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VIBRATION ABSORBING MOUNTING FOR SEWING MACHINES

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FIG. 1

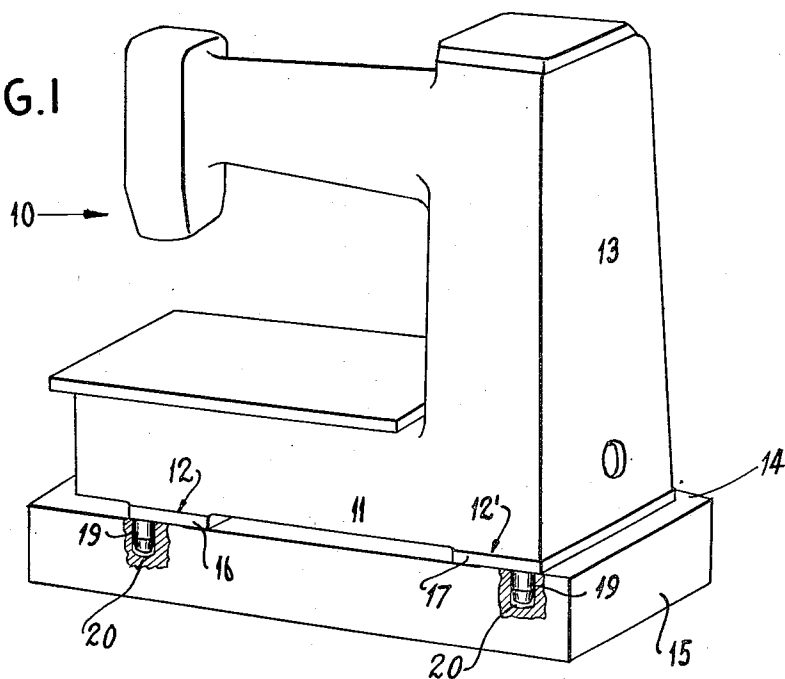


FIG. 2

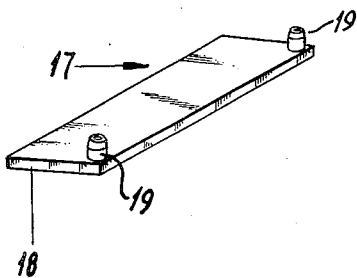


FIG. 3

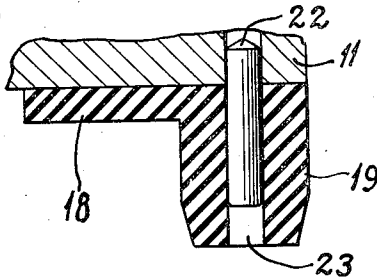


FIG. 5

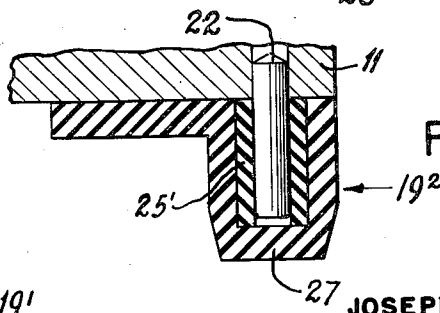
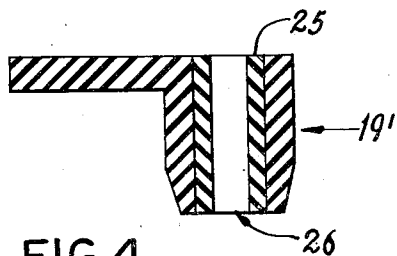


FIG. 4



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2,532,767

VIBRATION ABSORBING MOUNTING FOR
SEWING MACHINES

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4 Claims. (Cl. 248—22)

1

This invention relates to dual resilient mountings for sewing machines, each mounting comprising an elongated flexible rubber body element having a predetermined or ascertained deformation, necessary to dampen a specific range of vibrations. Each elongated body element of flexible material is maintained or confined endwise within definite bounds, and therefore, only small vibrations or movements of predetermined value are cushioned by each body element.

An object of this invention is to form integral tubular interlocking projections at each end of the elongated mountings, the projections fitting closely into openings in the sewing machine table at each end of the sewing machine base, whereby large vibrations are rigidly resisted by the interlocking projections.

