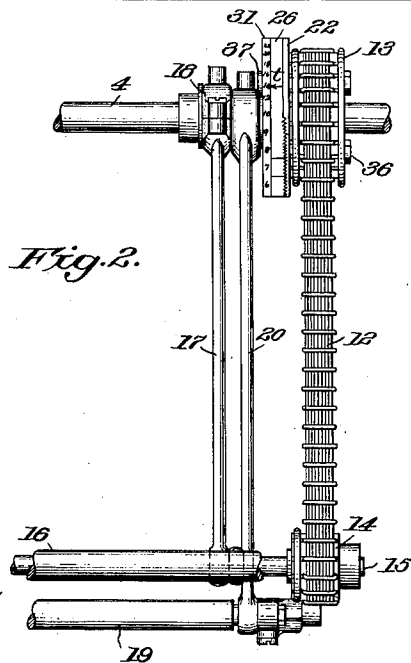
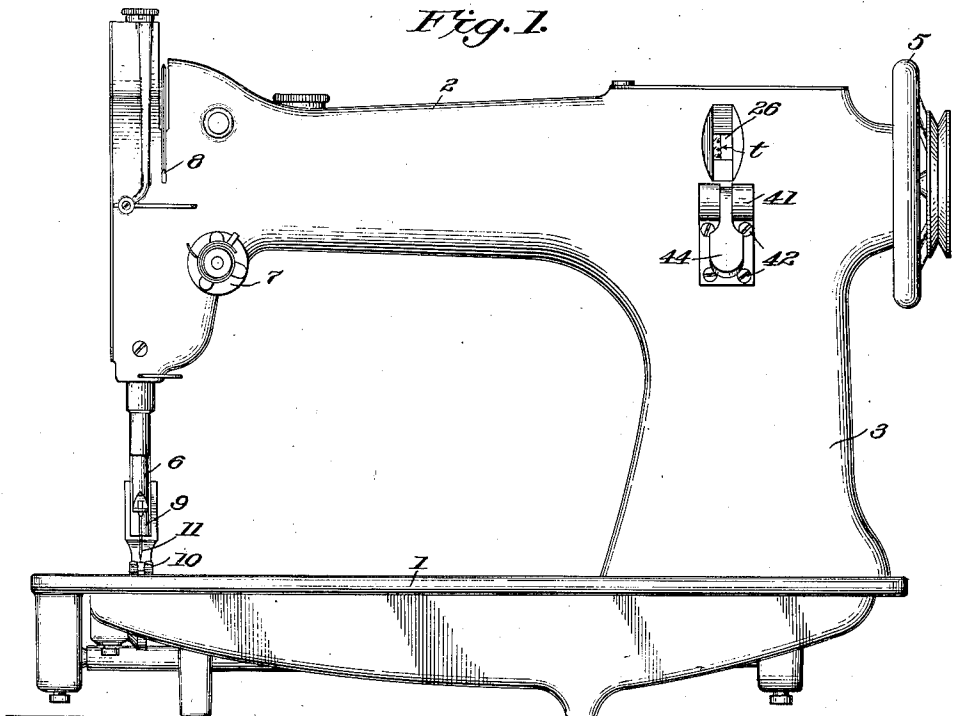


J. C. RINGE.
FEEDING MECHANISM FOR SEWING MACHINES.
APPLICATION FILED NOV. 29, 1911.

1,047,136.

Patented Dec. 10, 1912.

2 SHEETS—SHEET 1.



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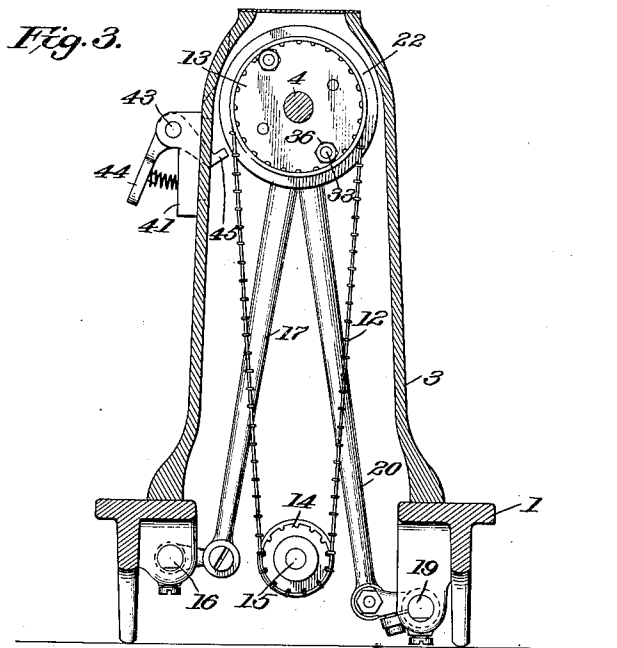


Fig. 5.

