M. YLIOJA.

ATTACHMENT FOR SEWING MACHINES.

APPLICATION FILED MAY 22, 1918.

1,302,750.

Patented May 6, 1919.

2 SHEETS—SHEET 1.

FIG. 1.

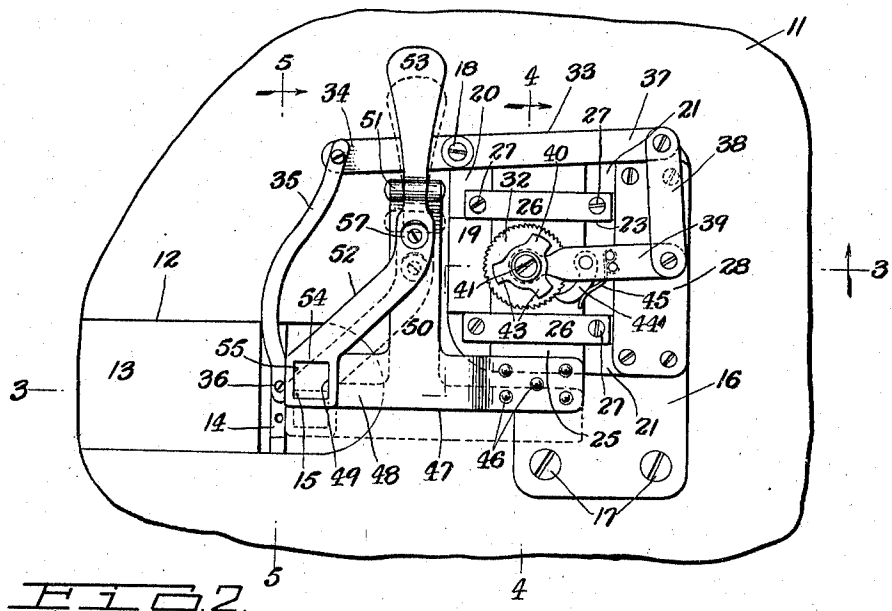
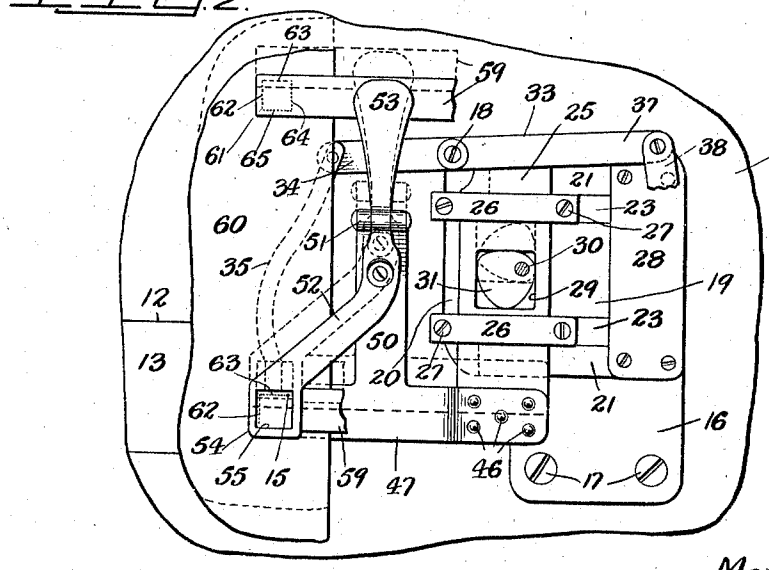


FIG. 2.



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2 SHEETS—SHEET 2.

FIG. 3.

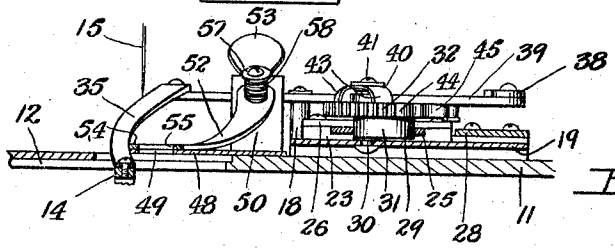


FIG. 10.

