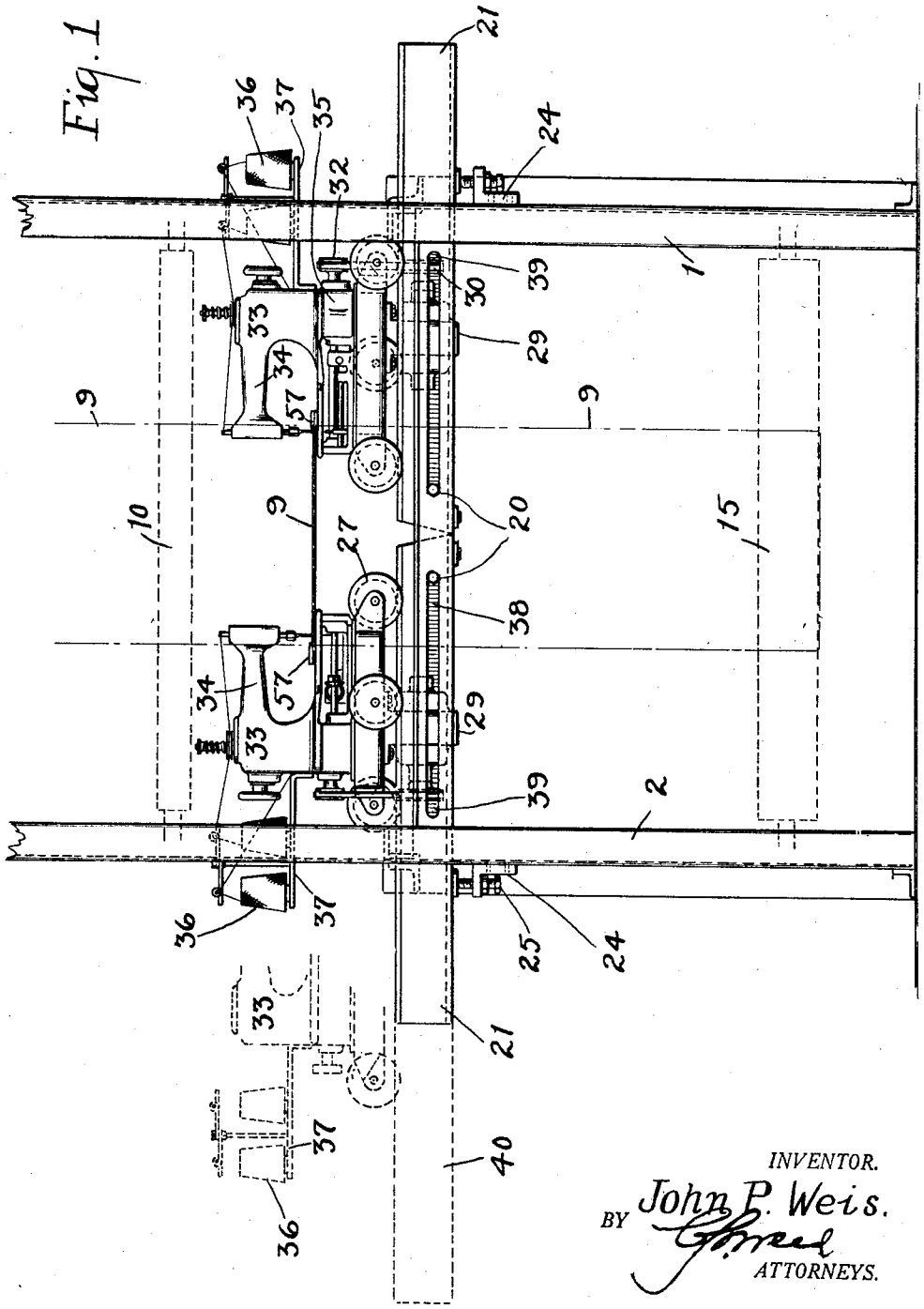
Oct. 18, 1932. J. P. WEIS 1,883,177

MACHINE FOR STITCHING WIRE FABRICS

Filed Nov. 7, 1927 4 Sheets-Sheet 1

Fig. 1



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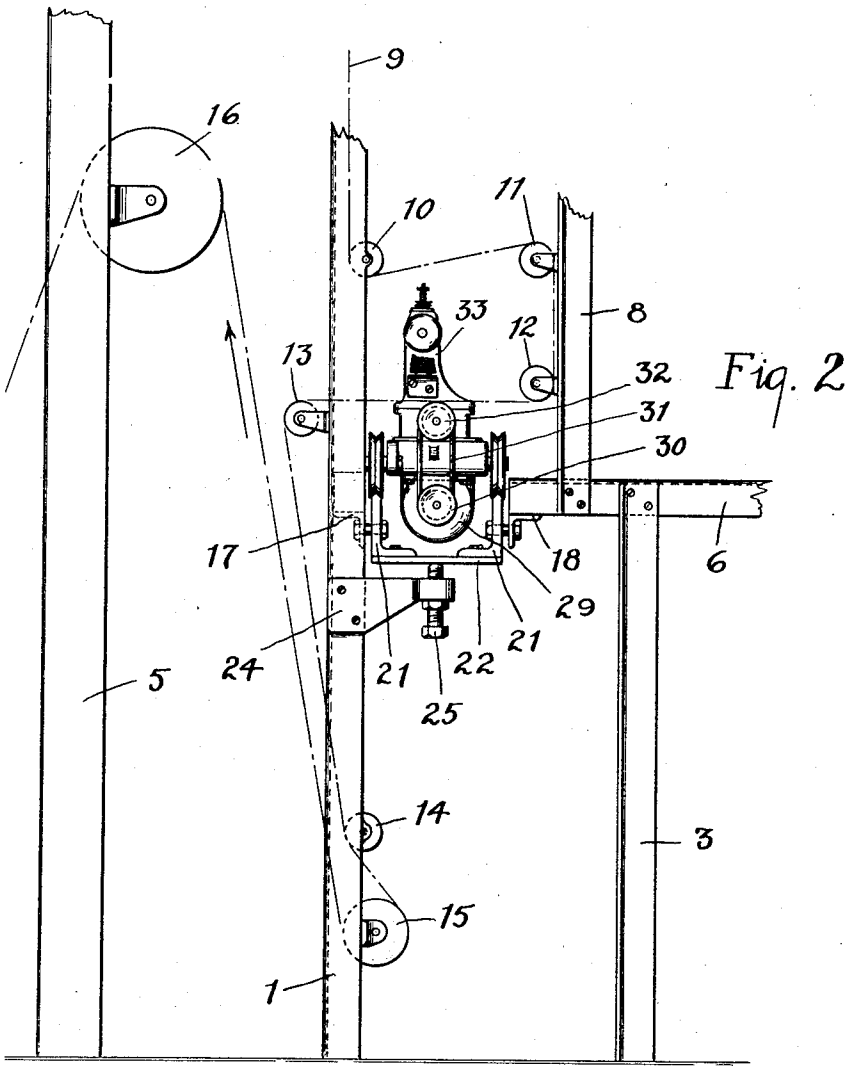