Fig. 4.

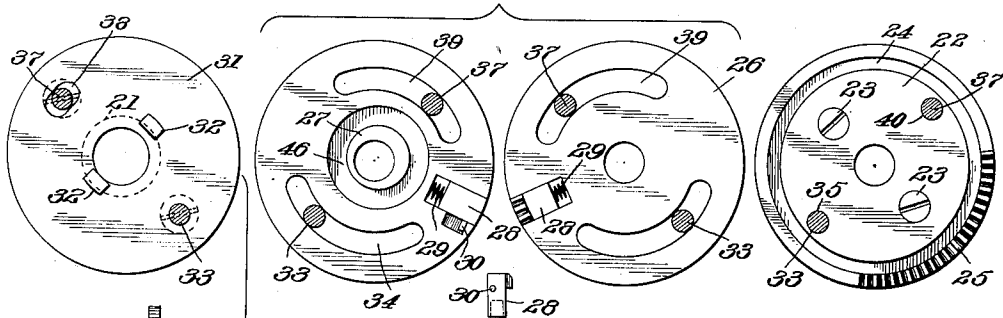
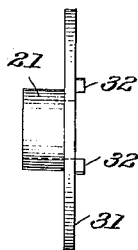


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN C. RINGE, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO THE SINGER MANUFACTURING COMPANY, A CORPORATION OF NEW JERSEY.

FEEDING MECHANISM FOR SEWING-MACHINES.

1,047,136.

Specification of Letters Patent.

Patented Dec. 10, 1912.

Application filed November 29, 1911. Serial No. 662,961.

To all whom it may concern:

Be it known that I, JOHN C. RINGE, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Feeding Mechanism for Sewing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to improvements in feeding mechanism for sewing machines, and has for its object to provide improved means for regulating the length of the stitch.

It has been the general experience that the earlier constructions of sewing machine stitch-regulating mechanisms are liable to accidental adjustment due to the sudden stopping and starting of so-termed "high speed" sewing machines, and to overcome this difficulty is the principal object of the present invention, to which end there is provided a combination disk, the members of which are provided with adjusting elements for positively determining the length of the stitch, and means for positively holding said elements in their given adjustments.

In the accompanying drawings illustrating the invention, in the several figures of which like parts are similarly designated, Figure 1 is a view in front side elevation of a sewing machine equipped with the present invention. Fig. 2 is a front side elevation of the elements connecting the main or needle-bar-driving shaft with the loop-taker-actuating, feed and feed-lift shafts. Fig. 3 is an end view—looking in the direction of the front of the machine—of the elements shown in Fig. 2, and illustrating in section the main shaft, arm standard and sewing machine bed-plate, together with a manually controlled lever mounted on said standard for facilitating the adjustment of the feed-regulating means carried by said main shaft. Fig. 4 is an inner face view of the feed-regulating toothed disk. Fig. 5 comprises reverse side views of the feed-regulating latch disk, together with an edge view of the toothed latch carried by said disk. Fig. 6 comprises edge and inner face views of the pivotally mounted feed connection disk.

As the present invention deals principally with the stitch-regulating mechanism, only such limited reference will be made to the

usual well-known parts of the sewing machine as is deemed necessary for a proper understanding of the invention.

Referring to the figures, 1 represents the bed-plate of the sewing machine upon which is mounted the bracket arm comprising the arm bracket 2 and standard 3, 4 the main or needle-bar-driving shaft carrying at its rear end the band or hand wheel 5 and at its opposite end connected with the needle-carrying bar 6 by the commonly-employed shaft flange and needle-bar link connection (not shown), 7 and 8 the needle-thread tension and take-up, respectively, 9 the cloth-presser-carrying bar, 10 the cloth-presser, and 11 the commonly-employed eye-pointed needle.

12 represents a belt connection for connecting the belt-driven pulley 13 carried by the main shaft with a belt-driven pulley 14 carried by the loop-taker-actuating shaft 15, 16 a feed-lift shaft connected at its rear end with a feed-lift connection 17 whose upper end embraces the usual feed-lift connection eccentric 18 carried by said main shaft, and 19 a feed shaft connected at its rear end with a feed shaft connection 20, the upper end of which embraces a hub 21 later to be referred to.

All of the foregoing parts are usually found in sewing machines of the present class, and are herein shown as best representing one form of construction to which the present invention is applicable.

Referring now to the parts more directly connected with the present invention, upon the main shaft 4 is mounted a combination disk comprising a toothed disk 22 secured by screws, as 23, to the inner face of the belt-driving pulley 13 and provided with a groove 24 and toothed section 25, and next to the disk 22 is mounted an adjustable latch disk 26 having formed integral with it an eccentric or cam 27 carrying a toothed latch 28 yieldingly held in its effective position by a spring 29 and controlled in its outward movement by a pin 30.

