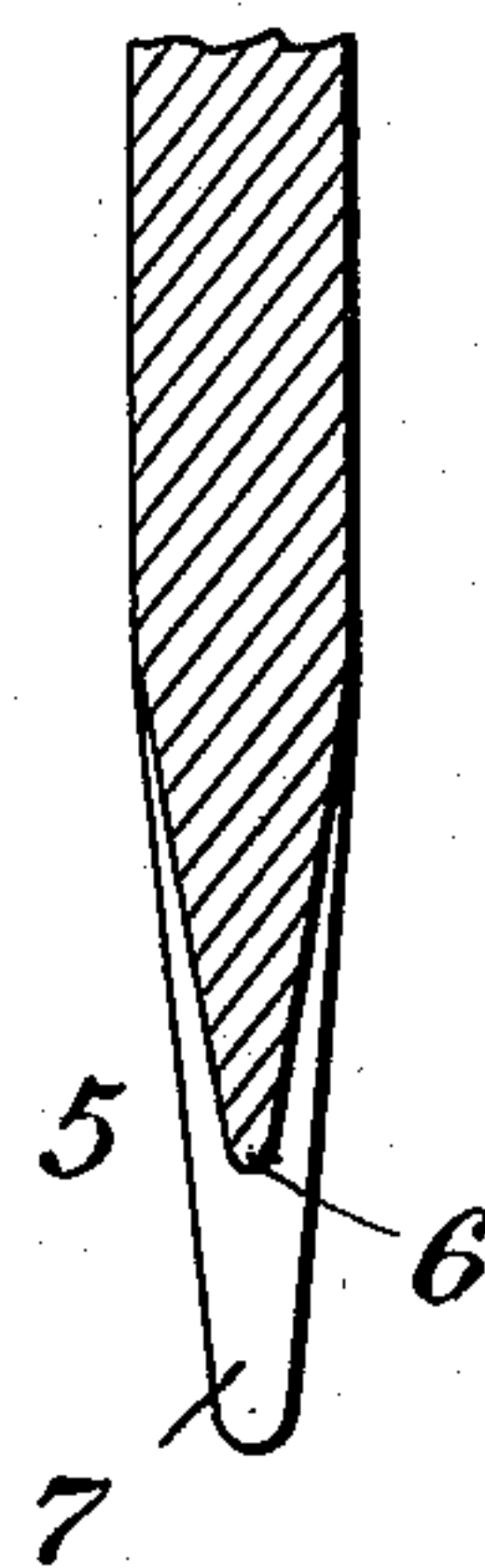
