J. R. HARE.

GRAPHOPHONE TONE ARM STOP.

APPLICATION FILED NOV. 13, 1916.

1,223,970. Patented Apr. 24, 1917.

Fig. 1.

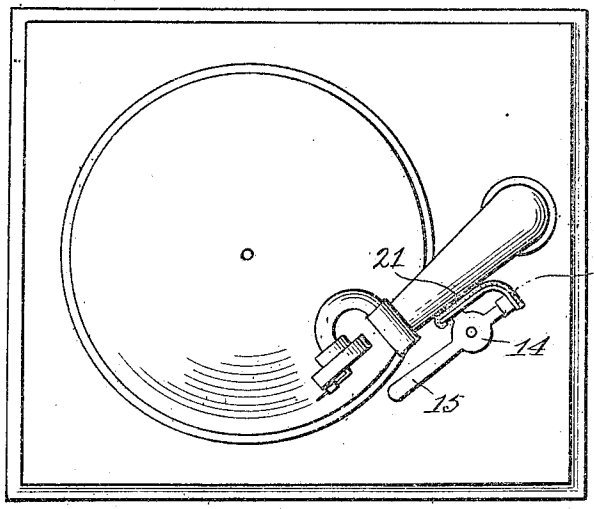


Fig. 5.

Fig. 2.

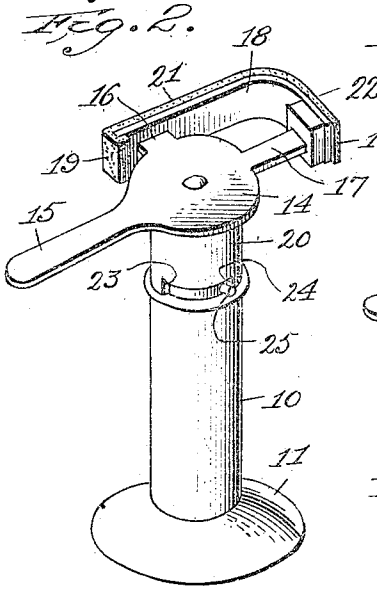
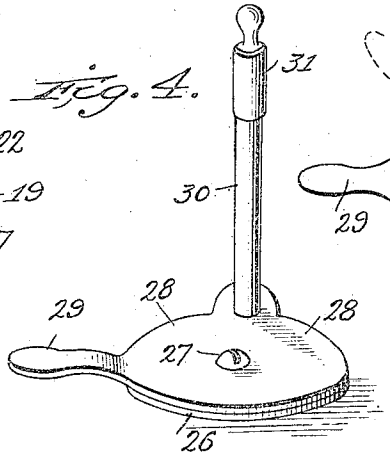


Fig. 4.



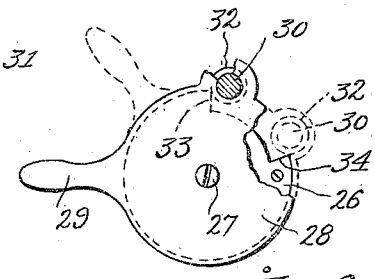
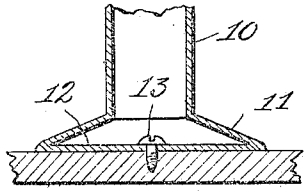
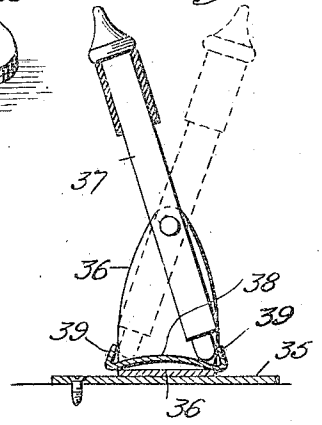


Fig. 6.

Fig. 3.





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GRAPHOPHONE-TONE-ARM STOP.

1,223,970. Specification of Letters Patent. Patented Apr. 24, 1917.

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To all whom it may concern.

Be it known that I, JOHN R. HARE, a subject of the King of Great Britain, residing at New Windsor, in the county of Carroll and State of Maryland, have invented new and useful Improvements in Graphophone-Tone-Arm Stops, of which the following is a specification.

This invention relates to improvements in graphophone tone arm stops, and has for its object to provide an adjustable means which will limit the movement of the tone-arm in one direction to adjust the stylus in its correct starting position upon records of different diameters.

Ordinarily the tone-arm is moved toward the edge of the record and with the utmost care and patience the stylus is placed in its starting position. This at times is very difficult, owing to poor light upon the record or to the faulty eyesight of the operator. With the improved stop, the tone-arm is swung outwardly until it strikes the stop and is lowered upon the record when it will be placed correctly to start playing.

