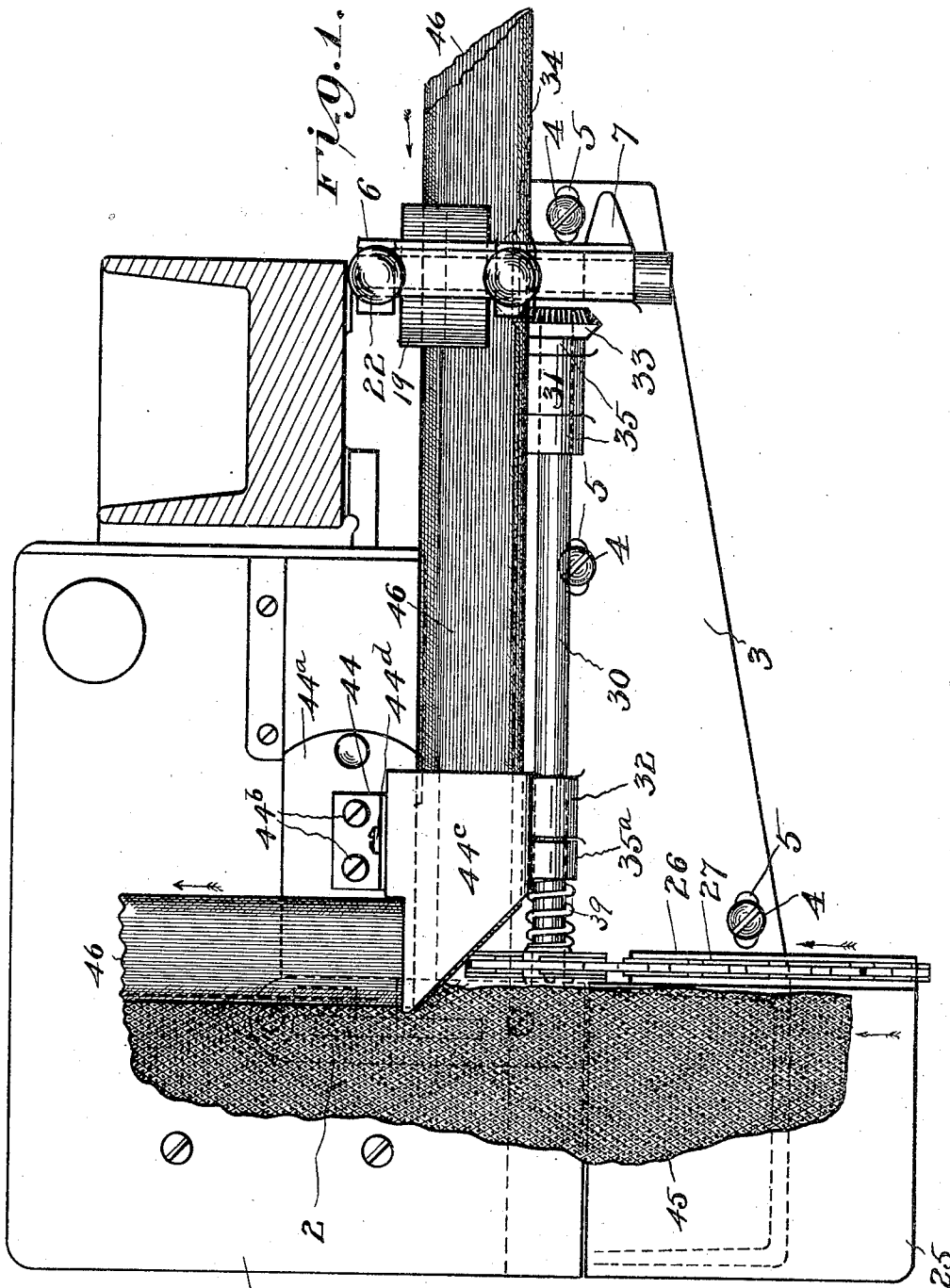


W. C. ROBBINS.
 INDICATING DEVICE FOR SEWING MACHINES.
 APPLICATION FILED OCT. 23, 1908.

951,967.

Patented Mar. 15, 1910.

