April 30, 1957 W. A. ANDRES 2,790,407

BELT-GUARDS FOR SEWING MACHINES

Filed April 20, 1953 2 Sheets-Sheet 1

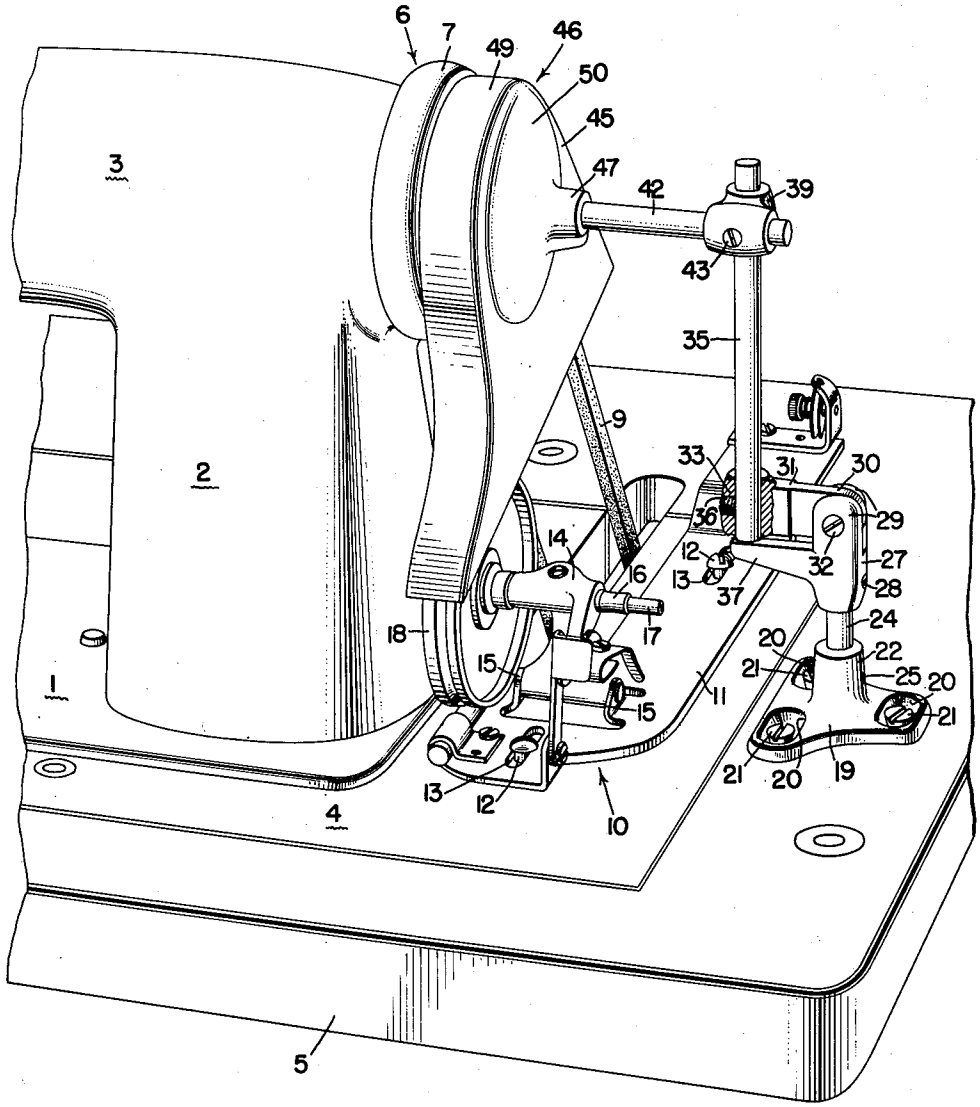


Fig. I.