Fig. 2

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MACHINE FOR STITCHING WIRE FABRICS

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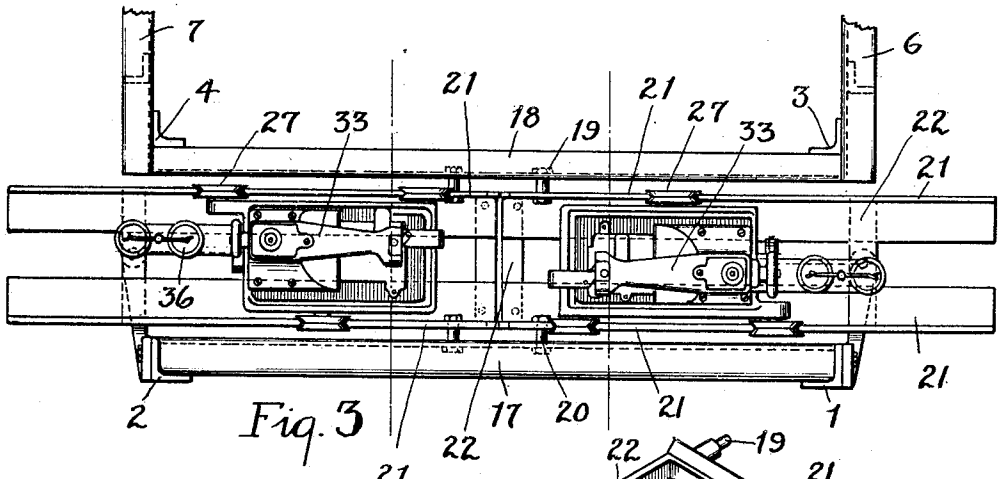


Fig. 3

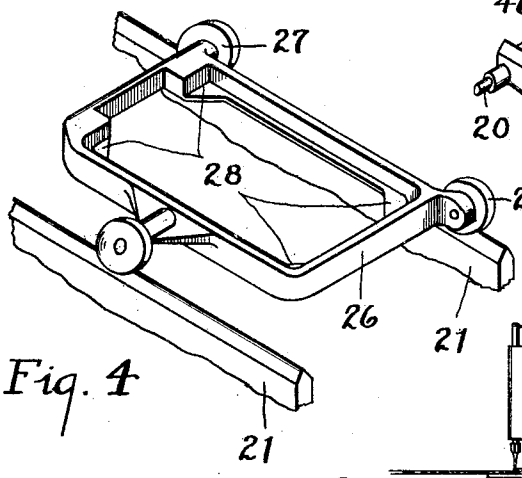


Fig. 4

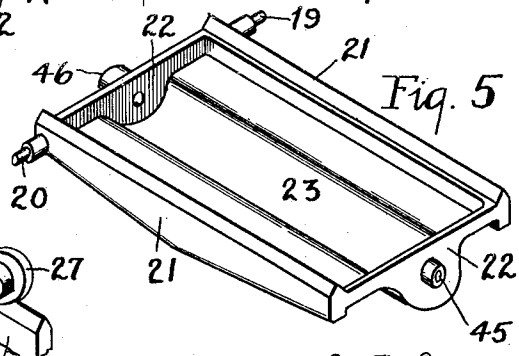


Fig. 5

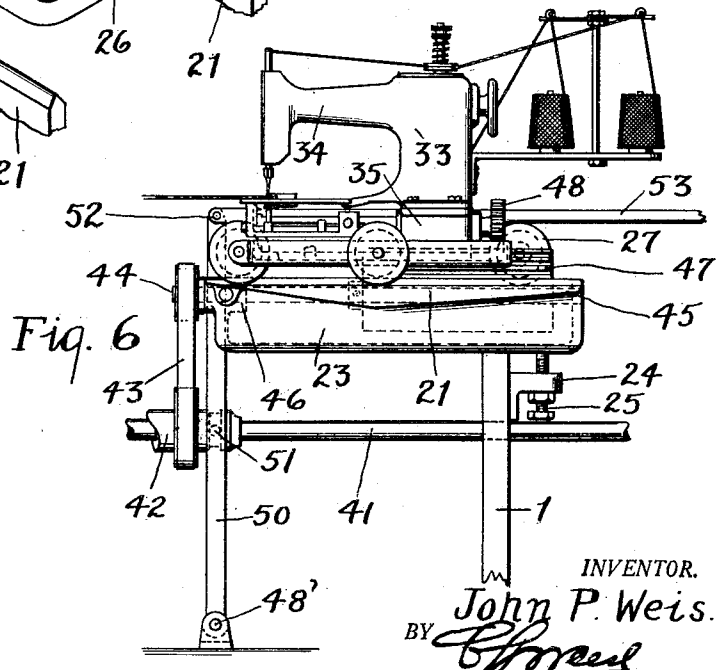


Fig. 6

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MACHINE FOR STITCHING WIRE FABRICS

