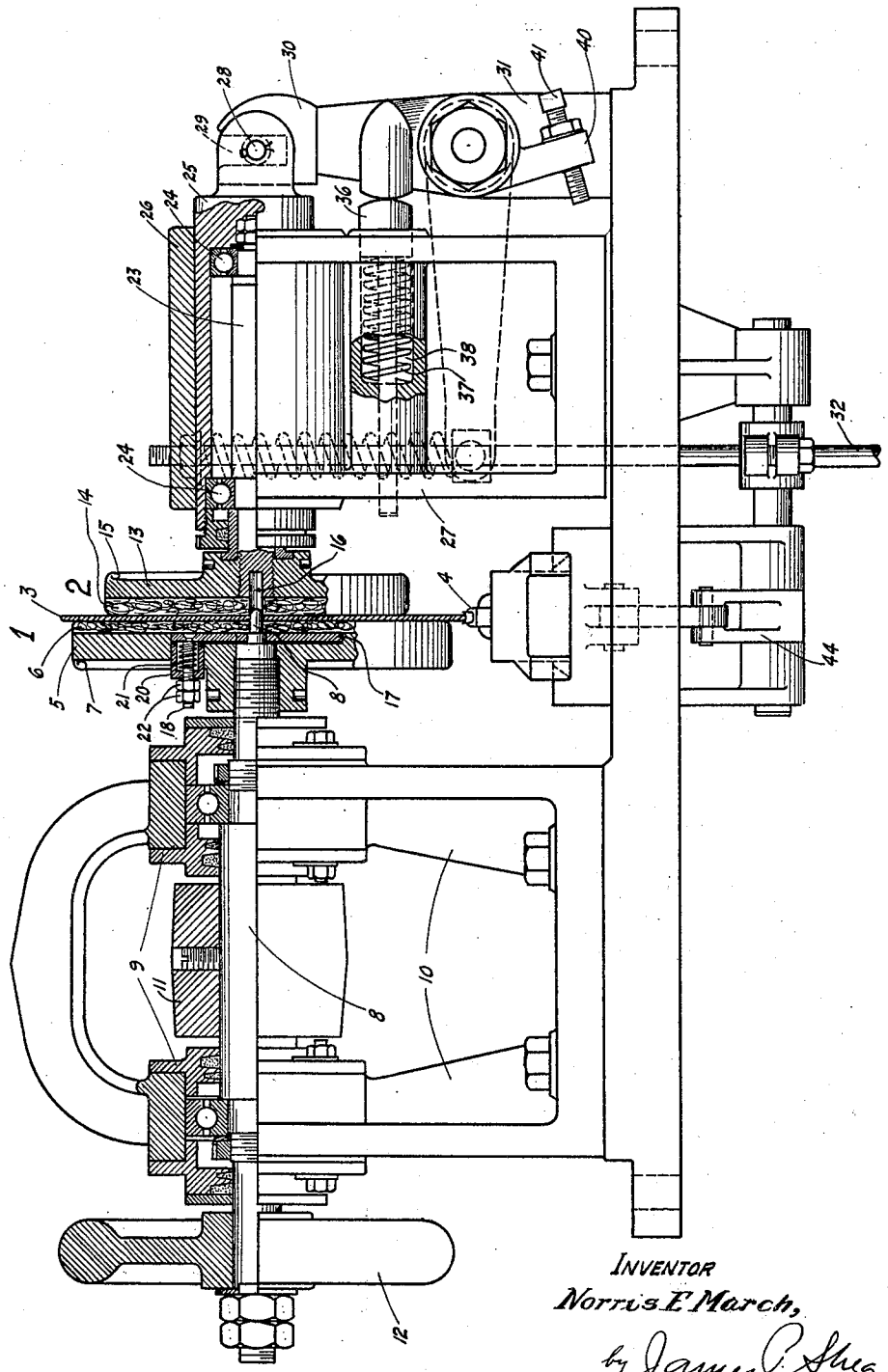
Nov. 1, 1932. N. E. MARCH 1,885,848

MACHINE FOR SMOOTHING THE EDGES OF PHONOGRAPH RECORDS

Filed June 5, 1928 2 Sheets-Sheet 1

FIG. 1



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FIG. 2

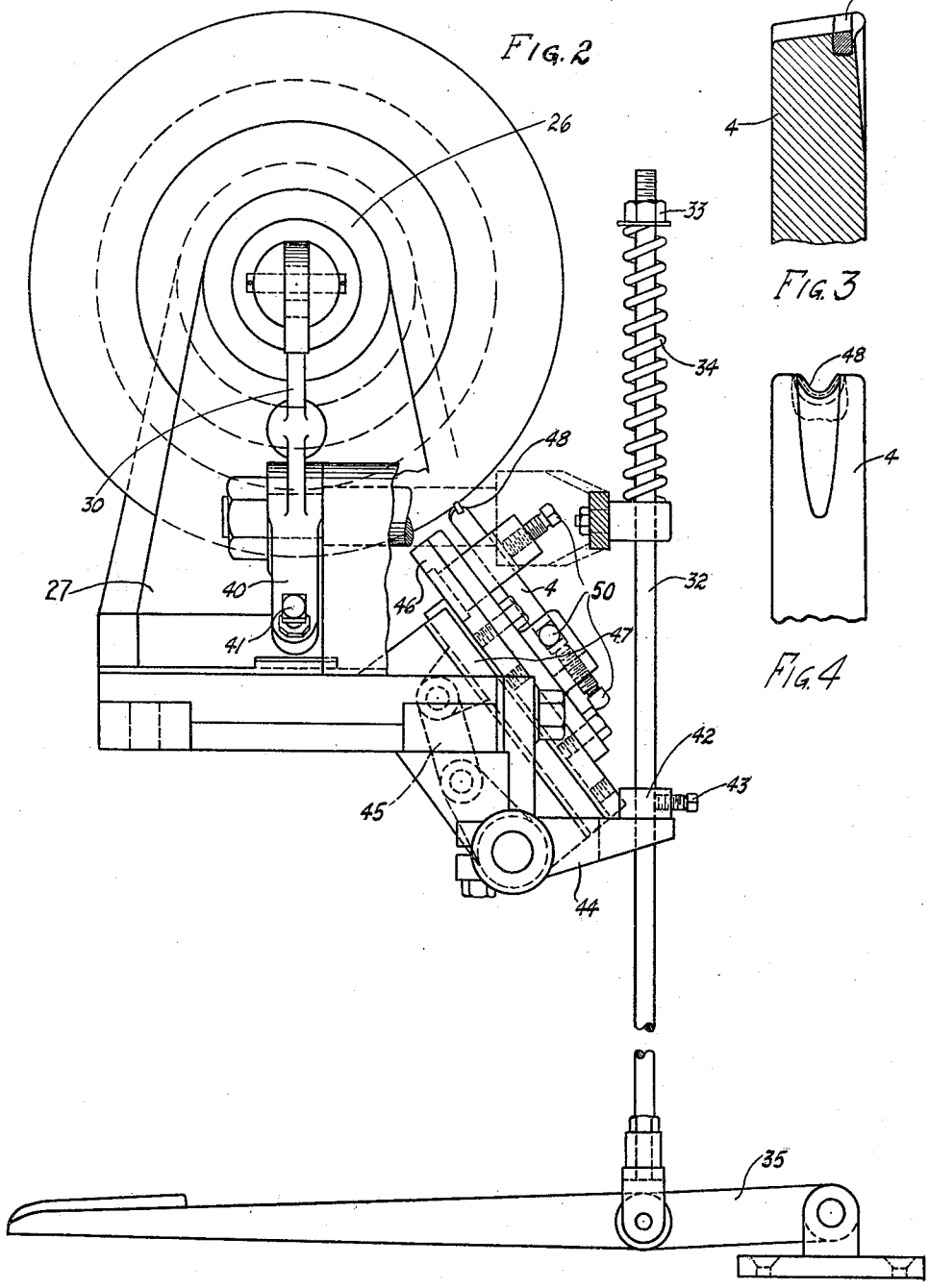


FIG. 3

FIG. 4

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MACHINE FOR SMOOTHING THE EDGES OF PHONOGRAPH RECORDS

Application filed June 5, 1928. Serial No. 283,102.

My invention relates to machines for finishing or smoothing the edges of phonograph records.

One object of my invention is to provide a machine for smoothing the edges of records in their roughened condition as received from the pressing molds, by rotating the records and applying a cutting jewel to their edges thereby cutting away the record and producing a smooth edge.

Another object of my invention is to provide a machine for moving a record holder into opposed relation with another holder which is continuously rotating and thus gripping a phonograph record between said holders, and for then advancing a cutting tool to the edge of said record for trimming the same.

Other objects and advantages of my invention will appear as the description proceeds.

