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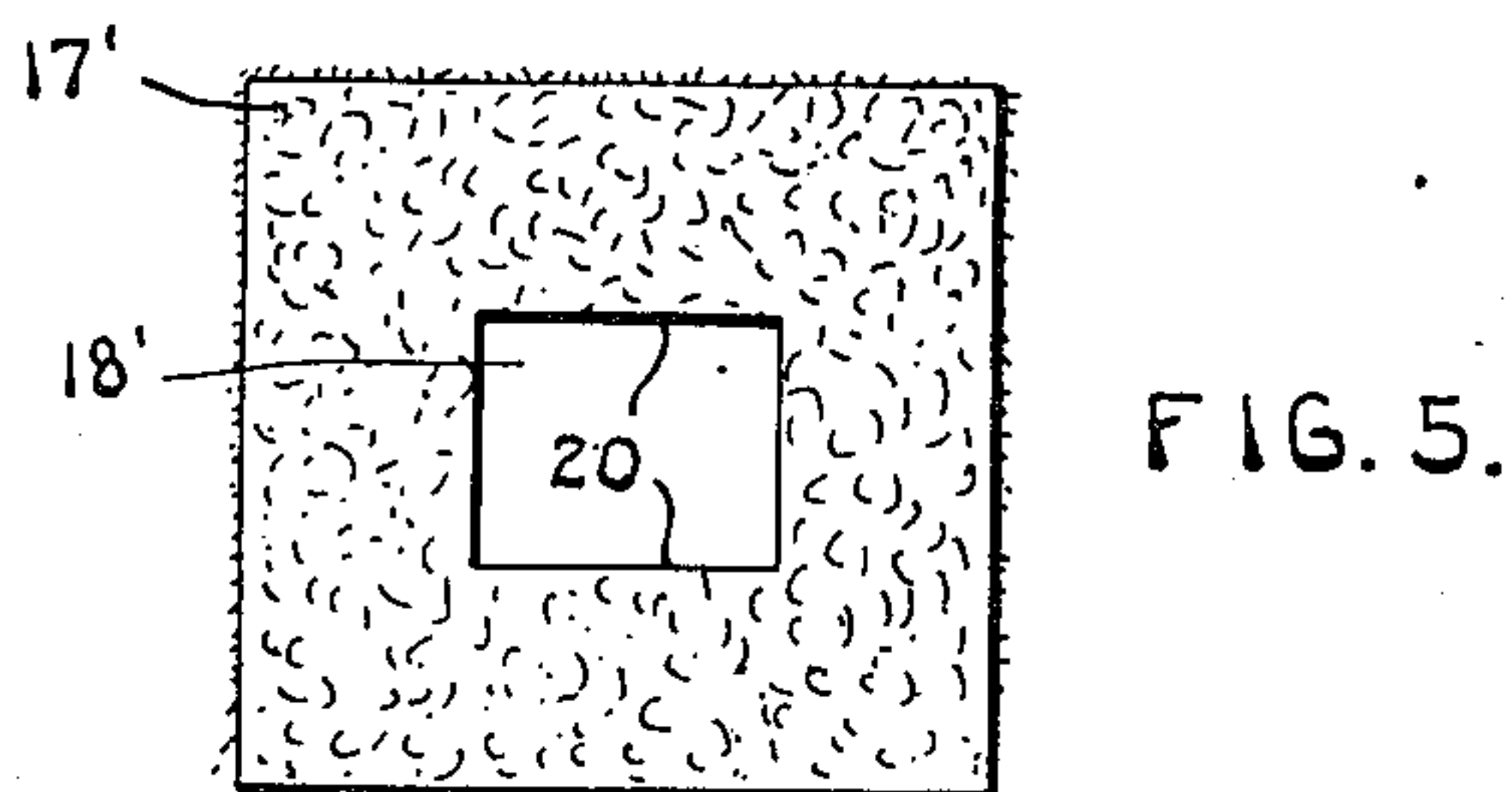
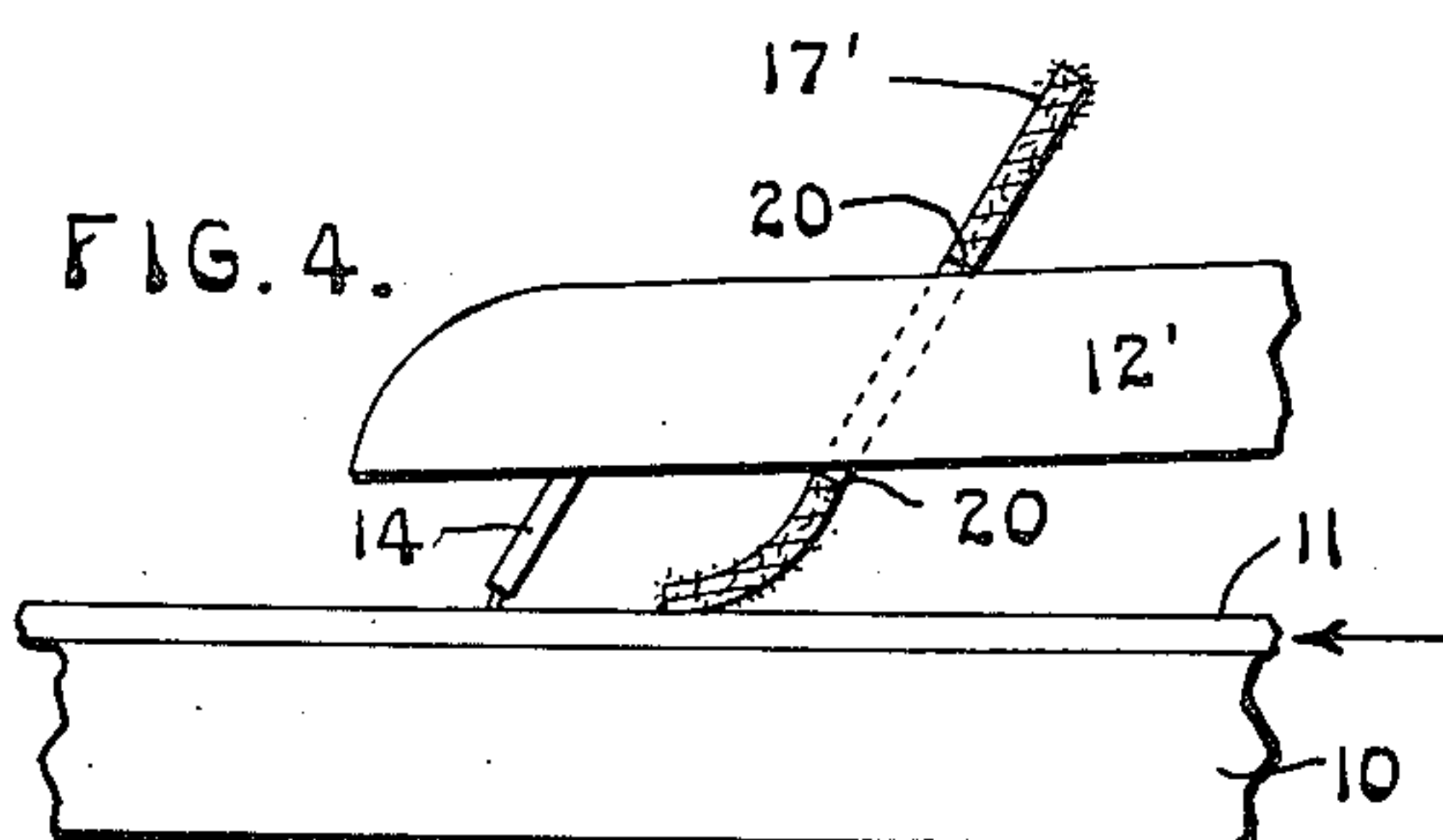
