Aug. 16, 1938. B. DUCHAN 2,127,209

KNEE PAD FOR SEWING MACHINES

Filed Sept. 11, 1936

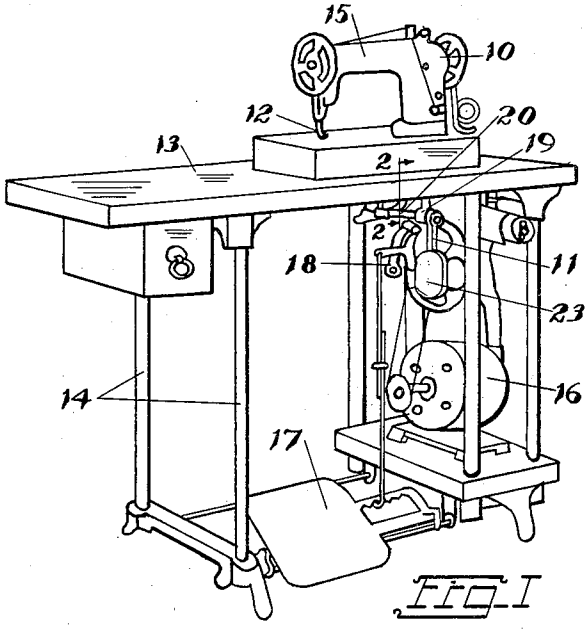


Fig. 1

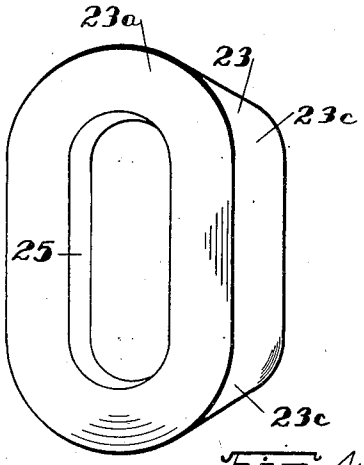


Fig. 4

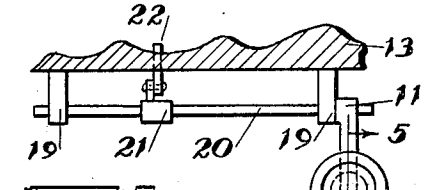


Fig. 2

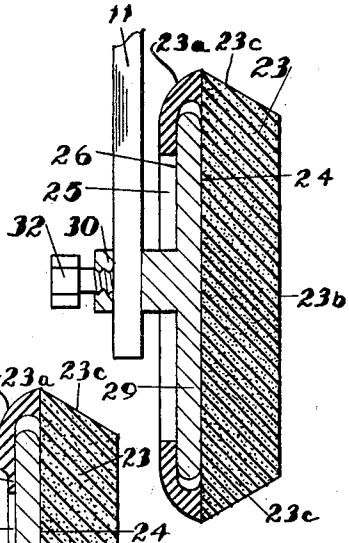


Fig. 5

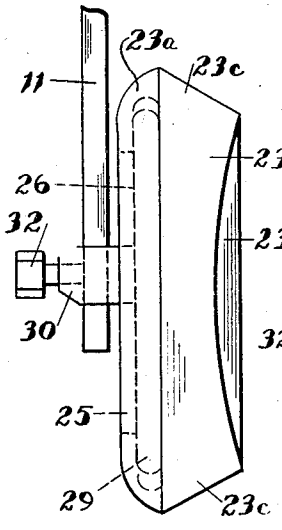


Fig. 3

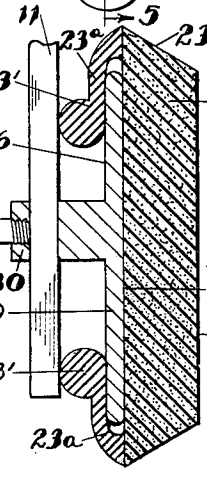


Fig. 7

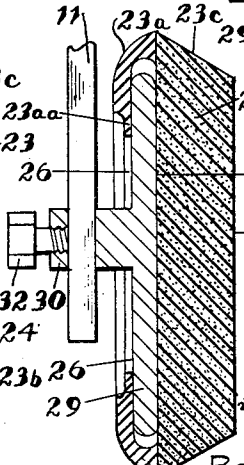


Fig. 6

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Patented Aug. 16, 1938

2,127,209

UNITED STATES PATENT OFFICE

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KNEE PAD FOR SEWING MACHINES

Bennie Duchan, New York, N. Y.

Application September 11, 1936, Serial No. 100,234

2 Claims. (Cl. 74—515)

This application is a re-file in part of my abandoned application Serial No. 426,791, filed February 8th, 1930 for a sewing machine and knee pad invention.

The invention has for an object the construction of a knee lifter rubber pad for sewing machines which is made especially for preventing soreness and pain caused by working the knee lifter of a sewing machine a great many times a day for extended periods.

More specifically, the invention proposes a knee lifter rubber pad which is characterized by a mass of sponge rubber material adapted to engage over the customary plate upon the knee lifter lever of a sewing machine, and which is associated with a relatively harder rubber flange adapted to engage edge portions of said plate to maintain the pad in position. From experiments I have learned that if the surrounding rubber flange was constructed from the soft sponge rubber material necessary in the mass of the pad, it would be relatively loose on the supporting plate and have a tendency of being easily displaced with the knee.

A further object of this invention is to construct the knee lifter rubber pad of two distinct sections; one—the front mass portion, and two—the rear supporting flange, and to vulcanize these two distinct parts together in an integral unit.

Still further the invention proposes an arrangement for reinforcing the flange portion of the pad so that it is capable of more firmly holding the pad in position.

