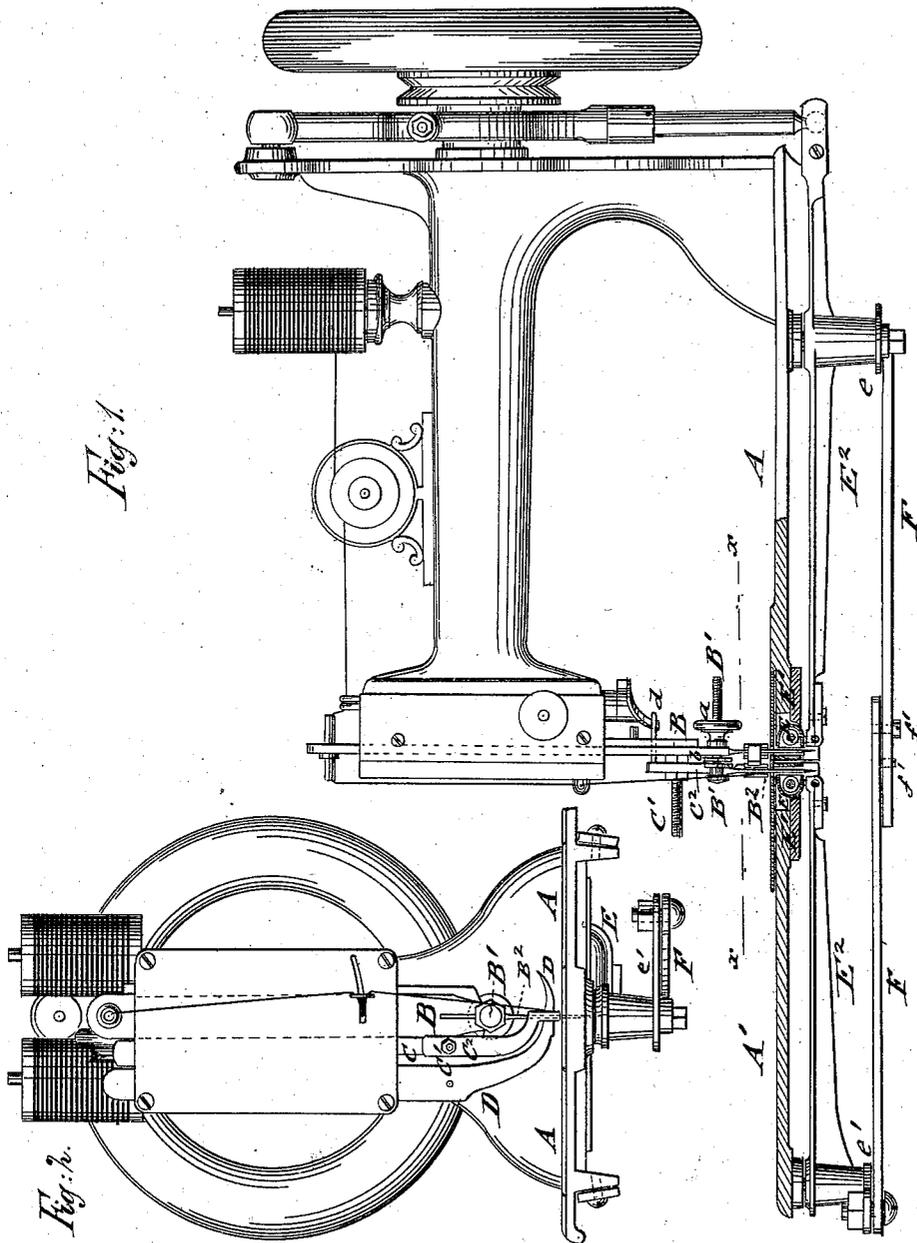


A. B. FELT.  
Sewing-Machine.

No. 219,082.

Patented Sept. 2, 1879.