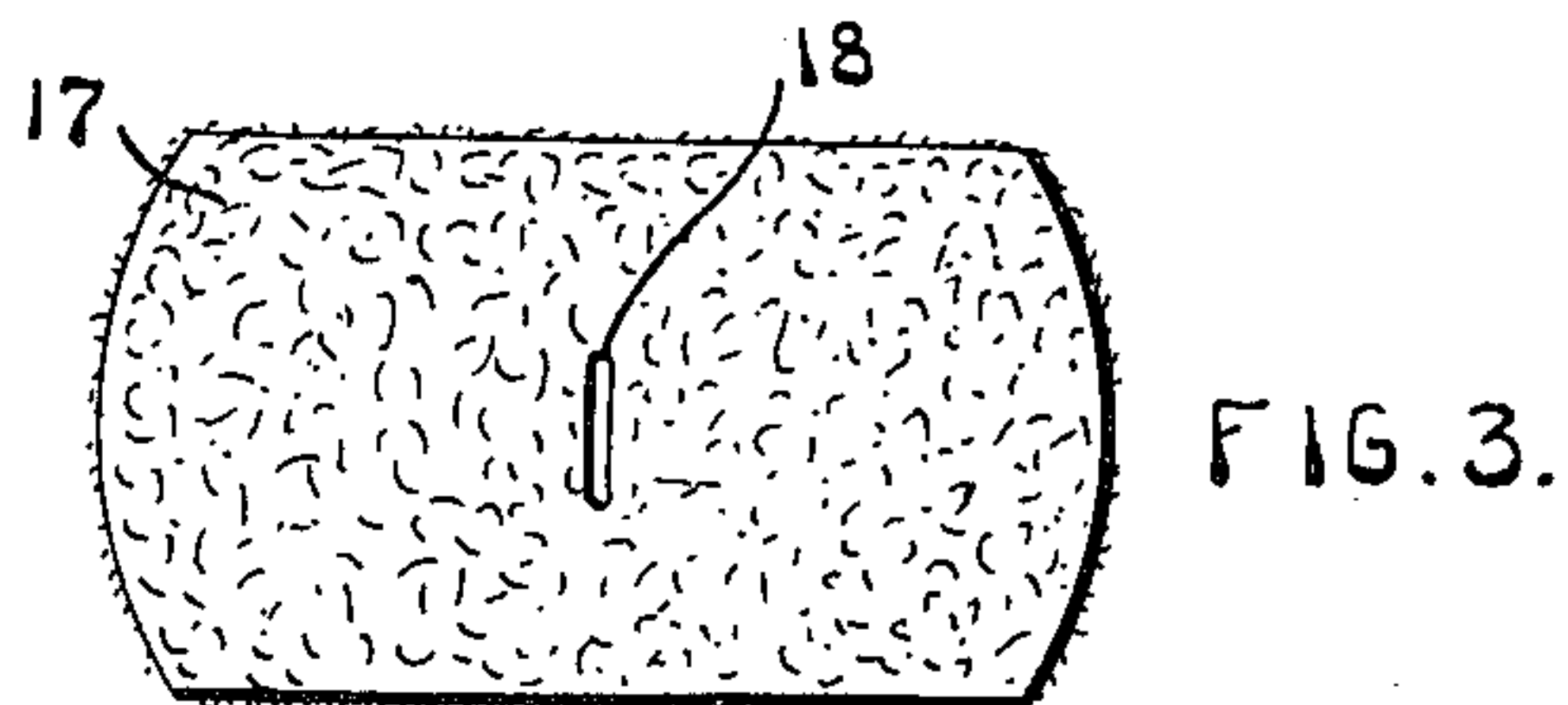
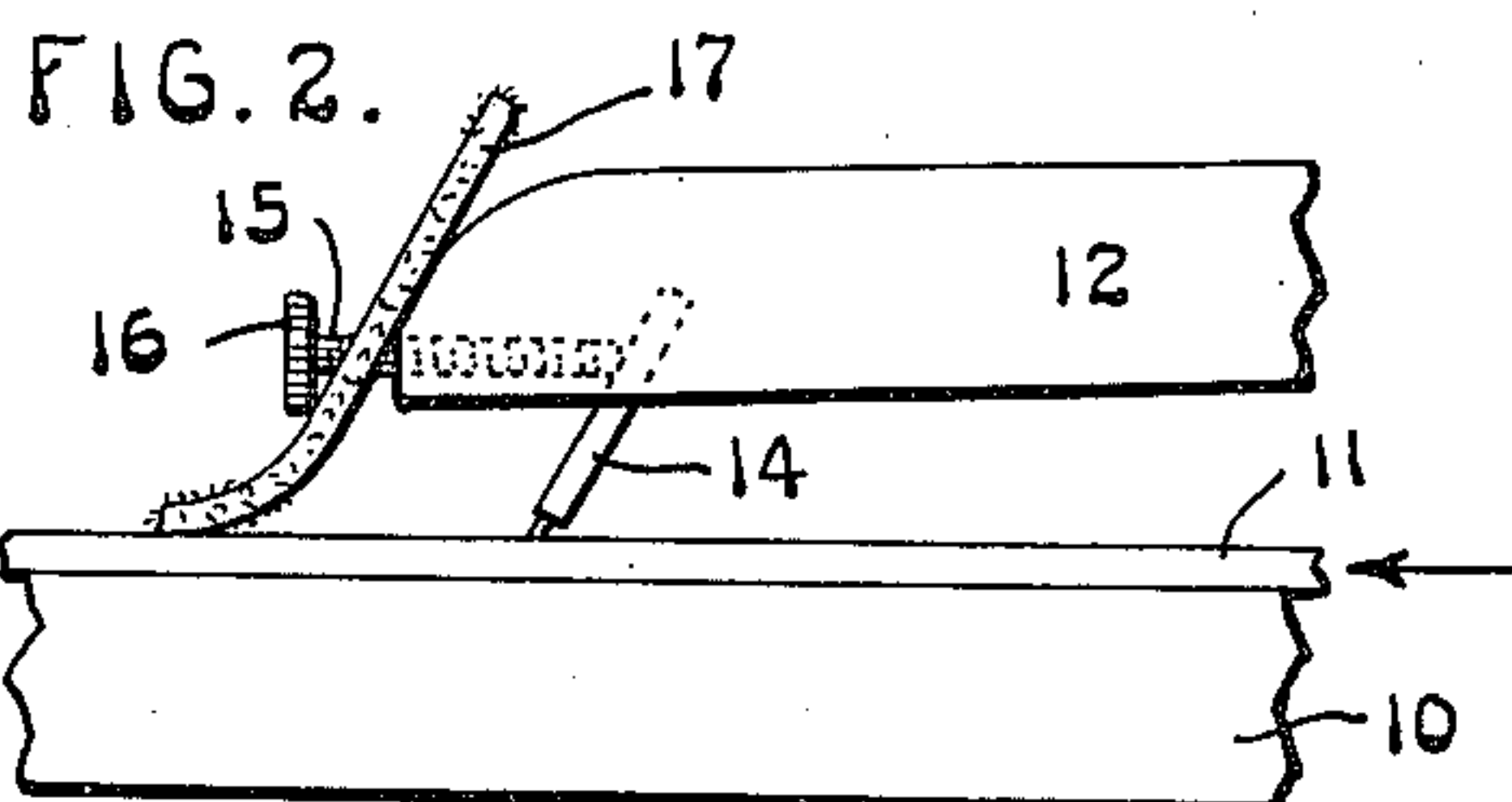