3 SHEETS—SHEET 1.



WITNESSES:
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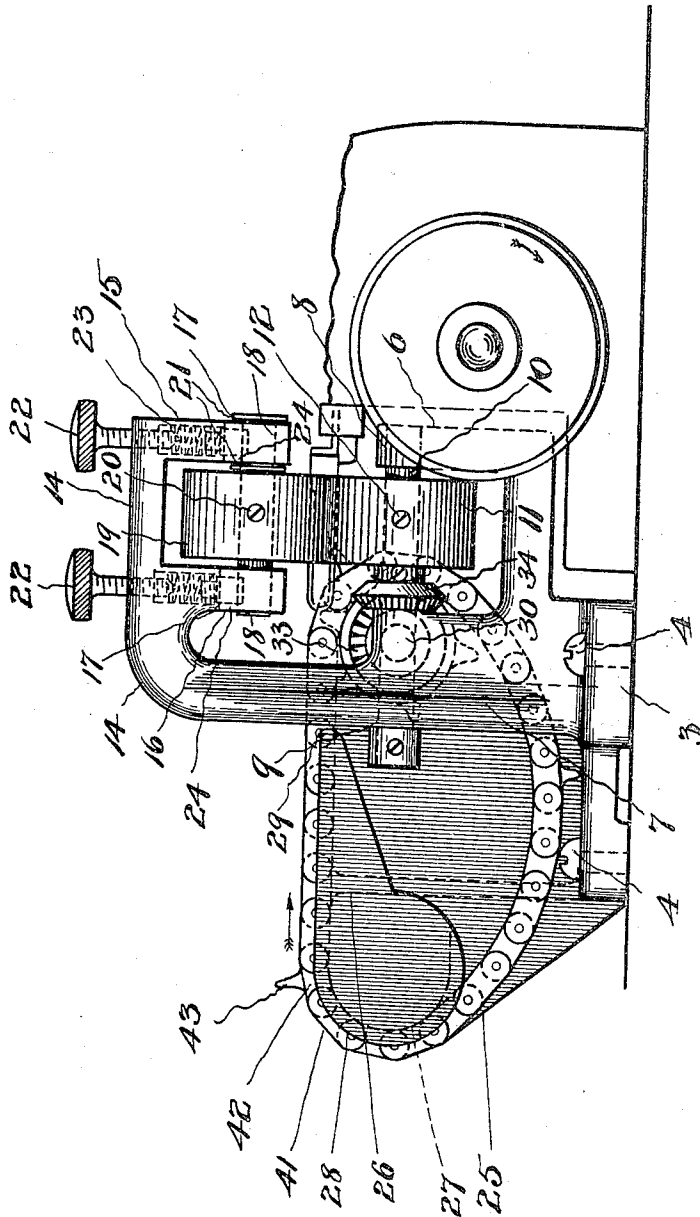
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3 SHEETS—SHEET 2.

Fig. 2.



WITNESSES:

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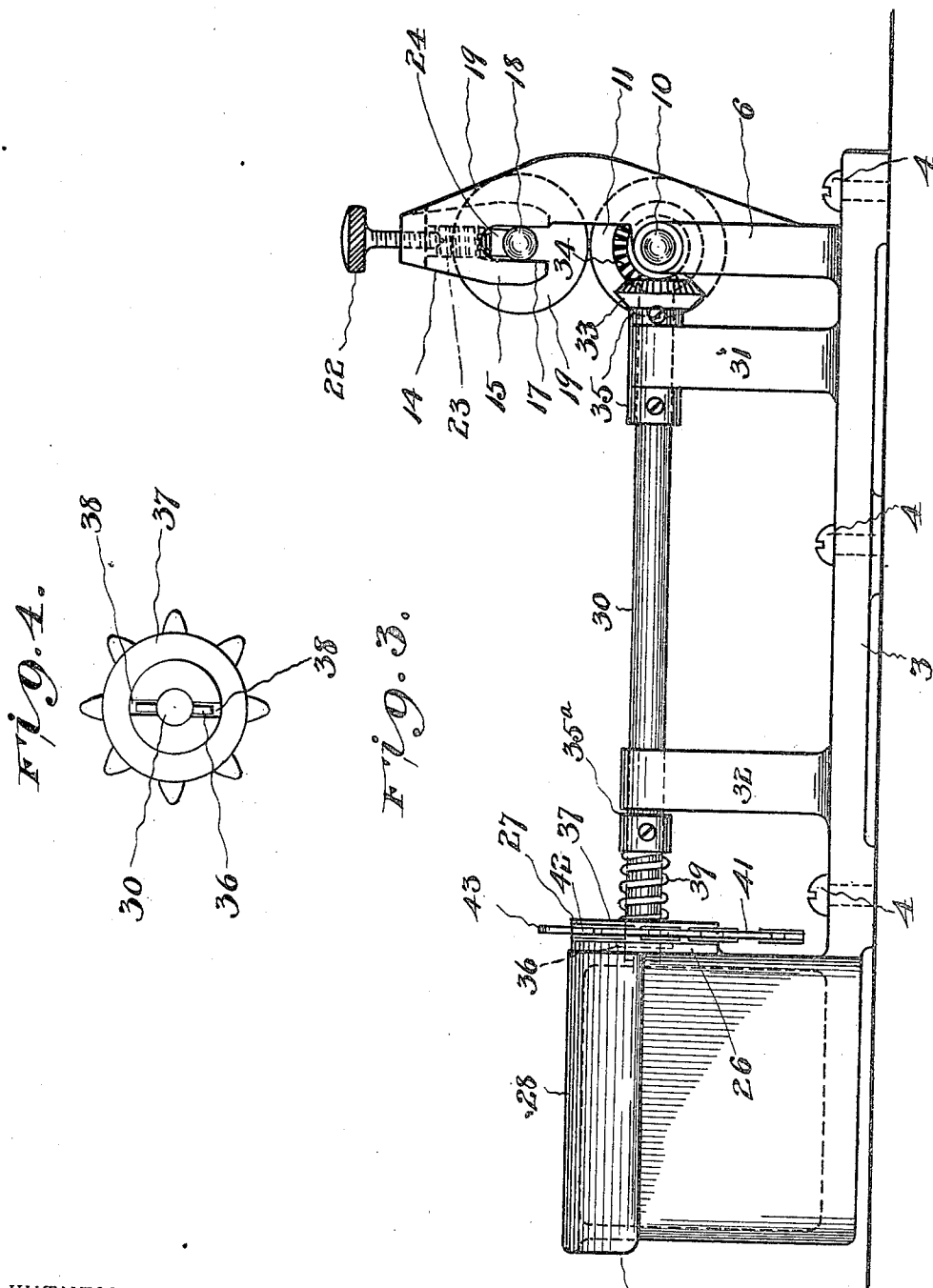
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

WILLIS C. ROBBINS, OF NYACK, NEW YORK.

INDICATING DEVICE FOR SEWING-MACHINES.

951,967.

Specification of Letters Patent. Patented Mar. 15, 1910.

Application filed October 23, 1908. Serial No. 459,113.

To all whom it may concern:

Be it known that I, WILLIS C. ROBBINS, a citizen of the United States, residing at Nyack, in the county of Rockland, State of New York, have invented certain new and useful Improvements in Indicating Devices for Sewing-Machines, of which the following is a specification.

My invention relates to improvements in indicating devices for determining the length of bands on which garments or other articles are to be sewed or attached, more especially designed for use in connection with sewing machines.

The size of a garment, piece of fabric or other article depends upon the length of the band to which it is attached and the objects of my invention are as follows:—1st, to provide means whereby the length of a band to which a garment, piece of fabric or other article is to be sewed or attached can be accurately determined, simultaneously with the sewing or attaching of said garment to the band; 2nd, to provide means to indicate one or more points where one of the pieces of fabric composing a garment or other article is to be lapped upon another piece or portion of the same garment; 3rd, to provide means to indicate one or more points where gathers or plaits are to be placed in the seam of a garment or other article, and the distance said gathers or plaits are to extend along said seam, or the amount said gathers or plaits should shorten the length of said garment or other article; 4th, to provide means to indicate one or more points where the body of the material of a garment or other article is to be stretched, and the distance from the point where the stretching commences to the point where it should cease, or the amount that it should be stretched; 5th, to provide means which will permit the operator of a sewing machine to fit a garment or other article to a strip or band with absolute accuracy on a sewing machine which is being operated at a very high rate of speed, say from 3,500 to 4,000 stitches per minute, without stopping or affecting the operation of the stitch forming or feeding mechanisms of the machine; 6th, to provide means to indicate the severing points on a strip or band to which a garment or other article has been sewn on a sewing machine; 7th, to

provide an indicating device which is simple, inexpensive and durable in construction, very effective in use, and capable of being readily attached to or detached from a sewing machine, or other machine, to which it is applied.

The invention consists in the several features and combination of features as more fully hereinafter described and claimed.

Referring to the drawings:—Figure 1, is a top plan view of the indicating device shown in connection with the feeding mechanism of a sewing machine. Fig. 2, is an end view in elevation. Fig. 3, is a front view in elevation. Fig. 4, a detail side view of the sprocket wheel and the end of the main shaft.

