

A. W. WAHLIN.  
PHONOGRAPH NEEDLE SHARPENER.  
APPLICATION FILED JULY 26, 1919.

1,401,929.

Patented Dec. 27, 1921.

2 SHEETS—SHEET 1.

Fig. 1

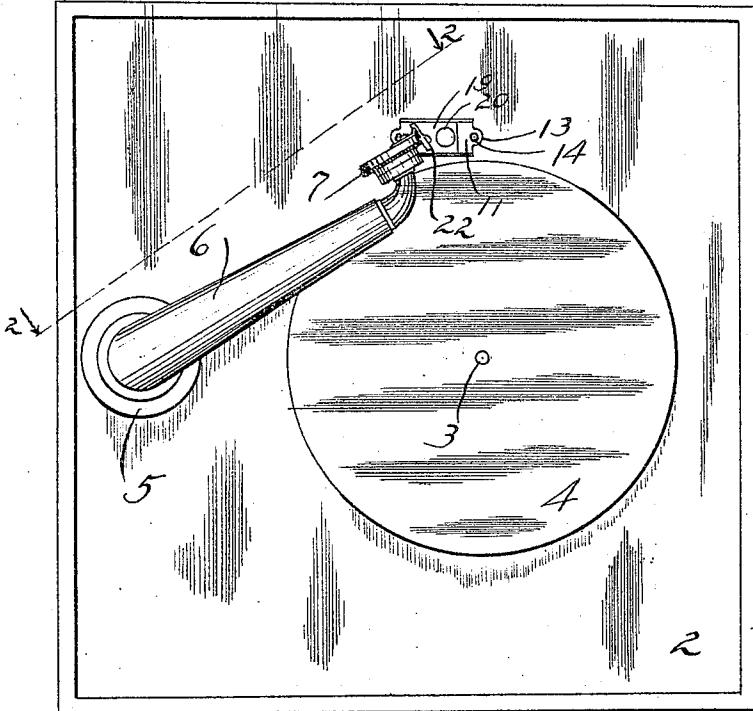
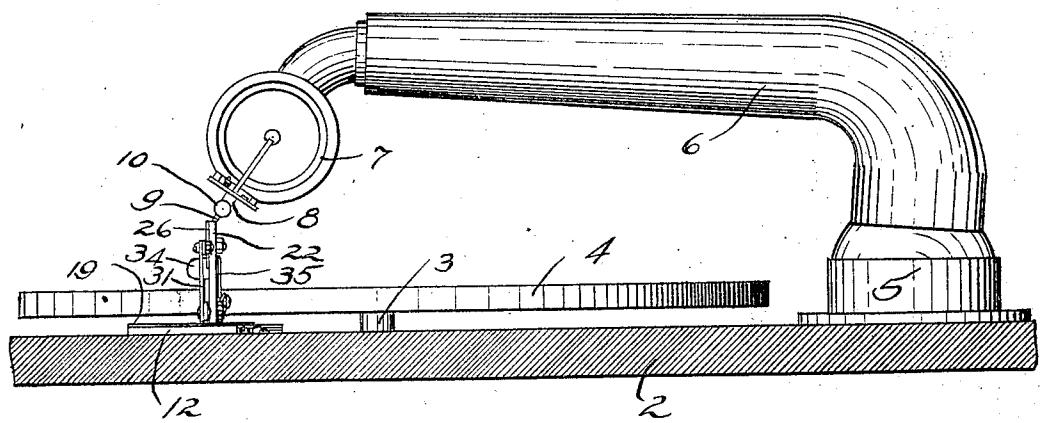