31 represents a feed connection disk mounted adjacent to the disk 26 and provided with the hub 21 and cam followers, as 32, said disk 31 being pivotally mounted on a stud screw 33 which passes through a slot formed in the disk 26 and an opening formed in the disk 22, and is threaded into

the belt-driven pulley 13, a nut 36 acting to hold said stud screw against accidental adjustment; and for holding the disk 31 in frictional contact with the disk 26 a stud screw 37 is employed which passes through elongated openings 38 and 39 and opening 40 and is threaded and secured in the pulley 13 in the manner of the stud screw 33.

41 represents a bracket secured by screws, as 42, to the standard 3 and provided with a short shaft 43 upon which is journaled a hand lever 44, the effective end 45 of which acts, at the will of the operator, on the toothed latch 28 to disengage the latter from the teeth of the section 25 of the disk 22 when it is desired to change the length of the stitch through the adjustment of the disk 26.

To change the length of the stitch, the operator by manipulating the hand lever 44 places the effective end 45 of said lever in contact with the periphery of the disk 26, when the main shaft is rotated a distance sufficient to cause said effective end to act on the latch 28 and place its teeth in line with the groove 24 formed in the disk 22, thus locking the disk 26 against rotation, followed by slightly rotating said main shaft in a direction to bring the arrow *t* opposite the numeral designating the desired number of stitches to the inch imprinted on the periphery of the disk 31, when said hand lever is permitted to return to its normal position, the eccentric 27 acting on the followers 32 to give to the hub 21 such degree of eccentricity with respect to the main shaft as will effect the number of stitches per inch indicated by the numeral designated by said arrow.

While in the preferred form of construction oppositely-arranged cam followers, as 32, are employed for coacting with the eccentric 27 to effect the adjustment of the disk 31, it will be readily understood that the groove 46 could be of a width corresponding to the thickness of one of said followers, whereby the second follower could be dispensed with.

Claims:—

1. In a feeding mechanism for sewing machines, the combination with the main and feed shafts, of a combination disk carried by said main shaft and operatively connected with said feed shaft, said combination disk including a toothed disk provided with a toothed section, a latch disk carrying a toothed latch, a feed connection disk provided with a hub, and means, as a cam and follower, for giving to said hub varying degrees of eccentricity with respect to said main shaft.

2. In a feeding mechanism for sewing machines, the combination with the main and feed shafts, of a combination disk carried by said main shaft and operatively connected with said feed-shaft, said combina-

tion disk including a toothed disk provided with a toothed section, a latch disk carrying a toothed latch and provided with an eccentric, and a feed connection disk provided with a hub and a cam follower, said eccentric acting upon said follower to give to said hub varying degrees of eccentricity with respect to said main shaft.

3. In a feeding mechanism for sewing machines, the combination with the main and feed shafts, of a combination disk carried by said main shaft and operatively connected with said feed shaft, said combination disk including a latch disk and a feed connection disk, the latter provided with a hub, and means, as a cam and follower, for giving to said hub varying degrees of eccentricity with respect to said main shaft.

4. In a feeding mechanism for sewing machines, the combination with the main and feed shafts, of a combination disk carried by said main shaft and operatively connected with said feed shaft, said combination disk including a toothed disk provided with a toothed section and a latch disk carrying a toothed latch and operatively connected with a feed connection disk provided with a hub, and conveniently located means for manually releasing said toothed latch from engagement with said toothed section to permit the adjustment of said latch disk to change the degree of eccentricity of said hub with respect to said main shaft.

5. In a feeding mechanism for sewing machines, the combination with the main and feed shafts, of a combination disk carried by said main shaft and operatively connected with said feed shaft, said combination disk including a toothed disk provided with a toothed section and a latch disk carrying a toothed latch and operatively connected with a feed connection disk provided with a hub, and means, including a manually controlled lever, for releasing said toothed latch from engagement with said toothed section to permit of the adjustment of said latch disk to change the degree of eccentricity of said hub with respect to said main shaft.

6. In a feeding mechanism for sewing machines, the combination with the main and feed shafts, of a combination disk comprising a toothed disk, a latch disk and a feed connection disk, said combination disk being carried by said main shaft and operatively connected with said feed shaft, and means, including a latch and a coacting element, for holding said latch disk against accidental movement independent of said toothed disk.

7. In a feeding mechanism for sewing machines, the combination with the main and feed shafts, of a combination disk comprising a toothed disk, a latch disk and a feed

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connection disk, said combination disk being carried by the main shaft and operatively connected with said feed shaft, and means, including a latch and a coacting element, for holding said latch disk against accidental movement independent of said toothed disk, and a hand lever for releasing said latch from engagement with its coacting element to permit of the adjustment of

said latch disk with respect to said toothed disk.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

JOHN C. RINGE.

Witnesses:

JAMES J. COX,
ABBIE M. DONIHUE.