No. 619,820. Patented Feb. 21, 1899.

E. B. ALLEN.

CARPET SEWING APPARATUS.

(Application filed Jan. 15, 1898.)

(No Model.) 3 Sheets—Sheet 1.

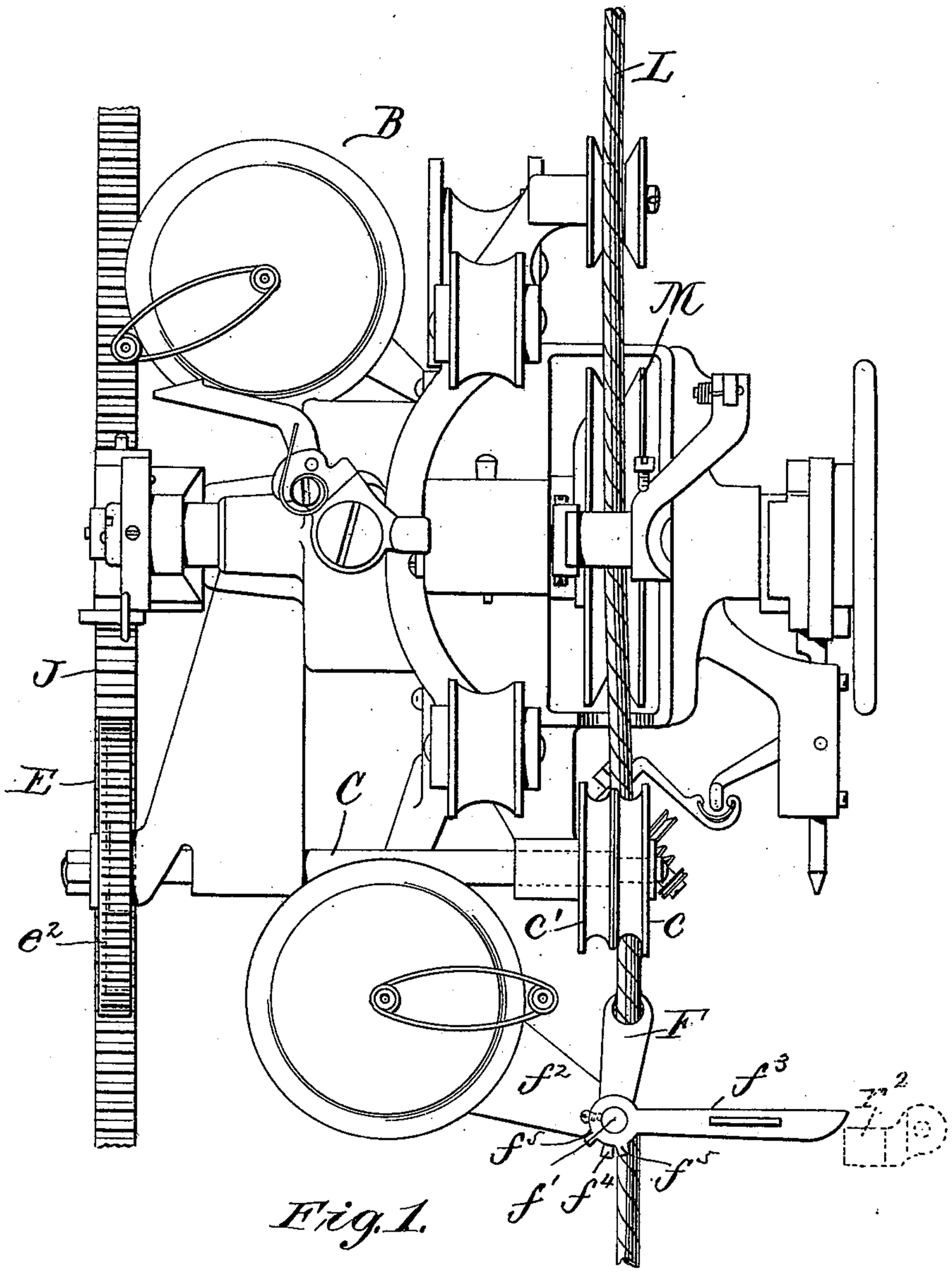

Fig. 1.