Fig. 2



Witnesses

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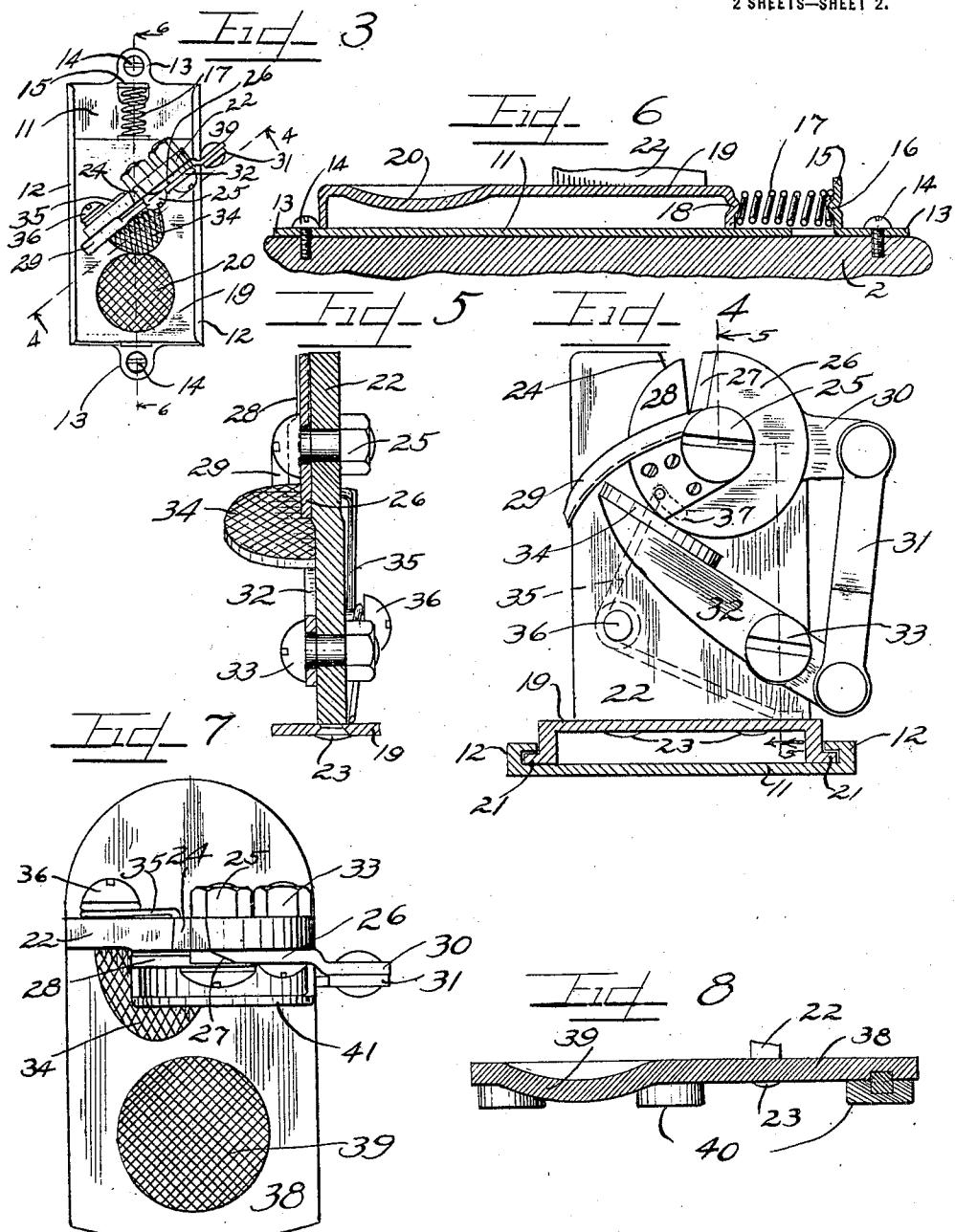
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# UNITED STATES PATENT OFFICE.

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## PHONOGRAPH-NEEDLE SHARPENER.

1,401,929.

Specification of Letters Patent. Patented Dec. 27, 1921.

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*To all whom it may concern:*

Be it known that I, AXEL W. WAHLIN, a citizen of the United States, and a resident of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in a Phonograph-Needle Sharpener; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the numerals of reference marked thereon, which form a part of this specification.

This invention relates to an improved type of a phonograph fiber or wood needle sharpener, adapted to be adjustably mounted upon a phonograph top board adjacent the record turn-table to permit a fiber needle, engaged in the phonograph needle holder, to be cut or sharpened without necessitating removal of said needle from its holder.

It is an object of this invention to provide an improved type of phonograph needle sharpener or cutter.

