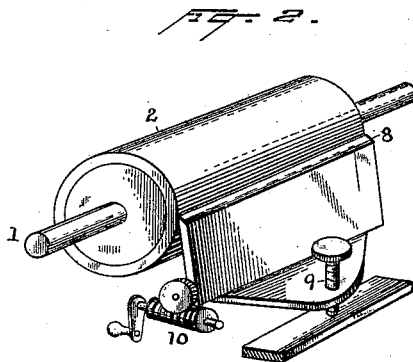
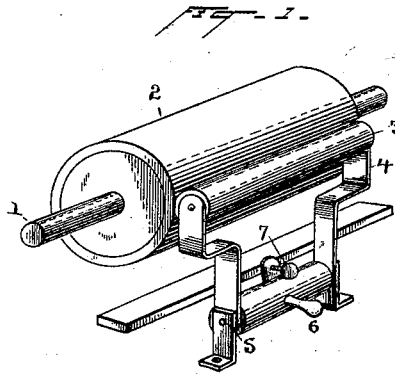


(No Model.)

T. A. EDISON.  
SMOOTHING TOOL FOR PHONOGRAM BLANKS.

No. 457,344.

Patented Aug. 11, 1891.



Witnesses  
Norris A. Clark,  
Nicholas F. Oberle

Inventor  
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By his Attorneys  
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# UNITED STATES PATENT OFFICE.

THOMAS A. EDISON, OF LLEWELLYN PARK, NEW JERSEY.

## SMOOTHING-TOOL FOR PHONOGRAM-BLANKS.

SPECIFICATION forming part of Letters Patent No. 457,344, dated August 11, 1891.

Application filed November 21, 1890. Serial No. 372,228. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS ALVA EDISON, a citizen of the United States, residing at Llewellyn Park, in the county of Essex and State of New Jersey, have invented a certain new and useful Improvement in Phonographs, (Case No. 892,) of which the following is a specification.

My invention relates to means for giving a true surface to phonogram-blanks of cylindrical or other form; and the invention consists in an apparatus, hereinafter described and claimed, for accomplishing the result named. Said apparatus consists of a smoothing or evening tool extending the entire length of the phonogram-blank and having means for delicately adjusting the same toward the blank, whereby the surface may be smoothed or evened throughout its entire extent by a single revolution of the blank. As is well known, it is customary in the phonographs now in use to turn off the surface of a blank by means of a narrow knife. This is done before the blank is used, or is done simultaneously with use, the cutting-tool being in advance of the recorder. The first plan is somewhat objectionable, owing to the time consumed in turning off the surface, and the second is somewhat objectionable, owing to the dust produced by the cutting-off tool, which may interfere slightly with the operation of the recorder. Both of these objections are obviated by the present improvement.

In the accompanying drawings, Figure 1 illustrates one form of apparatus embodying the improvement, and Fig. 2 a slightly-modified form.

1 is the phonograph-shaft, adapted to be turned by any suitable means.

2 is the phonogram-blank, the surface of which it is desired to render smooth and even.

3 is an ironing wheel or cylinder, which extends the whole length of the phonogram-blank and which is supported by the arms 4, pivoted at 5.

6 is a handle, and 7 is a screw for moving

the cylinder 3 slowly toward the surface of the blank.

In using this apparatus the surface of the blank is, or may be, slightly warmed to soften it.

In Fig. 2 a tool with a cutting-edge 8 has been substituted for the ironing-cylinder. 9 is a screw for limiting the backward movement of said tool, and 10 is a worm-gearing, or other speed-reducing gearing, for moving the knife slowly toward the cylinder.

Having thus described my invention, what I claim is—

1. The combination, with a phonograph having a phonogram-blank, of a smoothing or evening tool extending across the blank, whereby the surface may be made smooth at one operation, substantially as described.

2. The combination, with a phonograph having a phonogram-blank, of a smoothing or evening tool extending across the blank, and means for adjusting the tool toward the surface thereof, whereby the entire surface may be made smooth by one turn of the blank, substantially as described.

3. The combination, with a phonograph having a phonogram-blank, of a smoothing-tool consisting of an ironing-cylinder, substantially as described.

4. The combination, with a phonograph having a phonogram-blank, of a smoothing-tool extending across the blank and pivoted adjacent thereto, and means for turning the tool on its pivot to move it toward the blank, substantially as described.

5. The combination, with a phonograph having a phonogram-blank, of a smoothing-tool extending across the blank and supported adjacent thereto, and a speed-reducing gear for moving the tool toward the blank, substantially as described.

This specification signed and witnessed this 17th day of November, 1890.

THOS. A. EDISON.

Witnesses:

HARRY F. MILLER,  
THOMAS MAGUIRE.