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WITNESS =
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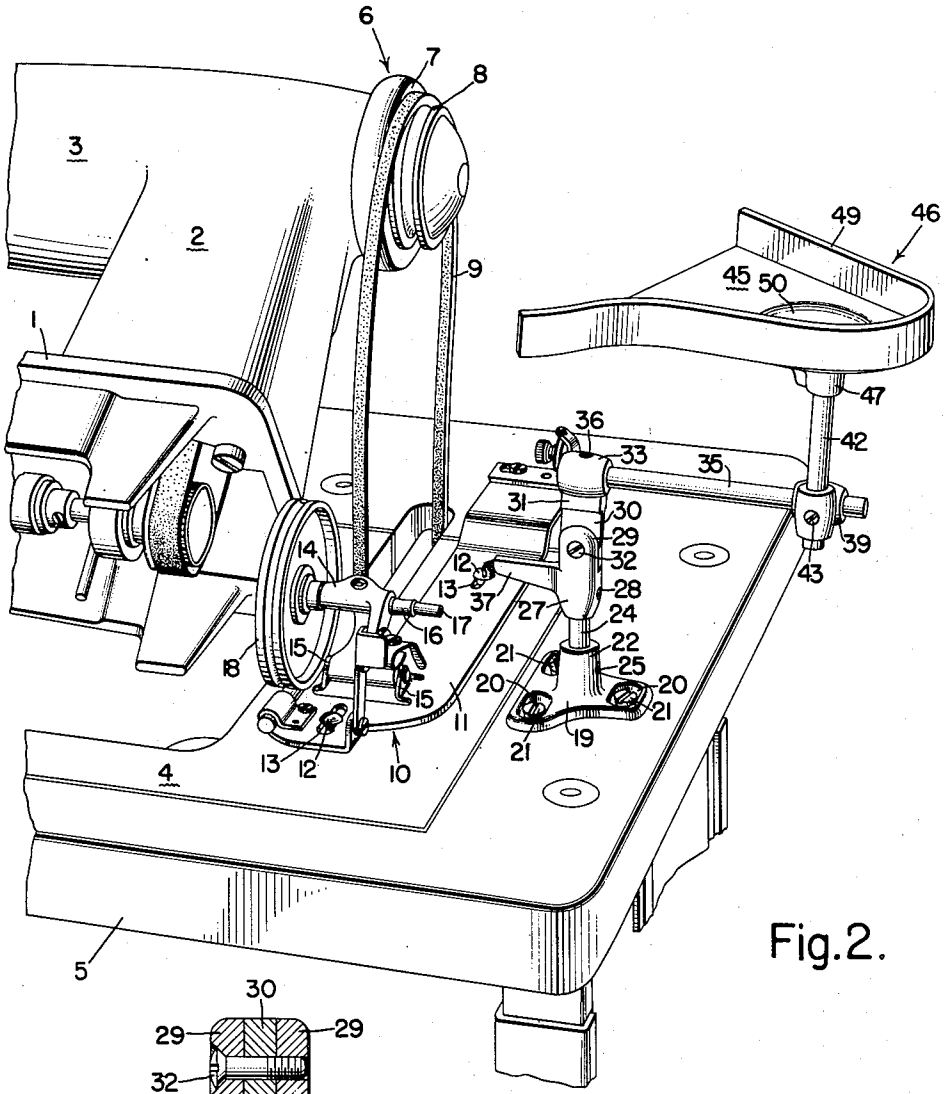


Fig.2.

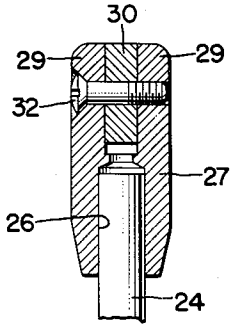


Fig.3.

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BELT-GUARDS FOR SEWING MACHINES

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Application April 20, 1953, Serial No. 349,698

4 Claims. (Cl. 112—261)

The present invention relates to a belt-guard for a sewing machine and has for a primary object to provide a novel belt-guard that is mounted upon a universally adjustable support whereby it may readily be adapted for use with a number of different machines.

In a sewing machine supporting table having interchangeable machine-carrying inserts, such as disclosed in the U. S. patent of Webb, No. 2,477,433, July 26, 1949, a plurality of inserts, each having the same outside dimensions but formed with varying machine-receiving apertures to accommodate different machines, are adapted for use with a single table. Such a construction is advantageous in that a single table, permanently secured in a desired position, may be used with a plurality of different machines and thus eliminate the necessity of providing a different table for each machine, which simplifies the process of changing machines and facilitates storage of the unused machines. In accordance with the present invention it is a further object to provide a novel belt-guard for a sewing machine that is particularly adapted to be used with such an insert-type table.

Having in mind the above and other objects that will be evident from an understanding of this disclosure, the invention comprises the devices, combinations and arrangements of parts as illustrated in the presently preferred embodiment of the invention which is hereinafter set forth in such detail as to enable those skilled in the art readily to understand the function, operation, construction and advantages of it when read in conjunction with the accompanying drawings in which:

Fig. 1 is a perspective view of a sewing machine mounted upon an insert-type table and having associated therewith a belt-guard constructed in accordance with the present invention.

