March 29, 1955 A. PAGNI 2,704,986

KNOB ADJUSTING MEANS FOR ADJUSTABLE SEWING MACHINE FEED

Filed Feb. 25, 1952 3 Sheets-Sheet 1

Fig. 1.

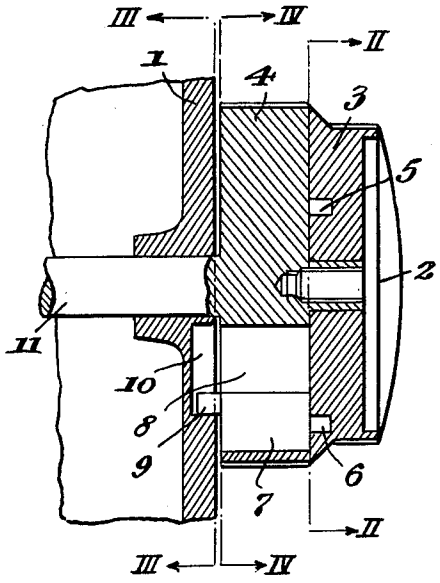


Fig. 2.

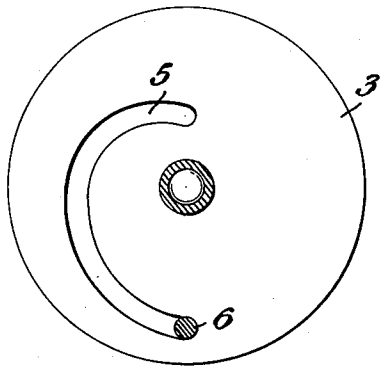


Fig. 3.

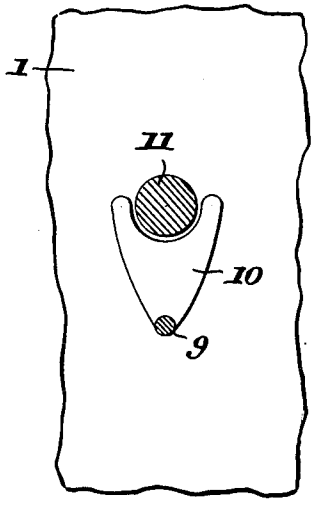
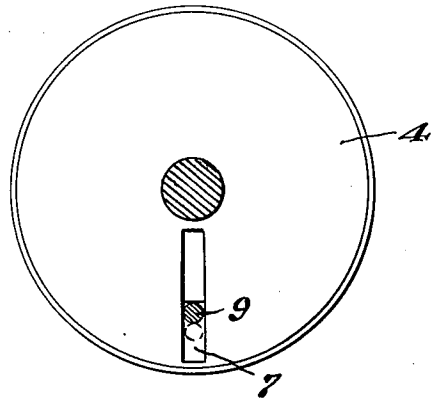


Fig. 4.



