

J. CRANDELL.
Sewing-Machine Gatherer.

No. 84,414.

Patented Nov. 24, 1868.

Fig. 2.

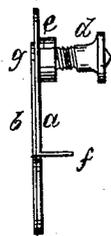


Fig. 1.

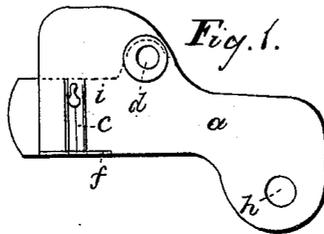


Fig. 3.

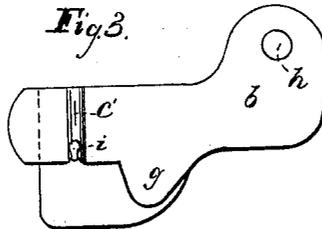
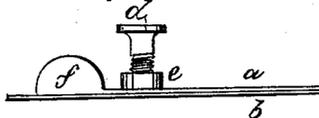


Fig. 4.



Witnesses

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United States Patent Office.

JOHN CRANDELL, OF CHICOPEE, MASSACHUSETTS, ASSIGNOR TO
LAMB KNITTING-MACHINE MANUFACTURING COMPANY.

Letters Patent No. 84,414, dated November 24, 1868.

IMPROVEMENT IN GATHERING-ATTACHMENT FOR SEWING-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JOHN CRANDELL, of Chicopee, in the county of Hampden, and Commonwealth of Massachusetts, have invented a new and improved Gathering-Attachment for Sewing-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 is a plan view of said attachment;
Figure 2 is an end elevation of the same;
Figure 3 is a plan view, (reverse;) and
Figure 4 is a side elevation.

Said attachment is designed to be applied to the cloth-plate, so called, of an ordinary sewing-machine, (either a single-thread or double-thread machine,) and is so constructed that two pieces of cloth can be sewed together by the ordinary action of the sewing-machine, the lower of said pieces being gathered or "ruffled" by the action of the attachment co-operating with the action of the feeding-device of the machine, the sewing together and the gathering being performed at the same operation. The ordinary processes of gathering, ruffling, or puffing fabrics are thus rapidly and regularly performed, and the amount of gathering, or the relative length of the lower or ruffled cloth to the upper or ungathered cloth, can be readily and accurately adjusted by the operator.

The construction of my invention is as follows:

The attachment, as shown, consists of two plates of sheet-metal, of a conformation hereafter described, which are riveted or otherwise firmly fastened together at one end, a screw, for regulating the distance of the upper-plate from the lower, a nut, in which such screw turns, and which is attached to the upper plate, and a projection, for the foot to rest against.

The form of the lower plate, *b*, is shown in fig. 3, and that of the upper plate in figs. 1 and 4.

Like the ordinary hemming-devices and gauges which are used upon sewing-machines, the united plates, *a* and *b*, have an ear, through which is the circular opening *h*, and a thumb-screw, passing through *h*, screws into a hole in the cloth-plate, provided with a female-screw thread. An ear, *g*, also projects from the side of the lower plate, as an end bearing for the screw *d*, and it also extends beyond the upper plate at the end, as shown by the dotted line in fig. 3.

The upper plate projects beyond the lower one at the side at which the cloth leaves the attachment, as shown in the dotted lines in fig. 1.

The slot *i* in the lower plate, and the elongated opening over it in the upper plate allow the passage of the needle.

As the tendency of the moving cloth is to draw the attachment in the direction in which the cloth is mov-

ing, a projection, *f*, is formed upon the upper plate, at a right angle to the plate, the inner side of which bears against the end of the presser-foot, and acts as a stop, to prevent such sidewise movement of the attachment.

A slight ridge is formed in the lower plate, extending from the slot *i* nearly to the other edge of the plate, and a corresponding recess or groove in the upper plate. The ridge and groove are not, however, absolutely essential to the successful operation of the attachment.

As the plate *a* is too thin to afford a proper bearing for the screw *d*, I attach a nut, *e*, to the upper side of the plate, in which nut the screw turns.

As the form of the sewing-machines produced by different manufacturers varies, it will be necessary to vary the form of the ear, the length of the plates, and other details of form, to make the same applicable to the various styles of machines, while the essential features of the invention and the principle of its operation will remain the same.

The operation of my invention is as follows:

The attachment is screwed to the cloth-plate of the sewing-machine to which it is adapted, and a simple gauge is also attached, if desired, being fastened to the cloth-plate by the same screw. The strip of cloth which is to be gathered, or is to make the ruffle, is then placed beneath the lower plate, so that the feed can come in contact with the under surface of the cloth. The extension of the end of *b* beyond *a* affords a means of lifting the lower plate, if necessary, so as to enter the cloth between the cloth-plate and the under surface of *b*. The piece of cloth to which the gathered piece is to be sewed is then inserted between the lower plate, *b*, and the plate *a*, while the presser-foot of the machine is raised. The latter is then allowed to rest upon the surface of the plate *a*.

If the screw *d* is turned out, so that the end of it does not bear against the lower plate, the whole pressure of the presser-foot will be exerted upon the upper strip of cloth, and also upon the lower, although the plates *a* and *b* intervene.

If the machine be started with such an adjustment of the screw *d*, as described, and the feeding-device of the machine be arranged to give the longest feed possible, it is evident that, after one or two stitches are taken, and the two pieces thus joined, the action of that part of the feed which is beneath the lower plate will be to press forward the lower strip of cloth beyond the path of the needle, while the progress of the upper strip will be retarded by the pressure of the plate *a*, which is held firmly down by the presser-foot.

As the two pieces of cloth are joined by the first stitch taken, the upper piece will be forced to move forward as far as the gathered or wrinkled cloth below presses it forward. At this point the needle descends, and forms a stitch, thus securing the gathered portion to the upper piece, and, after it is withdrawn, the feed

again carries forward the lower strip, and the upper piece is drawn on a limited distance, and thus the operation is continued.

With the screw *d* turned out, as described, the progress of the upper strip will be greatly retarded, and, therefore, the gathering of the lower strip will be much more than if the upper strip were allowed to move forward more freely.

If the screw *d* be turned in, so as to bear against the lower plate, *b*, the upper plate will be raised as the screw is turned, and the presser-foot will be raised with it. By means of the screw *d*, therefore, more or less pressure can be made upon the upper strip, and its progress more or less retarded.

When the upper plate is raised, so that it does not bear upon the upper strip of cloth at all, the latter will, of course, move along as rapidly as the lower cloth, and there will be no gathering of the lower strip.

It will be seen, therefore, that the amount of gathering depends upon the degree in which the progress of the upper cloth through the machine is retarded, and that this retardation can be regulated by turning

the screw *d*. It will also be seen that, whatever may be the position of the upper plate with regard to the lower, the pressure of the presser-foot is constantly transmitted, through the screw *d*, to the lower plate, and that the under cloth is always held down on the cloth-plate thereby, so that the feed can act upon it.

Having described my invention,

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

The within-described gathering-attachment, consisting of the plates *a b*, constructed in the manner explained and represented, provided with the screw *d* and projection *f*, and adapted for operation in conjunction with the feed and presser-foot of a sewing-machine, as and for the purpose set forth.

In testimony whereof, I have hereunto set my hand, this 8th day of January, A. D. 1868.

JOHN CRANDELL.

Witnesses:

J. P. BUCKLAND,

N. B. SMITH.