In a prior attempt to absorb the vibrations, metal shells were inserted in openings in the table but it was found that the sideways poundings of the metal shells enlarged the diameter of the openings in the wooden table and that the sounding board effect of the table kept on increasing in magnitude.

The vibration absorbing mountings herewith disclosed, are made entirely of flexible oil resisting rubber and it is found that the rubber projections can not enlarge the openings in the table and that sewing machines mounted in this improved manner remain quiet running indefinitely.

When using the four point support metal shells, when the sewing machine belt is tightened the tight belt causes the machine to be raised on an angle to the table and this increases the tendency to vibration. This angular raising of the sewing machine is impossible with the rectangular mountings herewith disclosed.

Another object of this invention is to provide dual vibration control mountings for a sewing machine, and comprising two elongated elastic mounting connections extending transversely and entirely across the sewing machine, each mounting having two tubular projections and tubular elastic inserts fitted in the projections, the inserts having a higher degree of elasticity than the tubular projections, the sewing machine having integral pins fitting into the tubular inserts, whereby to permit kneading-like vibrational movements throughout the extent of the elongated body portions of the mountings to cushion small vibrations, while large vibrations are absorbed jointly by the elongated body portions and by the tubular elastic inserts.

With the above and other objects in view, the

2

invention will be hereinafter more particularly described, and the combination and arrangement of parts will be shown in the accompanying drawings and pointed out in the claims which form part of this specification.

Reference will now be had to the drawings, wherein like numerals of reference designate corresponding parts throughout the several views, in which:

Figure 1 is a diagrammatic perspective view of a sewing machine and elastic mounting connections therefor.

Figure 2 is a perspective view of one of the elastic mounting connections, turned upside down.

Figure 3 is a central cross-sectional view through one of the tubular projections and transversely through the body of the elastic mounting shown in Figure 2.

Figure 4 is a central cross-sectional view similar to Figure 3, but showing a tubular insert fixed in the opening of the tubular projection.

Figure 5 is a central cross-sectional view similar to Figure 3, but showing a tubular insert confined at its upper and lower surfaces.

In the illustrated embodiment of the invention, the numeral 10 indicates a sewing machine having a base 11 which terminates in pads 12, 12', positioned in spaced-apart relation and extending transversely of the machine. Extending upwardly from the base 11 is a standard 13, as is well known in the art.

The sewing machine is adapted to rest upon the top face 14 of a supporting table 15. The usual practice of securing the sewing machine directly to the table results in vibration and noise.

For the purpose of absorbing the inherent sewing machine vibrations so as to limit its transmission to the table, I provide two elastic mounting connections 16, 17 of rectangular cross-section which are interposed between the pads 12, 12' of the sewing machine base 11 and the table 15.

As shown in Figure 2, the elastic mounting connection 17 comprises an elongated body 18 of rectangular cross-section and two integral laterally extending tubular projections 19, 19', of a diameter to fit into corresponding openings 20, 20' in the table 15. The mounting connection 16 is substantially identical with the mounting connection 17 and needs no further description.

As shown in Figure 3, a pin 22 extends from the base 11 of the sewing machine 10 into a central opening 23 of a tubular projection 19. Four pins

22 are used in the entire mounting connection for a sewing machine.

Figure 4 shows a modified tubular projection 19' wherein a tubular rubber insert 25 is secured in an enlarged opening 26 of the tubular projection. The insert 25 is preferably made of oil resisting rubber having a higher degree of elasticity than the elasticity of the tubular projection 19'. Under operating conditions, the softer rubber tubular inserts augment the vibration absorbing capacity of the mounting connections.

Figure 5 shows a modified tubular projection 19² wherein a tubular rubber insert 25' of the same diameter but slightly shorter than the insert 25 shown in Figure 4, is secured in an opening of the said tubular projection. The modified projection 19² has a horizontal bottom 27, whereby the insert 25' is confined at its upper level by the bottom surface of the base 11 and at its lower level by the wall 27.

It is to be noted that while the design shown in Figure 4 permits distension of the tubular insert 25 under compression lower than the tubular projection 19', that the tubular rubber insert 25' shown in Figure 5 is confined between the bottom surface of the base 11 and the horizontal bottom wall 27 and cannot increase in length when pressed laterally by a pin 22 in the base 11. The insert 25' can be compressed laterally only and this results in a pre-determined controlled vibration absorption.