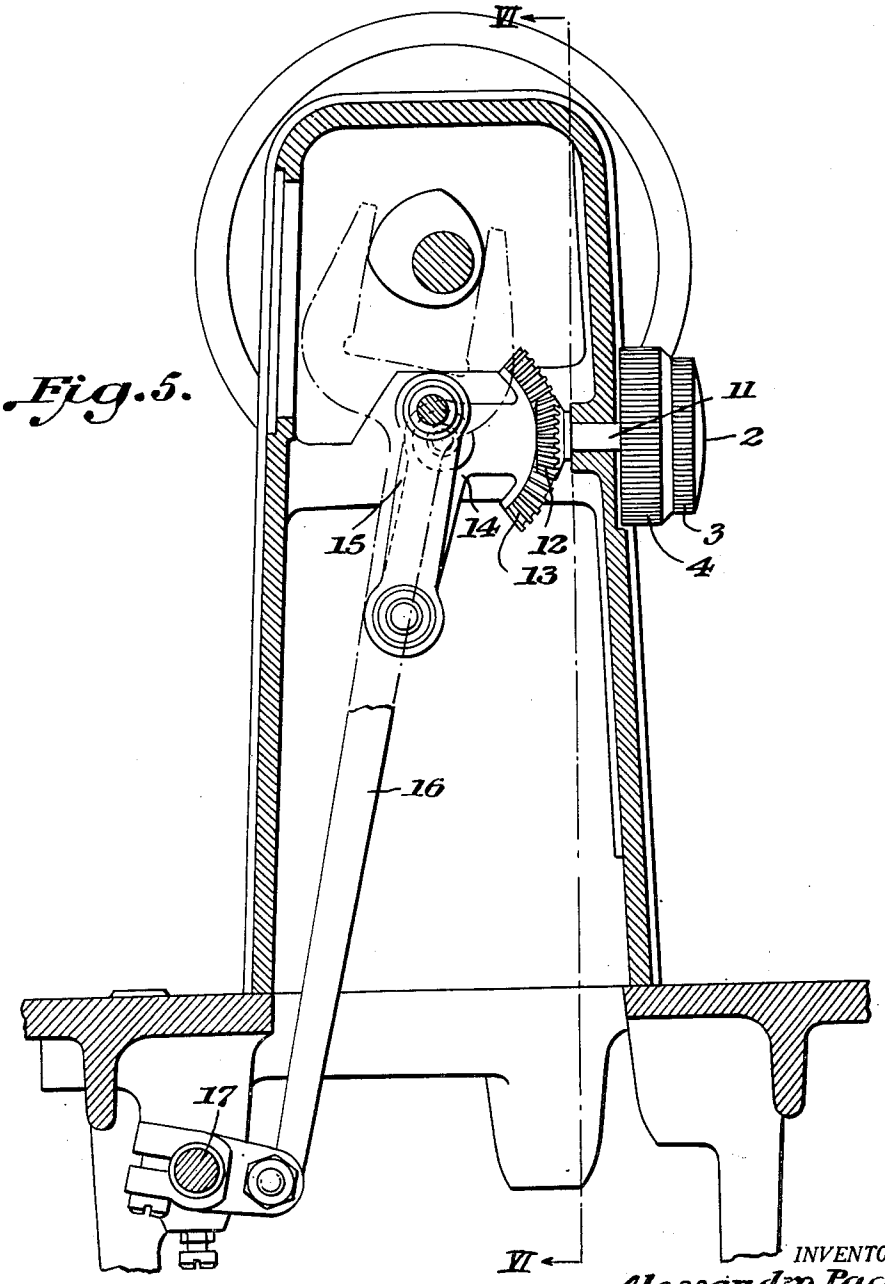
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Fig. 5.