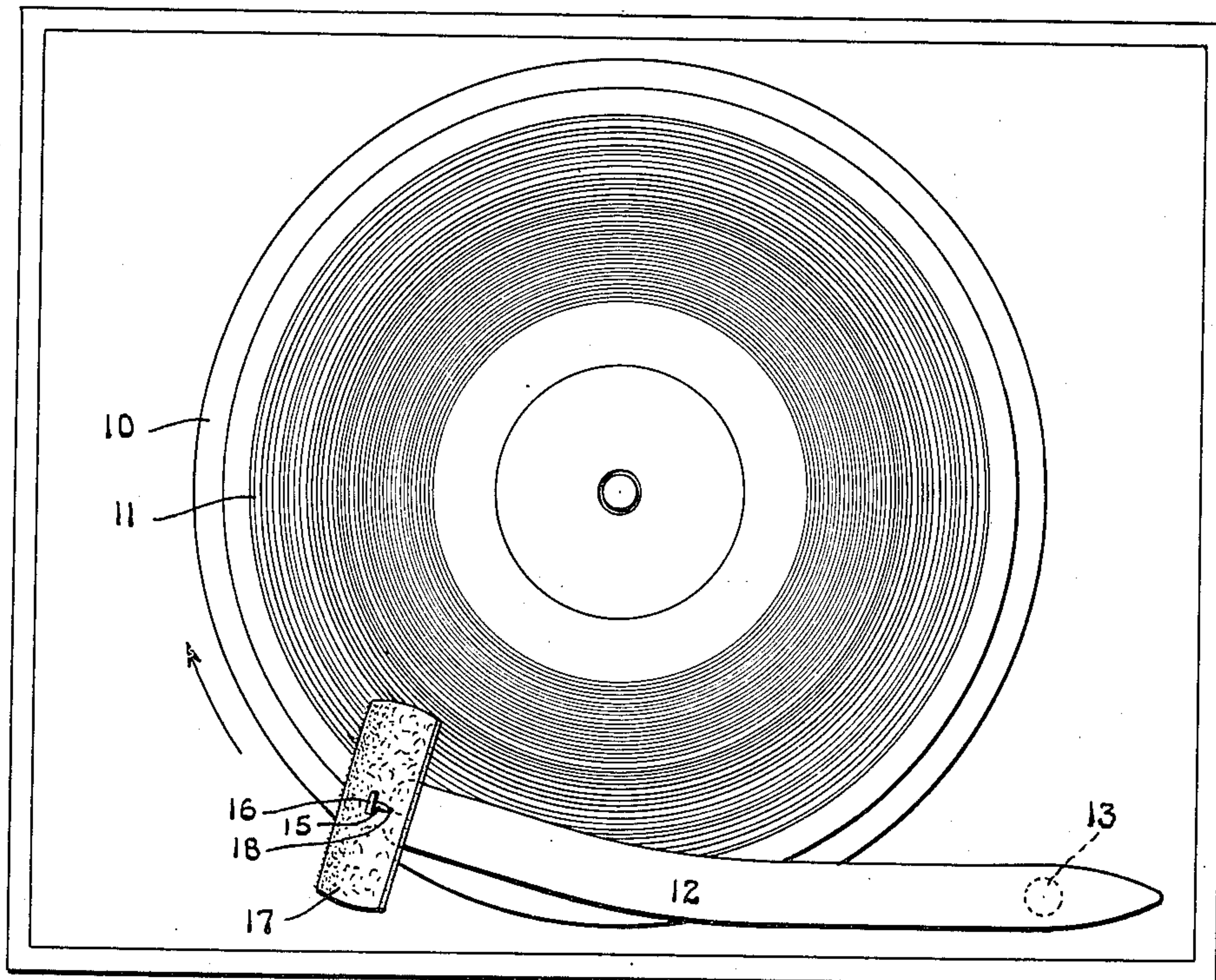
H. F. WHEELER