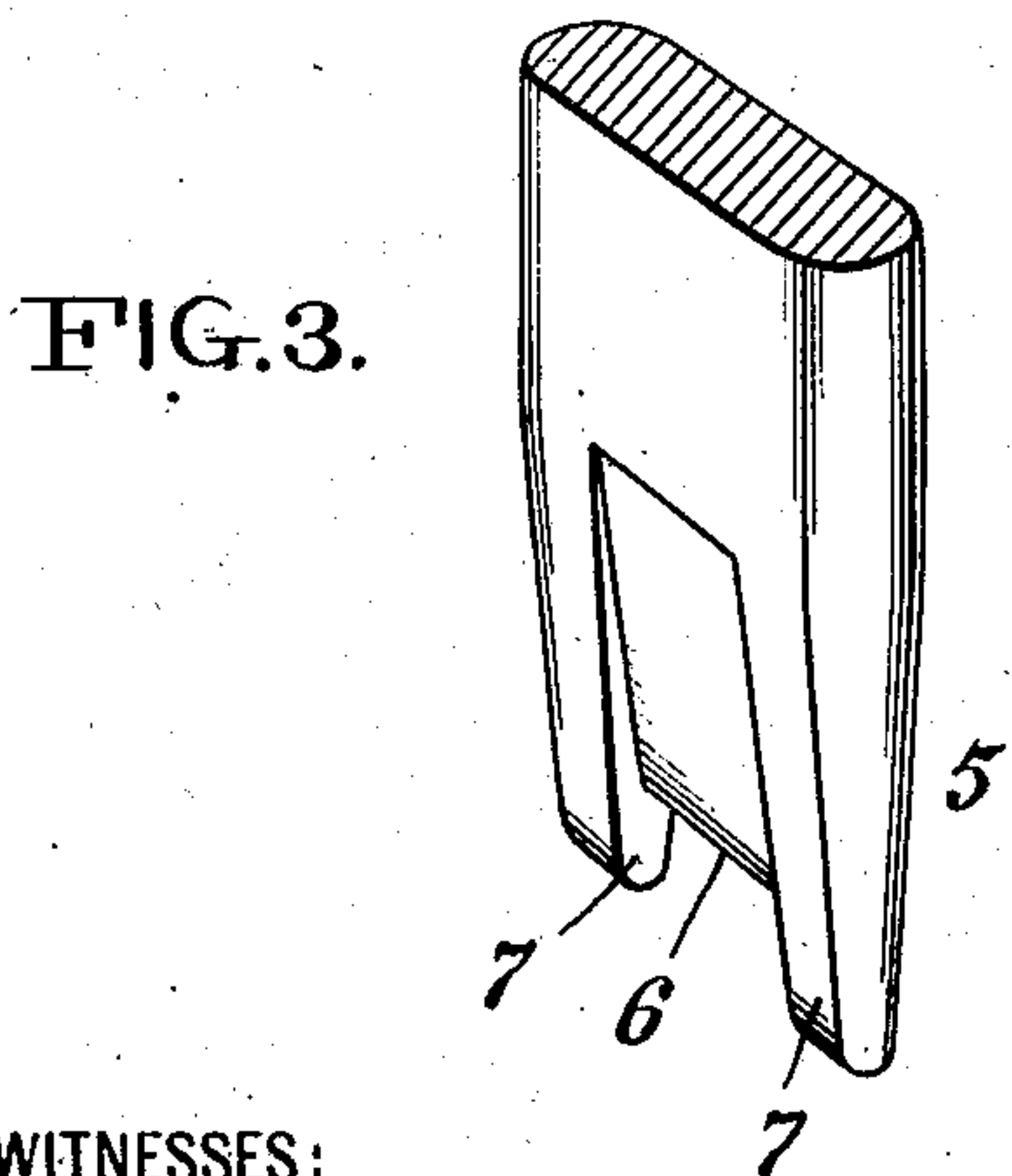
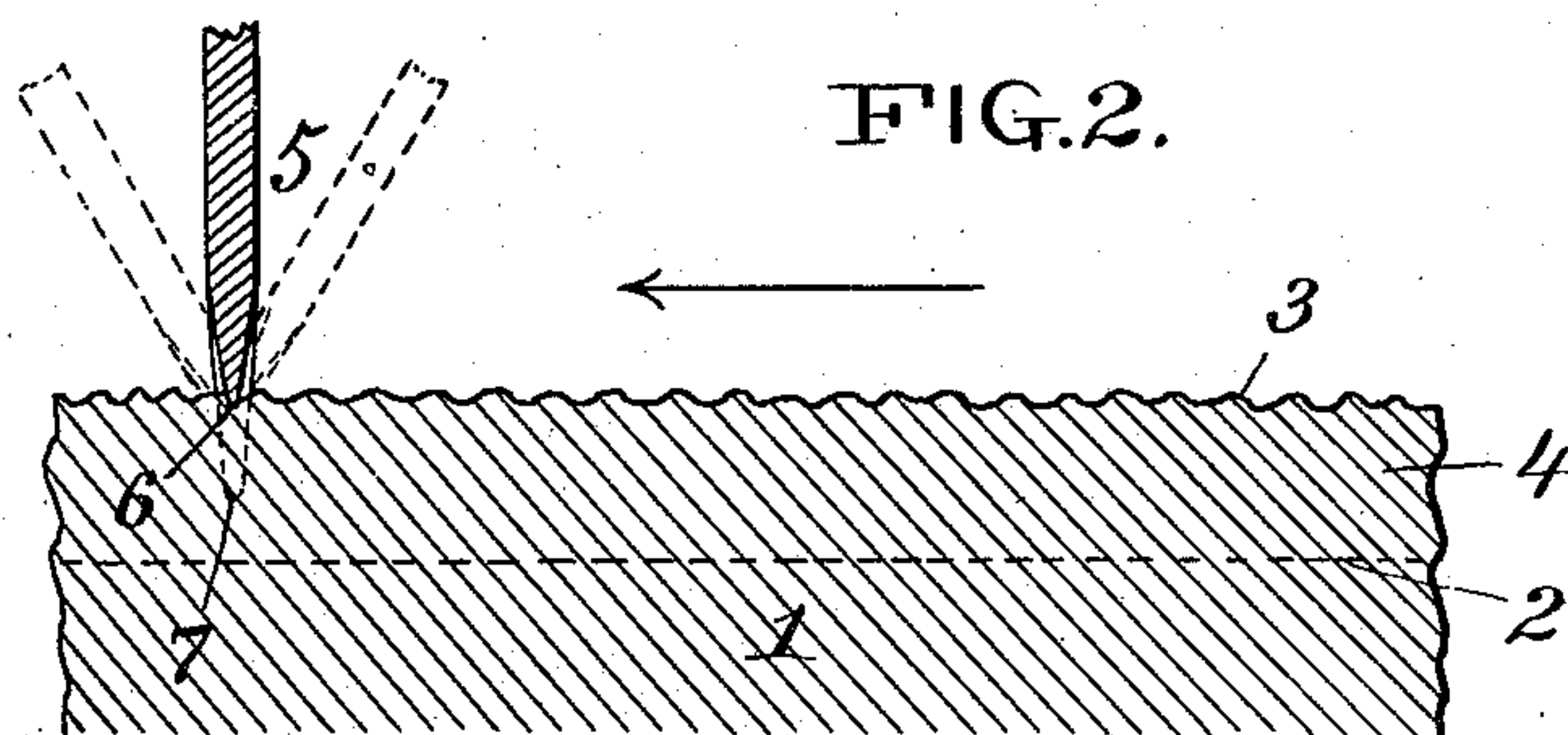
