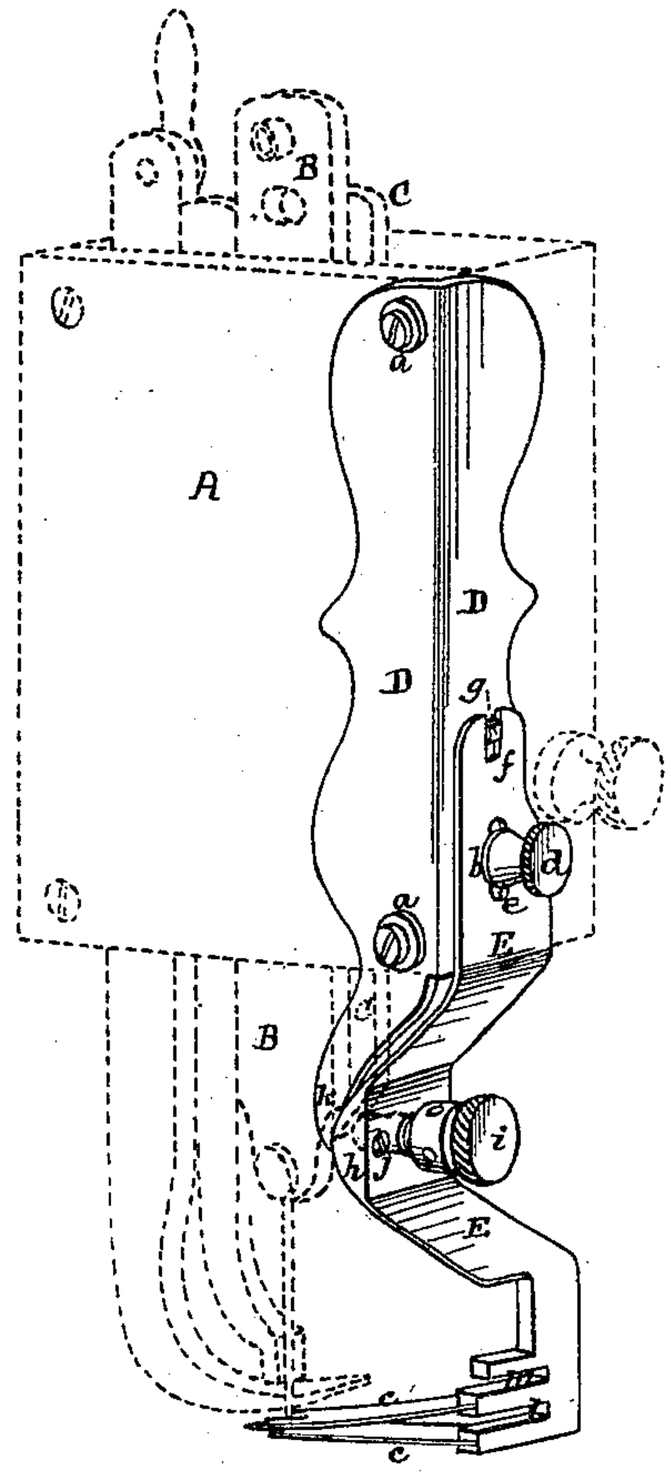
J. WISE.

Gathering and Ruffling Attachments for Sewing Machines.

No. 143,049. Patented September 23, 1873.



Witnesses.

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UNITED STATES PATENT OFFICE.

JOSEPH WISE, OF WATERTOWN, NEW YORK, ASSIGNOR TO THE DAVIS SEWING-MACHINE COMPANY, OF SAME PLACE.

IMPROVEMENT IN GATHERING AND RUFFLING ATTACHMENTS FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. **143,049**, dated September 23, 1873; application filed August 30, 1873.

To all whom it may concern:

Be it known that I, JOSEPH WISE, of Watertown, Jefferson county, New York, have invented certain new and useful Improvements in Gathering and Ruffling Attachments for Sewing-Machines, of which the following is a specification:

