(No Model.) 2 Sheets—Sheet 1.

J. D. KRENZ & W. D. FREDERICK.

GUIDING ATTACHMENT FOR SEWING MACHINES.

No. 494,679. Patented Apr. 4, 1893.

Fig. 1

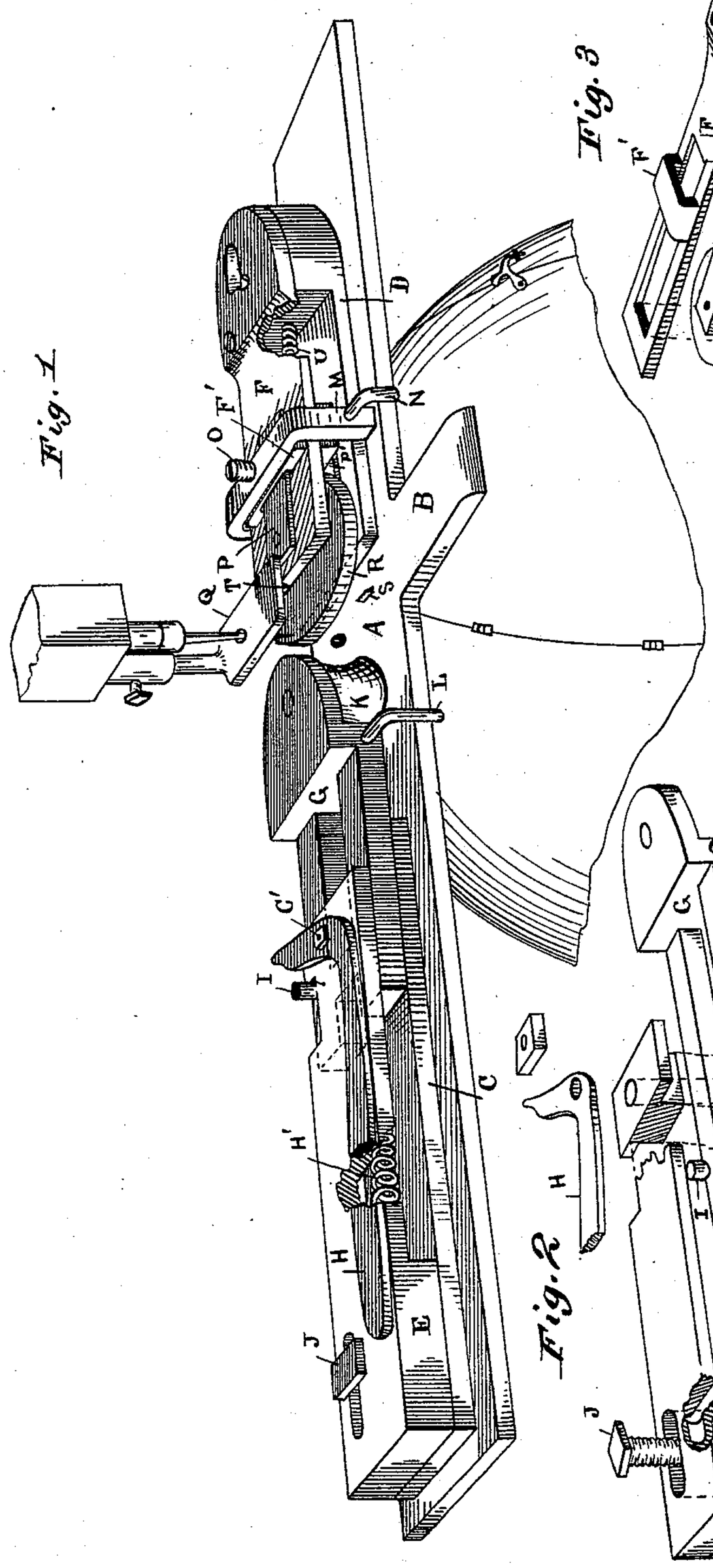