Referring to the accompanying drawings, Fig. 1 is a view partly in side elevation and partly in section of a machine embodying my invention, a pedal for operating the parts not being shown; and Fig. 2 is an elevational view on an enlarged scale of the right end of the machine as viewed in Fig. 1, parts being broken away and others being shown in section.

The machine illustrated as embodying my invention comprises a pair of holders 1 and 2 for a phonograph record 3, and a tool 4 for cutting the edge of the record.

The holder 1 comprises a disk 5, a pad 6, and a fabric cover 7 stretched over the pad and secured to the disk. A drive shaft 8 on which the disk 5 is mounted rotates in bearings 9 on a support 10 and is driven by a sheave 11 and has a flywheel 12 for steadying the same during the trimming of the records.

The holder 2 is similar to the holder 1 in that it comprises a disk 13, a pad 14, and a cover 15, but it is provided with a socket 16 for receiving the reduced end of the shaft 8 on which the record 3 is mounted and which centers the record in its rotary movement.

The holder 2 is movable towards and from the record to permit the removal of the trimmed record from the end of the shaft.

An ejector plate surrounds the end of the drive shaft and is interposed between the disk 5 and the pad 6 and has a plurality of bolts 18, each of which extends through a respective housing 20 for a respective spring 21. The action of the springs 21 is to force the ejector plate 17 outwardly to push the record away from the face of the main body of the holder 1 so that it may be readily withdrawn by the operator and replaced by another untrimmed record. Nuts 22 on the ends of the bolts 18 are engageable with the housings 20 to limit the movement of the ejector plate.

When the holder 2 is in the position shown in Fig. 1 it is rotated by the driving force of the shaft 8 transmitted through the holder 1, a supporting shaft 23 for the holder 2 being mounted on anti-friction bearings 24 which are carried by a slide 25. The slide is reciprocable in a guide 26 on a support 27 and its end is bifurcated and carries a pin 28 which extends through a slot 29 in the arm 30 of a bell crank lever. The bell crank lever is pivoted on a support 31 and has an opening in the end of its other arm through which a link 32 is slidable. A nut 33 is threaded on the upper end of the link and a spring 34 is coiled about the link and compressed between the nut and the end of the bell crank lever. The lower end of the link is pivotally connected to a pedal 35 which may be depressed by an operator to move the bell crank lever by means of the spring 34 and thus force the slide 25 forwardly to cause the holder 2 to press upon a record. When the operator releases the pedal 35 the bell crank lever is moved in a reverse direction by means of a plunger 36 which is urged by a spring 37 mounted in a recess 38 in the support 27.

The bell crank carries also a finger 40 in which a screw 41 is threaded, the latter being engageable with the support 27, for limiting the movement of the bell crank, thus determining the limit of movement of the holder 2 away from the holder 1.

The link 32 has a collar 42 adjustably secured thereon by means of a screw 43, and on the depression of the pedal 35 the collar 42 is brought into engagement with the arm of a lever 44, the engagement taking place after the holder 2 is brought into the holding position shown in Fig. 1. The lever 44 is connected by a link 45 to a carrier 46 for the tool 4 and movement of the lever 44 causes the carrier to advance towards the edge of the record 3, the carrier being slidable in a guide 47.

A hard cutting-jewel 48, such as a diamond, on the tool 4 is brought into engagement with the rotating record and cuts away the edge thereof, which is rough and irregular when the record is first received from the pressing mold. The cutting edge of the jewel is preferably curved in order that the record may be given a somewhat rounded edge lacking in sharp corners which would tend to cause scratching by the engagement of one record with another. Screws 50 secure the tool to the carrier and permit adjustment of its position so that it may be disposed at the right angle with respect to the record. As will be observed from Figure 4, the exposed face of the diamond 48 is provided with a curved re-entrant cutting edge, while the diamond, with the exception of its cutting face and a marginal portion of the front surface thereof, is firmly embedded in the holder so as to prevent accidental breaking thereof when in use. The holder 4 is provided on its outer face with sufficient chip clearance, as indicated in dotted lines in Fig. 4, to insure the proper operation of the cutter.

Phonograph records are composed of hard gritty substances and have incorporated within them particles of filler such as slate, but machines embodying applicant's invention and incorporating a diamond cutter have been found to be quite satisfactory in operation and cut away the rough edges of the records, producing a smooth edge having a neat appearance. The operation of the device is such that breakage of records is reduced to a minimum, and the machine is quite economical in operation as the scrap which is trimmed from the records can be used as stock in making other records. This is an advantage over the use, for instance, of sand paper, as in the latter case sand is abraded from the paper and mingles with the scrap, rendering it unfit for further use. The tools remain in operative condition also throughout long periods without necessitating renewal.

