17. BORING AND DRILLING.

No. 856,323. PATENTED JUNE 11, 1907.

C. S. WICKES.

APPARATUS FOR REMOVING LABELS FROM RECORDS FOR TALKING MACHINES.

APPLICATION FILED OCT. 6, 1905.

Fig. 2.

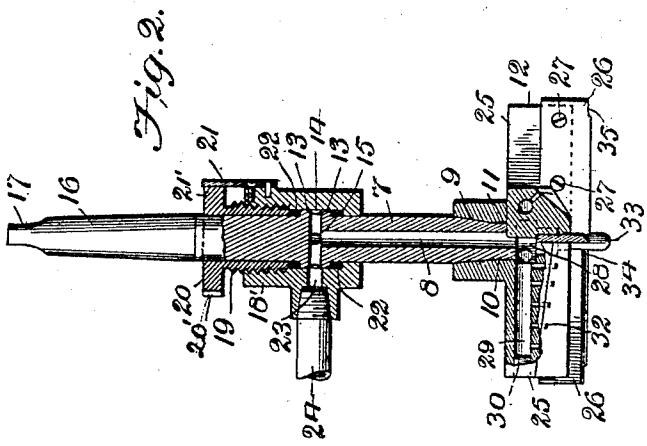


Fig. 3.

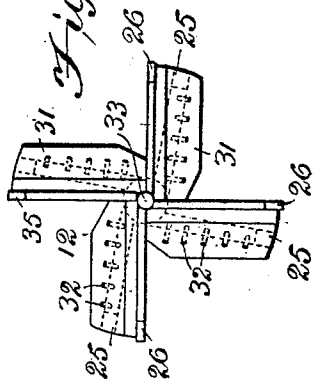


Fig. 4.

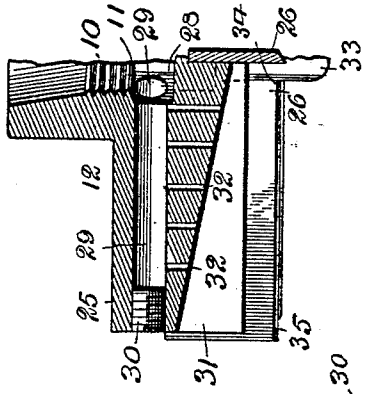
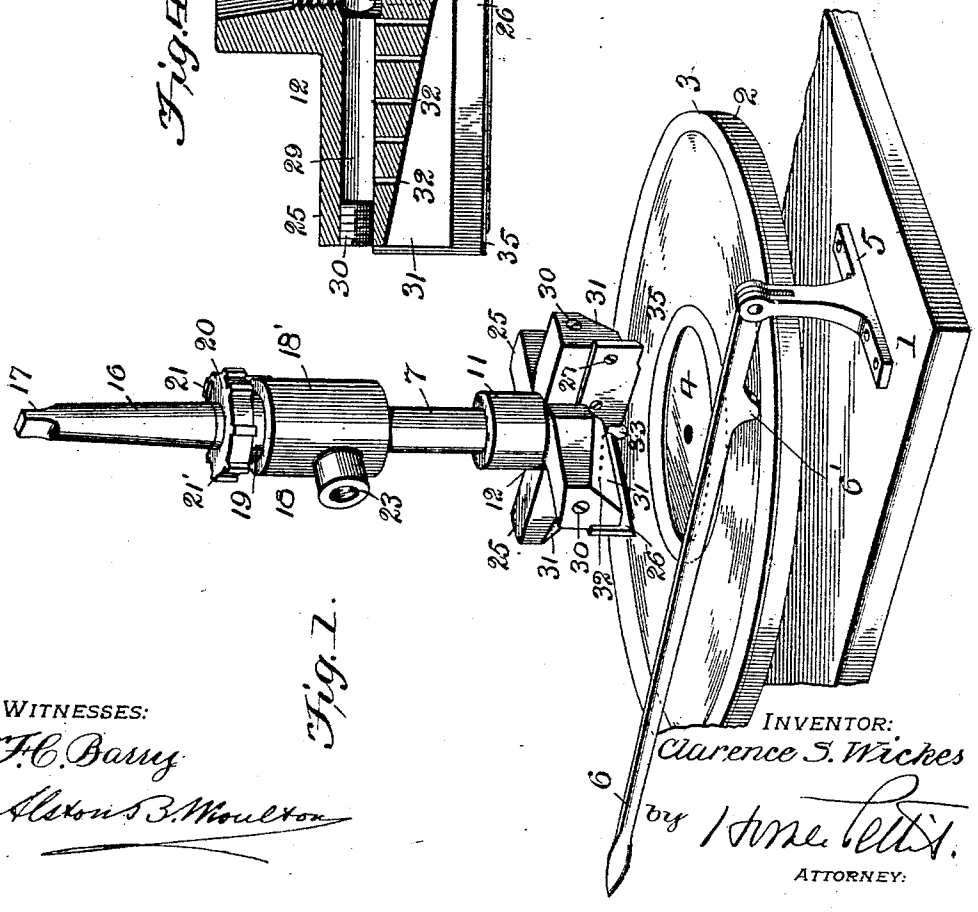