Fig. 3

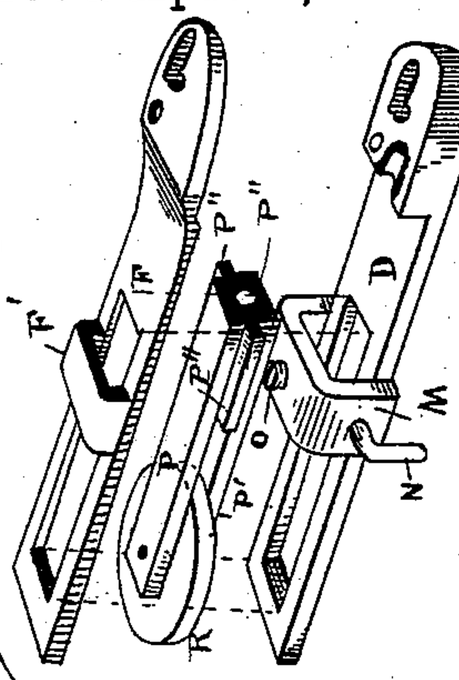
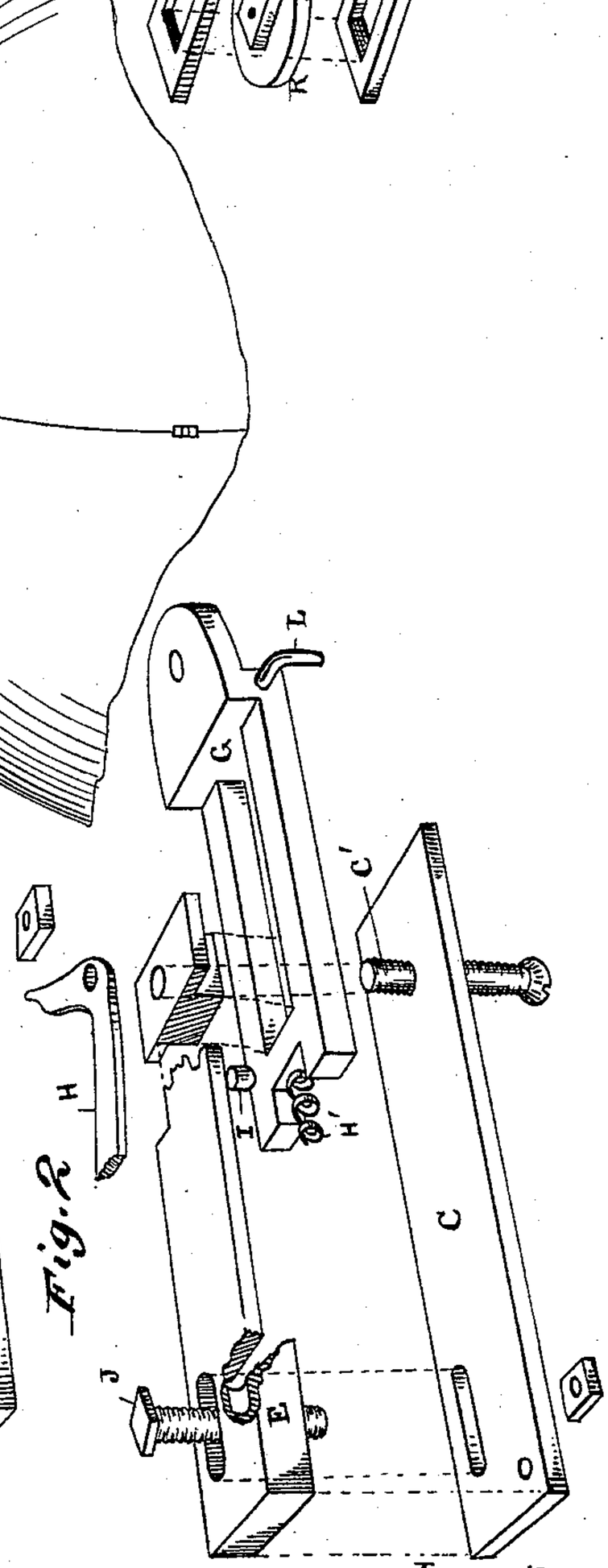


Fig. 2



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(No Model.) 2 Sheets—Sheet 2.