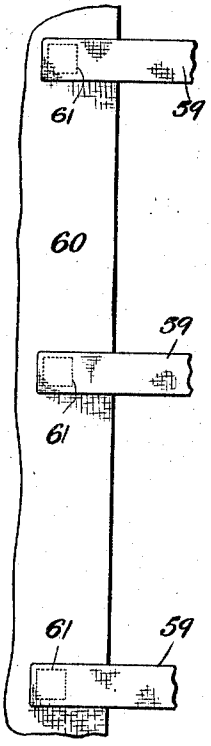


FIG. 4.

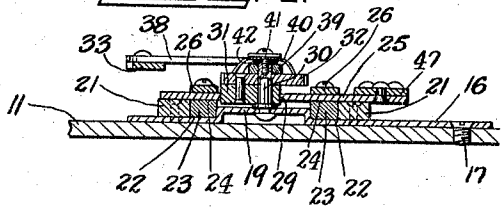


FIG. 5.

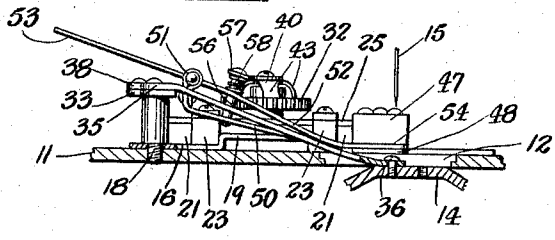


FIG. 6.

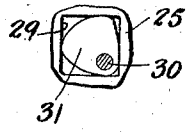


FIG. 7.

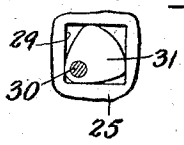


FIG. 8.

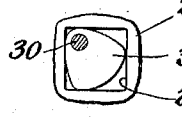
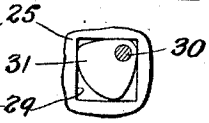


FIG. 9.



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ATTACHMENT FOR SEWING-MACHINES.

1,302,750. Specification of Letters Patent. Patented May 6, 1919.

Application filed May 22, 1918. Serial No. 235,993.

To all whom it may concern:

Be it known that I, MATTI YLIOJA, a citizen of Finland, and residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Attachments for Sewing-Machines, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to sewing machines and particularly to such machines as are used in factories, sweatshops and the like, and the invention consists in providing an improved attachment for machines of the class specified which is designed to move the workpiece or workpieces in a predetermined path in the operation of the machine and is particularly designed for use in attaching one workpiece in the form of a strap, tape, string or the like to the edge portion of another workpiece in the form of a garment or other article, and the object of the invention is to provide an attachment of the class and for the purpose specified which is simple in construction and operation and efficient in use.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which:—

Figure 1 is a plan view of the table or base-plate of a sewing machine showing my attachment secured in position;

Fig. 2 a view similar to Fig. 1 with part of the construction broken away and in section, and showing the parts in a different position and indicating the method of using the attachment;

Fig. 3 a partial section on the 3—3 of Fig. 1;

Fig. 4 a partial section on the line 4—4 of Fig. 1;

Fig. 5 a partial section on the line 5—5 of Fig. 1;

Figs. 6, 7, 8 and 9 are detail views of a part of my improvement showing the different positions thereof in the several views; and,

Fig. 10 a detail view of one edge portion of a garment, blanket or the like showing a number of straps secured thereto.

In the drawing I have shown at 11 the table or base-plate of a sewing machine and at 12 the bobbin and shuttle opening in said table closed by a plate or plates 13, as indicated in Fig. 1 of the drawing, and beneath the bobbin and shuttle opening is the usual feed bar 14 with which the feed dogs are usually connected and, in the practice of my invention, said feed dogs are disconnected, and a part of my improved attachment is connected therewith as hereinafter set out. At 15 I have also shown the needle of the machine which is connected with the needle bar in the usual manner, but the presser foot usually employed is detached from the machine when my attachment is in use.

My attachment comprises a main plate 16 secured to the table or base plate 11 of the machine by screws 17, and a screw 18, and one end portion of the main plate 16 is provided with a raised portion 19, as clearly shown in Fig. 4, which extends entirely across said plate and through a side extension 20 thereof, and secured to said plate at the opposite sides of the raised portion 19 and at a predetermined distance therefrom, and parallel therewith, are guide bars 21 which form between the same and the raised portion 19, passages 22 in which are mounted slide rods or bars 23, the top portions of which are recessed as shown at 24 and mounted in said recesses and movable transversely of the slide rods 23 is a supplemental movable plate 25 retained against displacement in the slide rods by strips 26 secured to the opposite ends of said rods by screws or similar devices 27 as clearly shown in Figs. 1 and 4 of the drawing.