In the drawings in which like numerals of reference denote like parts throughout the several views, 1 represents a portion of a cloth plate of a sewing machine and 2 the feeding mechanism of a sewing machine, said sewing machine being of any desired form or make.

The indicating device is supported on a suitable base 3 which is mounted on the sewing machine table and secured thereto by means of screws 4 which pass through elongated slots 5 in said base, said slots being for the purpose of allowing the indicating device to be adjusted, longitudinally, with relation to the sewing machine.

Standards 6 and 7 extend upward from the base 3 and are provided with bearings 8 and 9, in which are supported the ends of the shaft 10 of the driving roller 11, said roller being secured to the shaft 10 by means of a set screw 12.

Extending from the top of the standard 7 is a bracket 14 which is provided with depending arms 15 and 16, each having a slot 17, open at the bottom; and 18 is a shaft, on which a pressure roller 19 is secured, by means of a set screw 20, the ends of said shaft 18 being mounted in the slots 17 of the arms 15 and 16 and provided with flanges 21, which limit the lateral movement in said slots, although the shaft 18 is free to move vertically, to accommodate materials of varying thickness, and to rotate.

The periphery of the driving roller 11 is preferably roughened, so that materials passing over it and pressed down thereon, by the pressure roller 19, will cause said driving

roller to revolve, while the periphery of the pressure roller 19 may be smooth, hard, covered with soft material or made in any other desired way.

5 The pressure roller 19 contacts and bears on the strip or band to which a garment or other article is being sewed, and the degree of pressure of the said pressure roller on the strip or band is regulated by means of the
10 adjusting screws 22 in connection with the spiral springs 23, which are mounted in recesses in the arms 15 and 16, which bear on blocks 24, which in turn bear on the ends of the shaft 18 of the pressure roller.

15 At the left hand end of the base 3 a work supporting table 25 is provided which has a lateral projection 26 with a groove 27 therein, said projection having a circular portion 28, at one end, and a rounded point
20 29 at the other end.

Other suitable guiding means may be substituted for the groove 27 in the work supporting table if desired.

25 The main shaft 30 of the device is mounted in suitable bearings 31 and 32 extending upward from the base 3. One end of the main shaft is provided with a bevel gear 33 which meshes with a bevel gear 34 mounted on the shaft 10 of the driving roller 11, and
30 it is through these two gears 33 and 34 that motion is communicated from the driving roller to the main shaft 30. Suitable collars 35, are provided on the main shaft to prevent longitudinal movement of the same.
35 The opposite end of the main shaft 30 is provided with a pin 36, and 37 is a sprocket wheel slidably mounted on said shaft provided with a slot 38 in its face. See Fig. 4. The pin 36 is normally kept seated in the
40 slot 38 by means of a spiral spring 39, said spring being loosely mounted on the main shaft one end bearing against the sprocket wheel 37 and the other end against the collar 35^a, said collar designed to be adjusted to
45 control the tension of said spring by means of the set screw which passes through the collar and engages the shaft 30.

41 is a movable indicating member, comprising an endless chain, which may be of
50 any desired length, construction or form, said chain passing over and operated by the sprocket wheel 37 and traveling in and guided by the groove 27 on the projection 26 of the work table 25.

55 At proper points in the chain a special indicating link or links 42 are provided, which differ from the other links, each being provided with a finger or lug 43 projecting therefrom. The difference between the
60 indicating links 42 and the other links of the endless chain may be distinguished by their form, the material from which they are made, their color or in any other suitable manner. These indicating links may be
65 placed at any desired location in the chain,

and upon their location depends the several results to be attained by the invention.

44 is a bracket which is secured to the plate slide 44^a of the sewing machine by means of screws 44^b, and 44^c is a strip guide
70 or folder adjustably mounted on said bracket by means of a screw or screws 44^d. If desired instead of having the bracket 44 and the strip guide or folder 44^c mounted on the
75 plate slide, they may be mounted on any other part of the sewing machine, or in any other suitable manner, so long as the strip guide or folder is operatively located with respect to the stitch forming and feeding
80 mechanism.

45 represents a portion of a garment or other article and 46 a strip or band on which said garment is to be sewed, the strip being shown as passing between the operating
85 roller 11 and the pressure roller 19 and being turned by the folder 44^c just before it reaches the needle.