WITNESSES:
C. W. Benjamin
C. M. Sweeney.

INVENTOR:
Edward B. Allen,
BY
Henry Calvert,
ATTORNEY.

No. 619,820. Patented Feb. 21, 1899.

E. B. ALLEN.

CARPET SEWING APPARATUS.

(Application filed Jan. 15, 1898.)

(No Model.) 3 Sheets—Sheet 2.

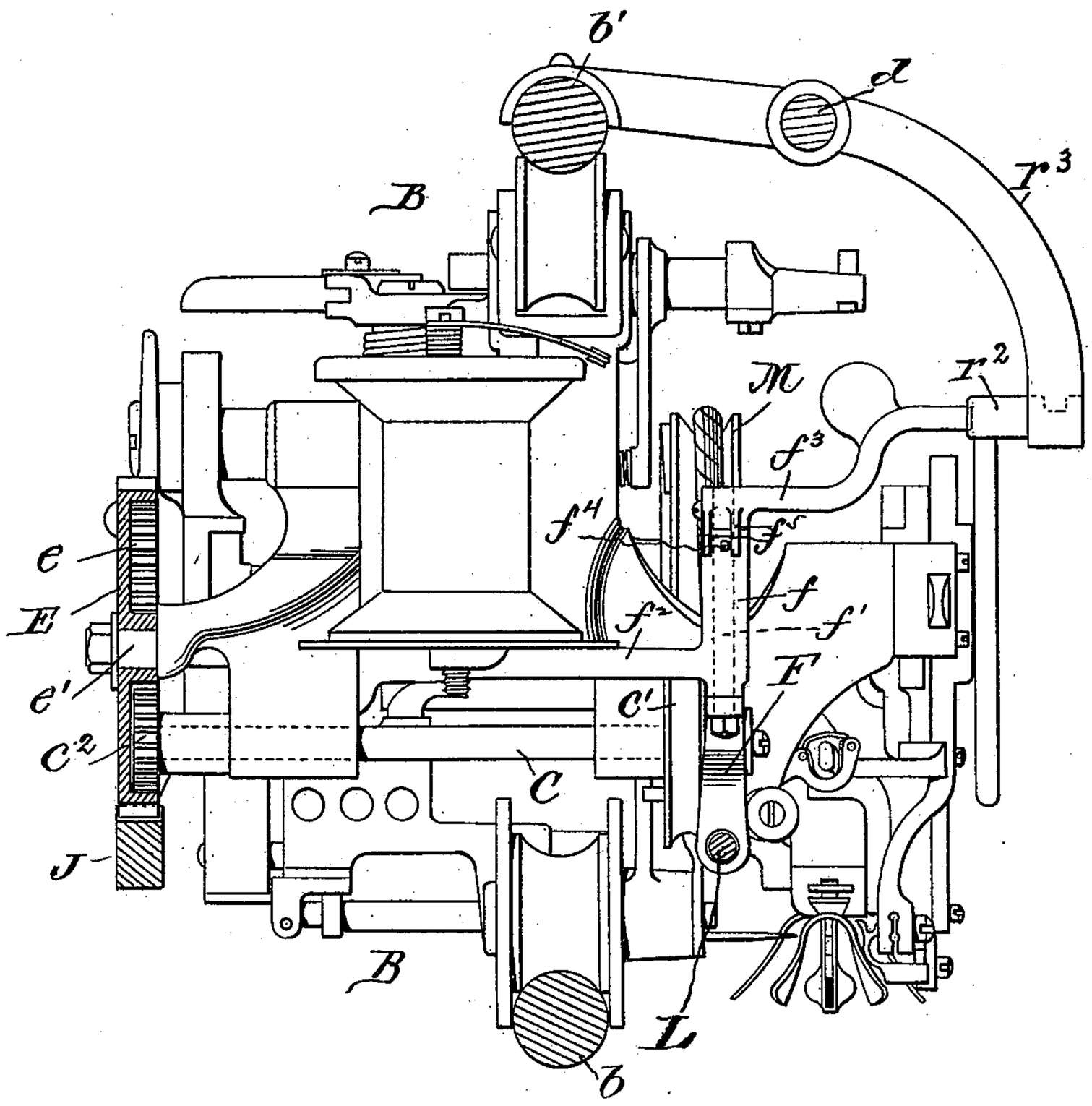

Fig. 2.