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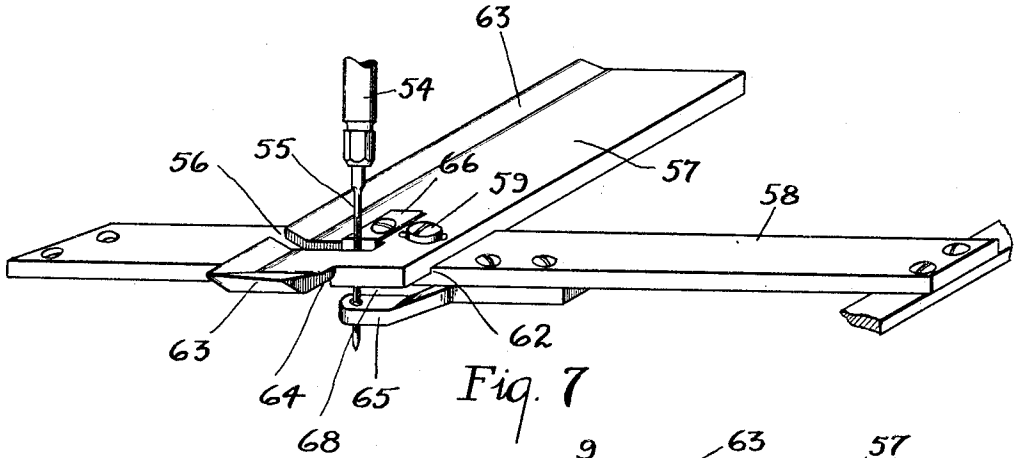


Fig. 7

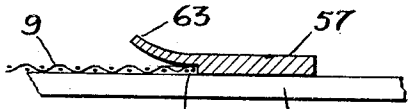
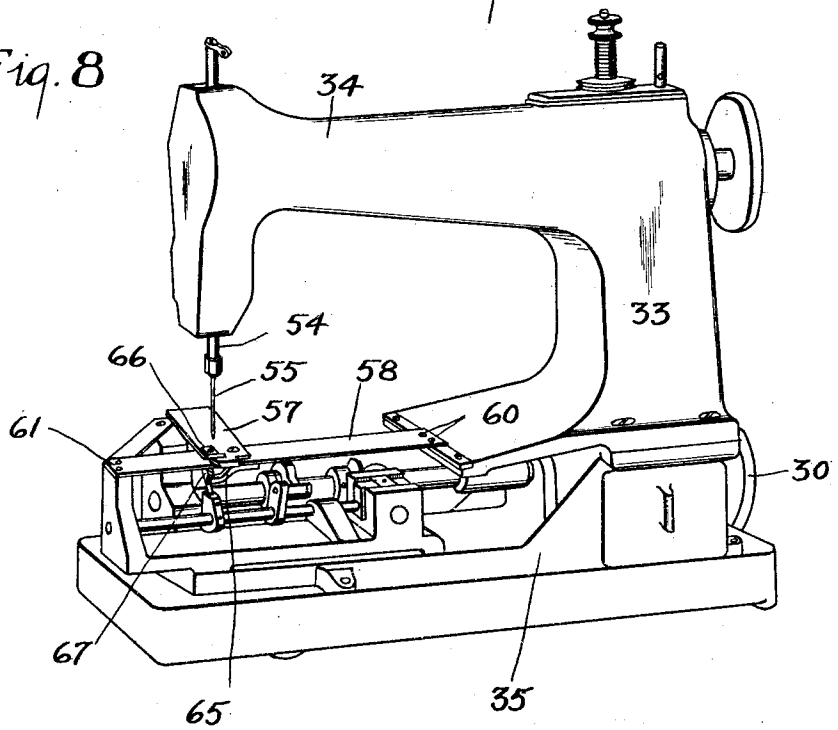


Fig. 9

Fig. 8



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Patented Oct. 18, 1932 1,883,177

UNITED STATES PATENT OFFICE

JOHN P. WEIS, OF NYACK, NEW YORK, ASSIGNOR TO METROPOLITAN SEWING MACHINE COOPERATION, OF NYACK, NEW YORK, A CORPORATION OF DELAWARE

MACHINE FOR STITCHING WIRE FABRICS

Application filed November 7, 1927. Serial No. 231,539.

This invention is a machine for the continuous stitching of wire or other fabrics as they pass through the processing machine for the purpose of stitching a reinforced cushioned friction edge along the selvages of the fabric simultaneously with the weaving, painting or galvanizing of the fabric.

In the manufacture of fabrics, it is sometimes desirable to place a line of stitching adjacent to the selvage as the fabric feeds through the machine. This stitching may be for the purpose of covering or for hemming the edge. It may also be useful for applying bindings or other trimmings to the edges of the fabric as it is delivered from the looms, printing or other processing machines. The improvement will also be found useful for stitching superimposed layers of fabric one upon the other. One object of the invention, therefore, is the provision of a machine embodying sewing machines which can be held in contact with and guided by the fabric, and for this purpose the sewing machines are so arranged as to travel transversely or laterally in the direction across the width of the fabric to accommodate different widths of fabric and to also compensate for any variation in the width of such fabric so as to be readily positioned for wide or narrow widths. For instance, when the sewing machines have been operating upon a wide width, the end of which is joined to a fabric of narrow width, the sewing machines will readily step from the wide width to the narrow width without mechanical adjustment. The construction is such also that the sewing machines will automatically adjust themselves to variations in the width of the fabric, and for this purpose the machines will shift or roll to and against the selvage of the fabric and thus always place the stitching at a uniform distance from the selvage along the entire length of the material feeding through the machine.

I believe that I am the first to provide a machine in which the sewing machines automatically adjust themselves and in the present instance are so arranged as to operate by gravity so as to properly place the stitching along the edge of the material, and in which the weight of the machines will hold the stitching instrumentalities against the edge of the fabric with a fixed or predetermined pressure regulated in accordance with the resistance which the fabric will permit. In the present machine the fabric is held taut at its stitch position by passing the fabric over or between guide or feed rolls to present a taut field with sufficient tension to prevent the fabric from buckling, sagging or bulging beyond a normal limit, whereby the edge margin stitch will be uniform. The construction is such that the sewing machines may also be adapted to various processing machines where parallel stitching is required.

