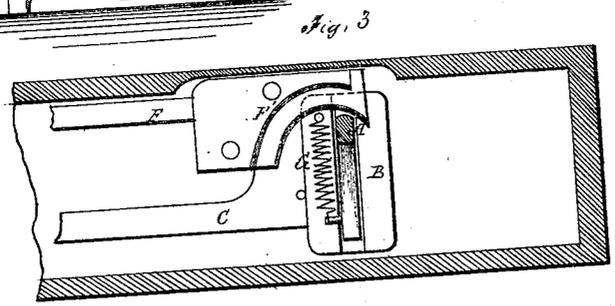
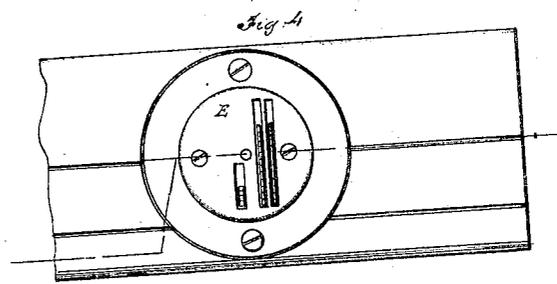
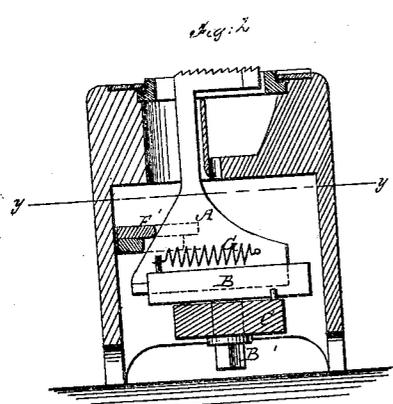
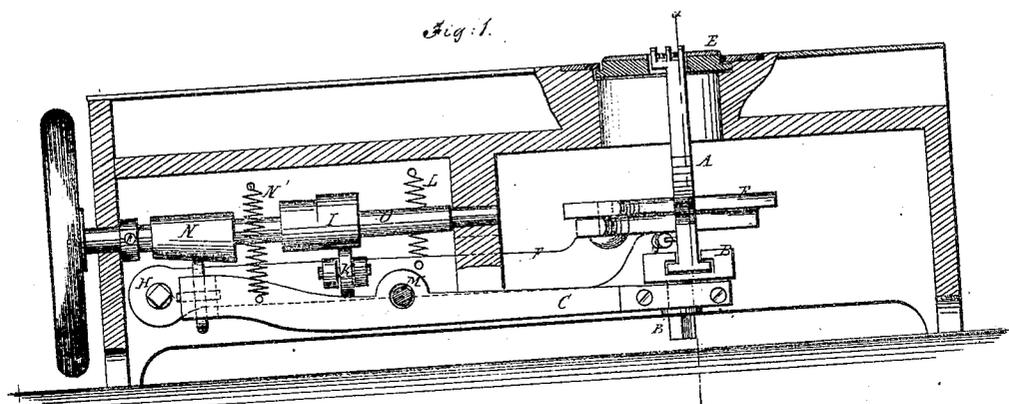


*W. Cooney,*  
*Sewing Machine.*

*No 102226.*

*Patented April 26. 1870*



Witnesses:  
*Chas. Vista.*  
*S. S. Mabee.*

Inventor:  
*W. Cooney*  
 PER *Wm H*  
 Attorneys.

# United States Patent Office.

WILLIAM COONEY, OF BRIDGEPORT, CONNECTICUT.

Letters Patent No. 102,226, dated April 26, 1870.

## IMPROVEMENT IN SEWING-MACHINE.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, WILLIAM COONEY, of Bridgeport, in the county of Fairfield and State of Connecticut, have invented a new and useful Improvement in Feed-Motion for Sewing-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings forming part of this specification.

The object of this invention is to arrange the feed-arms in those sewing-machines used for sewing tubular articles, and also in other machines, so as to feed not only longitudinally or transversely of the said cylinders, but at an angle between the two directions, or it may be in any direction whatever.

Figure 1 represents a sectional elevation of a cylinder with my improved apparatus;

Figure 2 represents a section on the line  $x x$ ;

Figure 3 represents a section on the line  $y y$  of fig. 2; and

Figure 4 represents a plan of part of the cylinder.

Similar letters of reference indicate corresponding parts.

The feed-arm A is seated in a grooved shoe, B, supported by a vertical pivot, B', on the end of the elevating and depressing lever C.

The said pivot B' is coincident with the axis of the feed-plate E, which turns with it, but the grooved shoe stands as much to one side of the axis as the slots in the feed-plate E are from the center of the said plate, to make room for the needle.

The axis B' is capable of being turned around on the lever to any direction it is required for the feed to work, within an angle of ninety degrees, and holds the shoe by friction.

The feed-arm A moves forward and back in the grooved shoe. It is moved forward by the curved end F' of the lever F, and backward by the spring G.

The said lever F is pivoted at H to the cylinder, and worked by the cam I downward, and by the spring h upward.

A friction-wheel, K, is provided for the cam I to work on.

The downward movement of the curved lever F against the curved heel of the feed-arm throws it forward. This end of the lever is a broad plate curved so as to work equally well on the curved heel of the feeding-arm. When feeding in either direction, within an arc of ninety degrees of a circle, or, if constituting a complete circle, and the spool be arranged to turn

completely around, it will work it to any degree of the circle.

The direct up-and-down movement is imparted to the feed-arm by the lever C pivoted at M, and operated by the cam N on the shaft O and the spring N'.

The cam I is so shaped and arranged relatively to the needle-operating devices that the needle-arm is thrown up previous to the movement of the arm F to give the forward movement, and held up during this movement. Then both levers F and C go down together, the arm C carrying the feed-arm down in a straight line. Then the arm F rises and allows the feed-arm to recede under the action of the spring G.

The length of the stitch may be regulated by a set-screw acting against the heel, or any other part of the shoe, or it may be changed by arranging the pivot M of the lever C to slide back and forth.

The vertical movements of the curved plate F' and of the shoe B may be effected by other contrivances; for instance, they may be fitted with attachments working in vertical guides; and be moved up and down by cranks on rotating or oscillating shafts, or they may have pins working in cam-grooves in cam-plates on rotating or oscillating shafts.

It is manifest that I may cause the feed to turn a complete circle, and work to any degree of the circle, the plate F' being made to form a continuous circle, and this I propose to do, when required.

Having thus described my invention,

I claim as new and desire to secure by Letters Patent—

1. The combination with the sliding feeding-arm A and a support for the same mounted on a lifting and depressing carrier, which may oscillate about or in the line of the axis of the needle, of a vertically-moving curved or circular plate, F', and a retracting spring, G, the said plate acting against the incline on the feed-arm, and all substantially as specified.

2. The combination with the feed-arm A and shoe B, wherein it slides, of the lever C, cam N, shaft O, and spring N', all substantially as specified.

3. The combination with the feed-arm A, shoe B, and lever C, of the curved or circular plate F', shaft O, and spring L, all substantially as specified.

The above specification of my invention signed by me this 23d day of February, 1870.

WILLIAM COONEY.

Witnesses:

GEO. W. MABEE,  
ALEX. F. ROBERTS.