

No. 885,989.

PATENTED APR. 28, 1908.

W. FITZPATRICK.  
GRAPHOPHONE NEEDLE.  
APPLICATION FILED JULY 31, 1907.

FIG-1-

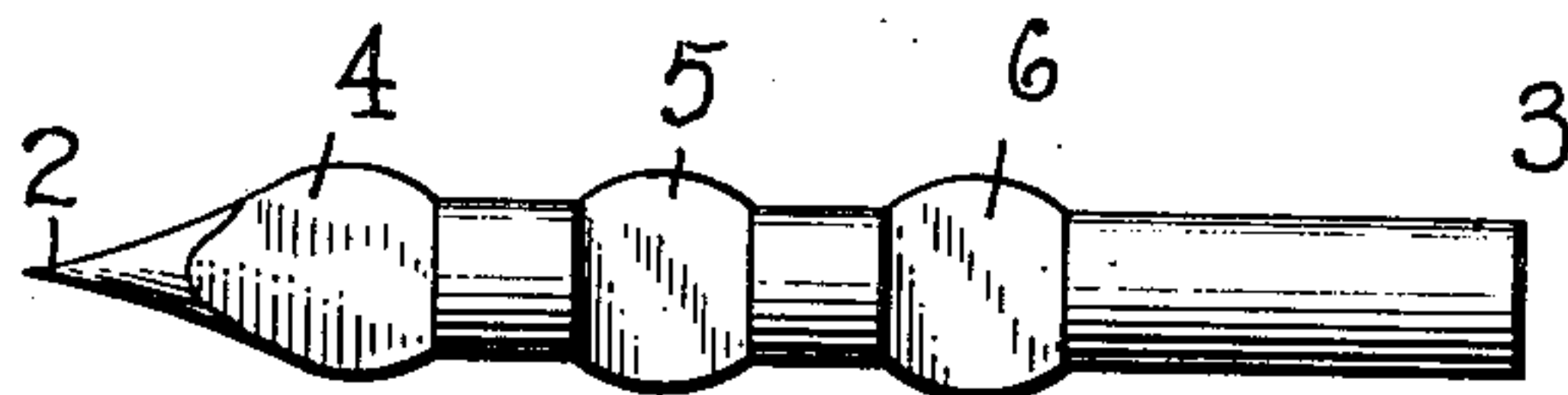


FIG-3-

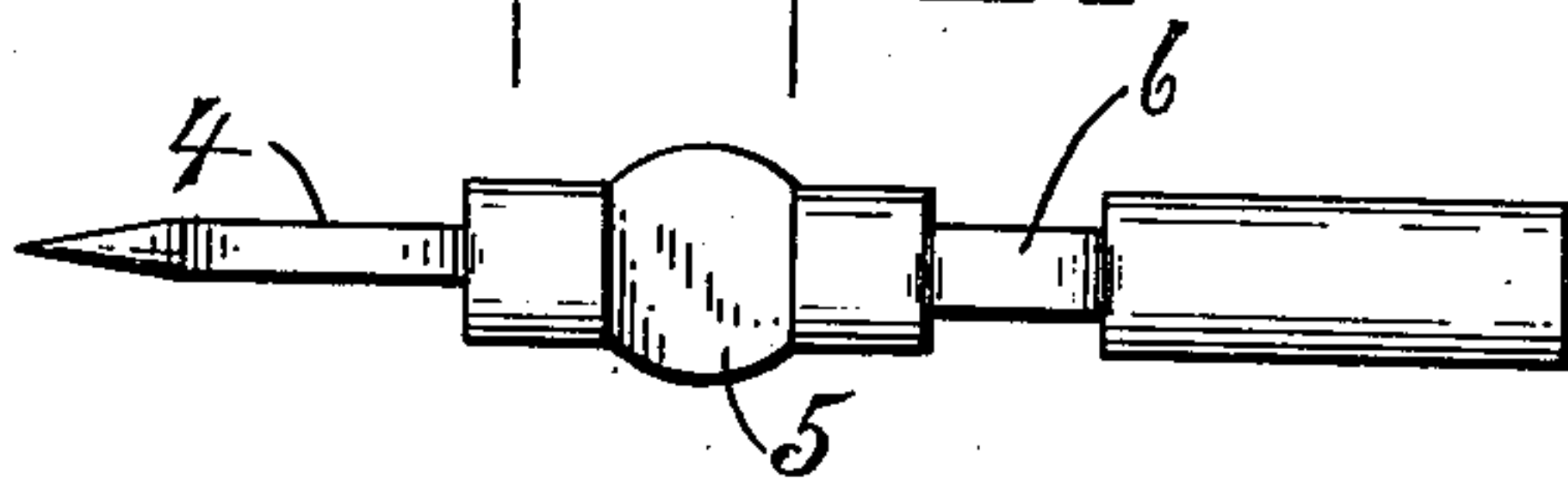
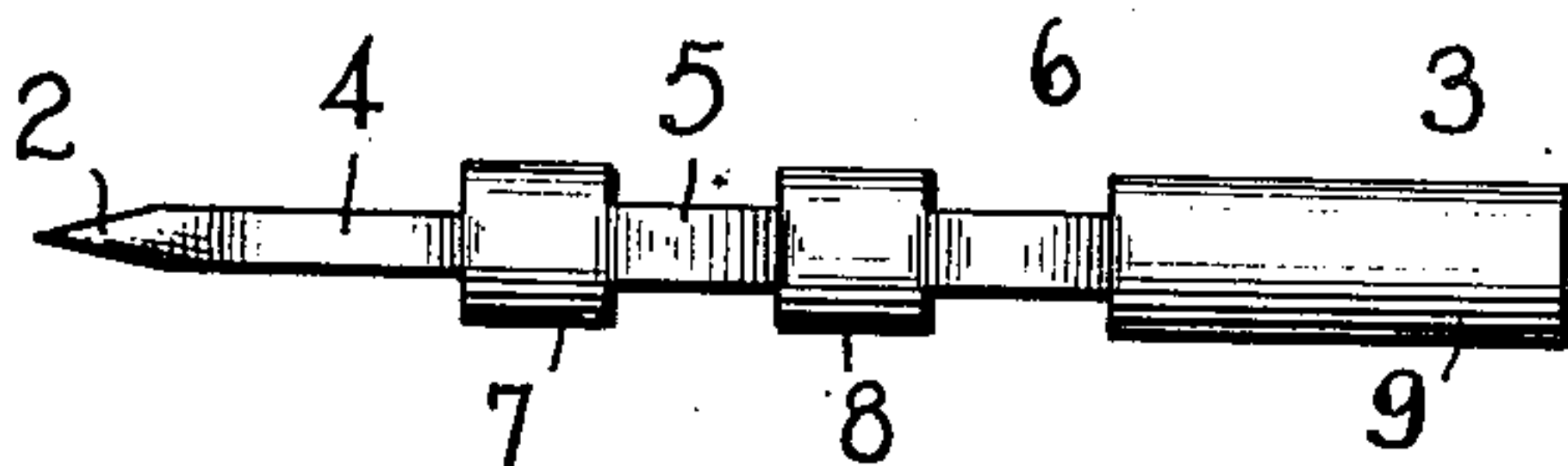