Another object of the invention is the construction of a device as mentioned which is simple and durable and which may be manufactured and sold at a reasonable cost.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawing, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawing forming a material part of this disclosure:—

Fig. 1 is a perspective view of a sewing machine with a knee lifter pad mounted on the knee lifter thereof.

Fig. 2 is an enlarged fragmentary transverse sectional view taken on the line 2—2 of Fig. 1.

Fig. 3 is a fragmentary enlarged elevational view looking from the left hand side of Fig. 2.

Fig. 4 is a perspective view of the knee lifter rubber pad per se.

Fig. 5 is a sectional view taken on the line 5—5 of Fig. 2.

Fig. 6 is a view similar to Fig. 5 but illustrating a modified construction.

Fig. 7 is another view similar to Fig. 5 but illustrating a still further modified construction.

In Fig. 1 a sewing machine 10 has been illustrated provided with a knee lifter 11 for lifting the pressure foot 12. The machine is shown provided with a conventional table top 13 supported by legs 14. A machine head 15 is arranged upon said top and is connected for operation with an electric motor 16 beneath said table top. A foot control pedal 17 is shown supported between the bottom ends of the legs 14 and is connected for operating a clutch 18 to transmit rotations from the motor to the machine head.

A pair of journals 19 are shown attached to the bottom of said table top 13 and rotatively support a rod 20. A radial arm 21 is fixed on this rod and connects with a connecting rod 22 passing through the table top 13 and connected for raising the pressure foot 12 upon a slight turn of the rod 20. The connection between the rod 22 and the pressure foot is not shown on the drawing or described in this specification as it is old and generally known and forms no part of the invention. The knee lever 11 is fixed on the rod 20 and normally depends in a vertical direction. When it is desired to lift the pressure foot it is necessary that the knee lifter rod 11 be moved laterally in an arc about the rod 20 as a center.

The pad for the knee lifter, according to this invention, consists of a resilient mass of sponge rubber material 23 capable of covering the knee engaging front face 24 of the knee lever plate 29 and provided with a flange portion 23*a* upon its rear side adapted to engage said plate 29 which is adjustably mounted on the knee lever 11. This flange portion 23*a* is formed from rubber material which is relatively stiff and strong as contrasted with the pad material 23. It is secured in position by vulcanization or other known methods. The flange 23*a* produces a central opening 25 through which the plate 29 may be engaged into position beneath the flange portion 23*a*. The rear face 26 of the knee lifter plate 29 engages against the inner face of the flange portion 23*a*.

The plate 29 is formed with a rear boss 30 formed with an opening through which the knee lifter lever 11 passes. A set screw 32 engages through the boss and against the lever 11 for adjustably holding the plate 29 thereon. The outer face 23*b* of the resilient pad 23 is formed curved convexly in a vertical plane. The side

portion **23c** of the resilient member **23** tapers from the front to the rear so that the resilient mass is of substantially frusto-conical form.

In operation the flange portion **23a** is forced over the plate **29** and maintains the resilient pad in position. The operator may keep his foot stationary on the floor or on the foot pedal of the sewing machine and bend the leg at the ankle to describe an arc at the knee to engage the face **23b** of the pad and so move the knee lifter. The knee of the operator will not become sore no matter how many times the knee lifter is engaged because the resilient mass **23** is of very soft sponge rubber material.

In Fig. 6 a slightly modified form of the invention has been disclosed which distinguishes from the prior form in an arrangement which assists in more securely holding the pad on the retaining plate **29**. According to this form of the invention the flange portion **23a** is formed with a very thin lip portion **23aa** extending inwards from the inner edge of the flange and adapted to rest against the outer face **26** of the plate. This lip portion is comparatively flexible when compared with the flexible portion **23a** because of its thinness, but materially assists in firmly holding the knee lifter pad on the plate **29** because it extends inwards and reaches pretty far towards the center of the supporting plate **29**. The lip **23aa** will not interfere with the removal of the rubber pad from the plate since it readily bends.

In Fig. 7 another modified form of the invention has been disclosed in which another provision is shown for reinforcing the flange **23a** to insure proper mounting of the knee lifter pad on the plate **29**. In this form of the invention the inner edge of the flange **23a** is formed with a thickened bead portion **23'**. This thickened bead portion is capable of drawing together the inner edge of the flange **23a** with sufficient force so as to firmly hold the bead on the plate. Furthermore, the bead **23'** because of its relative thickness will endure the deteriorating effects of the atmosphere to a much better extent than the flange portion **23a**.

The bead portion **23'** is of a thickness as to be capable of being wedged in between the rear face **26** of the plate **29** and the lever **11**. This serves to securely hold the pad in place.

While I have illustrated and described my invention with some degree of particularity, I realize that in practice various alterations therein may be made. I therefore reserve the right and privilege of changing the form of the details of construction or otherwise altering the arrangement of the correlated parts without departing from the spirit or the scope of the appended claims.

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

1. In a pad for the knee lifter of a sewing machine of the class described, a resilient mass of soft material adapted to cover the knee engaging front face of the knee lifter, and a resilient annular flange mounted on the rear face of said resilient material along its outer edges and adapted to engage upon a plate associated with said knee lifter for supporting the pad in position, and a thickened edge portion on the inner edge of said flange to hold said inner edge from expanding and slipping off said knee lifter.

2. In combination with the knee lifter pad of a sewing machine, a lever for operating the lifter, and a plate with a knee engaging front face and having a projecting boss mounted on said lever, a resilient mass of material covering the knee engaging front face of said plate, a flange mounted along its outer edges upon the rear of said pad and engaging over the edges of said plate, and a bead formed on the inner edge of said flange and having a portion wedged in between said plate and said lever portion for assisting in holding said flange from expanding and slipping off said plate.

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