It is also an object of the invention to construct a phonograph fiber needle cutter adapted to permit cutting of the playing end of a needle while the needle remains engaged in the phonograph needle holder.

Another object of the invention is to provide a fiber stylus cutter adapted to be mounted on a phonograph in a position to permit a fiber needle carried by the reproducer arm to be swung into engagement with the cutter to be cut thereby.

A further object of the invention is to provide a phonograph needle sharpener adapted to be moved into engagement with a wooden needle held in position in a phonograph needle holder to permit sharpening of the needle, after which the sharpener is adapted to automatically move away from the needle to permit swinging of the phonograph reproducer arm.

It is furthermore an object of this invention to provide a needle cutter adapted to be slidably shifted to cut off the playing end of a fiber needle when the phonograph reproducer arm carrying the needle is swung outwardly to one side of the phonograph turn-table.

It is an important object of this invention to provide a means for sharpening the

playing end of a fiber stylus while it is engaged in its holder.

Other and further important objects of this invention will be apparent from the disclosures in the specification and drawings.

The invention (in a preferred form) is illustrated in the drawings and hereinafter more fully described.

On the drawings:

Figure 1 is a top plan view of a phonograph equipped with a fiber needle sharpener embodying the principles of this invention.

Fig. 2 is an enlarged elevation thereof taken on line 2—2, of Fig. 1.

Fig. 3 is a top plan view of the sharpener.

Fig. 4 is an enlarged sectional view taken on line 4—4, of Fig. 3, showing the sharpening mechanism in elevation.

Fig. 5 is a detail section taken on line 5—5, of Fig. 4.

Fig. 6 is an enlarged detail section taken on line 6—6, of Fig. 3, with the sharpener mechanism omitted.

Fig. 7 is a top plan view of a portable modified form of the device.

Fig. 8 is a longitudinal section through the base thereof.

As shown on the drawings:

The reference numeral 1, indicates a phonograph casing, having a centrally apertured top board or plate 2, through which a spindle or shaft 3, projects. Secured on the upper end of the shaft 3, is a record turn-table 4. Also secured on the top board 2, to one side of the turn-table 4, is a socket 5, in which one end of a reproducer arm 6, is adjustably mounted. The reproducer arm is adapted to be swung across the turn-table 4, and has secured in the free end thereof a sound box 7, provided with a stylus or needle holder 8, for removably receiving and holding a wood or fiber needle or stylus 9, in position for playing a record on the turn-table. The fiber stylus or needle 9, is removably held in place by a set screw 10, or other suitable means.

As shown in Figs. 1 and 2, the improved fiber needle sharpener is mounted on the phonograph top board 2, to one side of the turn-table 4, and comprises a mounting plate 11, the side margins of which are bent upwardly and then inwardly to form opposite guide rails or channels 12. Integrally

formed centrally on each end of the mounting plate 11, is an apertured lug or projection 13, through which retaining screws 14, project and thread into the phonograph top board 2, to hold the base plates secured in position. Struck upwardly from the rear central portion of the base plate 11, is a stop or finger 15, provided with a projection 16, around which one end of a coiled spring 17, is engaged as it bears against the stop 15. The other end of the coiled spring 17, engages around a projection 18, integrally formed in the rear end wall of an adjustable base 19. The top of the base 19, is depressed 15 near the front end to afford a thumb pocket 20, to facilitate sliding of the base. To guide the base in its sliding movement, flanges 21, are integrally formed on the side walls of the base 19. The flanges 21, are 20 slidably disposed in the guide grooves afforded by the guide channels 12, as shown in Fig. 4.

Rigidly secured on the top of the base 19, and at an angle to the sides thereof, is a vertical or upright plate or wall 22, held in place by screws 23, which project upwardly through the top of the base 19, and thread into the lower portion of said vertical plate 22. The upper margin of the plate 22, has a 25 V-shaped portion thereof cut away to afford a triangular opening 24, adapted to receive the playing end of the triangularly cross-sectioned fiber stylus or needle 9, seated therein in position to be cut.

