

(No Model.)

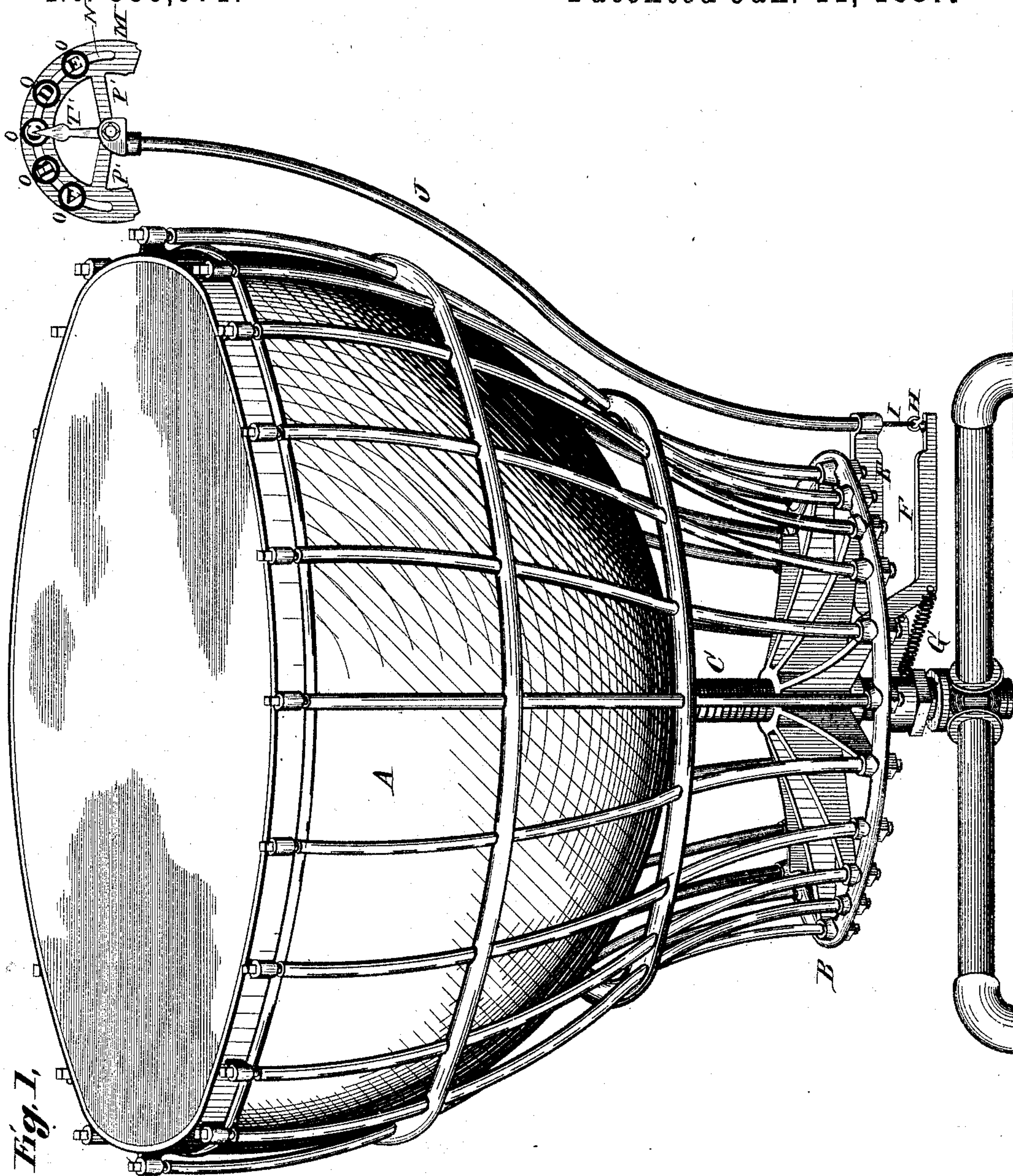
2 Sheets—Sheet 1.

E. BOULANGER.

PITCH INDICATOR FOR TYMPANUMS.

No. 355,971.

Patented Jan. 11, 1887.