Fig. 1.



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APPARATUS FOR REMOVING LABELS FROM RECORDS FOR TALKING-MACHINES.

No. 856,323. Specification of Letters Patent. Patented June 11, 1907.

Application filed October 6, 1905. Serial No. 281,598.

To all whom it may concern:

Be it known that I, CLARENCE S. WICKES, a citizen of the United States, residing at Camden, in the county of Camden, in the State of New Jersey, have invented new and useful Improvements in Apparatus for Removing Labels from Records for Talking-Machines, of which the following is a specification.

My invention consists generally of apparatus by which labels, which have been impressed in the records of talking machines, may be removed therefrom for any purpose; as for instance, for the purpose of remolding or reforming the material of the record without having therein any admixture of foreign matter.

My invention consists more specifically in softening record labels and by subjecting the softened label to the action of rapidly rotating cutters which remove the label from the record.

In view of the foregoing, the object of the present invention is to cheaply and rapidly remove the labels impressed into talking machine records; to remove the same by the action of cutting blades; and to so soften the label while it is being subjected to the action of the cutting blades that the cutting edges of the blades are not materially dulled by the normally hard material of the label.

In the accompanying drawings forming a part of the specification, Figure 1 is a perspective view of one form of the apparatus employed by me in carrying out the objects of my present invention; Fig. 2 is an elevational view of the cutter and its supporting spindle, parts thereof being shown in section; Fig. 3 is a plan view of the face of my improved cutter; and Fig. 4 is a sectional view taken lengthwise of one arm of my improved cutter head.

In the drawings in which similar numerals of reference indicate similar parts throughout the several views, 1 indicates a suitable base upon which a table 2, adapted to support the disk 3, from which the label 4 is to be removed, is mounted. Secured to the base 1, is a bracket 5 to the top of which a lever 6 is pivoted, a lug or suitable projection 6′ on the under side of said lever 6 forming a clamping point between which and the table, the disk may be securely held while the label is being removed.

Above the table 2, and in axial alinement therewith, is located a vertical spindle 7, the lower portion of which spindle is provided with an axially arranged conduit 8, and with a tapered end 9, terminating in a threaded portion 10, which enter the hub 11 of the cutter 12 and by which said head is secured to the spindle. At a suitable distance from its lower end, the spindle 7 is provided with a collar 13, the face of which is provided with a groove 14, which communicates by suitable passages 15 with the upper end of the conduit 8. The spindle 7 is tapered at its upper end, as at 16, and terminates in the head 17, the tapered portion and head being adapted to fit a suitable socket, not shown, by which the spindle may be rotated and also moved in the direction of its axis toward and away from the table 2.

The collar 13 is adapted to be inclosed by a suitable stuffing box 18, which consists of the main or body portion 18′, the upper end of which is internally threaded, and the follower 19, the top of which is provided with a suitably notched head 20. The body portion, 18′, of the stuffing box, is further provided with an upwardly extending spring 21 adapted to engage the notches 20′ in the head 20 of the follower 19 and to hold the follower from rotating with respect to the stuffing box. Within the stuffing box and located on either side of the collar 13, are packing washers 22, which are forced into steam tight engagement with the collar 13 by the follower 19 of the stuffing box. The stuffing box is further provided with an opening 23, the inner end of which communicates with the passage formed by the groove 14 and the interior of the stuffing box, and the outer end of which is adapted to be attached to a pipe, 24, connected with a suitable supply of steam. By this arrangement it will be apparent that steam may be supplied through the pipe 24, opening 23, groove 14 and openings 15 to the conduit 8 in the lower end of the spindle.