30 Rotatably mounted on one side and near the top of the plate 22, by means of a screw bolt 25, is a cutter disk 26, having a portion thereof cut away. One edge of the disk 26, is beveled or sharpened to provide a knife or cutting edge 27, adapted when the disk 26, is rotated, to co-act with the edges of the slot 24, to cut off a small portion of the fiber needle 9. Secured by screws or other suitable means on the outer surface of the 35 cutter disk 26, is a gage plate 28, a portion of which is depressed into the opening in the disk 26, to within a very short distance of and parallel to the vertical plate 22. The gage plate 28, thus serves to limit the inward 40 movement of the needle 9, and affords a stop therefor. The small distance between the vertical plate 22, and the gage plate 28, measures the amount to be cut off of the 45 playing end of the fiber needle 9, each time it is cut or sharpened to provide a new playing point for the needle. The cut off parts of the needle 9, are permitted to fall into a downwardly curved discharge chute 29, secured by screws or other suitable means on 50 the outer surface of the gage plate 28.

55 Integrally formed radially on the periphery of the cutter disk 26, is an arm 30, to the end of which is pivotally connected the upper end of a link or toggle 31. The lower 60 end of the link 31, is pivotally connected to

the end of a short arm of a lever 32, which is fulcrumed on a screw bolt 33, projecting through the lower part of the plate 22. The longer arm of the fulcrumed lever 32, has a finger piece 34 integrally formed thereon to facilitate operation of the lever. To return the cutter disk 26, to normal position after a cutting operation a spring 35, is provided. The spring 35, is twisted around a screw 36, secured to the plate 22. One end of the spring 35, projects through a slot 37, in plate 22, and is attached to the disk 26, while the other or lower end of said spring rests upon the top of the base 19, as shown in dotted lines in Fig. 4.

80 Figs. 7 and 8, disclose a modified form of needle sharpener. In this case the device is portable and embraces a base plate 38, which is depressed to afford a concave thumb receiving pocket 39. A plurality of legs or 85 feet 40, are secured to the bottom of the base plate 38, to support the same. The cutter mechanism in this case is substantially the same as that already described with the exception that the plate 22, is supported transversely upon the base plate 38. The discharge chute 29, is omitted and replaced by an open trough or receptacle 41, which is secured on the plate 22, below the cutter disk 26, to receive the cut off 90 portions of the fiber needles. The trough 41, is adapted to be emptied by inverting the entire device.

95 The operation is as follows:

100 Normally the spring 17, acts to hold the base 19, projected away from the stop 15, to permit the phonograph arm 6, to swing without contacting the needle sharpener. After a record has been played by a 105 triangularly cross-sectioned fiber needle 9, the playing point of the needle is dull and requires sharpening before another record can be successfully played.

110 Sharpening of the fiber needle 9, is done without removing the same from the needle holder 8. The phonograph arm 6, is swung outwardly into the position shown in Fig. 1. By placing one's thumb in the pocket 20, of the base 19, the base is slidably moved over the mounting plate 11, with the flanges 21, 115 engaged in the grooves of the guides 12. Rearward movement of the base 19, compresses the spring 17, and serves to move the cutter or sharpening mechanism into operating position, wherein the playing end 120 of the needle 9, is adapted to project through the V-shaped recess in the plate 22, and abut against the gage plate 28. The space between the gage plate 28 and the plate 22, is small, about one one-hundredth 125 of an inch, and said space measures the amount to be cut off of the end of the needle 9, to sharpen the same.

130 With the needle still in the holder 8, and contacting the gage plate 28, of the sharp-

ening mechanism, an operator merely presses downwardly on the finger piece 34, thereby elevating the short arm of the fulcrumed lever 32, and the link 31. The arm 30, is thus raised and acts to rotate the cutter disk 26, toward and across the playing end of the needle 9, cutting off the small portion thereof which projects into the small space between the plate 22 and the 10 gage plate 28. A new playing point is thus provided on the needle 9. As the cutter disk 26, is rotated the controlling spring 35, is compressed, and with the release of the lever 32, said spring acts automatically to return the cutter disk to normal position. The portion of the needle which has been cut off falls into the chute 29, and is discharged to one side of the needle sharpener. After a needle has been sharpened the thumb of 15 the operator is removed from the pocket 20, of the base 19, and the compressed spring 17, acts to automatically move the base 19, and the sharpening mechanism, away from the 20 reproducer box 7, to permit the arm 6, to be 25 swung into playing position.