2,343,837

WIPING ATTACHMENT FOR PHONOGRAPHS

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FIG. 1.



INVENTOR.
H. F. WHEELER
BY *Albert J. McCauley*
ATTORNEY.

UNITED STATES PATENT OFFICE

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WIPING ATTACHMENT FOR PHONOGRAPHS

Henry F. Wheeler, Richmond Heights, Mo., assignor of one-half to A. Edward Gross, Richmond Heights, Mo.

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8 Claims. (Cl. 274-47)

This invention relates to wiping attachments for phonographs. Fine grooves with minute variations are formed in phonograph records to accurately reproduce the original sounds, but such grooves very readily collect dust, grit and other foreign matter which not only changes the tones or sounds, but also forms a mass of abrasive material tending to wear away the original minute sound projections in the grooves, while also producing an undue sharpening of the reproducer needle.

This aggravating problem has existed ever since the beginning of the use of phonographs, and so far as I am aware, it has not been satisfactorily solved by any prior invention in this art. The ordinary user of such records will not resort to any substantial trouble or expense to remove the destructive dust, grit, etc., from the fine grooves. Consequently, any plan for troublesome, complex, or expensive cleansing devices would fail to overcome an outstanding phase of the old problem.

Therefore, an object of the present invention is to produce an extremely simple and very inexpensive attachment having properties which enable it to positively remove and collect the minute destructive particles while the record is in service, without requiring any substantial degree of attention from the user of the phonograph. In other words, my ultimate solution of this very old problem is based upon extreme simplicity and low cost, coupled with very high efficiency under conditions which require no substantial efforts on the part of the user. All of these factors have resulted in an entirely feasible commercial article having outstanding merits not found in any prior attempt to solve this perplexing old problem.

With the foregoing and other objects in view, the invention comprises the novel construction, combination and arrangement of details herein shown to illustrate desirable forms of the invention. However, this disclosure will lead others to numerous variations of the new concept, so it is to be understood that the scope of the patent extends to all variations and modifications described by the claims hereunto appended.

Fig. 1 is a top view of a phonograph equipped with an attachment embodying features of this invention.

Fig. 2 is a fragmentary side view, drawn to a larger scale, showing an end portion of the reproducer arm and a wiping attachment carried thereby to collect fine particles from the grooved record.

Fig. 3 is a detail view of the attachment shown in Figures 1 and 2.

Fig. 4 is a view similar to Fig. 2 illustrating another form of the invention.

Fig. 5 is a detail view of the attachment shown in Fig. 5.

Fig. 1 shows a phonograph having a rotary table 10 to receive a rotary record 11, and a reproducer arm, or tone arm, 12 pivoted at 13, said arm being provided with a suitable needle or stylus 14 contacting with the record as shown in Fig. 2. It will be understood that the point of the needle travels in a spiral groove in the record, and that the reproducer arm 12 will travel toward the center of the record in response to rotary movements of the table 10.