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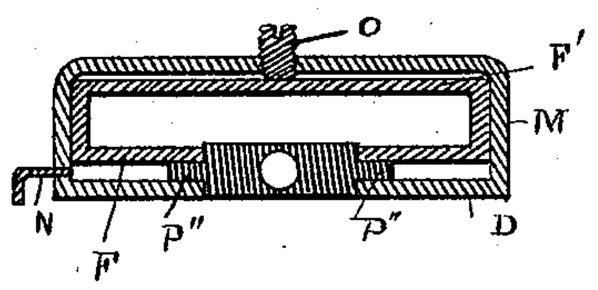


Fig. 4.

Fig. 5.

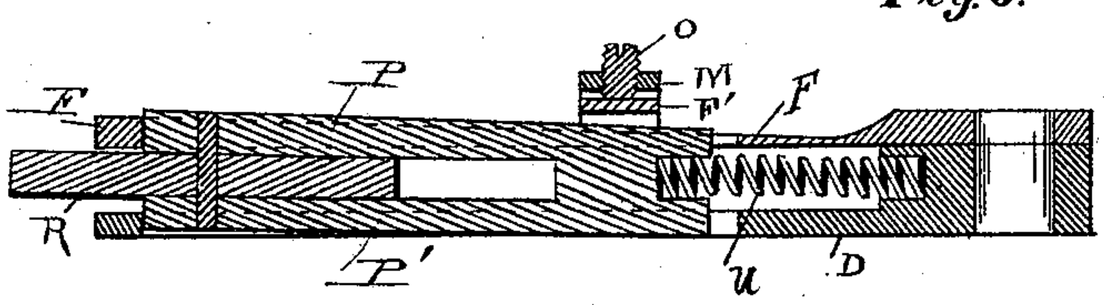
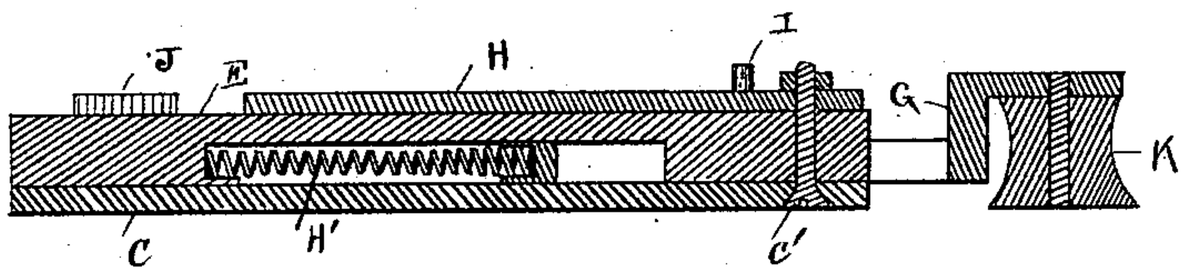


Fig. 6.



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UNITED STATES PATENT OFFICE.

JULIUS D. KRENZ AND WILLIAM D. FREDERICK, OF PEORIA, ILLINOIS.

GUIDING ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 494,679, dated April 4, 1893.

Application filed November 23, 1891. Serial No. 412,757. (No model.)

To all whom it may concern:

Be it known that we, JULIUS D. KRENZ and WILLIAM D. FREDERICK, citizens of the United States, residing at Peoria, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Round-Line Attachments for Sewing-Machines; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to certain new and useful improvements in sewing-machine attachments by means of which an attachment is provided being simple in construction, durable and very effective for the purpose designed.

More particularly our invention relates to a round rein attachment or an attachment to facilitate the making of round reins or lines, the sewing and forming the same for durability and neatness.

Our invention consists essentially of right and left guide-rollers and plates designed to bear up against the stock and filler to render them sufficiently compact and with the guide-rollers adjustable automatically to accommodate the passing through of uneven surfaces and more particularly of the irregularities or unevenness in the edges of the fillers, and of the adjustable plate to which the right guide-roller is attached working in connection with a spring-plate whereby the said roller is adjusted to accommodate itself to different sizes of round reins designed to be sewed or the difference in thickness of the leather used therein; the adjustment always being made so that the guide-roller will bear against the edge of the filler and of the various other parts provided to facilitate the operation of the complete device.

That our invention may be more fully understood, reference is had to the accompanying drawings in which:

Figure 1 is a perspective view of the invention showing the relative position of the various parts. Fig. 2 is a detailed view showing a portion of the device the parts thereof being separated. Fig. 3 is a detailed view showing a part of the device, the parts thereof being separated from each other. Fig. 4 is a detailed view in vertical section. Fig. 5 is a longitudinal sectional view of a portion of the device. Fig. 6 is also a longitudinal section of another portion.