A belt or band could be used with indicating means at proper intervals instead of the chain.

90 The operation is as follows:—The end of the strip 46 is passed between the rollers 11 and 19 and thence through the strip guide or folder 44^c, or similar device, and thence to the feeding mechanism 2 of the sewing machine. The sewing machine having been
95 prepared for use in the ordinary way, it is started and the strip 46 is fed through and as the strip 46 is fed along it causes the rollers 11 and 19 to revolve. The movement of these rollers is transmitted through
100 the bevel gears 33 and 34, to main shaft 30 and sprocket 36, which is caused to revolve in unison with the rollers 11 and 19. The indicating chain 41, coöperating with
105 sprocket 37, is caused to move in the direction of its length in the usual manner of all chain and sprocket driving mechanisms. The top of the sprocket 37 turns in the direction of the sewing machine, and carries
110 that part of the chain which lies in the chain guiding slot 27 toward the sewing machine, in the same direction that the garment is fed through, by the action of the sewing machine feeding mechanism. The relative di-
115 ameter of the driving roller 11 and the sprocket 37 being such that the portion of the indicating chain 41 lying in the chain guiding groove 27 is carried forward toward the sewing machine at exactly the same
120 speed as the strip 46 is fed through the feeding mechanism of the sewing machine. It is thus obvious that any given point on the strip 46 will move forward toward the
125 needle in unison with and at the same speed as any corresponding point on the indicating chain 41; therefore, with the strip 46 in proper operative position and with the indicating link 43 properly positioned for the
130 start, (having an indicating chain of cor-

rect length and fitted with indicating links correctly spaced) if a garment or other article be properly presented to the sewing machine feeding mechanism 2, and the sewing machine be caused to operate, the garment 45 and the strip 46 will be fed through the sewing machine and the indicating chain 41 will travel substantially parallel with the edge of the garment 45. Thus, the component links of the indicating chain 41 will successively pass along the chain guiding slot 27, in the same direction as the garment 45 passes from the operator to the sewing machine. Obviously, the operator can easily match any desired point or points on the garment 45 with corresponding indicating links 43, located in the indicating chain 41, and should it be necessary to stretch or gather the garment 45, that the points before mentioned may properly meet or match said indicating links 43, the operator may easily accomplish this without stopping or retarding the action of the stitch forming mechanism of the sewing machine.

The indicating chain 41 being endless, it will successively pass its component links from the front edge of the work supporting plate 25 through the chain guiding slot 27 and around the periphery of the sprocket 37, and then back to the starting point at the front edge of the work plate 25 as it is caused to move by the sprocket 37, when said sprocket is actuated through the bevel gear mechanism by the strip 46 passing between the rollers 11 and 19. This movement of the indicating chain 41 will continue as long as the strip 46 is drawn past the feeding mechanism 2 of the sewing machine. It will thus be seen that by using indicating chains 41 of proper length, having indicating links 43 correctly spaced or positioned, any combination of patterns or lengths desired may be obtained.

For work where each successive piece is to be of the same length, a chain of that length with one indicating link is all that is required; said indicating link would show the starting point for the starting end of a garment, and when it has moved around its orbit to the starting point it would correctly indicate the finish point of said garment and the starting point of another.

When pieces of different lengths are desired, and these various lengths follow in consecutive order, an indicating chain of suitable length having indicating links properly spaced, will successively indicate the various lengths in consecutive order.

In some garments composed of more than one piece, it is often desirable to lap the edge of one piece past the edge of another. For such work an indicating chain would be constructed having an indicating link to show the starting point, another indicating link, located at the proper distance from

the before mentioned indicating link, to show the point where the edge of the second piece of the garment should lap past the edge of the first piece.

Should the garment be composed of two pieces only, the first mentioned link would show the finish point of the garment and also the starting point for another, but if it be composed of more than two pieces, all desired combinations can be provided for by making the indicating chain of suitable length and having the indicating links correctly spaced.

In garments where a ruffle, plait or gather is desired, an indicating link may be so placed as to indicate the starting point for the ruffle, while another will indicate its finishing point, or may be so placed as to indicate when sufficient gathering has taken place by coming in juxtaposition with a mark on the garment or its end, as may be desired.

In garments where it is desired to have some portion stretched, the point where stretching should commence can be indicated by the position of an indicating link 43, and the amount to be stretched can be determined by another properly located indicating link.