Fig. 2 is a perspective view similar to Fig. 1 but showing the guard pivoted to an inoperative position and the machine tilted back in the conventional manner.

Fig. 3 is a detail section view of a portion of the belt-guard support.

The preferred embodiment of the present invention is illustrated as associated with a sewing machine having a bed-plate 1, a standard 2 and a bracket-arm 3. The machine is carried by an insert 4 which is, in turn, supported by a table 5, all substantially as disclosed in the above-mentioned patent to Webb.

There is provided a conventional balance-wheel 6 which comprises a combined hand-wheel 7 and belt-pulley 8, which balance-wheel, in the usual manner, is secured upon the projecting end of a shaft (not shown) journaled longitudinally of the bracket-arm 3. It will be understood that the above referred to shaft is operatively connected in any well-known manner to the various mechanisms of the sewing machine to drive the same. A belt 9 is entrained about the belt-pulley 8 and extends through an appropriate slot formed in the insert 4 and the top of the table 5 to where it is connected to a suitable source of power such as an electric transmitter (not shown) for the purpose of delivering power to the pulley 8 and consequently to the machine.

There is also provided a bobbin-winder 10 which as illustrated, is similar to that disclosed in the U. S. patent of Karle, No. 1,290,225, to which reference is made for a detailed description of the same. Briefly the bobbin-winder includes a sheet metal base-plate 11 adjustably secured to the insert 4 transversely thereof as by screws 12 that extend through slots 13 formed in the plate. A frame 14 is pivoted to the base-plate 11 as by a fulcrum-pin journaled in upstanding ears 15 struck from the same, on an axis parallel to that of aforementioned bracket-arm shaft. A bobbin-shaft 16 is journaled on a similar axis in the frame 14 and includes a bobbin-receiving end 17. A belt-wheel 18 is secured to the opposite end of the shaft 16 and is adapted to be selectively brought into contact with the belt 9 upon pivotal movement of the frame 14 to be driven thereby.

The belt-guard, in accordance with the present invention, is mounted upon a support including a base-member 19 having transversely elongated slots 20 therein that receive screws 21 for securing the same to the table 5. Thus, the base-member 19 can be adjusted laterally of the machine. The base-member 19 is provided with an upstanding lug 22 having a vertical bore that receives the lower end of an upstanding rod 24 which is secured therein by a set screw 25. The upper end of the rod 24 is received within a bore 26 formed in the lower end of a member 27 and secured therein by a set-screw 28, which member is thus supported by the rod 24. The upper end of the member 27 is bifurcated to form opposed tines 29 between which is received the flat shank 30 of a block 31 that is pivoted to said tines by a screw 32 passing through one of the tines, through the shank 30 and threading into the other of the tines. It will be apparent that tightening the screw 32 will cause the inner faces of the tines 29 to bear against the outer faces of the shank 30 which will generate frictional resistance to pivotal movement of the shank 30 with respect to the tines 29. Regulation of the screw 32 can thus be made to permit pivotal movement of the block 31 relative to the member 27 but with sufficient frictional resistance to hold the same in any desired set position.

The block 31 also includes a sleeve-like portion 33 having a through-bore in which is fitted one end of a second rod 35 that is secured in the desired position by a set screw 36. The end of the rod 35 projects through the bore in the sleeve-like portion 33 of the block 31 a short distance and is adapted to contact a stop-lug 37 projecting laterally from the member 27. The distance that the rod 35 extends through the bore is made such that when the rod is in contact with the lug 37, or in its normal operative position, it will be substantially vertical.

At its opposite end, the rod 35 is received within a bore formed in a crosshead 39 and secured in the desired position as by a set screw (not shown). A second bore is formed in the crosshead 39 at substantially a right angle to the bore receiving the rod 35 which second bore receives one end of a third rod 42 secured therein by a set-screw 43. The opposite end of the rod 42 fits within a bore formed in the face-wall or face-plate 45 of a belt-guard 46 and in a lug 47 integral with said face-wall. The rod 42 is secured in the bore by a set screw (not shown). The belt-guard 46 is provided with an integral flange 49 that projects laterally from the edge of the face-plate 45 in that direction opposite to the lug 47 and at substantially a right angle to the plane of the face-plate. In the particular belt-guard illustrated the face-plate 45 includes a dished portion 50 that accommodates the convex end portion of the balance-wheel 6, but this of course, is a function of the shape of the specific balance-wheel used.