One important application of machines of this kind, for instance, is the stitching of wire fabrics to form a friction cushioned edge, as shown and described in my application Serial No. 225,632, filed October 12, 1927, which discloses the purpose of the stitching along the edges of the wire fabric. In the treatment of wire fabric, this stitching may be applied at the time of weaving the fabric, or if the fabric must be painted, varnished, galvanized or otherwise treated, the stitching may be applied subsequent thereto just prior to the rolling up of the fabric, after which it is made ready for shipment and commercial use.

It is to be understood, however, that the invention is not limited to the stitching of wire fabric, for the machine will be found suitable for cotton, woven or other fabrics for use in the manufacture of any webbing produced in long or continuous lengths.

Among the objects of the invention are the following:

To provide a sewing machine, or a pair thereof, for operation on the edge margin or margins of fabrics whereby the placing of the stitching is determined by the location of the sewing machine relative to the fabric, such location being under the control of the fabric itself; that is to say, the sewing machines are guided by the fabric, whereas usually the fabric is guided by the sewing machine.

Another object is to so mount the sewing machines, as on wheels or rollers, and so

organizing them that the extent of lateral pressure of the sewing machines against the fabric may be regulated.

Another object is to have the sewing machines so mounted relative to the travel of the fabric that they will shift or roll against the edge of the fabric with sufficient pressure to keep the stitch lines a uniform distance from the edge margins of the fabric.

Another object is to have the sewing machines so mounted that they can travel in a direction across the width of the fabric, which is being continuously fed through the machine, the sewing machines being equipped as a unit and carrying their own power and supply of thread, whereby either or both machines may be quickly detached from active stitching position in the event of failure and another machine substituted therefor instantly, without interrupting the feeding of the work.

Another object is to so organize the sewing machines for stitching the right and left edges of the fabric being fed through the processing machine, that they will travel up to and be guided by the edge margins of the fabric and instantly adjust themselves relative to any variations in the width of the fabric as it feeds through.

Another object of the invention is to provide a machine in which the sewing machines will adjust themselves, according to the width of the fabric being stitched, and in the present instance this adjustment of position, independent of one another or relative to the fabric being worked upon is controlled by gravity, which may be regulated to set up sufficient edge pressure across the width of the material to maintain a uniform stitch line relative to the edge margins of the fabric.

In a general way, the invention consists of a machine having a right and left sewing machine loosely nested in cars which travel on tracks. Attached to the bottom of each car is an electric motor having a driving belt leading from the motor to the sewing machine for operating the machine at a proper speed. The tracks are inclined sufficiently to cause the machines to shift toward each other, and this inclination of the tracks will govern the force of pressure set up by this rolling action, since by inclining the tracks slightly the machines will shift toward each other and exert a slight pressure on the fabric, and if the tracks be inclined to a greater degree, the weight of the shifting sewing machines and the cars upon which they are mounted will cause them to exert greater pressure against the edges of the fabric.

The sewing machines are provided with suitable guides to act against the edge of the fabric being stitched and therefore, the inward shifting movement of the machines according to the inclination of the tracks will create a pressure against the edge of the fabric, being guided through the processing machine under tension. The sewing machines acting on a taut field of this fabric are kept apart according to the width of the fabric passing between them. The guides acting on the fabric are also adjustable relative to the stitch line. The location of the sewing machines may be anywhere in the processing machine, through as a rule the most suitable location is near the delivery end thereof.

The processing machines for handling various fabrics as a rule operate continuously as they are frequently connected to some other machinery that requires continuous operation. It therefore becomes very important to have dependable sewing machines and moreover, machines that can be replaced instantaneously with a minimum of interruption of the stitching. It is also desirable to have extra sewing machines ready to immediately replace a machine that has failed to do its work by reason of broken thread, skipped stitches, broken needle or looper. To meet this essential requirement one sewing machine can be removed and another one put in its place very quickly, there being no clamps, attaching bolts or other mechanical means to interfere with the quick handling thereof. The sewing machines are organized for continuous stitching and in the case of stitching wire fabric, the speed of the machines relative to the feed of the fabric is so fixed as to place a stitch in every mesh of the fabric or in every other mesh or at other intervals to suit the requirements. When an electric motor drive is used for operating the sewing machines this drive is entirely independent of the feed of the fabric, though the ratio of speed and feed will place the stitches quite uniformly relative to the meshes of the wire.

In some instances it may be found desirable to synchronize the drive of the sewing machine to operate the needle somewhat or exactly relative to the feed of the fabric so that the needle will more regularly pass through the open mesh of the wires as prearranged.

The sewing machines used in this machine have merely the stitching mechanism and thread handling means so as to properly form the stitches, there being no feeding elements in the machine such as the usual feed dog and presser foot, for the action of these feeding elements would damage certain fabrics especially those that have been enameled or painted. The feed of the material of the processing machine carries the work past the stitching elements.

In the drawings accompanying and forming part of this specification, Fig. 1 is a front view of this machine illustrating the organization of the sewing machines in the processing machine.

Fig. 2 is a side view thereof.

Fig. 3 is a top plan view of Figs. 1 and 2.

Fig. 4 is a perspective view of one of the carriages for supporting the sewing machine.

Fig. 5 is a perspective view of the tracks for the carriage of the sewing machine and which may be inclined to cause the sewing machines to shift towards each other to exert suitable pressure on the fabric.

Fig. 6 is a front detail view of one of the sewing machines showing its mounting on the carriage and the carriage on the inclined track. This view also illustrates the drive to synchronize the stitching with the feed of the fabric.

Fig. 7 is a perspective detail view of the sewing needle, the work guide, the throat plate and the needle guards above and below the throat plate.

Fig. 8 is a perspective view of one of the sewing machines and illustrates the needle, the looper, the operating parts therefor and the guide for acting against the edge of the fabric, and

Fig. 9 is a sectional detail view of the work guide.

Similar characters of reference indicate corresponding parts in the several views.