It will thus be noted that there has been provided elongated dual mounting connections or supports transversely of the sewing machine, for absorbing vibrations in sewing machines, the supports being made of rubber which is not effected by oil, which will not shrink, and which is adapted to absorb vibrations, retard slippage, and deaden the noise caused by the vibrations.

In accordance with the patent statutes I have described and illustrated the preferred embodiment of my invention, but it will be understood that various changes and modifications can be made therein without departing from the spirit of the invention as defined by the appended claims.

I claim:

1. A resilient mounting for a sewing machine mounted on a supporting table having openings in rectangular formation, comprising two mounting connections positioned transversely of said sewing machine between the sewing machine base and the table to absorb the inherent sewing machine vibrations and limit its transmission to the table, said table having openings at each corner of said sewing machine base, said mounting connections being interposed between said sewing machine and table at opposite ends of said sewing machine base, each of said mountings comprising an elongated body of rectangular cross-section and two laterally extending tubular elastic projections at the respective ends thereof, said projections fitting closely into said openings in said table, each of said flexible mountings comprising elongated body portions and being made of elastic deformable material adapted to be initially compressed all along said elongated body portions due to the weight of said sewing machine to cushion small vibrations of said machine solely by said body portions without effecting said projections while large vibrations are absorbed jointly by said body portions and by said elastic projections.

2. A resilient mounting for a sewing machine mounted on a supporting table having openings

in rectangular formation, comprising two elastic mounting connections positioned transversely of said sewing machine between said sewing machine base and said table to absorb the inherent sewing machine vibrations and limit its transmission to the table, said table having openings at each corner of said sewing machine base, said mounting connections being interposed between said sewing machine base and table at opposite ends of said sewing machine base, each of said elastic mounting connections comprising an elongated body of rectangular cross-section and two integral laterally extending tubular projections at the respective ends thereof, said projections extending into said openings in said table, tubular elastic inserts having a higher degree of elasticity than said tubular projections fixedly mounted in said projections, metal pins extending from said base and fitting said tubular inserts, each of said flexible mountings comprising elongated body portions and being made of elastic deformable material adapted to be initially compressed due to the weight of said sewing machine to cushion small vibrations of said machine by said body portions without effecting said tubular projections, while large vibrations are absorbed jointly by said body portions and by said elastic inserts.

3. A resilient mounting for a sewing machine mounted on a supporting table having openings in rectangular formation, comprising two elastic mounting connections positioned transversely of said sewing machine between said sewing machine base and said table to absorb the inherent sewing machine vibrations and limit its transmission to the table, said mounting connections being interposed between said sewing machine base and table at opposite ends of said sewing machine base, each of said mounting connections comprising an elongated elastic body of rectangular cross-section and two integral laterally extending tubular projections at the respective ends thereof, said projections extending into said openings in said table, tubular elastic inserts having a higher degree of elasticity than said tubular projections fixedly mounted in said projections, metal pins extending from said sewing machine base and fitting into said tubular inserts, each of said flexible mountings comprising elongated body portions made of elastic deformable material adapted to be initially compressed due to the weight of said sewing machine to cushion small vibrations of said machine by said body portions without effecting said tubular projections, while large vibrations are absorbed jointly by said body portions and by said elastic inserts.

4. A dual resilient mounting for a sewing machine mounted on a supporting table having openings in rectangular formation, comprising two elastic mounting connections positioned transversely of and extending entirely across said sewing machine and between said sewing machine base and said table to absorb sewing machine vibrations, said mounting connections being interposed between said sewing machine base and table at opposite ends of said sewing machine base, each of said mounting connections comprising an elongated elastic body of rectangular cross-section and two integral laterally extending tubular projections at the respective ends thereof, said projections extending into said openings in said table, tubular elastic inserts having a higher degree of elasticity than said tubular projections and being fixedly

2,532,767

5

mounted in said projections, metal pins extending from said sewing machine base and fitting into said tubular inserts, each of said flexible mountings comprising elongated body portions made of elastic deformable material permitting kneading-like vibrational movements throughout the extent of said elongated body portions to cushion small vibrations of said machine by said body portions, while large vibrations are absorbed jointly by said elastic body portions and by said elastic inserts.

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6

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