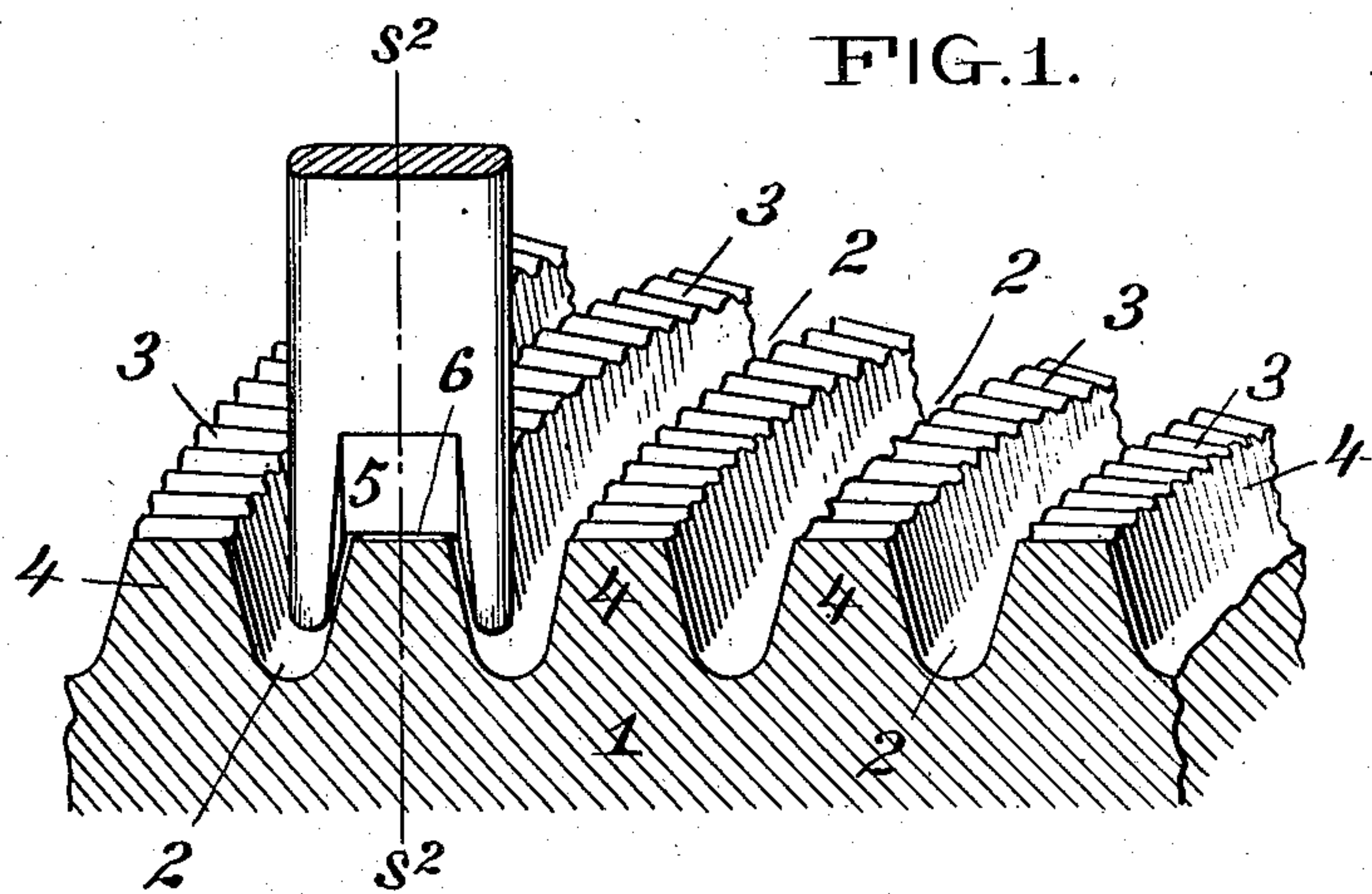