WITNESSES:
C. W. Benjamin
C. M. Sweeney

INVENTOR:
Edward B. Allen
BY
Henry A. Calver
ATTORNEY.

No. 619,820. Patented Feb. 21, 1899.

E. B. ALLEN.

CARPET SEWING APPARATUS.

(Application filed Jan. 15, 1898.)

(No Model.) 3 Sheets—Sheet 3.

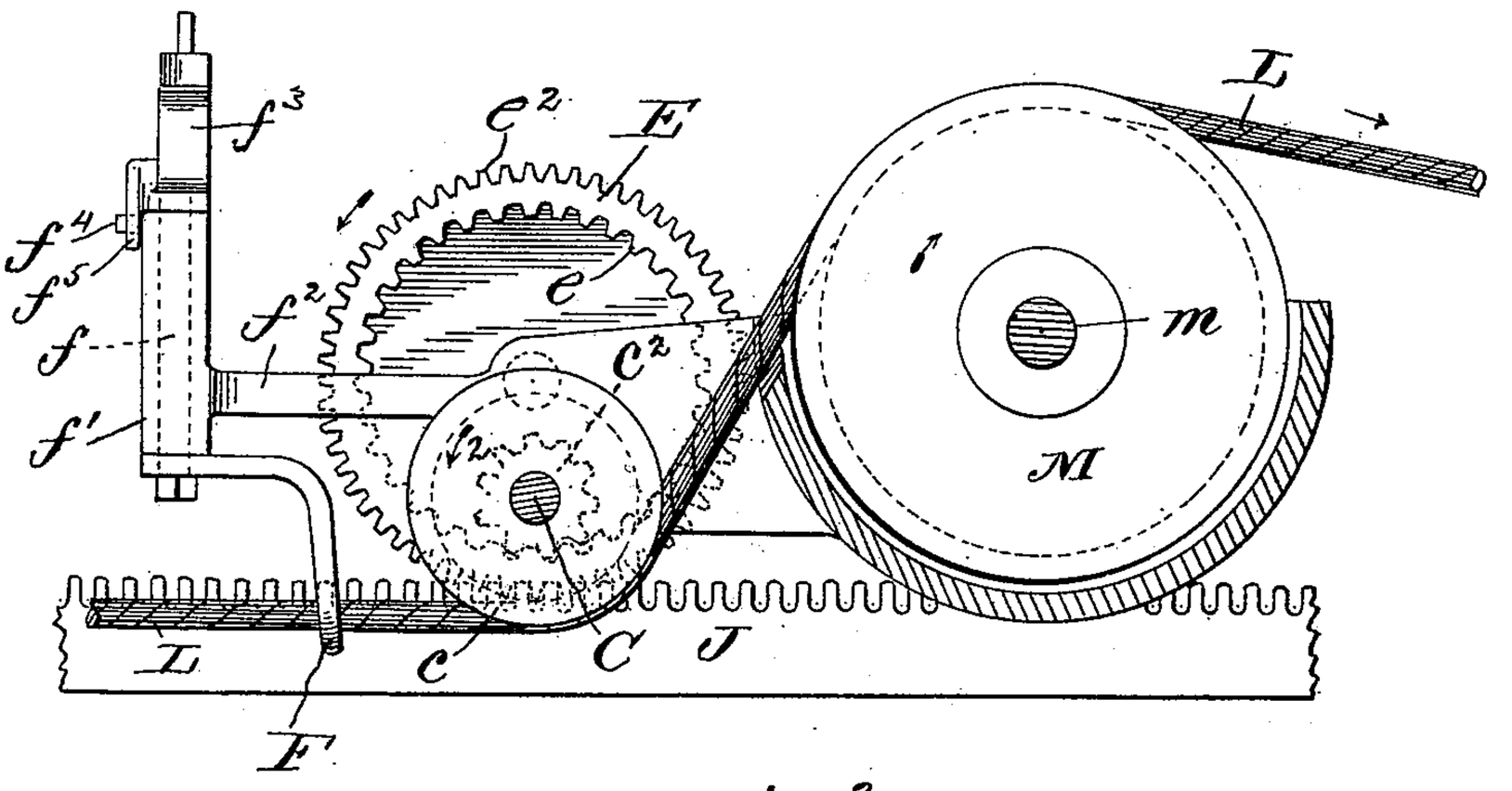

Fig. 3.