Attest  
F. A. L. R. R. R.  
G. D. Wheelock

Inventor;  
Emile Boulanger  
By Knight Bros  
attys

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Fig. 3,

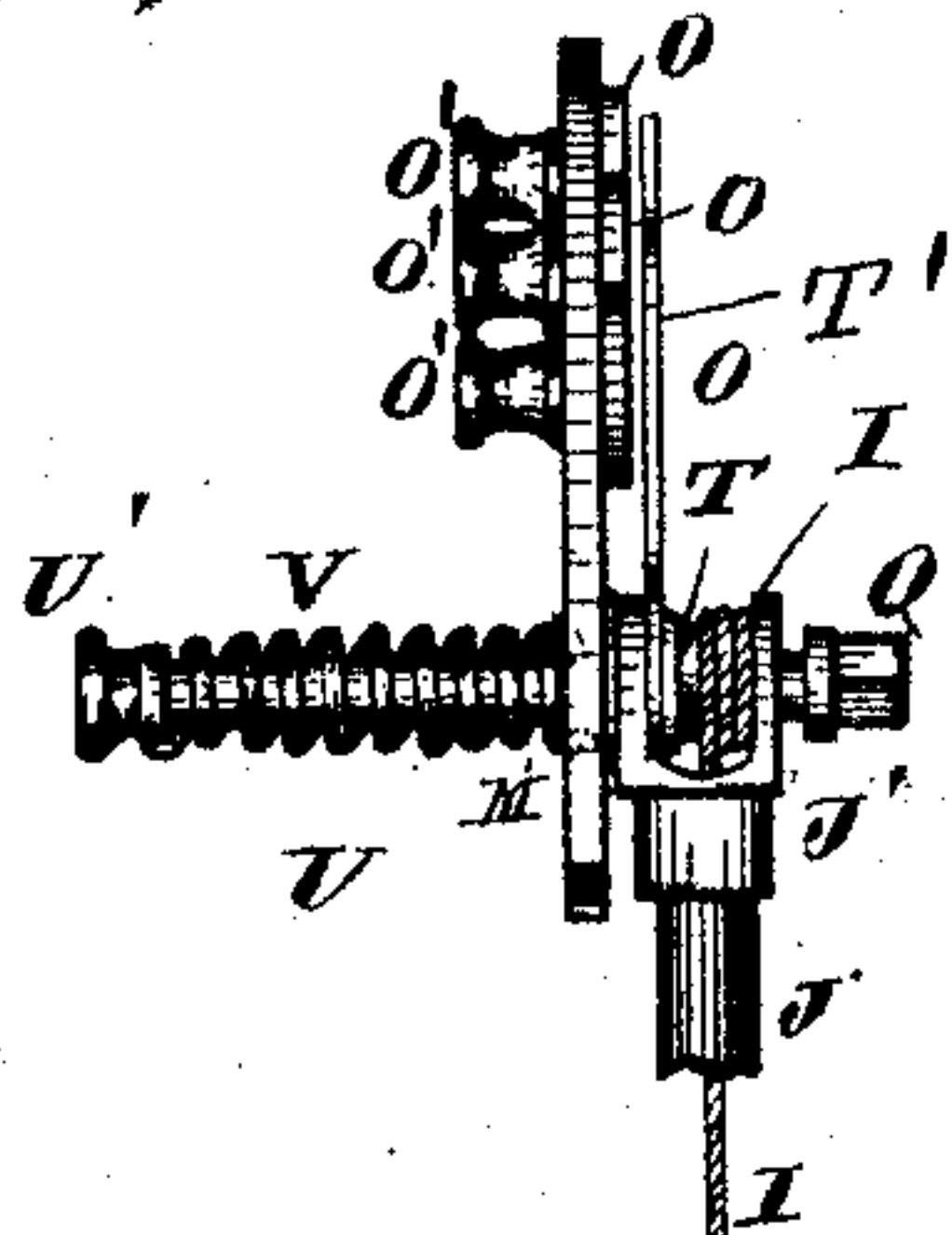


Fig. 4,

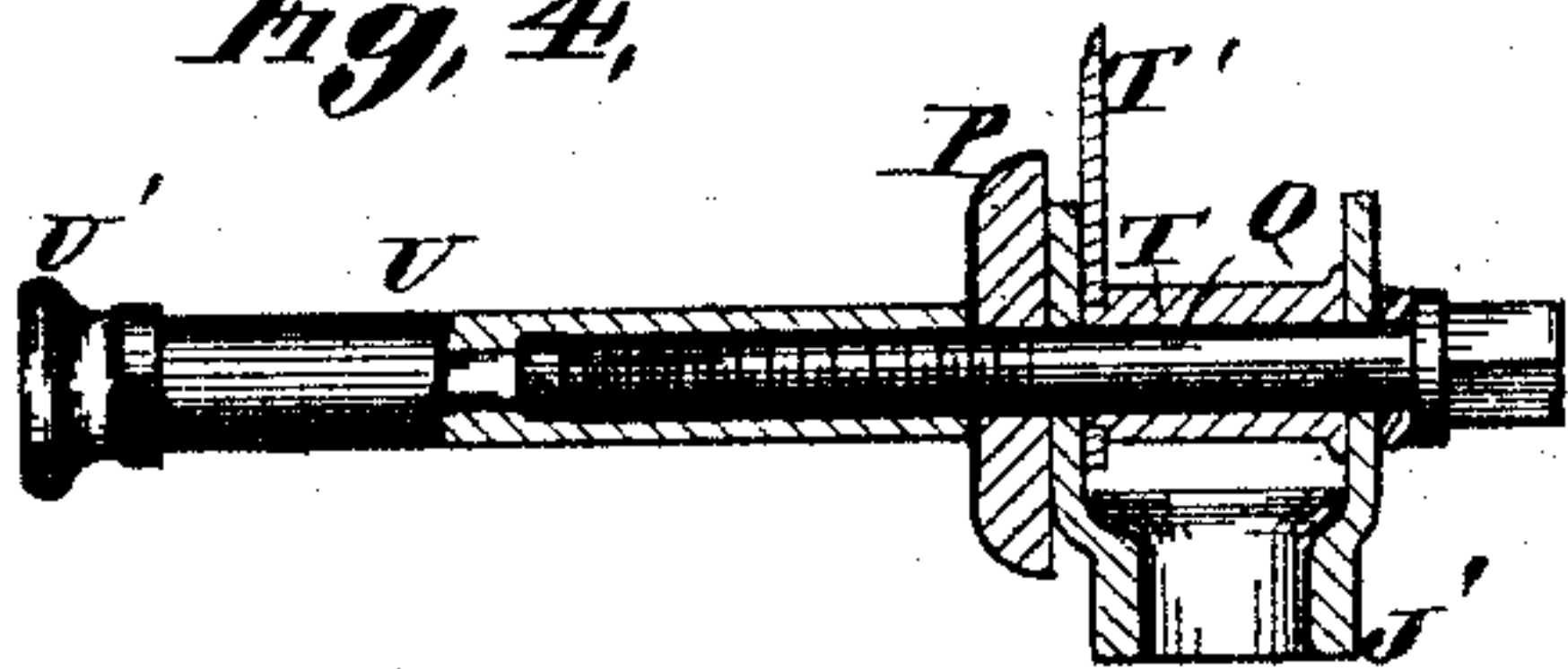
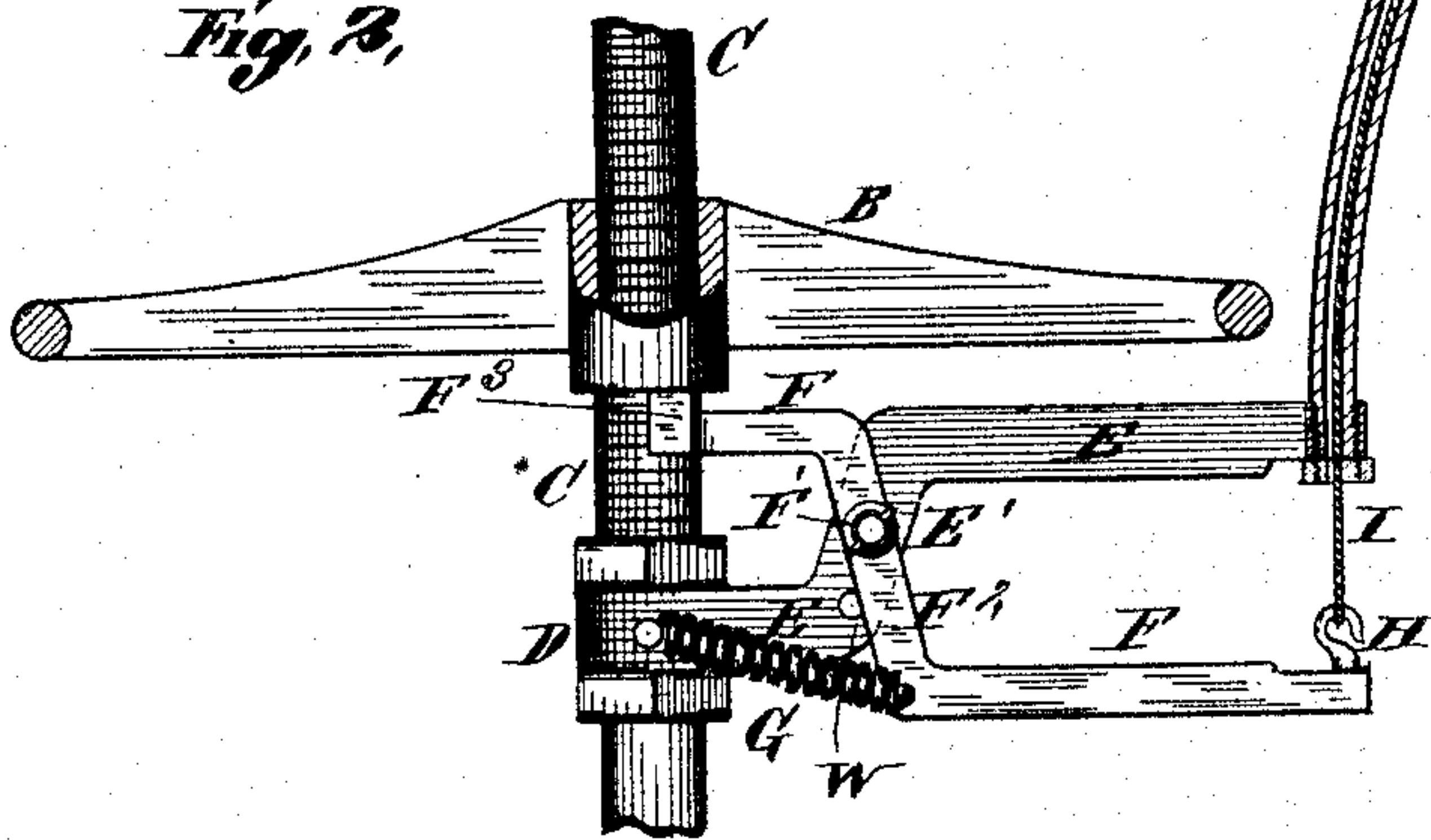