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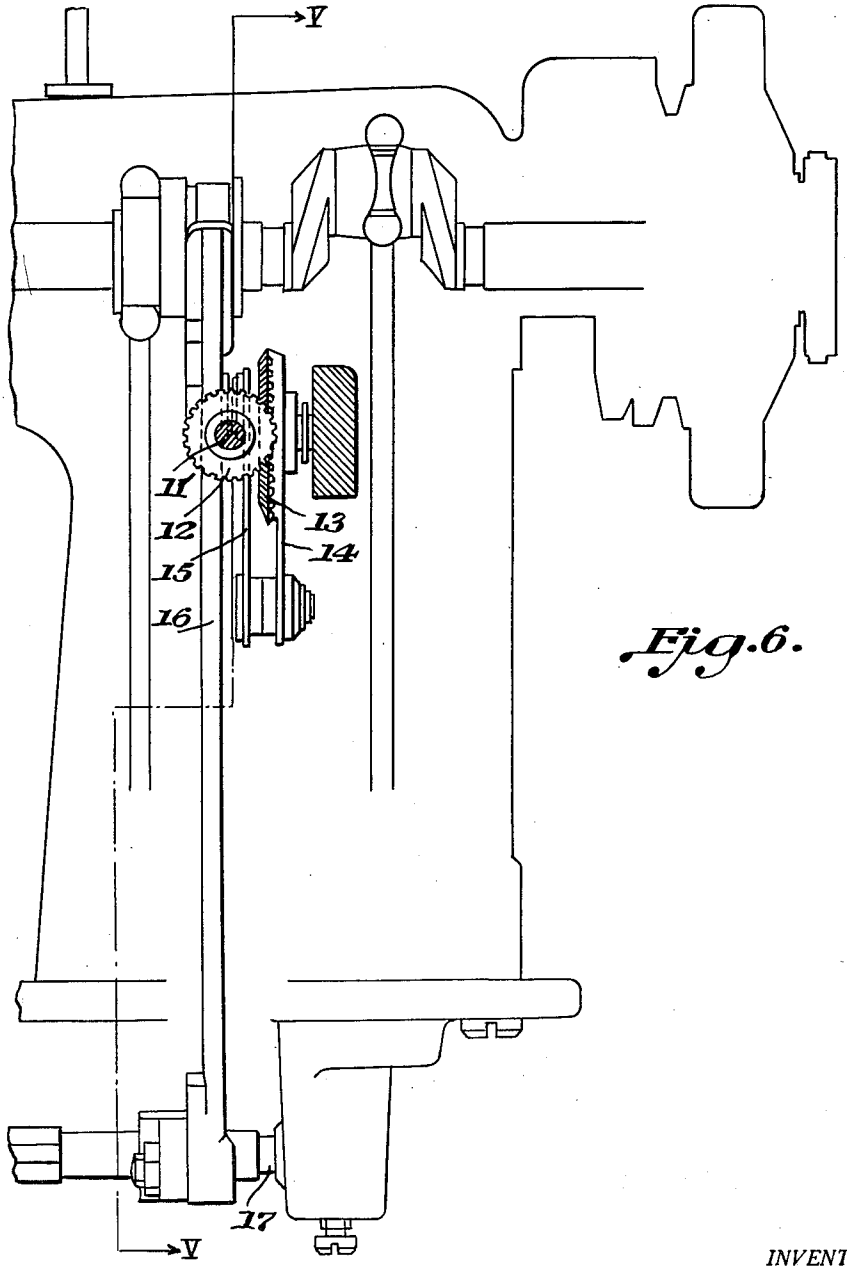


Fig. 6.

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KNOB ADJUSTING MEANS FOR ADJUSTABLE SEWING MACHINE FEED

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Application February 25, 1952, Serial No. 273,306

Claims priority, application Italy November 30, 1951

4 Claims. (Cl. 112—210)

The devices for stitch length variation as usually adopted have been provided with a control member placed on the plane of the base of the machine and generally consisting in a displaceable knob. Following the improvements on these machines and, mainly, with the realization of the portable type, this control-mechanism was conveniently located on the vertical standard or arm of the machine. This control member consists in a lever placed inside of said standard which transmits the necessary movements to the other components placed under and inside the base of the sewing machine. Said control lever projects from a slot provided in the standard casting and this slot is, usually surrounded with a plate upon which are engraved progressing figures corresponding to the stitch-range.

The aforesaid solution presents several drawbacks. One of these drawbacks is that, owing to the fact that the lever must be operated from the outside of the machine and that for evident reasons it is connected with the inside components of the sewing machine, it becomes always necessary to provide a slot in order to connect the outer part of the machine with the inside one; such slot generally becomes a collector of dust and dirt detrimental to a good upkeep.

Another drawback regards the appearance of the control device. As a matter of fact, however small may be the slot and the lever controlling mechanism, they always discontinue a surface in full view as the main side of the machine.