WITNESSES:
C. W. Benjamin
C. M. Sweeney

INVENTOR:
Edward B. Allen,
BY
Henry Calver,
ATTORNEY.

UNITED STATES PATENT OFFICE.

EDWARD B. ALLEN, OF ELIZABETH, NEW JERSEY, ASSIGNOR TO THE SINGER MANUFACTURING COMPANY, OF NEW JERSEY.

CARPET-SEWING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 619,820, dated February 21, 1899.

Application filed January 15, 1898. Serial No. 666,809. (No model.)

To all whom it may concern:

Be it known that I, EDWARD B. ALLEN, a citizen of the United States, residing at Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Carpet-Sewing Apparatus, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to the carpet-sewing machine and apparatus shown and described in my United States Patents Nos. 524,996 and 524,997, dated August 28, 1894, and comprises certain improved means for returning the traveling sewing-machine to its initial position on the track or guideway on which it moves after a seam has been completed, so that said machine will then be in starting position for a new seam. In the apparatus covered by my said patents the traveling sewing-machine was returned to starting position by a special returning-belt, with which the machine was engaged by the attendant when it was to be returned; but in the present invention the machine is returned by a reversing mechanism operated from the same endless belt which drives the machine forward, thus dispensing with the special returning-belt.

In the accompanying drawings, Figure 1 is a plan view of a traveling carpet-sewing machine equipped with my improvements, and Fig. 2 an end view thereof. Fig. 3 is a detail view of the reversing mechanism.

The traveling sewing-machine B, moving on lower and upper guide rods or rails *b b'*, is or may be essentially the same in construction and operation as the machine shown and described in my patents above referred to excepting as to the returning mechanism. The pulley M, over which the endless driving-belt L runs, has a clutch connection with the driving-shaft *m*, as shown and described in my said patents, so as to be operatively connected with said shaft when the machine is traveling forward, the clutch connection being automatically released or broken when the machine is stopped and is to be returned to starting position, and when this clutch connection is thus released or broken said pulley will run free or as a loose pulley.

C is the reversing-shaft, suitably journaled in bearings in the machine-frame, said shaft being provided at one end with loose and fast pulleys *c* and *c'* and at its other end with a gear-wheel c^2, meshing with internal gear-teeth *e*, formed on a gear-wheel E, journaled on a stud *e'*, supported by the machine-frame and having peripheral teeth e^2, meshing with the teeth of the rack-bar J, along which the machine is fed by means of the feeding mechanism described in my said patents and in the use of which the feeding levers or bars will be disengaged from said rack-bar when the machine is to be returned.

F is a belt-shifter consisting of an arm extending downward from a vertical shaft *f*, adapted to turn or rock on a hollow post or sleeve *f'*, supported by an arm f^2, extending from the machine-frame, said belt-shifter arm having a hole through which the driving-belt L loosely passes. The belt-shifter shaft *f* has a laterally-extending upper arm or handle f^3, which will be taken hold of by the attendant when the machine has been stopped by the unclutching of the pulley M to turn the belt-shifter arm so as to transfer the driving-belt L from the loose pulley *c* to the fast pulley *c'* and set the reversing-shaft C (which shaft and the gear-wheel E run idly when the machine is traveling forward) into positive and reverse movement, or in the direction denoted by the arrow 2 in Fig. 3, thus causing the gear-wheel E by its engagement with the teeth of the rack-bar J to carry the machine back along said rack-bar and the guide rods or tracks *b* and *b'* to starting position.

To automatically stop the return traveling movement of the machine, as in the apparatus covered by my former patents, I provide a stationary rigid tripping-abutment r^2, supported by a rigid arm r^3, attached to the clamp-supporting rod *d* and rod *b'* and located at or near the starting-point of the machine, said abutment r^2 extending slightly within the path of movement of the outer end of the handle f^3 of the belt-shifting device, so that when said handle strikes said stopping-abutment the belt-shifter will be turned slightly to transfer the driving-belt L from the fast pulley *c'* to the loose pulley *c*, and thus the reverse travel of the machine will be automatically arrested. The arm *f* when turned back-

ward to place the belt on the loose pulley *c* can pass by the abutment r^2, so that no injury of the parts will result from the contact of said arm with said abutment.