In the figures, A is the throat-plate properly adjusted upon the machine and is provided with the extension B.

C—D are bed-plates bearing upon the throat-plate A. E is also a plate secured to the bed-plate C by means of the bolt J bearing in a slot, provided in the plates E—C to render the same adjustable, the said plate E being formed at its middle and forward part to provide a passage-way for the slide G. The plate E is provided at its forward end with a lug depending therefrom and designed to bear within the slot in the slide-plate G, as best shown in Fig. 2.

H′ is a spring provided to bear against the rear end of the slide plate G and against the face of the raised part of the plate E in a sufficiently compressed state to provide a strong forward pressure; the slide-plate being held, to prevent its too far advancement forward by means of the depending lug on the forward end of the plate E, bearing against the cross-piece at the rear end of said slide-plate.

I is a pin fixed in the slide plate at its side bearing above the plate E and within a recess cut therein.

H is a lever, hooked at its forward end and pivoted to the plate E, by means of the bolt or screw C′ passing through a perforation in the bed-plate C, through the slot in the slide G, through the perforation in the plate E and through a perforation in the lever H and provided with a suitable nut at its top to secure the same. The short arm of the lever H is adapted to bear against the pin I, when the long arm of the said lever H is pushed forward, the forward movement of the lever pushing the pin I, and with it the slide plate G, backward. The lever H is so adjusted with relation to the pin on the said slide plate that when the said pin and plate are forced backward to a certain point, the lever H will be held in the forward adjustment by frictional engagement between the said lever and pin and may be released by a slight pressure properly applied, thus allowing the slide plate G and pin to spring back to its original position, the slide being thrown back by the action of the spring H′.

K is a revolving guide formed with a slight concave and journaled upon a pin and secured to and depending from a raised extension of the plate G, the said guide-roller being independent of and in no way connected with the throat-plate A unless by slight contact.

L is a hook secured to the slide-plate G and bearing over the edge of the bed-plate prevents the guide-roller and other attached parts from being borne backward with the pressure of the material being passed through during the operation of sewing, the materials being passed through in the same direction.

The bed-plate D has bearing thereon the rear portion of the spring-plate F and is formed at its forward end to provide in connection with the spring-plate F a passage way for the slide-plate P and space for the spring U. The spring U is located in the open space between the spring plate F and the plate D and in such a position as to bear at its respective ends against and within depressions or sockets provided in the raised portions of the plate D and in the rear end of the slide plate P—P′ in a compressed condition to press the said slide plate P—P′ forward.

The plate D and the spring-plate F are each provided with slots within which are borne the respective parts P—P′ of the slide-plate, the said slide-plate being shorter than the slots in which they are carried to provide for its backward and forward movement therein.

P″—P″ are lugs on the slide-plate designed to bear between the upper and lower plates to hold the slide-plate in position.

R is a guide-roller carried between the parts P—P′ at its forward end and is properly journaled by means of the pin shown.

F′ is a bridge spanning the slot in the spring-plate F; M is also a bridge bearing over the bridge F and secured to the sides of the bed-plate.

O is a set-screw in the bridge M with the lower end thereof designed to bear upon the bridge F′ and provides a means of adjustment of the revolving guide R and spring-plate F.

N is a hook secured to the bridge M and bears over the edge of the bed-plate for the same purpose as hook L previously explained.

S is a groover fixed to the throat-plate on a line with the opening in the throat-plate and the extension plate B which extension plate might be properly termed the work-plate; T is also a groover integral with the pressure foot Q and in exact perpendicular alignment with the groover S below.