This invention may, in some respects, be considered as analogous to that for which Letters Patent No. 130,522 were issued to M. T. Moody, on the 13th August, 1872, inasmuch as it embraces the employment of a clamp or supporting-plate adapted to be attached to the head of a sewing-machine, in combination with a vibratory arm mounted on said clamp or plate, and carrying the gathering foot or device by which the cloth is nipped and carried forward to the needle. In lieu, however, of hinging the gathering arm or bar to the clamp or supporting-plate, and combining therewith an independent spring, I clamp or fasten said bar to the supporting-plate by a set-screw or its equivalent, and make the bar of spring metal, so that the portion of it below the point of attachment may be able to yield or vibrate, so as to carry back and forth the gathering foot or device attached to its lower end. This spring-arm is also detachable from the clamp or supporting-plate, in order that, after the latter has once been adjusted to the head of the sewing-machine, it may remain there permanently, the spring-arm being unfastened and removed from said plate when the machine is used for other work than ruffling. The arm is also so connected with the supporting-plate that it may be moved up and down thereon to adjust the gathering blade or blades with respect to the cloth-plate; and the arm is provided with devices whereby the gathering blade or blades can be adjusted with reference to the needle, and whereby a greater or less "throw" or extent of vibratory movement can be imparted to them. The manner in which my invention is or may be carried into effect will be understood by reference to the accompanying drawing. I have there represented a perspective view of my ruffler, as adapted for and fitted to the head of a "Davis vertical feed sewing-machine." I wish it to be understood, however, that the use of the attachment is not restricted to this machine; but that, with obvious modifications, it can be adapted to all or nearly all of the different styles of sewing-machines now in the market. The head A of the sewing-machine is represented in dotted lines; so, also, are the parts of the sewing and feeding mechanism carried by said head, including the needle-bar B and cam-bar C. To the right-hand front corner of the head is applied the clamp or supporting-plate D of the ruffler, consisting of a metallic angle-plate fitting the corner and extending over onto the front and side of the head adjacent to the corner. It is attached to the head by screws *a* passing through slots in the plate, which are enlongated in the direction of the length of the plate, so as to permit of its proper adjustment on the head before being clamped tightly thereon by the screws. To the side portion of plate D is fastened, at the point *b*, a vertical arm or bar, E, made of a strip of spring metal, such as steel, which extends from the point *b* down below the plate D and head A to or nearly to the point where the cloth-plate of the machine is located, and carries on its lower end the gathering device, consisting, in this instance, of the horizontal converging slotted spring-blades or "feeders" *c* between which the cloth to be gathered should pass. The spring gathering arm or bar can be fastened to the plate D by any suitable means, provided said fastening be rigid, or such as will hold the bar at that point tightly and unmovable, while the portion of the bar below the same is free to bend or vibrate to carry the gathering-blades to and from the needle. I employ for the purpose a clamp or screw, *d*, which will allow the bar to be removed from the machine, when it is desired to do other work than ruffling, without necessitating the removal of the clamp or supporting-plate D; and in order to adjust the gathering blade or blades vertically with respect to the cloth-plate, I make the spring-bar vertically movable, the clamp-screw *d* for this purpose passing through an elongated slot, *e*, in the bar. To prevent the bar from twisting or turning on the screw *d* as an axis, I form a vertical groove in the upper end of the bar, in which fits a spline or feather, *g*,

on the plate D. The movement of the spring-arm E in this machine is derived from the cam-bar C, and to bring the arm in proximity with the bar it is bent inwardly between the two ends toward the cam-bar, this portion of the spring-arm having a V shape. The angle of the V is filled with a block or filling of metal, *h*, which is designed both to strengthen and stiffen the spring at the angle, and also to afford a bearing for the adjustable thumb-screw *i*, by which the throw of the gathering-blade is regulated. The end of this screw passes through the spring-arm on the side toward the cam-bar, and by projecting the screw more or less toward said bar the latter in its descent will, in striking against the end of said screw, force back the spring-arm with its gathering-blade a correspondingly greater or less distance. Of course, when the cam-bar rises and clears the screw *i* the spring-arm will recoil, and its blades will consequently carry the cloth to the needle.

In lieu of bending inwardly the spring-bar, and providing this bent part with a metal filling piece, the bar may remain straight, and a metallic piece or block of proper form and dimensions to contain the thumb-screw may be formed on or made fast to the spring-bar at this point.

In order to adjust the feeders with respect to the needle, I employ a regulating-screw, *j*, the front end of which projects through the spring-arm opposite to a stop-piece, *k*, fixed to and forming part of the supporting-plate D. By screwing the screw *j* toward or away from this stop-piece the forward movement of the feeders can be arrested at any point desired.

The extreme lower end of the spring-arm is made thicker and stiffer than the upper part, and is provided with horizontal slots *l m*. The strip of goods to be gathered passes through the former slot, and the upper ungathered strip passes through the latter.

Having described my invention, and the manner in which the same is or may be carried into effect, what I claim, and desire to secure by Letters Patent, is—

1. In a gathering and ruffling attachment for sewing-machines, the combination, with a clamp or supporting-plate adapted to be fitted and fastened to the sewing-machine head, of an arm, in itself a spring, carrying on its lower end the gathering blade or blades, or gatherer proper, and rigidly secured at or near its upper end to said clamp, as herein shown and specified, said arm being adapted to operate in connection with the sewing-machine needle-bar, or other part moving in unison therewith, so as to derive a vibratory motion therefrom, substantially as described.

2. The combination, in a gatherer or ruffler for sewing-machines, of a clamp or supporting-plate adapted to be applied to the head of the sewing-machine, and a spring-arm carrying the gathering devices and removable from and vertically adjustable on said plate, substantially as herein shown and set forth.

3. The spring-arm, carrying on its lower end the gathering device proper, and at a point intermediate between its ends bent inwardly or toward the needle-bar or other moving part from which its movement is derived, the thumb-screw or its equivalent, by which the throw of the said arm is regulated, being located on the spring-arm at this point, substantially as shown and described.

4. The combination, with the supporting-plate and the spring gathering-arm, of a regulating-screw on the said arm, and a stop-piece on said plate for the purpose of arresting the forward movement of the arm at any desired point, substantially as shown and described.

In testimony whereof I have signed my name in the presence of two subscribing witnesses.

JOSEPH WISE.

Witnesses:
M. T. MOODY,
G. A. BAGLEY.

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