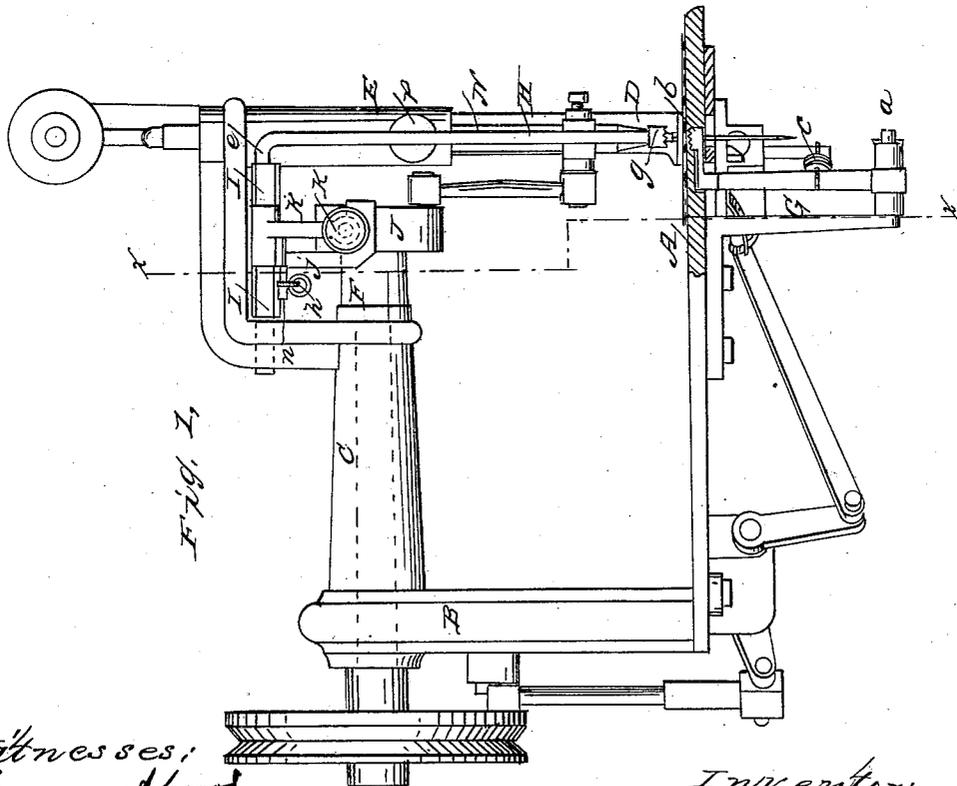
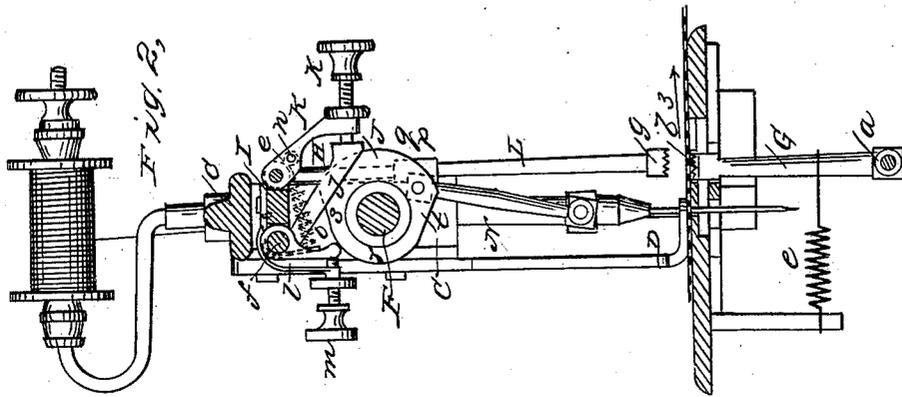


J. E. ATWOOD.

Sewing Machine.

No. 22,273.

Patented Dec. 14, 1858.



Witnesses:  
Eugene Atwood  
J. E. Atwood

Inventor:  
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# UNITED STATES PATENT OFFICE.

JAMES E. ATWOOD, OF MANSFIELD CENTRE, CONNECTICUT.

## IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 22,273, dated December 14, 1858.

*To all whom it may concern:*

Be it known that I, J. E. ATWOOD, of Mansfield Centre, in the county of Tolland and State of Connecticut, have invented a new and useful Improvement in Sewing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a side view of a machine having my improvements, but showing the table on which the cloth or material to be sewed is placed, in section. Fig. 2 is a transverse section of the same in the line *xx* of Fig. 1, exhibited as seen from the back.

Similar letters of reference indicate like parts in both figures.