The object of this invention is attained by the means illustrated in the accompanying drawing, in which,—

Figure 1 is a plan view showing the top of a graphophone with its tone-arm in engagement with one form of the improved stop. Fig. 2 is a perspective view of the improved stop shown in Fig. 1. Fig. 3 is a vertical sectional view through the lower end of the standard of the stop shown in Figs. 1 and 2. Fig. 4 is a perspective view of a modified form of the stop. Fig. 5 is a plan view of the same showing the stopping post in section and a portion of the rotating plate broken away to show underlying parts. Fig. 6 is a side elevation of a further modification, parts being shown in section.

Similar reference numerals in all of the figures of the drawing designate like parts.

The form of stop shown in Figs. 1, 2 and 3 embodies a standard 10 which is preferably tubular and has a base 11 provided with a bottom plate 12, shown in Fig. 3, by which it is secured to the top of the graphophone case by a central screw 13. Rotatably mounted upon the top end of the tubular standard 10 is the adjustable stop, the same comprising a supporting plate 14 furnished with a handle 15 at one side and radially extending arms 16 and 17 projecting from two of its other sides. The arm 16 is somewhat shorter than the arm 17, and secured to these arms is a vertically disposed plate 18 upon the outer face of which is secured a pad 19 to form a buffer for the tone-arm. The supporting plate 14 has riveted to its under side a depending tubular portion 20 which snugly engages over the top end of the tubular standard 10 and upon which it is adapted to rotate. The buffer, which includes the pad 19 and the plate 18, is shaped to form substantially flat faces 21 and 22, arranged at right angles to each other, one of which is located nearer the central pivoted point than the other, so that when the face 21 is presented to abutting position the tone-arm will be stopped to locate the stylus correctly upon a record 12 inches in diameter, and when the face 22 is presented it will form an abutment to locate the stylus in the proper position upon a record 10 inches in diameter.

To positively limit the movement of the abutting faces when they reach their abutting positions, a limit stop is provided, the same being formed by recessing the lower edge of the depending portion 20 to form two shoulders 23 and 24 against which a pin or stud 25 engages. Thus, as shown in Fig. 2, when the pin 25 is in engagement with the shoulder 24, the buffer face 21 is presented to engage the tone-arm, and when the plate 14 is rotated to the right, the shoulder 23 is brought into engagement with the pin 25, and the buffer face 22 is positioned to stop the tone-arm.

The form of stop shown in Figs. 4 and 5 embodies a base plate 26 secured to the casing in any suitable manner and upon which is rotatably secured, by a central screw 27, a supporting plate 28 having a handle 29 extending from one side thereof. Mounted upon said supporting plate 28 at one side thereof and adapted to be carried therewith, is a vertically disposed stop-standard 30 having at its upper end a buffer sleeve 31. The lower end of said stop-standard 30 projects slightly below the lower face of the plate 28 and is preferably provided with a ring 32 which is adapted to contact with the shoulders 33 and 34 formed on the base

plate 26. This construction forms a limit stop for the adjustable stop-standard in two positions, to adapt the device for use in positioning the stylus upon either a 10 inch or a 12 inch record.

The form of stop shown in Fig. 6 embodies a base-plate 35 which is adapted to be secured to the top of the graphophone casing, said plate having secured thereon a bracket member 36 in the upper end of which is pivoted a stop-standard 37. The pivoted point of the standard 37 is intermediate of its ends, furnishing an upper buffer end and a lower limit-stop and which coöperates with a spring plate 38 having a raised center portion and upwardly bent ends 39. It is evident that as the stop-standard is moved from one position to another, as indicated in dotted lines, the lower end of the standard will depress the raised spring portion and snap against the upturned end 39 on the opposite side, thus effectually forming a limit stop for the two positions of the standard.

From the above description it will be seen that each of the several forms embodies a stop which positively limits the movement of the buffer faces in both directions, and without the use of spring-held pawls or adjusting and locking screws. The several forms are simple in construction and inexpensive, and are easily attachable to modern graphophones.

Having thus fully described my invention, I claim:—

1. A tone-arm stop, comprising a stationary base-plate, a supporting-plate rotatably secured to said base-plate, a vertically disposed stop standard mounted at one side of said supporting-plate to be carried therewith, and a limit-stop formed in said base plate which is adapted to be engaged by the lower end of said stop-standard.

2. A tone-arm stop, comprising a stationary base-plate having a recess in its edge to provide a pair of abutting shoulders, a supporting-plate rotatably mounted on said base-plate, and a vertically disposed stop-standard mounted at the edge of said supporting-plate, the lower end of said stop-standard being extended below said supporting-plate and adapted to travel in the recess of the base-plate and alternately engage said abutting shoulders to positively limit the movement of the stop-standard in both directions.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN R. HARE.

Witnesses:
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