The cutter head 12 consists of the hub portion 11 and four radial arms 25, the front face of each arm being adapted to have secured thereto cutter blades 26. These blades may be secured to the arms 25 in any suitable manner, as by screws 27, and the blades may be set into the face as shown in Fig. 1.

The cutter head is provided with a central chamber 28 which communicates with the conduit 8 of the spindle and with chambers 29 running longitudinal of the radial arms.

Preferably, I form the chambers 29 by drilling from the outer end of the arm into the chamber 28, and then close the outer end of the holes so made, in any suitable manner, such as by the screw plug 30. The backs of the arms on the sides opposite the faces to which the blades are secured, are preferably beveled to form faces as indicated by 31, the beveled face of each arm being so arranged that the thickness of the material between the outer end of the chamber 29 and the face 31 is considerably less than the thickness nearer the axis of the cutter head, the purpose of which construction will be described later.

Through the beveled faces 31 of the arms 25, a series of jet passages 32, communicating with the chambers 29, are formed, as plainly shown in Fig. 4, and the bevel of the face 31 will make the length of the passages 32 constantly increase in a direction toward the axis of the cutter head. The angle which the jet passages 32 make with the chamber 29 is such that the steam passing from the central chamber 28 through the radial chambers 29 and the jet openings 32, will be directed immediately in advance of the edge of the succeeding cutter.

As is well known, the velocity with which fluids will be discharged through passages of equal diameter but of different lengths, will inversely vary as the length of the passages, since the friction between the fluid and the walls of the passages will have the greater effect on the fluid passing through the longer passage. In chambers, like the chambers with which the radial arms of the cutter head are provided, in which the fluid is supplied to the chamber from one end and is discharged at different distances from the point at which the fluid is supplied to the chamber, the tendency of the fluid would be to discharge more rapidly through the passages nearest the supply unless some adequate means for compensating for this were employed. In order to effect a more equal discharge of steam from the jet passages independent of their distance from the source of steam supply, I have so beveled the faces 31 of radial arms that the steam issuing from the jet openings nearest the axis of the spindle, and consequently nearest the point at which the steam is supplied to the chamber, will have to traverse longer passages than that issuing through the jet openings nearer the ends of the arms. This feature is plainly shown in Fig. 4.

The cutter head is provided with a centering pin 33, adapted to coöperate with the opening in the center of the disk.

Since the labels are usually depressed a little below the surface of the records, I preferably arrange the cutting edges of the blades 26 so that the portion thereof nearer the axis of the head as at 34, will cut deeper than at the ends, as at 35.

The operation of my device is as follows:— The disk 3, being placed in position on the table 2 and clamped thereto by the lever 6, the cutter head is put into rotation and steam is supplied through the pipe 24. The cutter head is then lowered, the centering pin 33 entering the opening in the center of the disk 4, and the blades are forced against the surface of the label 4. The steam issuing from the jet passages 32 will impinge the label just in advance of the succeeding cutting blade and will so soften the label at the point where it is engaged by the edge of the cutting blade that the cutter will cut or pare the label without destroying the edge of the blade, and this will continue until the entire label has been cut through, when the outer ends of the blades will engage and smooth the surface of the record adjacent the depression in which the label is placed. The cutter head is then raised, and other records may then be treated in the same manner.

From the above it will be apparent that the steam is so directed that it impinges only the label, and the label may be so rapidly removed that the material of the record does not have time to be materially affected by the heat thereof. Thus I rapidly and effectively remove labels from a medium which is easily affected by heat, without destroying, mutilating or materially affecting the records into which the labels have been impressed.

Having thus described my invention, what I claim and desire to protect by Letters Patent of the United States, is:—

1. In a device for removing labels impressed into a medium, means for softening the label without substantially affecting the supporting medium and means for cutting away the said label.