The guide bars 21 are connected at one end thereof by a cross plate 28 which extends longitudinally of the main plate 16, and which retains the slide rods 23 within the passages 22.

The supplemental movable plate 25 is provided approximately centrally thereof with a rectangular aperture 29, and secured to the upwardly directed portion 19 approximately centrally thereof is a vertical stud 30 on which is rotatably mounted a cam member 31 to the top of which is secured a ratchet 32, which when operated as hereinafter described rotates the cam member within the rectangular aperture 29 in the supplemental movable plate 25 to move said plate and the slide rods 23.

Pivoted to the top of the screw 18 is a lever 33 to the short arm 34 of which is pivoted a link rod 35 which is secured to the

top of the feed bar 14 as shown at 36, after the feed dog or dogs have been removed therefrom, and pivoted to the end of the longer arm 37 of the lever 33 is a link 38 which is also pivoted to an arm 39, the free end of which is mounted to rotate on the stud 30 as clearly indicated in Figs. 1 and 4 of the drawing.

A spring member 40 is secured to the top of the stud 30 by a screw 41 and placed between the spring member 40 and the end of the arm 39 is a washer 42 which bears on the upper end of the stud 30 and permits the free rotation of the arm 31 on said stud, and the spring member 40 is provided with a plurality of downwardly directed spring arms 43, three of which are shown, and which are adapted to bear on the upper face of the ratchet 32 to give tension thereto and to hold said ratchet against free rotation upon the stud 30.

A pawl 44 is pivoted to the arm 39 a predetermined distance from the free end thereof, and a spring 45 is mounted on said arm and adapted to operate in connection with the pawl 44 to hold it in engagement with the ratchet 32 as clearly shown in Fig. 1.

Secured to the front end of the supplemental movable plate 25 as shown at 46 is an approximately T-shaped plate 47, the free end 48 of the cross head of which is provided with a rectangular aperture 49 of predetermined dimensions, and the part 50 of the plate 47 extends backwardly and the end thereof is directed upwardly and forms a yoke-shaped keeper 51 within which is pivotally mounted a tensionally operated member 52, having a hand or finger piece 53 at one end and a rectangular head 54 at its opposite end, which is offset from said hand or finger piece and which is provided with a rectangular aperture 55, which is directly over and which corresponds with the aperture 49. A pin 56 is secured to the backwardly directed extension 50 forwardly of the keeper 51 and passes upwardly through an aperture in the member 52, and is headed at its upper end as shown at 57, and placed between the head 57 and the member 52 is a spiral spring 58 which normally serves to depress said member, or hold the rectangular head 54 thereof in engagement with the free end 48 of the cross head of the T-shaped plate 47.

The free end 48 of the plate 47 and the head 54 of the member 52 are substituted for the presser foot of the sewing machine and serve to feed the workpiece or workpieces in a path to accomplish the desired result.

Heretofore when it was desired to connect a strap, tape or the like, such as shown at 59 in Figs. 2 and 10 of the drawing, with the edge portion of a garment or article 60 of any kind or class as shown in said figures, the garment or article 60 as well as the straps or tapes 59 were manipulated by hand or constantly turned into four different positions to secure said strap or tape 59 to the garment or article 60 by stitchings 61 in a square form as clearly shown in Fig. 10, and much time and labor was lost in accomplishing the result in the usual way and faulty or irregular stitchings were commonly produced by the aforesaid manner of operation. With my attachment which is secured to the table or base plate of a machine in such manner as to bring the rectangular apertures 49 and 55 in the parts 48 and 54 in operative relation with the needle 15 of the machine, and by placing the garment or article 60 with a strap or tape 59 between the parts 48 and 54, when said parts are in the position shown in Fig. 1, said garment or article 60 and strap or tape 59 will be firmly held in the desired position, and by operating the machine in the usual manner the feed bar 14 will operate the link rod 35 to oscillate the lever 33, the link 38 and arm 39, which operation will rotate the cam member 31 by reason of the engagement of the pawl 44 with the ratchet 32.