FIG-2-



Witnesses

L. B. James  
F. J. Kent.

By

William Fitzpatrick, <sup>Inventor</sup>  
Henric & Henric.

Attorneys.

# UNITED STATES PATENT OFFICE.

WILLIAM FITZPATRICK, OF LOWELL, MASSACHUSETTS.

## GRAPHOPHONE-NEEDLE.

No. 885,989.

Specification of Letters Patent.

Patented April 28, 1908.

Application filed July 31, 1907. Serial No. 386,437.

*To all whom it may concern:*

Be it known that I, WILLIAM FITZPATRICK, a citizen of the United States, residing at Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Graphophone-Needles, of which the following is a specification.

My invention relates to graphophone needles, and has for object the production of a needle of superior qualities so far as durability and tone production are concerned.

A further object is to produce a needle of such construction that the resulting tone may be modified according to the way the needle is fixed in the reproducer.

To these and other ends which will be obvious to one skilled in the art, my invention consists of the elements, combinations and arrangements of parts, all as will be hereinafter fully set forth, and succinctly defined in the annexed claims.

In the accompanying drawings, in which I have illustrated various embodiments of the invention: Figure 1 is a perspective of a needle embodying my invention; Fig. 2 is a perspective at right angles of the subject matter of Fig. 1; and Fig. 3 shows in perspective a modified form of the invention.

Referring to the numerals on the drawing, 1 indicates in a general way a phonograph or graphophone needle, having a point 2, and a butt 3, the latter adapted to be held in the reproducers. Intermediate the point and butt the needle is provided with flattened portions 4, 5, and 6 alternating with portions 7, 8 and 9 which have not been flattened. As shown in Figs. 1 and 2, the said flattened portions are in alinement, and the flat nearest the point is made thinner than the others, because at the point, and at the butt the needle is ordinarily most inflexible, while there is usually some resiliency at the middle.

In Fig. 3 I have shown a modification, in which alternate flats are at angles to each

other. By this construction the needle is flexible, no matter whether the needle be secured in the reproducer so that a particular flat is alined with the line of travel of the point, or at an angle to said line of travel.

By the construction shown in the other figures, if the needle is so held that the flats lie in a plane transverse to the line of travel of the point, there will be greater flexibility in the needle, and the tone will be modified, and free from roughness. If it be desired to produce a loud, strident tone, the needle is arranged so that the flats are in line with the line of travel of the point; the needle is now less flexible in the direction in which the bending tendency occurs, consequently there is rougher vibration.

It is to be understood that I do not limit myself herein to specific forms, materials, or relations, other than those set out in the claims, except such as may be necessary to practically embody the invention there defined.

What I claim is:—

1. A phonograph needle provided with a series of flattened portions arranged at intervals between the point and the butt thereof, one of said flattened portions being thinner than the others.

2. A phonograph needle provided with a series of flattened portions arranged at intervals between the point and the butt thereof, the flattened portion nearest the point being thinner than the others.

3. A phonograph needle provided with a series of flattened portions arranged at intervals between the point and the butt thereof, alternate flattened portions being arranged at an angle to each other.

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

WILLIAM FITZPATRICK.

Witnesses:

JOHN J. DEVINE,  
JOHN KEARNEY.