On the other side and to the same aim, other control members are known consisting of a turnable knob carried by a spindle that projects outside the frame of the machine. In order to establish the amplitude of the angle of rotation of such a knob and, thereupon, the length of the stitch forward and backward it is necessary, however, to have recourse to a second auxiliary mechanism of control which complicates the construction and constitutes a further projecting part from the machine frame.

The present invention makes up for these drawbacks having recourse, for adjusting the stitch-length and the feed-reverse, to a spindle that carries a control knob which is turned in either direction in order to displace the known lever placed inside of the machine vertical standard and also a second controlling gear fitted to said knob and apt to determine in advance the angle of rotation and consequently the rotation of the spindle according to the stitch length wanted both for forward and backward feed.

Particularly this problem is resolved when it is desirable to secure the same stitch length both for forward and backward feed.

The device according to the invention is shown by the attached drawings by way of example.

Fig. 1 is a section along the axis of the machine.

Figs. 2, 3 and 4 are sections of the device shown in Fig. 1 respectively in conformity with planes II—II, III—III, IV—IV in Fig. 1.

Figs. 5 and 6 represent, by way of example, two views showing respectively and according to planes V—V of Fig. 6 and VI—VI of Fig. 5, the device applied to a sewing machine of known construction.

Referring to the drawings, the control-knob consists of two cylindrical components 3 and 4 coaxially assembled so that their abutting surfaces may rub together and be held in place by a screw with a large head 2. The component 3 carries, in the surface in contact with the disc 4, a spiral groove 5 in which fits a nib 6 which belongs to a small square plate 7 that slides with a minimum play in the radial slot 8 of the component 4.

A second nib 9 of said component 7 fits in a slot 10 shaped as shown in Fig. 3 provided in the side of the sewing machine standard 1 facing the operator.

Furthermore the component 4 solidly carries a spindle 11 which transmits the controlling action inside of the machine through the bevel gears 12—13, crank-lever 14, connecting bars 15 and 16 to the known spindle 17 of the feeder.

The working of the stitch controlling knob is carried out as follows.

Turning the piece 3 in respect to the piece 4, the small plate 7 moves in a radial direction. During this movement the nib 9, solid with said small plate which fits in the slot 10 of the frame, is pushed toward the spindle 11 far from the sides of said slot and nearly on the center line of the angular curvilinear profile of same.

Now, the rotation of the piece 4 in respect to the frame causes the knob 9 to deviate from said center line and to abut one of the inner sides of slot 10.

The length of the stitch conforms itself to the position of the small plate as determined by the rotation of the piece 3 in respect to the piece 4. For any length of stitch it will be possible to ensure forward and backward feeds corresponding to the tangency of the nib 9 in respect to the two sides of the slot 10.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:

1. Adjusting means for an adjustable sewing machine feed located within the frame of a sewing machine comprising a spindle mounted in said frame and projecting therefrom and operatively connected to said feed, said frame having a slot with symmetrical divergent sides therein adjacent said spindle, a disc on the projecting portion of said spindle having a radially extending slot therein, a second disc mounted on said first disc and capable of relative movement therewith having a spiral groove in the face thereof abutting said first disc and a member slidably mounted in said radially extending slot having extensions thereon engaging in said first named slot and said spiral groove whereby the length and direction of feed of said adjustable sewing machine feed may be adjusted.

2. Adjusting means as set forth in claim 1 wherein said second disc is coaxially mounted with respect to said first disc.

3. Adjusting means as set forth in claim 1 wherein said first disc is provided with a collar upon which said second disc is rotatably mounted and a screw secured to said first disc maintains said second disc in frictional engagement with said first disc.

4. Adjusting means for an adjustable sewing machine feed located within the frame of a sewing machine comprising a spindle mounted in said frame and projecting therefrom and operatively connected to said feed, said frame having a slot with symmetrical divergent sides therein adjacent said spindle, means mounted on said spindle cooperating with said slot for determining the length and direction of feed of said adjustable sewing machine feed and said spindle being operatively connected to said feed by means including cooperating bevel gears.

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