G. K. CHENEY.
REPRODUCING STYLUS FOR TALKING MACHINES.
APPLICATION FILED JUNE 6, 1903.

915,936.

Patented Mar. 23, 1909.



WITNESSES:
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UNITED STATES PATENT OFFICE.

GEORGE K. CHENEY, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO VICTOR TALKING MACHINE COMPANY, A CORPORATION OF NEW JERSEY.

REPRODUCING-STYLUS FOR TALKING-MACHINES.

No. 915,936.

Specification of Letters Patent.

Patented March 23, 1909.

Application filed June 6, 1903. Serial No. 160,429.

To all whom it may concern:

Be it known that I, GEORGE K. CHENEY, a citizen of the United States of America, and a resident of the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Reproducing-Styluses for Talking-Machines, of which the following is a specification.

My invention relates generally to talking machines and consists more specifically of an improved form of reproducer adapted for use in connection with the sound record described and claimed in my co-pending application Serial No. 160,431 filed June 6, 1903. The record referred to is preferably of the disk type having a spiral groove cut or otherwise formed in its face and the record in the form of a connected series of indentations contained on the thread or that portion of the surface of the disk remaining between the turns of the spiral groove.

The reproducer point is preferably of suitable form to engage both the record thread and the groove on one or both sides thereof, it being thereby guided and maintained in proper relation to the record, also fed across the disk as the latter is rotated.

By reducing the bearing surface of the reproducer to the extreme point of the stylus and forming the spiral guide groove with perfectly smooth walls, unpleasant sounds, such as harsh, shrill tones and grating noises, may be either entirely avoided, or so greatly reduced as to be rendered unnoticeable.

The preferred form of reproducer embodying my invention, is illustrated in the accompanying drawings, throughout the several views of which like characters of reference indicate corresponding parts.

In these drawings: Figure 1 is a view in perspective on a greatly enlarged scale, showing a portion of a disk sound record and the reproducer point or stylus in operative relation thereto. Fig. 2 is a vertical sectional view taken centrally of the record thread, on the line s^2 , s^2 , of Fig. 1. Fig. 3 is a detail view in perspective of the reproducer point, and Fig. 4 is a vertical sectional view thereof.

Referring now to the drawings, 1, indicates the sound record, which may be of the disk or cylinder type. A spiral groove 2, is formed in the face of the disk or cylinder and the record in the form of a connected

series or succession of indentations 3, is contained on that portion, 4, of the disk or cylinder surface remaining between the turns of the spiral groove.

The reproducer point or stylus 5, may be made of any suitable material, such as steel or the like, but owing to the necessity for frequently renewing the same, when made of metal, I prefer to use sapphire or similar stone, which may be used repeatedly without showing appreciable wear.

The bearing surface 6, of the stylus, is preferably straight, to conform to the upper surface of the record thread and is preferably beveled on opposite faces, so that its cross section is approximately V-shaped, as best shown in Fig. 4.

In order that the reproducer may guide and feed automatically, it is provided with a depending lug 7, at one or both ends of the bearing surface, such lugs being adapted to enter the spiral groove of the disk. Two of these lugs are preferably employed and thus constructed, the stylus straddles the record strip, as shown in Fig. 1, and while free to move up and down in following the indentations of the record, its lateral play is limited.