*Fig. 1.*

*Fig. 2.*

*Witnesses:*

*Carl Karp*  
*Fr. Mayer*

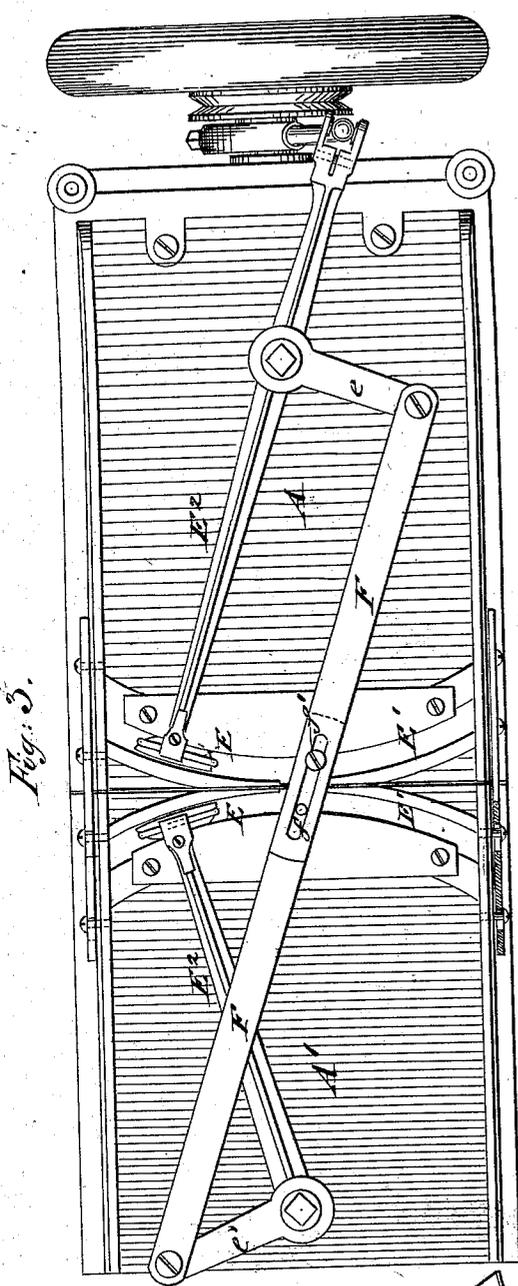
*Inventor:*

*Alvin B. Felt*  
*by Paul Soepel*  
*Attorney.*

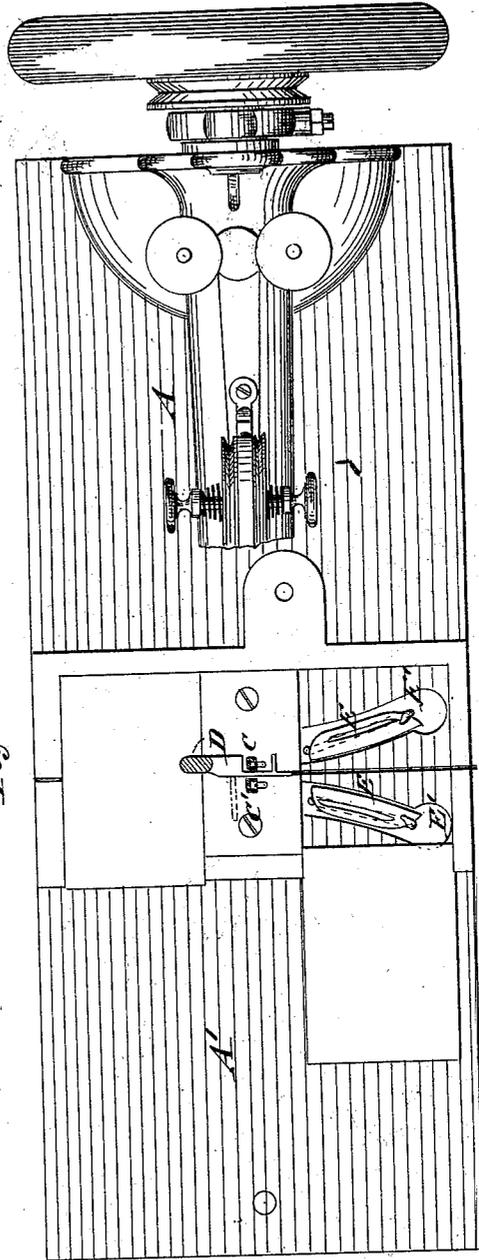
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*Fig. 3.*



*Fig. 4.*

Witnesses:  
*Carl Karp*  
*J. Mayer*

*Fig. 5*

Inventor:  
*Alvin B. Felt*  
 by *Paul Goepel*  
*Attorney*

# UNITED STATES PATENT OFFICE.

ALVIN B. FELT, OF PHILADELPHIA, PENNSYLVANIA.

## IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. **219,082**, dated September 2, 1879; application filed December 2, 1878.

*To all whom it may concern:*

Be it known that I, ALVIN B. FELT, of the city of Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented certain new and useful Improvements in Sewing-Machines, of which the following is a specification.

In the accompanying drawings, Figure 1 represents a side elevation of my improved sewing-machine, partly in vertical longitudinal section. Fig. 2 is an end elevation of the same; Fig. 3, a bottom view of the machine, showing the shuttles and their actuating mechanism. Fig. 4 is a top view of the machine, a part being broken away, and the presser-foot, needles, and helper-bar shown in horizontal section on line *x x*, Fig. 1; and Fig. 5 is a perspective view of the presser-foot with extended heel.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved sewing-machine for heavy work of all kinds, such as corsets, canvas articles, and the like, by which a double line of stitching is accomplished at any desired distance between the stitchings, so that the sewing-machine may be advantageously and economically applied to a variety of heavy work.