Before explaining in detail the present improvement and mode of operation thereof, I desire to have it understood that the invention is not limited to the details of construction and arrangement of parts which are illustrated in the accompanying drawings, since the invention is capable of other embodiments, and that the phraseology which I employ is for the purpose of description and not of limitation.

As the framework of the processing machines vary according to the character of such machine, such frame structure members will be referred to but briefly. This framework comprises the upright members 1, 2, 3, 4 and 5 to which may be connected cross members 6 and 7. To the members 6 and 7 are secured upright members 8 (see Fig. 2). The fabric indicated by 9 feeds down and around a roller 10 carried by the uprights 1 and 2. Then it feeds over and around roller 11 carried by uprights 8 and then down and under roller 12 also carried by uprights 8 and then past the sewing machines to be described later, then around rollers 13 and 14 and wrapped around roller 15, from which point it may again feed upward around roller 16 carried by the upright 5. The feed of this fabric may come from any source and it is finally delivered to a rolling up means.

Attached to the upright members 1 and 2 is a cross bar 17 and to the horizontal members 6 is another cross bar 18. These two bars are spaced apart, see Fig. 3 to form a support for the sewing machines.

The sewing machines about to be described are arranged for right and left stitching mechanism and as these machines are identical except one is right hand and the other left hand, a description of one will suffice for both.

Pivotally secured at their front ends by pivots 19 and 20 to the supports 17 and 18 are the tracks 21 upon which the sewing machines travel. These tracks 21 may be in the form of angle iron, see Fig. 4, secured together by cross members 22 or this track supporting structure may be in the form of a casting see Fig. 5, in which the pivots 19 and 20 may be integral with the tracks 21, while the cross members 22 would form the end walls. In this construction there may be a depression 23 to hold lubricant for gearing in case of a synchronized drive to be described hereinafter. To support the rear end of the tracks brackets 24 are secured to the uprights 1 and 2, see Figs. 1 and 2. These brackets carry adjusting screws 25 in position to contact with the outer or rear cross member 22 so that by adjusting these screws the tracks may be inclined toward the center of the machine. Operating on the tracks are carriages 26, see Fig. 4, the frame structure of which is formed to suit the outline of the sewing machine base. Each carriage is shown provided with three wheels 27, two of which engage one track and one the other and these wheels permit the carriage to roll freely on the tracks. The frame of the carriage is provided with a web or bottom forming corner pockets 28, into which the base of the sewing machine fits freely for quick removal and replacement.

To the bottom of the frame 26 of each carriage may be attached the electric motor 29, which is provided with a belt wheel 30 carrying a drive belt 31 running to a belt wheel 32 carried by the sewing machine.

The sewing machines generally indicated by 33 need not be described in detail for they are the well-known Metropolitan sewing machines with rotary top and bottom crank shaft for driving the stitching elements. These sewing machines comprise an overhanging arm 34 and a base 35, and the needle operating mechanism is contained in the arm 34 while the looper operating mechanism is carried by the base 35. Each machine detachably rests on its carriage 26 for travel therewith. Each sewing machine carries a supply of thread 36 for feeding thread to the needle and loopers, and this thread is supported by a bracket forming a thread stand 37, secured to the sewing machine frame. In order to thread the machines it may be necessary on some installations to withdraw the sewing machine from the processing machine. This may be accomplished in one way as shown in Fig. 1 by having the frame members 17 and 18 slotted as at 38 with the pivots 19 and 20 of the tracks projecting thereinto whereupon the track pivots may

be shifted to the rear ends of the slots 39 and thus permit the tracks 21 to be shifted into the position shown by dotted lines at 40. After the sewing machines are threaded or adjusted they can then be quickly put into working position by shoving the tracks inward. In practice, however, it may be found preferable to immediately substitute one machine for another and make repairs or adjustments elsewhere other than at the working position in the processing machine. Under some working conditions it may be desired to incline the tracks to a greater degree than would be practical to operate the machines at under their own gravity.

Where a synchronized drive is necessary so as to time the sewing machine stitching elements with the feed of the fabric, power may be obtained from a shaft 41, see Fig. 6 of the processing machine to which will be applied a friction clutch 42 and a chain or belt drive 43 to drive a shaft 44 carried in bearings 45 and 46 of the track structure, see Figs. 5 and 6. In this construction the shaft 44 carries a drum gear 47 in mesh with a gear 48 carried by the bottom shaft of the sewing machine. This gear 48 slides back and forth along the drum gear 47 as the sewing machine is carried along the track to adjust itself to variations in the width of the fabric being stitched. To start and stop the sewing machines I provide a shifting lever 50 pivoted as at 48', see Fig. 6 and this lever operates the member 51 of the clutch 42. Pivoted to the upper end of the lever 50 as at 52 is a rod 53 reaching the outside of the machine structure for convenient manipulation by hand for starting and stopping the sewing machine or connecting and disconnecting it with the source of power of the processing machine. The organization is also such as to permit the sewing machine to be lifted off of its carriage and quickly replaced. The depression 23 of the track structure shown in Figs. 5 and 6 forms a housing for the drum gear and permits proper lubrication thereof.

The needle bar 54 of the sewing machine, see Figs. 7 and 8 carries the needle 55 which passes down through a slot 56 of a fabric guide 57 which is adjustably secured to a throat plate 58 by screw 59 which passes through an elongated slot, and thus permits lateral adjustment of the guide along the throat plate. The throat plate is provided with a needle hole for the passage of the needle and has its rear end secured to the sewing machine frame as at 60 and its front end secured thereto as at 61. The guide 57 is cut out or recessed to fit over the throat plate as at 62, thus being guided thereby. The guide and throat plate form a square or right angle, the throat plate supporting the fabric, while the guide acts against the edge thereof. The guide has an upturned lip 63, see Figs. 7 and 9 extending along its front edge for the free entrance of the material underneath the guide and also has a step 64 milled on its bottom side, which accommodates the thickness of the fabric passing thereunder between it and the top surface of the throat plate. This step forms a vertical wall against which the edge of the fabric may contact to control the position of the sewing machine relative to the fabric. The length of this guide is sufficient to act as a straight edge so as not to follow minute variations in the fabric such as a slight break in the edge. However, the length of the guide is arranged to suit the requirements and conditions of the work.