The belt-guard 46 is shaped to substantially enclose the belt-pulley 8, and to overlie the bobbin-winder belt-wheel 18 and a portion of the runs of the belt 9. The specific shape of the belt-guard 46 is adequate to substantially eliminate the possibility of any accidental contact with the moving belt 9, belt-pulley 8 or belt-wheel 18 during operation of the machine.

In use, when it is desired to tilt the machine back as illustrated in Fig. 2, to gain access to the bed mechanisms of the machine, the belt-guard may be readily pivoted to the retracted position as illustrated about the screw 32. To restore the same to its operative position it is only necessary to pivot the same forwardly until the end of rod 35 contacts the stop lug 37. When it is desired to change machines, the one being used, together with its insert 4, can be withdrawn when the belt-guard is in the retracted position, and the new machine installed. The belt-guard can then be swung back into operative position with respect to the new machine after the necessary adjustments, if any, are made. In order to obtain the required adjustment, it should be noted the rods 35 and 42 can be adjusted lengthwise with respect to the crosshead 39, the base-member 19 can be adjusted laterally with respect to the table 5, the end of rod 35 can be adjusted relative to the block 31 to vary the stop position of the pivotal movement toward operative position as determined by the end of rod 35 and the stop-lug 37, and each of the rods is rotatably adjustable in its respective bore.

Numerous alterations of the structure herein disclosed will suggest themselves to those skilled in the art. However, it is to be understood that the present disclosure relates to a preferred embodiment of my invention which is for purposes of illustration only and not to be construed as a limitation of the invention. All such modifications which do not depart from the spirit of the invention are intended to be included within the scope of the appended claims.

Having thus set forth the nature of the invention, what I claim herein is:

1. A belt-guard for use with a sewing machine mounted upon a support, said belt-guard comprising a base adapted to be adjustably secured to said support for lateral adjustment relative thereto, a block loosely pivoted on said base for free pivotal movement relatively thereto, a stop for limiting pivotal movement of said block relative to said base, a first rod carried by said block, a crosshead carried by said first rod, and a second rod carried by said crosshead, said second rod, when in operative position, being arranged generally perpendicular to a plane that is normal to said support and includes the pivotal axis of said block, connections between said rods and said block and crosshead normally fixing the same in set position but being releasable for lengthwise adjustment of said rods with respect to said block and crosshead, and a belt-guard carried by and arranged generally normal to the second-rod.

2. In combination, a machine support having an insert-receiving aperture, said aperture adapted to receive an insert carrying a sewing machine having a driven bracket arm shaft, a belt-pulley fixed to said shaft and a belt operatively associated with said pulley for driving the same, and a belt-guard for shielding said pulley and said belt, said belt-guard being carried by a support comprising a base secured to said machine support adjacent said insert-receiving aperture and being laterally adjustable with respect thereto, a block pivotally carried by said base, a first rod carried by said block, a crosshead carried by said first rod, and a second rod carried by said crosshead, said second rod when in operative position being arranged generally perpendicular to a plane that is normal to said support and includes the pivot axis of said block, connections between said rods and said block and crosshead normally fixing the same in set position but being releasable for lengthwise adjustment of said rods relative to said block and crosshead, said belt-guard being carried by and arranged generally normal to said second rod.

3. A belt-guard for a sewing machine carried by a universally adjustable support comprising a base, a first rod upstanding from said base and carrying a member adjacent its free end, a block pivoted to said member, a second rod carried by said block, a stop-lug on said member in position to be engaged by one end of said second rod to limit pivotal movement of said block relative to said member to that position in which the belt-guard is in operative position, a crosshead carried by said second rod, and a third rod carried by said crosshead, connections between said rods and the respective ones of the base, member, block and crosshead, normally fixing the same in set position but being releasable for rotatable adjustment of said first and second rods and lengthwise adjustment of said second and third rods, said belt-guard being carried by said third rod.

4. A belt-guard for a sewing machine carried by a universally adjustable support comprising a base having elongated fastener-receiving apertures therein, a first rod upstanding from said base substantially normal to the plane thereof and carrying a member adjacent its free end, a block pivoted to said member, a second rod carried by said block, a stop-lug on said member in position to be engaged by one end of said second rod to limit pivotal movement of said block relative to said member, said second rod being arranged when in stop-position on an axis substantially parallel to said first rod, a crosshead carried by said second rod, and a third rod carried by said crosshead on an axis substantially at a right angle to the first rod, connections between said rods and the respective ones of the base, member, block and crosshead, normally fixing the same in set position but being releasable for rotatable adjustment of said first and second rods and lengthwise adjustment of said second and third rods, said belt-guard being carried by said third rod.

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