

CHILCOTT & SCRINGEOUR.

Sewing Machine.

No. 12,856.

Patented May 15, 1855.

Fig. 1,

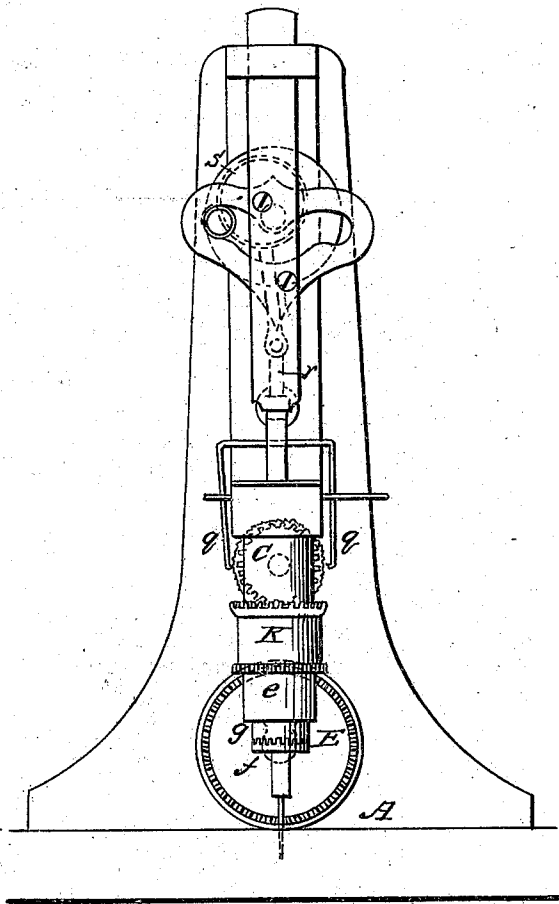


Fig. 2,

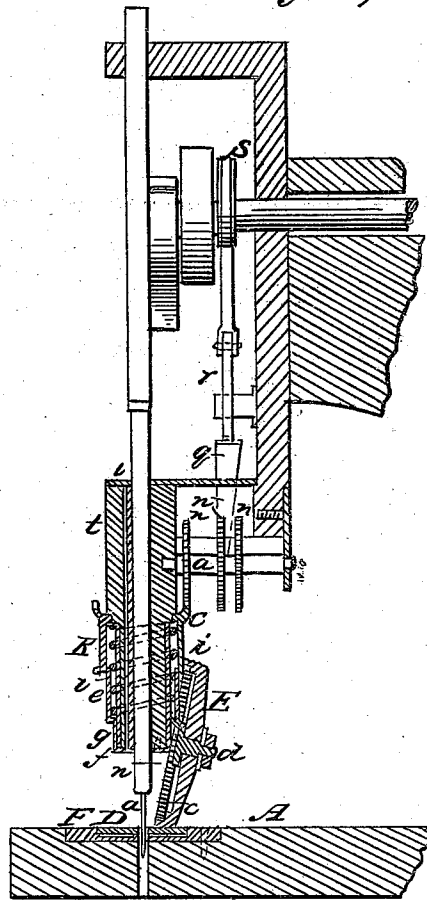


Fig. 4,

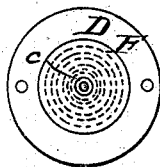
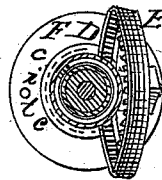


Fig. 3,



UNITED STATES PATENT OFFICE.

JNO. CHILCOTT AND JAS. SCRIMGEOUR, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 12,856, dated May 15, 1855.

To all whom it may concern:

Be it known that we, JOHN CHILCOTT and JAMES SCRIMGEOUR, of the city of Brooklyn, county of Kings, and State of New York, have invented a new and useful Improvement in the Feeding Mechanism of Sewing-Machines; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a front view, showing the application of our improved feed mechanism to a sewing-machine. Fig. 2 is a vertical section of the same, taken at right angles to Fig. 1. Fig. 3 is a sectional plan of the same. Fig. 4 is a plan of a portion of the same.

Similar letters of reference indicate corresponding parts in the several figures.

The object of this invention is to obtain a universal feeding movement to feed the cloth or other material to be sewed in any and every direction, and to change the direction as often as may be desired.

The invention consists, chiefly, in confining and giving motion to the material between the face of a disk or plate through and in line with or nearly in line with whose axis the needle or needles work, and the periphery of a roller whose axis is nearly or quite perpendicular to the axis of the said disk or plate and radial thereto, the said roller being movable around the needle, so as to bear upon the material on any side of the needle. Motion given either to the disk or to the roller will give motion to the cloth in a direction parallel with the plane in which any portion of the roller rotates.

