for the purpose set forth.

3. The combination, with the reciprocating gatherer, of the adjustable gage M, for varying the size or length of the gather, substantially as shown and described.

4. The combination, with the reciprocating gathering-edge D, of the plate R, adapted to be pressed down upon the under piece of fabric, and the spring Q, which bears it down, and which also bears upon the upper piece of fabric interposed between the spring and plate, both these devices being located in rear of, and out of reach of, the gathering-edge.

5. The combination, with the gathering-edge D, of the lever P and upright P', to lift the gathering-edge from the fabric and draw it back out of operative action, for the purpose set forth.

6. The spring-piece S, arranged to be interposed between the ordinary presser-foot of a sewing-machine and the fabric, to keep the work smooth after it is sewed, and prevent the tightening of the stitch from drawing it back.

7. The described gathering mechanism as a whole, constructed and operating as shown and described.

JOB A. DAVIS.

Witnesses:

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