2. In a device for removing labels from sound records a medium which is easily affected by heat, the combination of means for successively and rapidly softening the surface of the label without substantially softening the supporting medium, and for cutting away the softened portion of said label.

3. In an apparatus for removing labels impressed into a medium which is easily affected by heat, the combination of means for projecting a jet of steam against the surface of a label only, and means for paring away the steamed portion.

4. In a device for removing labels, a series of cutters, and means for projecting steam immediately in advance of the edge of each cutter.

5. In a device for removing labels, a series of cutters, and means for projecting steam from one cutter immediately in advance of the edge of the succeeding cutter.

6. A device for removing labels, a cutter means for rotating said cutter, and means for projecting steam immediately in advance of the edge of said cutter.

7. In a device for removing labels, a series of cutters, means for rotating said cutters, and means for projecting steam from one cutter immediately in advance of the edge of the succeeding cutter.

8. In a device for removing labels, a series of cutting blades, arms supporting said blades, each arm being provided with a steam chamber, means for supplying steam to said chambers, and means for projecting steam from the chamber of one arm immediately in advance of the cutting blade carried by the succeeding arm.

9. In a device for removing labels, a series of cutting blades, arms supporting said blades, each arm being provided with a steam chamber, means for supplying steam to said chambers, and means for projecting steam from the chamber of one arm immediately in advance of the cutting edge of the blade carried by the succeeding arm, and means for rotating said arms.

10. In a device for removing labels, a series of cutter blades, each arm being provided with a steam chamber, means for projecting steam from the chamber in one arm, immediately in advance of the cutting edge of the blade carried by the succeeding arm, means for rotating said arms, and means for clamping the record subjected to the action of said blades.

11. In a cutting head, the combination of a blade and arm for supporting said blade, said arm being provided with a chamber and with a series of openings communicating with said chamber, and means for supplying steam to said chamber.

12. In a cutting head, the combination of a blade and arm for supporting said blade, said arm being provided with a steam chamber and with a series of openings communicating with said chamber, and means for equalizing the amount of steam delivered through said openings.

13. In a cutting head, the combination of a blade, an arm for supporting said blade, said arm being provided with a chamber and with a series of openings, communicating with said chamber, means for supplying steam to said chamber from one end, and means for equalizing the amount of steam delivered through said openings.

14. In a cutting head, the combination of a blade and arm for supporting said blade, said arm being provided with a chamber and with a series of openings communicating with said chamber, means for supplying steam to said chamber, means for holding a record operated on by said blade and means for producing a relative motion of rotation between said head and said record.

15. A cutting head, provided with radial extended arms, blades secured to said arms, a hollow spindle, said arms being provided with steam chambers communicating with the center of said spindle and being further provided with a series of openings leading out of said chamber, means for supplying the steam to said chamber, and means for equalizing the amount of steam delivered from said opening.

16. In a cutter head, an arm provided with a steam chamber and with a series of jet openings communicating with said chamber, the length of the said jet passages being progressively shorter as the distance from the source of steam supply increases, and means for supplying steam to said chamber.

17. In a cutter head, a hollow spindle, a series of arms provided with chambers communicating with the center of said spindle, blades secured to said arms, a series of jet openings communicating with said chambers and adapted to project steam immediately in advance of the succeeding cutter blade, a stuffing box in said spindle above said head, and means for supplying steam through said stuffing box, and spindle to said chamber.

18. In a device for removing labels impressed into a medium susceptible to the action of heat, means for softening the label without substantially softening the supporting medium and means for cutting away the said label.

19. In a device for removing labels adhering to a medium an element mounted to move over the surface of the same, the said element carrying means for softening the label and cutting the same away from the medium.

20. In a device for removing labels adhering to a medium comprising an element mounted to move over the surface of the label, the said element carrying a cutter blade and means for projecting a softening fluid upon said label immediately in advance of said blade.

21. In a device for removing labels adhering to a medium comprising an element mounted to move over the surface of the label, the said element carrying a cutter blade, means for projecting a softening fluid upon said label immediately in advance of said blade, and means for holding the medium in position while the label is being removed.

In testimony whereof, I have signed my name to the specification in the presence of two subscribing witnesses.

CLARENCE S. WICKES.

Witnesses:

HENRY R. STADTMILLER,

ALEXANDER PARK.