When sewing garments to which no band is attached or when a strip is to be sewn that could not be handled, as is the strip or band 46, the driving roller 11 could be mounted directly on the main shaft 30 with the pressure roller 19 above it, both being located to the right of and close to the sprocket; and a driving band could be placed between the rollers and carried to the sewing machine feeding mechanism by means that would permit of said band being fed and carried along by the feeding mechanism, and at the same speed as is the garment, but out of line of the needle, so that it would not be caught by the needle and sewed to the garment. This driving band would be carried down behind the sewing machine along beneath it and up between the driving and pressure rollers, so that it would travel around that orbit continuously as the machine was being operated and cause the sprocket to revolve and actuate the indicating means.

It will thus be seen that my invention is capable of a wide range of use and can be adapted for many purposes.

I do not desire to be understood as limiting myself to the specific details of construction and arrangement as herein described and illustrated, as it is manifest that variations and modifications may be made in the features of construction and arrangement in the adaptation of the device to various conditions of use without departing from the spirit and scope of my invention and improvements. I therefore reserve the right to all such variations and modifica-

tions as properly fall within the scope of my invention and the terms of the following claims.

What I claim is:

- 5 1. In a device for determining the length of a strip or band of material being sewed to a garment or other article on a sewing machine, an endless movable indicating member for indicating the length of the
- 10 strip or band, rollers between which said strip or band travels and which are operated thereby, means operatively connecting one of said rollers with the endless movable indicating member, and a guide for directing
- 15 said strip or band with the garment or other article, substantially as described.
2. In a device for determining the length of a strip or band of material being sewed to a garment or other article on a sewing
- 20 machine, a movable member provided with means for indicating the length of said strip or band, a driving roller operated by said strip or band, a shaft, means on one end of said shaft operatively connecting it
- 25 with the driving roller, means on the opposite end of said shaft operatively connecting it with the movable member and means for adjusting the movable member, substantially as described.
- 30 3. In a device for determining the length of a strip or band of material being sewed to a garment or other article on a sewing machine, said sewing machine having the usual feeding means for feeding said strip
- 35 or band and garment or other article, a work support provided with a groove, a movable member traveling in said groove and provided with means for indicating the length of the strip or band, rollers between
- 40 which said strip or band passes and means for operatively connecting the axis of one of said rollers with the movable member, substantially as described.
4. In a device for determining the length
- 45 of a strip or band of material being sewed to a garment or other article on a sewing machine, a work support provided with a groove, an endless member designed to travel in said groove and provided with
- 50 means for indicating the length of said strip or band, a pressure roller, a driving roller, means for operatively connecting said movable member and the driving roller and means for adjusting the said movable member,
- 55 member, substantially as described.
5. In a device for determining the length of a strip or band of material being sewed to a garment or other article on a sewing ma-

chine, a movable member provided with means for indicating the length of the strip 60 or band and means for adjusting the indicating means comprising a shaft provided with a pin, a sprocket wheel over which the indicating means passes, said sprocket wheel being provided with a slot and a spring for 65 normally keeping said pin in said slot, substantially as described.

6. In a device for determining the length of a strip or band of material being sewed 70 to a garment or other article on a sewing machine, an endless member provided with means for indicating the length of the strip or band, pressure and driving rollers between which said strip or band passes, a shaft, means on one end of said shaft for operatively connecting said shaft with the 75 driving roller, means for adjusting the indicating means of the endless member comprising a pin and a sprocket wheel on the opposite end of said shaft, said sprocket 80 wheel provided with a slot and a spring for normally seating said pin in said slot, substantially as described.

7. In a device for determining the length of a strip or band of material being sewed 85 to a garment or other article on a sewing machine, an endless chain provided with means for indicating the length of the strip or band, pressure and driving rollers, a shaft, means on one end of said shaft for 90 operatively connecting it with the driving roller and means on the other end of said shaft for allowing the removal of one endless chain and the substitution of another, comprising a spring controlled sprocket 95 wheel over which the chain passes, substantially as described.

8. In a device for determining the length of a strip or band of material being sewed 100 to a garment or other article on a sewing machine, means for indicating the length of the strip or band and garment or other article, means operated by the strip or band, and operative connection between said last 105 named means and the indicating means so proportioned that the indicating means, the strip or band and the garment or other article travel simultaneously, substantially as described.

In testimony whereof I have signed my 110 name in the presence of two subscribing witnesses.

WILLIS C. ROBBINS.

Witnesses:

GEORGE H. PRESSEY,
WILLIAM C. WHIPPLE.