The recorder may be set vertically to cooperate with the horizontally disposed surface of the rotating record disk, or it may be inclined either toward the right or left, as indicated by dotted lines in Fig. 2.

In use, it will be seen that as the walls of the groove are perfectly smooth, the surface thereof in passing in contact with one or the other of the guide lugs on the stylus, will not produce noticeable sounds of an unpleasant character and as the distance separating these lugs may exceed somewhat the width of the record strip, contact between the surface of the groove and the lugs will only occur at intervals. The stylus will therefore have a bearing normally on the record thread only at its extreme point; and in consequence, the objectionable scratching or grating noises will be to a great extent overcome.

The stylus or reproducing point may be mounted in operative relation with a suitable sound box and phonetically connected with the diaphragm thereof in any well known or suitable manner.

The advantages and method of operation will be apparent from the foregoing description.

I do not wish to be understood as limiting

myself to the exact details of construction shown and described, as various changes might be made without departing from the spirit and scope of my invention. For example, the bearing surface of the stylus might be given more or less curvature to conform to a record strip having a rounded surface. My improved stylus may also be used in connection with a record thread having lateral undulations as well as those having undulations upon their tops or edges. All such modifications, however, I consider obvious and immaterial variations of form and not of substance and still within the meaning of the present invention.

Having, therefore, described my invention, I claim:

1. As an article of manufacture, a reproducing stylus for talking machines having a pair of longitudinal extensions, the inner sides of which are adapted to form guides for said stylus and having a portion located between said extensions adapted to guide and retain said stylus in position longitudinally and to contact for substantially its whole length with the active surface of the record.

2. As an article of manufacture, a reproducing stylus for talking machines having a pair of longitudinal extensions, the sides of which are adapted to form guides for said stylus and a portion located between said extensions adapted to contact for substantially its whole length with the active surface of the sound record.

3. As an article of manufacture, a reproducing stylus having a pair of longitudinal extensions, the inner sides of which are adapted to form guides for said stylus and having an edge located between said extensions to contact for substantially its whole length with the top of an undulatory record thread.

4. As a new article of manufacture, a reproducing stylus for talking machines notched to straddle the record thread and having a straight edge engaging for substantially its whole length the active surface of the record, lateral play of the stylus being limited by the side walls of the notch.

5. As a new article of manufacture, a reproducing stylus for talking machines, said stylus being notched to straddle the record thread and having a straight edge of approximately V-shaped cross section engaging the record.

6. As an article of manufacture, a flattened reproducing stylus one end of which is provided with a transverse notch, the bottom edge of said notch being sharpened to form a wedge-shaped portion to contact for substantially its whole length with the active surface of the record, the portions of said

stylus adjacent either side of said wedge-shaped portion forming guides to feed the stylus across the record.

7. As an article of manufacture, a flattened reproducing stylus provided with a substantially rectangular notch in the end thereof, the bottom of said notch being sharpened to form a wedge-shaped portion to contact for substantially its whole length with the active surface of the record, the portions on either side of said wedge-shaped portion forming guides to feed the stylus across the record.

8. A reproducing stylus having its engaging extremity beveled down to a straight edge, the said beveled portion being situated between a pair of adjacent surfaces projecting beyond said edge.

9. A reproducing stylus having the middle portion of its engaging end beveled down to a straight edge and its side portions projecting beyond said edge.

10. A stylus having a portion provided with a straight edge adapted to engage the undulatory surface of the record and spaced projections for limiting the lateral play of the stylus.

11. A reproducing stylus having a portion provided with a straight edge, and a portion projecting beyond said edge to guide said stylus.

12. A reproducing stylus having a portion provided with an edge adapted to contact for substantially its full length with the active surface of the record, and having spaced projections for limiting the lateral play of the stylus upon said surface.

13. A reproducing stylus having a straight edge to engage the undulatory surface of the record, and having means for limiting the lateral play of said stylus.

14. A reproducing stylus having a substantially straight edge extending substantially at right angles to the longitudinal axis of said stylus, and having a portion extending longitudinally of said stylus beyond said edge to guide said stylus.

15. A reproducing stylus having an edge adapted to contact with the active surface of the record, and having spaced projections for limiting the lateral play of the stylus upon said surface.

16. The combination with a stylus of spaced projections for limiting the lateral play of the stylus.

Signed at New York, N. Y. this 4th day of June, 1903.

GEORGE K. CHENEY.

Witnesses:

J. E. PEARSON,
W. H. PUMPHREY.