In Figures 1 and 2, the free end of the reproducer arm 12 is provided with a set screw 15 to secure the needle 14, said set screw having a head 16 in the form of a button separated from the body portion of the reproducer arm.

The wiping attachment 17 shown in Figures 1, 2 and 3 is in the form of an elongated sheet of yieldable fibrous material, preferably a sheet of wool felt or hair felt, adapted to interlock with the traveling reproducer arm 12. This fibrous sheet may be provided with a suitable opening 18 to receive portions of said traveling arm, and abutments at said opening to detachably secure the fibrous sheet to the traveling arm. For example, the opening 18 in Fig. 3 may be in the form of a button hole, or vertically elongated slot, and the screw head 16 will readily pass through this opening 18 to loosely secure the fibrous sheet 17 between the body portion of the arm 12 and the head 16. The fibrous sheet is thus loosely interlocked with the traveling reproducer arm, and it has oppositely disposed abutment faces at the slot 18 adapted to be firmly forced into frictional engagement with elements of the reproducer arm, as suggested in Fig. 2.

Special attention is directed to Fig. 2 which illustrates conditions existing when the lower portion of the yieldable wiping sheet 17 contacts with a record 11 moving in the direction indicated by arrows in Figures 1 and 2. This rotary movement of the record forcibly tilts the loose wiping sheet as suggested in Fig. 2, so as to tighten abutment faces of the sheet into forcible interlocking contact with elements 12 and 16 of the traveling reproducer arm, at the same time forcing the deflected lower portion of the sheet 17 into firm wiping contact with the grooved face of the record 11. The wiping sheet is thereby securely

interlocked with the traveling arm and placed in a condition for forcible wiping contact with the rotating record.

Further study of Figures 2 and 3 will show that the approximately horizontal bottom margin of the wiping sheet 17 has a pair of companion wiping faces at opposite sides of said bottom margin. When the sheet is deflected, as shown in Fig. 2, only one of said wiping faces contacts with the record, while its companion bottom marginal wiping face is shifted upwardly to an idle position entirely beyond the record.

It may be important to observe that fibers of the sheet 17 are exposed at all of its wiping faces, so as to receive and collect fine particles of material from grooves in the records, thereby transferring said fine particles to the fibrous sheet. Moreover, the fibrous sheet shown in Fig. 2 is removable and reversible to selectively locate the previously idle bottom wiping face in active wiping contact with the record, while locating the previously used wiping face, containing collected fine particles, in an idle position entirely beyond the record.

Additional advantages appear when the yieldable wiping sheet has a plurality of wiping margins and an approximately central opening between said margins. For example, in Figures 1, 2 and 3, the wiping sheet has a central opening 18 midway between its approximately flat top and bottom margins. This sheet can be very readily rotated around its central opening 18, or around the set screw of the reproducer arm, so as to selectively locate any one of its several marginal wiping faces in active contact with the record, while locating all of the other wiping faces in idle positions entirely beyond the record.

More specifically stated, the extremely simple wiping device shown in Figures 1, 2 and 3 has four separate and distinct fibrous wiping faces, two at opposite sides of its top margin, and two at opposite sides of its bottom margin. Each of these wiping faces has exposed fibers to receive, collect and retain fine particles which are very efficiently removed from grooves in the records, and when any one of the wiping faces is in active service, all of the other wiping faces are entirely beyond the record.

In Figures 1, 2 and 3, I have provided for use of the conventional set screw at the free end of the reproducer arm. However, the invention is not limited to this detail.

Figures 4 and 5 illustrate a suitable form of the invention wherein a wiping sheet 17' may be applied directly to the body of a reproducer arm 12' in a location behind the needle or stylus 14. This sheet 17' is preferably made of felt, or other suitable fibrous material, with fibers exposed at its peripheral wiping edges. However, its central opening 18' is relatively large to loosely receive the body portion of the reproducer arm. Frictional abutments 20 are formed by the top and bottom walls of said opening 18', and these abutments will forcibly engage top and bottom faces of the reproducer arm in response to a rotary movement of the record, as shown in Fig. 4. The wiping attachment of Figures 4 and 5 is thus firmly interlocked with the traveling reproducer arm when the phonograph is in service, and it is provided with a plurality of wiping faces for selective successive use, as previously described. It can be forcibly rotated on the reproducer arm, or

readily removed and reversed in changing from one wiping edge to another.

The wiping devices herein shown are elongated to extend substantially beyond the periphery of the grooved portions of the records. However, they could be square, or of any polygonal shape, to provide additional wiping margins.