Fig. 5,



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# UNITED STATES PATENT OFFICE.

EMILE BOULANGER, OF ST. LOUIS, MISSOURI.

## PITCH-INDICATOR FOR TYMPANUMS.

SPECIFICATION forming part of Letters Patent No. 355,971, dated January 11, 1887.

Application filed May 29, 1886. Serial No. 203,624. (No model.)

*To all whom it may concern:*

Be it known that I, EMILE BOULANGER, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Pitch-Indicators for Tympanums, &c., of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figure 1 is a perspective view of a tympanum with my indicator attached. Fig. 2 is a detail view of the lower part of the tympanum, showing my invention, part in side view and part in vertical section. Fig. 3 is an enlarged edge view of the segment of the dial of the indicator. Fig. 4 is an enlarged section taken on line 4 4, Fig. 2, the cord and spring of the dial being removed.

My invention relates to an attachment for tympanums, &c., and I have shown it connected to a tympanum such as shown and claimed in my application No. 187,628, filed January 4, 1886, the object of the attachment being to indicate the pitch or the tone of the instrument by sight, thus affording means for the tuning of the instrument by sight instead of by ear, or, in other words, instead of by beating upon it, this latter method being objectionable, particularly in theaters and like places, where such instruments are tuned after the people have assembled.

My invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Referring to the drawings, A represents the body or kettle of the instrument, which is supported and operated as in my application referred to, and reference is made to this application for a description of this tympanum, which is one form upon which the attachment to which my present invention relates may be used.

B in this application represents the disk or ring F, in my former application referred to, constructed and operated and performing the same function in this application as in the other. Secured to the rod or stem C, upon which the disk is threaded, and beneath the disk, is a collar or hub, D, from which extends a fixed arm, E, preferably bent to form a

vertical portion, E', as shown in Fig. 2. Pivoted to this arm E at F' is an arm, F. The arm F has preferably a vertical part, F<sup>2</sup>. The inner upper end of the arm F extends beneath and bears against the bottom of the disk B, so that as the disk is screwed down upon the stem C it will depress the inner upper end, F<sup>3</sup>, of the arm F and raise its lower outer end, and as the disk B is screwed upon the stem C the upper end of the arm F follows it, and the lower end of the arm F descends, which is caused by a spring, G, connecting the arm F to the collar, or to any other fixed object. It will thus be seen that as the ring or disk B is turned up or down the arm F will be correspondingly adjusted.

Secured to the lower outer end of the arm F, preferably by means of a hook, H, is a cord, wire, or other suitable connection, I.