In the operation of the machine, assuming the parts 47 and 52, and the parts connected therewith, are in the position shown in full lines in Fig. 1, said parts are moved into the position indicated in dotted lines in said figure thus producing the line of stitching as indicated at 62 in Fig. 2, after which said parts move from the position shown in dotted lines in Fig. 1 to the full line position shown in Fig. 2, forming the line of stitching indicated at 63, after which the said parts move from the full line position shown in Fig. 2 to the dotted line position shown in said figure to produce the line of stitching shown at 64, after which said parts move from the dotted line position shown in Fig. 2 to the full line position shown in Fig. 1 to produce the line of stitching 65 as indicated in Fig. 2 of the drawing, and at this time the operation of the machine is stopped and the garment or article 60 with the strap or tape 59 secured thereto by the stitchings as above described are removed from the parts 48 and 54 by depressing the hand or finger piece 53 and another strap or tape 59 is placed on the garment or article 60 and between the parts 48 and 54, and the above operation is repeated. In the manner of attaching the straps or tapes 59 to a garment or article 60, as above described, after a strap or tape has been placed in position, there is no time lost in attaching the same to a garment or article 60 and if properly placed in position the attachment thereof to the garment will be uniform and neat in appearance.

The parts 47 and 52 are moved in the manner above set out by the slide rods 23 and the supplemental movable plate 25 which constitute two frame members mov-

able at right angles to each other and in the slide or guide ways, and the movement thereof is controlled by the cam member 31 which operates in the rectangular aperture 29 in the movable plate 25, and the form and dimensions of the stitches 61 will be controlled by the dimensions of the cam member 31 and aperture 29, as will be readily understood, and in Figs. 6 to 9 inclusive, I have shown the positions the cam member 31 assumes during a complete revolution thereof, and from the foregoing description the operation will be readily understood by all those skilled in the use of apparatus of this class when taken in connection with the accompanying drawing.

While I have shown an attachment for sewing machines which is designed to guide a workpiece or workpieces through a path to form on such workpiece or workpieces an approximate rectangular or square form of stitching, it will be understood that my invention is not limited to the specific form of the stitching as various shapes may be employed, and all that is necessary to vary the shapes of the stitching would be to change the form of the aperture 29 as well as the cam member 31, as well as the apertures 49 and 55, and while I have shown certain details of construction for carrying my invention into effect, it will be understood that I am not limited to such details, and changes in and modifications of the construction herein shown and described may be made, within the scope of the appended claims, without departing from the spirit of my invention or sacrificing its advantages.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. In an attachment for sewing machines, a support, a lever pivoted to said support, means adapted to be connected with the feed bar of the machine for giving said lever an intermittent oscillatory movement, two members mounted in said support and adapted to move at right angles to each other, one of said members being provided with an angular aperture, a cam mounted to operate in said aperture, means in operative connection with said lever for rotating said cam to give said members their movements, and means involving a tensionally operated device connected with one of said members for supporting a workpiece.

2. In an attachment for sewing machines, a support, a lever pivoted to said support, means adapted to be connected with the feed bar of the machine for giving said lever an intermittent oscillatory movement, two members mounted in said support and adapted to move at right angles to each other, one of said members being provided with an angular aperture, a cam mounted to operate in said aperture, said cam being provided at one side thereof with a ratchet, a tensionally operated pawl mounted at one side of said ratchet and in operative connection therewith, means in operative connection with said lever for operating said pawl to rotate the ratchet and cam to give said members their movements and means involving a tensionally operated device connected with one of said members for supporting a workpiece.

3. In an attachment for sewing machines, a support, a lever pivoted to said support, means adapted to be connected with the feed bar of the machine for giving said lever an intermittent oscillatory movement, two members mounted in said support and adapted to move at right angles to each other, one of said members being provided with an angular aperture, a stud secured to said support and adapted to pass vertically through said members and through said aperture, a cam mounted on said stud and adapted to operate in said aperture, a ratchet device secured to one face of the cam, link devices pivoted to the top of said stud and to one end of said lever, a tensionally operated pawl pivoted to one of said link devices and adapted to cooperate with said ratchet to rotate the same and said cam to give said members their movements and workpiece supporting devices connected with one of said members.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 20th day of May, 1918.

MATTI YLIOJA.

Witnesses:
C. E. MULREANY,
H. E. THOMPSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."