The operation of the device in connection with sewing-machines for the purpose of sewing round lines or reins is simple and apparent. The proper adjustment of the various parts having first been made which are shown in the figures and particularly in Fig. 1, the stock from which the round line or round rein is to be made, is passed through the machine and between the revoluble guide-rollers with the back of the stock or the rounded portion thereof (so formed by bearing over the edge of the filler within) held firmly in position and alignment, being prevented from side movement by the pressure of the said rollers. The pressure-foot Q bearing upon the top face of the stock presses it to a proper compactness and the groovers S and T cut proper channels for the concealment of the threads. The spring-plate F and guide-roller R having been adjusted according to the thickness of the line or rein, the roller R upon the edge of the filler and the forward ends of the plates F—D against the edges of the stock (if the same reach so far) the rein is passed through the machine and in such passage through, the roller R yields to accommodate itself to the irregularities in the edge of the filler through and by means of its connection with the adjustable plate P—P′ actuated by the spring U, thus giving it a constant and continuous pressure against the said filler sufficient to hold the same in place. When it is desired to remove the line after having been sewed by the machine, the same may be readily withdrawn by first pressing the lever H forward which relieves the guide-roller K from contact with the rein by the said lever being connected in the operation with the slide-plate G to which the roller K is attached, the operation of the same having been heretofore explained. It will be seen from examination of the figures that by the provision of the slots in the plates F and D, made a little longer than the slide plate P, P′, the said slide plate being pressed forward by the action of the spring U, will readily yield to accommodate irregularities in the material being operated upon by the roller R, carried in the said slide plate contacting therewith and further, that the spring plate F, may be adjusted to accommodate itself to bear against the edge of the stock according to the different thicknesses used by the action of the screw O, being screwed down upon the bridge F′.

The advantages possessed by our improvement are first, that the same may be attached to any machine whether chain-stitch or lock-stitch, it working equally as well with either class of machine, there having heretofore been no round line attachment provided that could be thus generally applied. Second, that by the provision of the sliding-plate G bearing the guide-roller K and adjusted by means of the lever H, a ready means is provided for the release of the round line to facilitate its being drawn from the machine after having been sewed. Third, that different thicknesses of round lines may be sewed by the use of the automatically yielding guide roller R working in connection with the slide plate P—P′ and the adjustment means provided. The material being sewed is held in proper position with respect to the stitch forming mechanism when the guide rollers yield laterally to allow the passage of irregularities in the material being stitched, by means of the groovers S—T located as shown, on the throat plate A, and foot Q and so formed as to cut into

the leather or the faces thereof grooves, thus providing depressions in which the stitches are formed, and also acting to hold the material being sewed in position.

Having thus fully described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The combination, in a round line attachment for sewing machines, of the guide roller R, carried in the slot in plate P, P′ as shown; the slotted spring plate F and slotted bed plate D, separated to provide a sufficient space for the carrying between of the guide roller R, and plate P, P′; the bridge F′, and the bridge M, provided with the screw O to facilitate the adjustment of the spring plate F; the spring U with the opposite guide roller K supported by suitable means all substantially as described and set forth.

2. The combination, in a round line attachment, of the guide roller K, carried upon the slide plate G, the plates C, E carried a suitable distance apart to provide sufficient space for the carrying between of the slide plate G and the spring H′, the slide plate G having pin I, the spring H′, and the lever H for operation in connection with slide plate G to facilitate the adjustment of said slide plate by contact with pin I, with the opposite guide roller R, supported by suitable means, all substantially as described and set forth.

3. The combination, in a round line attachment for sewing machines, of the guide roller R, carried in the slot in plate P, P′ as shown; the slotted spring plate F and slotted bed plate D, separated to provide a sufficient space for the carrying between of the guide roller R, and plate P, P′; the bridge F′, and the bridge M, provided with the screw O to facilitate the adjustment of the spring plate F; the spring U, with the roller K adjustably supported and journaled in the slide plate G, the said plate being forwardly actuated by spring H′ to provide a yielding means for roller K, all substantially as described and set forth.

4. The combination, in a round line attachment, of the guide roller K, carried upon the slide plate G, the plates C, E carried a suitable distance apart to provide sufficient space for the carrying between of the slide plate G and the spring H′, the slide plate G having pin I, the spring H′, and the lever H for operation in connection with slide plate G to facilitate the adjustment of said slide plate by contact with pin I, with the roller R adjustably supported and journaled in the slide plate P, P′, the said plate being forwardly actuated by spring U, to provide a yielding means for roller R, all substantially as described and set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

JULIUS D. KRENZ.
WILLIAM D. FREDERICK.

Witnesses:
W. V. TEFFT,
BOB M'CORMICK.