As a desirable cooperative feature for commercial use, I have dipped the fibrous sheets into a paraffin solution. For example, one pound of paraffin wax may be dissolved in four gallons of gasoline to provide a suitable solution. This treatment tends to stiffen very flexible fibrous sheets, and provides a relatively firm but resilient wiping contact at the records, as well as firm interlocking frictional contacts at the reproducer arm. The paraffin in the exposed mass of fibers seems to aid in collecting very minute grit particles from grooves in the records. However, the invention is not limited to this detail, except as specified in one or more of the claims.

I claim:

1. In a wiping attachment for the rotary records of a phonograph having a traveling reproducer arm, a sheet of fibrous material adapted to interlock with said traveling arm, said fibrous sheet having an opening to receive portions of said traveling arm and abutments at said opening to detachably secure the fibrous sheet to said arm, said fibrous sheet being provided with a bottom margin and a pair of companion wiping faces at opposite sides of said bottom margin, said sheet being tiltable in the direction of rotation of the record so as to locate one of said wiping faces in active wiping contact with the rotary record while locating the companion wiping face in an idle position entirely beyond the record, said sheet being yieldable to force the selected wiping face into wiping contact with the record, and said fibrous sheet being removable and reversible to selectively locate the previously idle wiping face in contact with the record while locating the used wiping face in an idle position entirely beyond the record.

2. In a wiping attachment for the rotary records of a phonograph having a traveling reproducer arm, a sheet of fibrous material adapted to interlock with said traveling arm, said fibrous sheet having an opening to loosely receive portions of said traveling arm and abutments at said opening to detachably secure the fibrous sheet to said arm, said fibrous sheet being provided with a bottom margin and a pair of companion wiping faces at opposite sides of said bottom margin, said sheet being tiltable in the direction of rotation of the record so as to locate one of said wiping faces in active wiping contact with the rotary record while locating the companion wiping face in an idle position entirely beyond the record, said sheet being yieldable to force the selected wiping face into wiping contact with the record and at the same time tighten the tilted sheet into forcible interlocking contact with the reproducer arm, and said fibrous sheet being removable and reversible to selectively locate the previously idle wiping face in contact with the record while locating the used wiping face in an idle position entirely beyond the record.

3. In a wiping attachment for the rotary records of a phonograph having a traveling reproducer arm, a sheet of fibrous material adapted to interlock with said traveling arm,

said fibrous sheet having an opening to receive portions of said traveling arm and abutments at said opening to detachably secure the fibrous sheet to said arm, said fibrous sheet being provided with an approximately horizontal bottom margin and a pair of companion wiping faces at opposite sides of said bottom margin, fibers of said sheet being exposed at said pair of companion wiping faces to receive and collect fine particles of material from grooves of the record, thereby positively transferring said fine particles to the fibrous sheet, said sheet being tiltable in the direction of rotation of the record so as to locate one of said wiping faces in active wiping contact with the rotary record while deflecting the companion wiping face to an idle position entirely beyond the record, said sheet being yieldable to force the selected wiping face into wiping contact with the record and at the same time tighten the tilted sheet into forcible interlocking contact with the reproducer arm, and said fibrous sheet being removable and reversible to selectively locate the previously idle wiping face in contact with the record while locating the used wiping face containing collected fine particles in an idle position entirely beyond the record.

4. In a wiping attachment for the rotary records of a phonograph having a traveling reproducer arm, a sheet of fibrous material adapted to detachably interlock with said traveling arm, said fibrous sheet having an approximately central opening to receive portions of said traveling arm and frictional abutments adjacent to said opening to detachably secure the fibrous sheet to said arm, the periphery of said fibrous sheet being provided with a plurality of wiping faces adapted to frictionally engage the grooved faces of the rotary records, fibers of said sheet being exposed at the peripheral wiping faces to receive and collect fine particles of material from the grooves of the records, thereby positively transferring said fine particles to the fibrous sheet, and said fibrous sheet being rotatable around the center of said approximately central opening so as to selectively locate any one of its several peripheral wiping faces in active wiping contact with the record while locating all of the other wiping faces in idle positions entirely beyond the record.