To limit the turning movement of the shaft *f* in either direction, the post or sleeve *f'* is provided with a lug f^4, which is straddled by depending lugs f^5 on the collar of the arm or handle f^3, fast on said shaft, and thus the belt-shifter shaft will be prevented from turning so far as to move the belt L off from the pulleys *c c'*.

When a seam has been completed, the machine is stopped by the automatic unclutching of the pulley M from the driving-shaft of the machine, as described in my former patents, and when this has been done a machine equipped with my present invention may be returned to starting position simply by the movement of the arm or handle f^3 by the attendant to transfer the driving-belt L from the loose pulley *c* to the fast pulley *c'*, and the machine is then driven back to its first position, at which point its return movement is arrested, as hereinbefore described.

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

1. In a carpet-sewing apparatus, the combination with a traveling sewing-machine and a track or guideway therefor, of an endless belt for causing said machine to travel forward, and a reversing mechanism separate from said belt and with which said belt may be connected to cause the machine to be returned to its starting-point without reversing the travel of the belt.

2. In a carpet-sewing apparatus, the combination with a traveling sewing-machine and a track or guideway therefor, of an endless belt for causing the said machine to travel forward, a reversing mechanism separate from said belt and with which said belt may be connected to cause the machine to be returned to its starting-point without reversing the travel of the belt, and a stopping device for automatically arresting the return travel of the machine.

3. In a carpet-sewing apparatus, the combination with a traveling sewing-machine and a track or guideway therefor, of a rack-bar along which said machine is fed in its forward travel, an endless driving-belt, mechanism operated by said belt to cause the said machine to be driven forward along the said rack-bar, a reversing-shaft geared to said rack-bar and provided with loose and fast pulleys, and a belt-shifting device by means of which the said driving-belt may be placed on either of said pulleys according to whether the machine is to travel forward or backward.

4. In a carpet-sewing apparatus, the combination with a traveling sewing-machine and a track or guideway therefor, of a rack-bar along which said machine is fed in its forward travel, an endless driving-belt, mechanism operated by said belt to cause the said machine to be driven forward along the said rack-bar, a reversing-shaft geared to said rack-bar and provided with loose and fast pulleys, a belt-shifting device by means of which the said driving-belt may be placed on either of said pulleys according to whether the machine is to travel forward or backward, and a stopping device for automatically arresting the return travel of the machine.

5. In a carpet-sewing apparatus, the combination with a traveling sewing-machine and a track or guideway therefor, of a rack-bar along which the machine is fed, an endless belt for driving the stitch-forming mechanism of said machine and for causing the latter to travel forward, a driving-pulley having a clutch connection with the driving-shaft of said machine, said pulley being thus adapted to run loose relative to said shaft when said clutch connection is released, and a returning mechanism comprising a shaft geared to the said rack-bar and which shaft is provided with fast and loose pulleys, and a belt-shifting device by means of which the belt may be placed in engagement with either of said pulleys on the returning-mechanism shaft.

6. In a carpet-sewing apparatus, the combination with a traveling sewing-machine and a track or guideway therefor, of a rack-bar along which the machine is fed, an endless belt for driving the stitch-forming mechanism of said machine and for causing the latter to travel forward, a driving-pulley having a clutch connection with the driving-shaft of said machine, said pulley being thus adapted to run loose relative to said shaft when said clutch connection is released, and a returning mechanism comprising a shaft geared to the said rack-bar and which shaft is provided with fast and loose pulleys, a belt-shifting device by means of which the belt may be placed in engagement with either of said pulleys on the returning-mechanism shaft, and a device for causing the said belt to be automatically transferred from said fast pulley to said loose pulley when the machine has been returned to starting position.

In testimony whereof I affix my signature in the presence of two witnesses.

EDWARD B. ALLEN.

Witnesses:
HENRY J. MILLER,
HAROLD W. BROWN.