The operation of the modified portable type of the sharpening device shown in Figs. 7 and 8, is substantially the same as that already described. In this case the 30 sharpening mechanism is securely mounted on the base 38, and the entire device is placed to permit a needle held in a phonograph needle holder to be cut without removal from the holder. If desired needles 35 removed from the needle holder may also be sharpened. The shavings or cut off parts of the wooden needles fall into the trough or cup 41, and when said trough is full it may be emptied by inverting the entire device.

I am aware that numerous details of construction may be varied through a wide range without departing from the principles of this invention, and I therefore do not 45 purpose limiting the patent granted otherwise than necessitated by the prior art.

I claim as my invention:

1. The combination with a phonograph and the reproducer mechanism thereof, of a 50 needle sharpener slidably mounted on the phonograph and adapted to be moved into position to sharpen a needle while it is held in position in the needle holder of the phonograph reproducer mechanism when 55 said reproducer mechanism is moved into a predetermined position to dispose the needle in the path of said needle sharpener.

2. The combination with a phonograph and the needle holder thereof, of a needle 60 sharpening device comprising a mounting plate rigidly secured on the phonograph, an upright member integral with said mounting plate, a base slidably mounted on said mounting plate, a spring engaged between 65 said upright member and said base, and a

needle sharpener mounted on said base, said base adapted to be slidably moved on said mounting plate against the action of said spring to move the needle sharpener into engagement with a needle held in the phonograph needle holder when said needle holder is moved into a predetermined position to permit sharpening of the needle while in position in said needle holder. 70

3. The combination with a phonograph 75 and the reproducer mechanism thereof, of a guide member secured upon said phonograph, a base slidable thereon, a needle sharpening mechanism on said base adapted to be moved toward the reproducer mechanism into a position to sharpen a playing needle when the reproducer mechanism carrying the needle is moved into a predetermined position, and means on said guide member for automatically returning said 80 base and the sharpening mechanism to normal position out of engagement with the needle after a sharpening operation. 85

4. The combination with a phonograph and the reproducer mechanism thereof, of a 90 mounting plate secured on the phonograph, and a needle cutter slidably mounted on said mounting plate for co-action with said reproducer mechanism to sharpen a needle held by the reproducer mechanism when the reproducer mechanism is moved to position the needle in the path of said needle cutter. 95

5. The combination with a phonograph top board, turn-table and reproducer mechanism, of a plate secured to said top board to one side of the turn-table, guide channels integral with said plate, a base member on said plate, flanges thereon slidably engaged in said guide channels, and a needle sharpener mounted on said base and movable 100 therewith into engagement with a playing needle supported by said reproducer mechanism to sharpen the needle when the reproducer mechanism is moved into a predetermined position. 105

6. A phonograph needle sharpening device comprising a mounting plate adapted to be secured on the top board of a phonograph, an upright member integral with the mounting plate, a base slidably mounted on 115 said mounting plate and having a depression therein to facilitate sliding of the base, a needle sharpening mechanism mounted on said base adapted to be moved with said base toward said upright to engage and 120 sharpen a needle when the needle holder of the phonograph is moved into a predetermined position, and resilient means between said base and said upright adapted to return the base and the needle sharpening 125 mechanism to normal position after a cutting operation.

7. The combination with a phonograph and the needle carrying mechanism thereof, of a needle sharpening means adjustably 130

5 mounted on said phonograph and adapted to be moved into engagement with the needle to sharpen the same when the needle carrying mechanism and the needle are moved into a predetermined position.

10 5. The combination with a phonograph cabinet, of a guide rigidly secured thereon in a predetermined position, a needle carrying sound reproducer mechanism adjustably mounted on said cabinet and adapted to be moved into a predetermined position over said guide, and a needle sharpener mounted on said guide to be moved in a predeter-

15 mined path into a position to receive the needle therein to positively permit cutting off of the playing end of the needle at the same angle each time the needle is sharpened.

20 In testimony whereof I have hereunto subscribed my name in the presence of two 20 subscribing witnesses.

AXEL W. WAHLIN.

Witnesses:

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CHARLES W. HILLS, Jr.