A is the bed or table upon which the sewing is performed. *a* is the needle attached to a slider working through a fixed head, C. D is the disk, and E the roller between which the material is confined and by which it is moved, the motion being, in this illustration of our invention, given by the roller E. The disk has a roughened upper surface and is sunk into the bed A, so as to stand flush with or not very perceptibly raised above the surface thereof, and is fitted to the bed so as to turn freely, and a suitable opening is provided at its center for the needle to work through it. The manner in which we apply the disk to the bed is to fit it first to a bearing within a circular plate, F, and to leave a small boss, *e*, in the

center of the said plate F, to fit an opening in the center of the disk, leaving an opening in the center of the plate F for the needle to pass through. The disk should be fitted so as to rotate with the least possible amount of friction. The roller E has a toothed or roughened periphery. It is fitted to turn on an axle, *d*, secured to a sleeve, *e*, which is capable of turning freely on a cylindrical portion of the lower part of the head C; but this sleeve is kept stationary, except at such times as the direction of the feed requires to be changed, by means of a toothed clutch, *f g*, of which the part *f* is secured to the bottom of the head C by a screw, *h*, and the part *g* is formed on the bottom of the sleeve. The clutch is kept in gear by a spiral spring, *i*, applied, as shown in Fig. 2, between the upper portion of the inside of the sleeve and the cylindrical portion of the head C. This spring also serves to give a yielding pressure to the roller E, to confine the cloth to the disk. When it is necessary to change the position of the roller to feed in a different direction, the sleeve *e* must be lifted up by hand, aided, if necessary, by suitable mechanical appliances high enough to ungear the clutch, and then the roller may be turned to work in any required position. The movement of the roller on its axle *d* to feed the cloth is effected by furnishing the roller with teeth on its inner side to gear with teeth formed around the lower part of a loose collar, *k*, which is fitted to turn around the head C independently of the sleeve *e*, and confined in its place by a collar, *l*, which is fitted tightly to the lower part of the head C and secured thereto by a screw, *m*, as shown in Fig. 2. The upper part of the loose collar *k* is toothed all around to enable it to receive motion from a spur-wheel, *n*, on the horizontal feed-shaft *o*, which works in bearings in the head C, and carries two ratchet-wheels, *p p'*, whose teeth incline in opposite directions, in order that motion may be given to the feed-shaft in either direction by throwing in gear with the proper ratchet one of two pawls, *q q'*, which are suspended from a rod, *r*, receiving a reciprocating motion from an eccentric, *s*, on the main shaft of the machine. In changing the position of the roller E relatively to the needle, the raising of the sleeve *e* to free the clutch *f g* also raises the teeth on the roller E clear of the teeth on the bottom of the collar *k*, and allows the sleeve to turn without mov-

ing the feed-shaft. In order to conduct the thread to the needle without its being interfered with by any of the feeding mechanism, we provide a hole, *t*, for it to pass down through the head C.

As the material to be operated upon is moved by the friction of the roller E, the disk D receives motion upon its axis through the friction of the material upon it. Although the surface of the disk moves in circles, the distance it moves during every movement of the material is so short that the circular movement does not affect the straightness of the feed, which will be preserved by merely applying a slight drag to the material somewhere in the desired line of feed, either by hand or mechanical means. Whatever may be the position of the roller E, the disk D will always bear the same relation to it, as the position of the roller is always confined to a circle concentric with the disk.

As the roller E is capable of moving right round the needle, it is plain that the feed can be given in any line, and by the application of the double movement to the feed-shaft by the two ratchets and pawls, a feed in any direction may be obtained. The direction of the feed may be changed at any point in a piece of work by stopping the machine with the needle in the work to confine it in its place before moving or changing the position of the roller, and the work will proceed in a new direction without any irregularity in the stitches at the point where the change of direction takes place.

Instead of giving motion to the roller E to feed the material, the motion may be given to the disk D, and the roller will then receive motion by the friction of the cloth. This we

regard as a mere modification of our invention.

We are aware that sewing-machines have been constructed so that their feed mechanism might be varied to run the seam either longitudinally with or circularly round a cylindrical mandrel by substituting one set of feeding-rollers for another, and that these rollers have been arranged on one side of the material being sewed, to operate in connection with bearing-rollers on the other side to prevent drag, and that such bearing-rollers have been made adjustable round the needle to run in either one of the two directions of seam specified. Such, therefore, we do not claim. Neither do we use nor claim a rotating table with guide on its face to adjust the direction of the seam, as known to be old; but

We do claim as new and useful in the feeding mechanism of sewing-machines and desire to secure by Letters Patent—

The arrangement herein shown and described of the revolving disk D within or on the fixed table, and having its axis in line with the needle, as specified, when combined to operate together with a roller, E, bearing on the opposite side of the cloth and made adjustable to any position in a circle round the center of the said disk, to vary with facility and dispatch the run of the seam in lines on any side of the needle without the aid of guides on the face of the table, and whether the revolving disk or bearing-roller be caused to move the cloth, as herein set forth.

JOHN CHILCOTT.
JAMES SCRIMGEOUR.

Witnesses:

S. H. WALES,
WILLIAM TUSCH.