Since the feed of the work is continuous, there is considerable strain upon the needle, and therefore a needle guard 65 is provided to guard the needle below the throat plate and a needle guard 66 is also attached to the guide to guard the needle and take the pressure thereof above the throat plate. The looper 67 operates in the space 68 between the top surface of the needle guard 65 and the bottom surface of the throat plate 58.

From the foregoing it will thus be seen that I have provided a machine which is particularly adapted for applying to a wire fabric a reinforced or built-up friction cushioned edge as the fabric is continuously fed along by stitching the fabric with a chain stitch, which my experiments have shown is the only kind of a stitch that is suitable for this work and in which machine the organization is such that the fabric guides the sewing instrumentalities instead of the fabric being guided thereby, so that the sewing instrumentalities will automatically adjust themselves to varying widths of work and to irregular edges of the work being held and exerting a constant pressure against the edges of the work by their own weight, and which sewing instrumentalities are not only readily detachable but are also withdrawable away from the work as occasion requires.

While this machine is particularly adapted for the use just described, it, nevertheless, may be used in connection with various fabrics which may require stitching along the edges thereof during the formation or processing of such fabrics, and as such fabrics are usually held taut or fed under tension, it follows that they would guide the sewing machines which, as will be seen are located at right angles to the line of feed of the fabric, back and forth according to the width of the fabric or any irregularities in the edges thereof, so as to properly and uniformly place the stitch line along the edges of the fabric.

It is to be understood that by describing in detail herein any particular form, structure or arrangement, it is not intended to limit the invention beyond the terms of the several claims or the requirements of the prior art.

Having thus explained the nature of my

said invention and described a way of constructing and using the same, although without attempting to set forth all of the forms in which it may be made or all of the modes of its use, I claim:

1. In a machine for stitching a continuously fed tensioned fabric, the combination of a support, two pairs of pivotally supported tracks carried thereby, means for vertically adjusting the tracks, a carriage shiftably supported by each pair of tracks at the opposed edges of the fabric for gravitational movement toward the edge of the fabric, and a sewing machine carried by each carriage and spaced apart by the fabric.

2. In a machine for stitching a continuously fed tensioned fabric, the combination of a support, two pairs of pivotally supported tracks carried thereby, means for vertically adjusting the tracks, a carriage shiftably supported by each pair of tracks at the opposed edges of the fabric for gravitational movement toward the edge of the fabric, a sewing machine carried by each carriage and spaced apart by the fabric, and means for operating the stitching elements of the sewing machines and for synchronizing the movement of the sewing instrumentalities of the sewing machines with the feed of the fabric.

3. In a machine for stitching a continuously fed wire fabric, the combination of a support, two pairs of pivotally supported tracks carried thereby, means for vertically adjusting the tracks, a carriage shiftably supported by each pair of tracks at the opposed edges of the fabric for gravitational movement toward the edge of the fabric, a sewing machine carried by each carriage and spaced apart by the fabric, adjustable guiding means carried by each sewing machine for engaging the edge of the fabric, and means for operating the stitching elements of the sewing machines and for synchronizing the movement of the sewing instrumentalities of the sewing machines with the feed of the fabric, and comprising means effective to permit the shiftable movement of the sewing machines relatively to the fabric.

4. In a machine for stitching a continuously fed tensioned fabric, the combination of a pair of spaced sewing instrumentalities supported at the opposed edges of and guided by the fabric, means for shiftably supporting said sewing instrumentalities, and means for effecting a gravitational movement of the sewing instrumentalities toward the fabric, whereby they are self-adjustable to varying widths and the irregular edges of the fabric and whereby the weight thereof will hold them against such edges to exert constant pressure against the fabric edges.

5. In a machine for stitching a continuously fed wire fabric, the combination of a pair of spaced sewing instrumentalities supported at the opposed edges of and guided by the fabric, means for shiftably supporting said sewing instrumentalities, and means for effecting a gravitational movement of the sewing instrumentalities toward the fabric, whereby they are self-adjustable to varying widths and the irregular edges of the fabric and whereby the weight thereof will hold them against such edges to exert constant pressure against the fabric edges, said shiftable supporting means comprising two pairs of pivotally supported tracks and a pair of carriages rolling upon said tracks.

6. In a machine for stitching a continuously fed wire fabric, the combination of a pair of spaced sewing instrumentalities supported at the opposed edges of and guided by the fabric, means for shiftably supporting said sewing instrumentalities, and means for effecting a gravitational movement of the sewing instrumentalities toward the fabric, whereby they are self-adjustable to varying widths and the irregular edges of the fabric and whereby the weight thereof will hold them against such edges to exert constant pressure against the fabric edges, said shiftable supporting means comprising two pairs of pivotally supported tracks and a pair of carriages rolling upon said tracks and said sewing instrumentalities comprising a pair of sewing machines detachably carried by said carriages.

7. In a machine for stitching a continuously fed wire fabric, the combination of a pair of spaced sewing machines supported at the opposed edges of and guided by the fabric, means for shiftably supporting said sewing machines and comprising two pairs of tracks, a pair of carriages shiftable on said tracks for the reception of said sewing machines, means for effecting a gravitational movement of the sewing machines toward the fabric, whereby they are self-adjustable to varying widths and the irregular edges of the fabric and whereby the weight thereof will hold them against such edges to exert constant pressure against the fabric edges, means for operating the stitching elements of the sewing machines. and means carried by the sewing machines for supplying thread to the stitching elements.

8. In a machine for stitching a continuously fed tensioned fabric, the combination of a pair of spaced sewing instrumentalities shiftably supported for gravitational movement toward the opposed edges of the fabric and guided by the fabric and automatically adjustable to varying widths and the irregular edges of the fabric, and adjustable guides carried by said sewing instrumentalities for contact with the edges of the fabric.