My invention is not limited to the specific steps of the process described, nor to the specific details of construction, but may be modified in various ways, and a substantial range of equivalents is contemplated within the spirit of the invention and the scope of the appended claims.

What I desire to claim as new and to protect by Letters Patent is:

1. The combination of a pair of holders for a phonograph record of the disk type, means for rotating the same, a tool having a cutting jewel thereon movable into engagement with the unfinished edge of said record, a pedal movable by an operator and means operable on the depression of said pedal for moving one of said holders into opposed relation with respect to the other for gripping a record therebetween and thereafter moving said tool to apply said jewel to the edge of said record.

2. The combination of a pair of holders for a phonograph record of the disk type, means for rotating the same, means including a spring for forcing one of said holders against a record interposed between said holders and for maintaining a pressure on said record, a tool having a diamond thereon, means for moving said tool to apply said diamond to the edge of said record for smoothing the same, and a common actuating means including a single control member movable by an operator for first actuating the second mentioned means and thereby gripping said record and thereafter advancing said tool to trim the edge of said record.

3. The combination of a pair of holders for a phonograph record of the disk type, means for rotating said holders, means for moving one of said holders towards the other to grip a record interposed between said holders, a tool for trimming the edge of said record, means for advancing said tool into engagement with the edge of said record, a member movable by an operator, a connection including a spring interposed between said member and the second mentioned means for causing one of said holders to exert a pressure on said record, said connection permitting further movement of said member after said one of said holders is moved into gripping relation with said record, and means operable on the further movement of said member for actuating the third mentioned means and advancing said tool into engagement with said edge of said record.

4. The combination of a pair of holders for a phonograph record of the disk type, means for rotating said holders, one of said holders having a member adapted to project through the aperture in the record for centering the same, means for moving the other of said holders towards and from said one of said holders, means for smoothing the edge of the record on the rotation thereof, and

means including an ejector adjacent said member for forcing said record away from the face of said one of said holders on the removal of said other of said holders to permit the withdrawal of the record by an operator.

5. The combination of a pair of rotatable record holders, one of said holders of the disk type having a member receivable in the aperture in a record for centering the same, the other of said holders being movable towards and from the centered record for gripping and releasing same, means for rotating said holders, an ejector surrounding said member and resilient means for actuating said ejector after said other of said holders is moved away from said record to force said record away from the face of said one of said holders.

6. A record trimming machine comprising in combination, a spindle member having bearings, a supporting frame, a flywheel, and a record carrying member comprising a face plate, an ejector plate thereon, a fabric pad thereover, and a centering pin, a second spindle, means for moving it endwise, a second record holder comprising a face plate having a pad cover, means for driving said first-mentioned spindle, and a cutting tool movable towards said holders.

7. A record trimming machine, comprising a spindle, means for supporting and driving said spindle, a record holder thereon, comprising a face plate, having a concentric, recess, a spring operated stripper plate within said recess, a pad covering said face plate and said stripper plate, a second spindle co-axial with said first mentioned spindle, means for moving it endwise towards said first mentioned spindle, a second face plate and pad mounted thereon, and a cutter tool adapted to be advanced towards said record holders.

8. A record trimming machine, comprising a spindle, means for supporting and driving said spindle, a record holder thereon, comprising a face plate, having a concentric recess, a spring operated stripper plate within said recess, a pad covering said face plate and said stripper plate, a second spindle coaxial with said first mentioned spindle, means for moving it endwise towards said first mentioned spindle, a second face plate and pad mounted thereon, a cutter tool adapted to be advanced towards said record holders, and a pedal means adapted to actuate said second mentioned spindle, and to advance said cutter tool towards said record holders.

9. A record trimming machine, comprising a spindle, means for supporting and driving said spindle, a record holder thereon, comprising a face plate, having a concentric recess, a spring operated stripper plate within said recess, a pad covering said face plate and said stripper plate, a second spindle coaxial with said first mentioned spindle, means for moving it endwise towards said first mentioned spindle, a second face plate and pad mounted thereon, a cutter tool adapted to be advanced towards said record holders, and a pedal means adapted to actuate said second mentioned spindle, and to advance said cutter tool towards said record holders, comprising an eye member attached to said spindle advancing means, a rod member passing through said eye member, a spring cooperating between said rod and eye, to advance said spindle, and allow said rod to continue to move, a slide member for said holder, and link and lever members cooperating between said rod and said slide to advance said tool holder.

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