Secured to the outer end of the arm E is a stem, J, upon the upper end of which is secured a dial, L. The stem J is preferably made hollow, and the connection I passes through it, as shown in Fig. 2. The dial preferably consists of a segment, M, slotted at N to receive adjustable disks O, upon which are marked letters indicating the tones of the instrument, as, for instance, "A, B, C, D, and E." These disks have nuts O', by which they are held to desired position in the slot, the idea being that, if A and B, for instance, are not the proper distance apart to indicate the correct sounds, they may be adjusted to or from each other. The segment is supported by and connected to a disk or hub, P, by arms P'. The disk is supported on a screw-threaded bolt or rod, Q, which passes through the upper end of the stem, or a head, J', secured to the stem to form part of it, as shown in Figs. 3 and 4. The head J' is made hollow, so as to receive a hub, T, that surrounds the rod, and which carries the finger or hand T' of the dial.

The upper end of the wire or connection I is wound around the drum T, and secured to it, as shown in Fig. 3, so that by the downward movement of the outer end of the arm F the drum T is caused to be turned backward, thus moving the finger T' from the position shown in Fig. 2 toward the letter A.

Screwing over the bolt Q outside of the disk



P is a sleeve or stem, U, with a head, U', on its outer end. Surrounding this sleeve, between the head U' and the disk P, is a coil-spring, V, as shown in Fig. 3. One end of this spring is secured to the sleeve U, and the other end is secured to the segment M, as shown at M'. The action of the spring is to turn the finger T' away from the direction it has been moved by the connection I and arm F, as above stated, so that when the outer end of the arm F is raised, loosening the connection I, the hand T' is turned from the letter A in the direction of the letter E by the spring V.

In case it is desired to make the hand turn more or less freely, and consequently the drum T, it may be done by tightening on the rod Q, thus drawing the sleeve U up tightly against the disk P, and also acting to tighten the drum T in the head J' of the stem J. By this means any tension may be given to the hand T', so that it will move more or less freely under the influence of the connection I and the spring V.

The hub T is held on the bolt Q by friction, with sufficient friction between them to insure the turning of the drum under the influence of the spring V and connection I; but should it be desired to adjust the hand independently of these it may be done by taking hold of it and forcing it in either direction, causing the drum T to turn on the bolt Q.

To prevent the spring G from pulling the arm F inward too far, I locate a pin, W, in the arm E, behind the vertical part of the arm F, as shown in Fig. 2.

I claim as my invention—

1. In combination with a tympanum having means for tightening and loosening its head, an arm operated by said means, so as to be moved thereby, a dial, a pointer, means for moving the pointer in one direction, and means for moving the pointer in the opposite direction connected to the arm, substantially as described.

2. In combination with a tympanum or like instrument, a dial, and mechanism connecting the tympanum and the dial, consisting, essentially, of a stem, pivoted arm, and cord or wire, substantially as shown and described, for the purpose set forth.

3. The combination of the tympanum or like instrument having an adjustable disk, B, for tightening the head, pivoted arm located beneath the disk, dial, and connection between the dial and pivoted arm, substantially as shown and described, for the purpose set forth.

4. In combination with a tympanum or like instrument having a tightening-disk, B, the pivoted arm, stationary arm to which the pivoted arm is secured, stem secured to the stationary arm, dial secured to the stem, and cord connecting the pivoted arm to the dial, substantially as and for the purpose set forth.

5. In combination with a tympanum or like instrument having a tightening-disk, B, stationary arm, pivoted spring-arm operated by the disk, hollow stem supported by the fixed arm, dial supported on the stem, and cord or wire passing through the stem and connecting the pivoted arm to the dial, substantially as shown and described, for the purpose set forth.

6. In combination with a tympanum or like instrument having a tightening-disk, B, fixed arm, arm pivoted to the fixed arm and moved in one direction by the disk, spring for moving the pivoted arm in the other direction, stem secured to the fixed arm, dial secured to the stem, and connection between the pivoted arm and dial, substantially as shown and described, for the purpose set forth.

7. In combination with a tympanum, dial, and mechanism connecting the tympanum to the dial, the dial consisting of a segmental plate, finger or pointer, drum to which the finger or pointer is secured, spring-sleeve, and a bolt connecting the spring-sleeve and drum, substantially as shown and described, for the purpose set forth.

8. In combination with a tympanum, an arm, a dial, a pointer, means for connecting the pointer to the arm, and adjustable lettered disks on said dial, substantially as described.

EMILE BOULANGER.

In presence of—

GEO. H. KNIGHT,  
EDW. S. KNIGHT.