9. In a machine for stitching a continuously fed wire fabric, the combination of a supporting framework, means carried thereby for guiding the fabric, a pair of spaced sew-

ing machines supported at the opposed edges of and guided by the fabric, two pairs of tracks each pair vertically shiftable and lengthwise adjustable, a carriage rolling upon each pair of tracks and detachably supporting one of said sewing machines, means for vertically adjusting each pair of tracks, thereby to incline the same toward each other thereby to effect a gravitational movement of the carriages toward the edge of the fabric, whereby the sewing machines are self-adjustable to varying widths and the irregular edges of the fabric, means for automatically operating the stitching elements of the sewing machines, and an adjustable guide carried by each sewing machine for the edge of the fabric.

10. In a machine for stitching a continuously fed tensioned fabric, the combination of a support, two pairs of pivotally supported tracks carried thereby, means for vertically adjusting the tracks, a carriage shiftably supported by each pair of tracks at the opposed edges of the fabric for gravitational movement toward the edge of the fabric, a sewing machine carried by each carriage and spaced apart by the fabric, power driven means located below the carriages for operating the stitching elements of the sewing machines, and means for synchronizing the movement of the sewing instrumentalities of the sewing machines with the feed of the fabric.

11. In a machine for stitching a continuously fed wire fabric, the combination of a support, two pairs of pivotally supported tracks carried thereby, means for vertically adjusting the tracks, a carriage shiftably supported by each pair of tracks at the opposed edges of the fabric for gravitational movement toward the edge of the fabric, a sewing machine carried by each carriage and spaced apart by the fabric, adjustable guiding means carried by each sewing machine for engaging the edge of the fabric, power driven means located below the carriages for operating the stitching elements of the sewing machines and for synchronizing the movement of the sewing instrumentalities of the sewing machines with the feed of the fabric, and comprising means effective to permit the shiftable movement of the sewing machines relatively to the fabric.

12. In a machine for stitching a shiftable fabric, the combination of a sewing instrumentality located in position to stitch said fabric, means for supporting said sewing instrumentality for shiftable movement toward the fabric, and means for supporting the fabric in position relative to the sewing instrumentality so that the movement of the fabric will automatically shift and control the position of the sewing instrumentality relative to the fabric according to the width or the shape of such fabric.

13. In a machine for stitching a shiftable fabric, the combination of a sewing instrumentality located in position to stitch said fabric, means inclined toward the edge of the fabric for supporting said sewing instrumentality for shiftable movement toward the fabric, and means for supporting the fabric in position relative to the sewing instrumentality so that the movement of the fabric will automatically shift and control the position of the sewing instrumentality relative to the fabric according to the width or the shape of such fabric.

14. In a machine for stitching a shiftable fabric, the combination of a sewing instrumentality located in position to stitch said fabric, means inclined toward the edge of the fabric for supporting said sewing instrumentalities for automatic shiftable movement toward the fabric, and means for guiding a continuously-fed web of fabric and thereby automatically shifting the sewing instrumentality relatively to the fabric according to the width or shape thereof.

15. In a machine for stitching a shiftable fabric, the combination of a pair of sewing instrumentalities located in position to stitch opposite portions of the fabric, means for supporting said sewing instrumentalities for automatic shiftable movement toward and from the fabric transversely to the feed of the fabric, and means for guiding a continuously-fed web of fabric so that the movement thereof will automatically shift and control the position of the sewing instrumentalities relative to the fabric according to the width or the shape of such fabric.

16. In a machine for stitching a shiftable fabric, the combination of a pair of sewing instrumentalities located in position to stitch opposite portions of the fabric, means inclined toward the edges of the fabric for supporting said sewing instrumentalities for shiftable movement toward the fabric, and means for supporting the fabric whereby the movement thereof will automatically shift and control the position of the sewing instrumentalities relative to the fabric according to the width or the shape of such fabric.

17. In a machine for stitching a shiftable fabric, the combination of a pair of sewing instrumentalities located in position to simultaneously stitch said fabric, and means inclined toward the fabric for supporting said sewing instrumentalities for shiftable movement toward the fabric.

18. In a machine of the class described, the combination of means for guiding a continuously-fed web of fabric, a pair of shiftable sewing instrumentalities spaced apart and located at opposite edges of the work, and means whereby the sewing instrumentalities are automatically held in engagement

with the opposed edges of the work to stitch the same and permit the work during the feeding thereof to guide and automatically shift the sewing instrumentalities toward and from each other according to the varying widths and the irregular edges of the work.

19. In a machine of the class described, the combination of means for guiding a continuously-fed tensioned web of fabric, a pair of shiftable sewing instrumentalities spaced apart and located at opposite edges of the web and having guiding means for the edges of the fabric, and means whereby the sewing instrumentalities are automatically held in engagement with the opposed edges of the web to stitch the same and permit the web during the feeding thereof to automatically shift the sewing instrumentalities toward and from each other according to the varying widths and irregular edges of the web.

20. In a machine of the class described, the combination of means for guiding a continuously-fed web of fabric, a pair of spaced sewing instrumentalities located at opposite edges of the work, and means for supporting the sewing instrumentalities for gravitational movement toward the opposed edges of the work to stitch the same and permit the work to automatically guide and shift the sewing instrumentalities toward and from each other according to the varying widths and the irregular edges of the work.

21. In a machine of the class described, the combination of means for guiding a continuously-fed web of wire fabric flatwise in a horizontal plane, a sewing machine located in position to stitch the fabric, and means for shiftably supporting the sewing machine for gravitational movement toward the edge of the fabric to sew the same.

22. In a machine of the class described, the combination of means for continuously guiding a continuously-fed tensioned web of fabric flatwise in a horizontal plane, a sewing machine located in position to stitch the fabric, means for shiftably supporting said sewing machine for gravitational movement toward the edge of the fabric to stitch the same so that its own weight will hold it against the edge of the fabric and thus cause the fabric as it passes along to automatically shift the machine toward and from the edge of the fabric according to the varying widths and the irregular edges of the fabric.

23. In a machine of the class described, the combination of means for continuously guiding a continuously-fed web of fabric, a support, an inclined track carried thereby and having the lower end thereof extending toward the fabric, and a sewing machine shiftably mounted on said track for gravitational movement toward the edge of the fabric for stitching the fabric.