This invention consists in a novel, simple, and very efficient combination and arrangement of feeding mechanism for moving the cloth or other material to be sewed between the successive operations of the needle.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A is the table or plate upon which the cloth or other material is placed to be sewed, having cast with it the standard B, to which is attached the arm C, to which is secured the spring-pressure pad D, for confining the cloth or material to be sewed to the table A, said arm also carrying the guide E for the vertically-sliding needle-bar N, and containing the bearings for the main shaft F, from which the needle and the looper or shuttle, and the feeding mechanism also, derive motion.

I will now describe the feeding mechanism.

G is an arm arranged to vibrate on a fixed pin, *a*, below the table, in a direction parallel with the plane of the feed movement, the upper end of the said arm constituting a serrated dog, *b*, which works in a slot, *d*, in the table A, and whose teeth are flush with or slightly above the upper surface of the said table when the arm is upright. The said arm has applied to it a light spring, *e*, which, when the said arm is not under other influence, draws it as far as permitted by the length of the slot *d* in the opposite direction to that in which it is desired to feed the cloth—viz., to or slightly beyond a vertical position.

H is an arm arranged to vibrate in the same or parallel planes with the arm G from a pivot, *e*, which attaches it to a plate, I, which swings on a fixed pin or center secured in the arm C, the pivot *e* and fixed pin *f* being both above the main shaft F, and one being on one side and the other on the other side of the vertical plane passing through the axis of said shaft. At the lower end of the vibrating arm H is formed or rigidly attached a serrated dog, *g*, which, when not under other and stronger influence, is drawn by a spring, *h*, operating, as will be presently described, in the same direction as the dog *b* is drawn by the spring *e*, as far as permitted by a stop, *p*, on the guide E, and which then occupies a position directly above the dog *b*. From the fixed pin *f* there are suspended two independent short levers, *i* and *j*, which are both so arranged that their own weight will keep them in contact with a peripheral cam, J, on the shaft F, the said cam being composed of two concentric arcs, *p r*, united by straight or gradually-curved surfaces *s t*. The arm H has rigidly attached to it, by the pin *e*, another arm K, in which there is a set-screw, *k*, whose point is directed toward the back of the lever *j*, and to the swinging plate I is attached a strong spring, *l*, in the end of which is a set-screw, *m*, whose point is directed toward the back of the lever *i*. The spring *h*, before mentioned, connects a pin, *n*, secured in the arm K, with another pin, *o*, secured in the plate I.

The operation of this feeding mechanism is as follows: Before the feed commences the dog *g* is directly over the dog *b* and resting against its stop *p*. The cam J, rotating in the direction of the arrow shown on it in Fig. 2, brings the part *t* of its surface into operation on the independent lever *i* and forces it against the point of the set-screw *m*, and by throwing the spring *l* outward from the center of the shaft F pulls down the frame I and attached pin *e*, and forces down the arm H, and presses the dog *g* down upon the cloth, and causes the latter to be clamped between it and the dog *b* while the arc *q* is passing said lever *i*, the spring *l* yielding as much as necessary, but keeping the cloth pressed between the two dogs. Before the arc *q* passes the lever *i* the part *s* of the cam comes into operation on the lever *j* and forces it outward from the center

of the shaft F and against the set-screw *k*, so that the lever *j* carries with it the arm K, and moves the arm H and dog *b* in the direction of the arrow 3, (shown near the dog in Fig. 2,) thus causing said dog to feed the cloth, which is held up by and carries with it the dog *b*. Before the arc *q* escapes from the lever *i* it arrives in operation on the other lever, *j*, and by holding out the lever *j* against the screw *k* it holds out the arm K, so that the spring *h*, by its pull on the pin *o*, pulls up the plate I as fast as permitted by the surface *s* of the cam, and thus lifts up the arm H and removes the dog *g* from contact with the cloth, and leaves the latter free till the said arm H and dog *g* are forced down again by the operation of the part *t* of the cam on the lever *i*, as already described. The dog *b* is pulled back by its spring *c* as soon as the dog *g* is raised, and the arm H is afterward pulled back to its stop

*p* and the dog *g* to its position directly over dog *b* by the spring *h* as soon as the arc *q* of the cam passes the lever *j*.

The feeding movement of the dog *g* in the direction of the arrow 3 may be increased or diminished by screwing the screw *k* toward or from the lever K, and the lifting movement of the said dog is adjusted by the screw *m*.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of the vibrating arm H, which carries the dog *g*, its attached arm K, the swinging frame I, the independent levers *i j*, the springs *h l*, and the cam J, the whole applied, arranged, and operating substantially as herein set forth.

J. E. ATWOOD.

Witnesses:

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J. C. ATWOOD.