The invention consists in the improved construction of a sewing-machine having a fixed and an adjustable needle, with a fixed and an adjustable auxiliary helper-bar, and with a common presser-foot, as will be hereinafter more fully described, and pointed out in the claims.

Referring to the drawings, A represents the table of my improved sewing-machine; B, the needle-bar; C, the helper-bar, and D the presser-foot, of the same.

My improvements are preferably adapted to machines provided with the Davis needle-feed, for which Letters Patent have been granted under date of October 9, 1866, and under No. 58,614, as this feed is a positive feed and arranged entirely above the work.

On the needle-bar B is arranged, at right-angles thereto, a horizontal screw-arm, B<sup>1</sup>, to the end of which a second needle, B<sup>2</sup>, is applied. The horizontal screw-arm B<sup>1</sup> is laterally adjusted by means of a screw-nut, *a*, and both needles are rigidly secured in position,

respectively, to the needle-bar and horizontal arm by means of jam-nuts *b*. The horizontal screw-arm is longitudinally slotted to admit the passage of the needle of the permanent needle through the same, and also the lateral adjustment of the screw-arm.

The helper-bar C, back of the needle-bar B, is also provided with a fixed horizontal screw-post, C<sup>1</sup>, to which an auxiliary helper-bar, C<sup>2</sup>, back of the adjustable needle, is loosely applied and secured by means of jam-nuts. From the upper end of the helper-bar extends a guide-rod, *d*, which passes through a perforation of the helper-bar C, which guide-rod serves to steady the auxiliary helper-bar C<sup>2</sup>, so that the same may be firmly and reliably secured in position back of the adjustable needle. Both needles and helper-bars are actuated, in conjunction with the presser-foot, by the needle-feed, and partake of the peculiar step-motion and positive feed of the same.

The table A is made of two separate sections, of which the outer section, A', is adjustable on the permanent section A by means of slotted arms and clamp-screws, said arms being attached to the adjustable section A' and guided by the outer slotted ends on the shanks of the clamp-screws, which are tightened when the section A' of the table is set to the proper distance from the main portion, or by means of other guiding and fastening devices. Each section of the table is provided with a separate shuttle, E, and shuttle-race E<sup>1</sup>, the shuttle-races being symmetrical to the meeting edges of the sections of the table. The shuttles work in conjunction with the needles below the throat-plates of the same.

The shuttles are actuated from the driving-shaft above the table by an oscillating arm, which engages a ball or socket joint at the end of the fulcrumed lever E<sup>2</sup> of one shuttle.

The second shuttle is operated simultaneously with the first by means of a crank-arm, *e*, on a sleeve of the first shuttle-lever, the crank-arm being connected by a sectional rod, F, with the crank-arm *e'* of the fulcrumed lever of the second shuttle. The motion-transmitting rod F is made of two sections, which are adjustably connected by means of slots and clamp-screws *f'* at their overlapping ends. The transmitting-rod is adjusted in length so

as to correspond exactly to the distance to which the needles, helper-bars, shuttles, and sections of the table are set from each other. When the different parts are properly adjusted relatively to each other the sewing-machine produces two separate lines of stitching, at varying distances from each other, on the fabric to be operated upon.

The presser-foot may be arranged with a heel that extends at right angles to the lower portion, as shown in Fig. 5, the heel being of sufficient length to press on the goods throughout the full distance for which the adjustment may be made.

The advantage of a double line of stitches for different articles of manufacture is obvious, and adapts the improved machine in a higher degree than the common sewing-machine to the wants of the trade.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, in a sewing machine, of a fixed and of an adjustable needle with a fixed and with an auxiliary adjustable helper-bar

back of the same, substantially as and for the purpose specified.

2. The combination, in a sewing-machine, of a fixed and an adjustable needle with a permanent and an auxiliary adjustable helper-bar, and with a common presser-foot for both needles, substantially as described.

3. In a sewing-machine, the combination of a fixed and an adjustable needle, a fixed and an auxiliary helper-bar, and a common presser-foot with separate shuttles, one for each needle, substantially as specified.

4. The combination, with a fixed helper-bar having a horizontal screw-post, of an auxiliary helper-bar that is adjustable thereon, and secured in position by jam-nuts, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two witnesses this 26th day of November, 1878.

ALVIN B. FELT.

Witnesses:

PAUL GOEPEL,  
ADOLF DENGLER.