5. In a wiping attachment for the rotary records of a phonograph having a traveling reproducer arm, a sheet of fibrous material adapted to detachably interlock with said traveling arm, said fibrous sheet having an approximately central opening to receive portions of said traveling arm and frictional abutments adjacent to said opening to detachably secure the fibrous sheet to said arm, said fibrous sheet being provided with a plurality of approximately flat marginal portions adapted to frictionally engage the grooved faces of the rotary records, fibers of said sheet being exposed at said marginal portions to receive and collect fine particles of material from the grooves of the records, thereby positively transferring said fine particles to the fibrous sheet, each of said approximately flat marginal portions having a pair of wiping faces at opposite sides of the fibrous sheet, each of said marginal portions being tiltable in the direction of rotation of the record so as to locate one of said wiping faces in active wiping contact with the record while locating all of the other wiping faces in idle positions entirely beyond the

record, said fibrous sheet being yieldable to force the selected wiping face into wiping contact with the record and at the same time tighten said frictional abutments into firm interlocking contact with said traveling arm, and said fibrous sheet being rotatable around its center and also reversible so as to selectively locate any one of its several marginal wiping faces in active wiping contact with the record, while locating all of the other wiping faces in idle positions entirely beyond the record.

6. In a wiping attachment for the rotary records of a phonograph having a traveling reproducer arm, a sheet of fibrous material adapted to detachably interlock with said traveling arm, said fibrous sheet having an opening approximately midway between its top and bottom margins to receive portions of said traveling arm and frictional abutments at the top and bottom of said opening to detachably secure the fibrous sheet to said arm, said fibrous sheet being provided with approximately horizontal top and bottom margins adapted to frictionally engage the grooved faces of the rotary records, fibers of said sheet being exposed at said top and bottom margins to receive and collect fine particles of material from the grooves of the records, thereby positively transferring said fine particles to the fibrous sheet, each of said top and bottom margins having a pair of longitudinal wiping faces at opposite sides of the fibrous sheet, each of said margins being tiltable in the direction of rotation of the record so as to locate one of said longitudinal wiping faces in active wiping contact with the record while locating all of the other wiping faces in idle positions entirely beyond the record, said fibrous sheet being yieldable to force the selected wiping face into wiping contact with the record and at the same time tighten said frictional abutments into firm interlocking contact with said traveling arm, and said fibrous sheet being removable and reversible so as to selectively locate any one of its several long wiping faces in active wiping contact with the record, while locating the other wiping faces in idle positions entirely beyond the record.

7. In a wiping attachment for the rotary records of a phonograph having a traveling reproducer arm, a sheet of fibrous felt adapted to detachably interlock with said traveling arm, said fibrous felt sheet having an opening approximately midway between its top and bottom margins to loosely receive portions of said traveling arm and frictional abutments at the top and bottom of said opening to detachably secure the loose fibrous sheet to said arm, said sheet of felt being provided with approximately horizontal top and bottom margins adapted to frictionally engage the grooved faces of the rotary records, fibers of said felt being exposed at said top and bottom margins to receive and collect fine particles of material from the grooves of the records, thereby positively transferring said fine particles to the fibrous sheet, each of said top and bottom margins having a pair of longitudinal wiping faces at opposite sides of the fibrous sheet, each of said margins being tiltable in the direction of rotation of the record so as to locate one of said longitudinal wiping faces in active wiping contact with the record while locating all of the other wiping faces in idle positions entirely beyond the record, said fibrous sheet being yieldable to force the selected wiping face into wiping contact with the record and at the same time tighten

said frictional abutments into firm interlocking contact with said traveling arm, and said fibrous sheet being rotatable on said arm, and also removable and reversible so as to selectively locate any one of its several longitudinal wiping faces in active wiping contact with the record, while locating all of the other wiping faces in idle positions entirely beyond the record.

8. In a wiping attachment for the rotary records of a phonograph having a traveling reproducer arm, a sheet of fibrous material containing paraffin as a stiffener, adapted to interlock with said traveling arm, said fibrous sheet having an opening to receive portions of said traveling arm and abutments at said opening to detachably secure the fibrous sheet to said arm, said fibrous sheet being provided with an approximately horizontal bottom margin and a pair of companion wiping faces at opposite sides

of said bottom margin, fibers of said sheet containing paraffin being exposed at said pair of companion wiping faces, said sheet being tiltable in the direction of rotation of the record so as to locate one of said wiping faces in active wiping contact with the rotary record while locating the companion wiping face in an idle position entirely beyond the record, said sheet with its paraffin stiffener being yieldable to force the selected wiping face into wiping contact with the record and at the same time tighten the tilted sheet into forcible interlocking contact with the reproducer arm, and said sheet being removable and reversible to selectively locate the previously idle wiping face in contact with the record while locating the used wiping face in an idle position entirely beyond the record.

HENRY F. WHEELER.