24. In a machine of the class described, the combination of means for guiding a continuously-fed web of fabric, a support, an inclined track carried thereby and having the lower end thereof extending toward the fabric, a sewing machine shiftably mounted on said track for gravitational movement toward the edge of the fabric for stitching the fabric, and means for adjusting said track.

25. In a machine of the class described, the combination of means for guiding a continuously-fed web of fabric, a support, an inclined track carried thereby and having the lower end thereof extending toward the fabric, said track having a lengthwise shiftable movement relatively to its support, and a sewing machine shiftably mounted on said track for gravitational movement toward the edge of the fabric for stitching the fabric.

26. In a machine of the class described, the combination of means for guiding a continuously-fed web of fabric, a support, an inclined track carried thereby and having the lower end thereof extending toward the fabric, said track having a lengthwise shiftable movement relatively to its support, a sewing machine shiftably mounted on said track for gravitational movement toward the edge of the fabric for stitching the fabric, and means for adjusting the track to vary the inclination thereof.

27. In a machine of the class described, the combination of means for guiding a continuously-fed tensioned web of fabric, a support, a track carried thereby, a carriage shiftable thereon, a sewing machine carried by said carriage, and means whereby a gravitational movement of the carriage and its sewing machine toward the edge of the fabric to stitch the same is obtained.

28. In a machine of the class described, the combination of means for guiding a continuously-fed web of wire fabric, a support, a track carried thereby and shiftable lengthwise relatively to the support, a carriage shiftably mounted upon said track, a sewing machine carried by the carriage, and means whereby a gravitational movement of the machine toward the edge of the fabric to stitch the same is obtained.

29. The combination of means for supporting a fabric flatwise in a horizontal plane, sewing means located in position to stitch said fabric, said fabric and sewing means supported for traveling movement one relatively to the other in the direction of the length of the fabric, and means inclined toward the edge of the fabric for shiftably supporting said sewing means for movement downwardly transversely to and in position to stitch the fabric so that the weight of said sewing means will automatically hold it against the fabric, the shiftable movement of said sewing means on its inclined means being automatically controlled by the varying widths or irregularities of the fabric.

30. In a machine of the class described, the

combination of means for supporting a traveling web of fabric, a pair of laterally-spaced sewing machines located at opposite edges of the fabric and shiftable relatively toward and from each other, and means whereby the machines are automatically held in engagement with the edges of the fabric whereby, simultaneously with the traveling of the fabric, the edges of the fabric will be stitched.

31. In a machine of the class described, the combination of means for supporting a tensioned traveling web of fabric, a pair of laterally-spaced sewing machines located at opposite edges of the fabric and shiftable relatively toward and from each other, and means whereby the machines are held in engagement with the edges of the fabric whereby, simultaneously with the traveling of the fabric, the edges of the fabric will be stitched, and the machines automatically spaced relative to each other in accordance with the width of the fabric.

32. In a machine of the class described, the combination of means for supporting a traveling web of tensioned, wire screen-formed fabric, a pair of laterally-spaced sewing machines located at opposite edges of the fabric and shiftable relatively toward and from each other, and means whereby the machines are held in engagement with the edges of the fabric, the machines being automatically shifted relative to each other in accordance with the width of the screen fabric.

33. In a machine of the class described, the combination of means for supporting a traveling web of fabric, a pair of laterally-spaced sewing machines located at opposite edges of the fabric, and means including wheels for supporting the machines for relative rolling movement toward and from each other, said means being maintained in spaced relation in accordance with the width of the fabric.

34. In a machine of the class described, the combination of means for supporting a traveling web of tensioned screen fabric, a pair of laterally-spaced, chain-stitch sewing machines located at opposite edges of the fabric for stitching parallel rows of chain stitches in said fabric, means including wheels for supporting said machines for relative rolling movement toward and from each other, and means whereby the machines are held in engagement with the edges of the fabric, said machines being automatically shifted relative to each other in accordance with the width of the fabric.

35. In a machine of the class described, the combination of means for supporting a traveling web of fabric, a pair of laterally spaced sewing machines located at opposite edges of the fabric, means whereby the machines are maintained in proper position to co-operate with the edges of the fabric whereby simultaneously with the traveling of the fabric, the edges thereof will be stitched and whereby the machines are shiftable toward and from each other in accordance with the width of the fabric.

36. In a machine of the class described, the combination of means for supporting a traveling web of tensioned wire screen-formed fabric, a pair of laterally spaced sewing machines located at opposite edges of the fabric and shiftable relatively toward and from each other, and means whereby the machines are shifted into engagement with the edges of the fabric and maintained in spaced relation in accordance with the width of the fabric.

37. In a machine of the class described, the combination of means for supporting a traveling web of fabric, a pair of laterally spaced chain stitch sewing machines located at opposite edges of the fabric and shiftable relatively toward and from each other for stitching parallel rows of chain stitches in the edges of the fabric, thereby forming a friction grip cushioned edge, and means whereby the machines are shifted into engagement with the edges of the fabric and maintained in spaced relation in accordance with the width of the fabric.

38. In a machine of the class described, the combination of means for supporting a traveling web of fabric, a pair of laterally spaced sewing machines located at opposite edges of the fabric for relatively shiftable movement toward and from each other and operative to stitch parallel rows of stitches along said edges, operating means therefor, and means whereby the machines are shifted into engagement with the edges of the traveling web of fabric and maintained in spaced relation in accordance with the width of the fabric.

39. In a machine of the class described, the combination of means for supporting a traveling web of tensioned screen fabric, a pair of laterally-spaced, looper-carrying sewing machines located at opposite edges of the fabric for simultaneously stitching parallel rows of stitches along the opposite edges of said fabric thereby to form a friction grip cushioned edge, and means whereby the machines are held in engagement with the edges of the fabric, said machines being automatically spaced relative to each other in accordance with the width of the screen fabric.

Signed at Nyack, New York, this 4th day of November, 1927.

JOHN P. WEIS.