

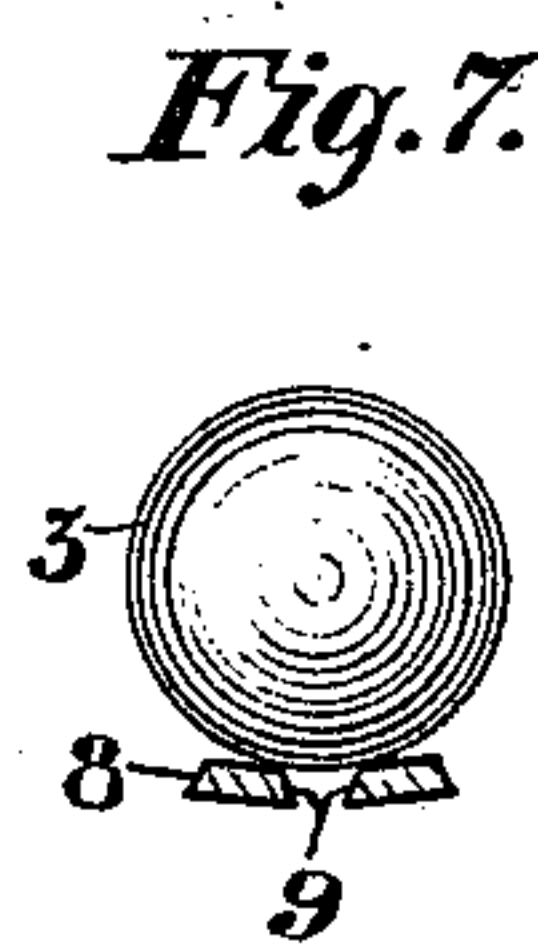
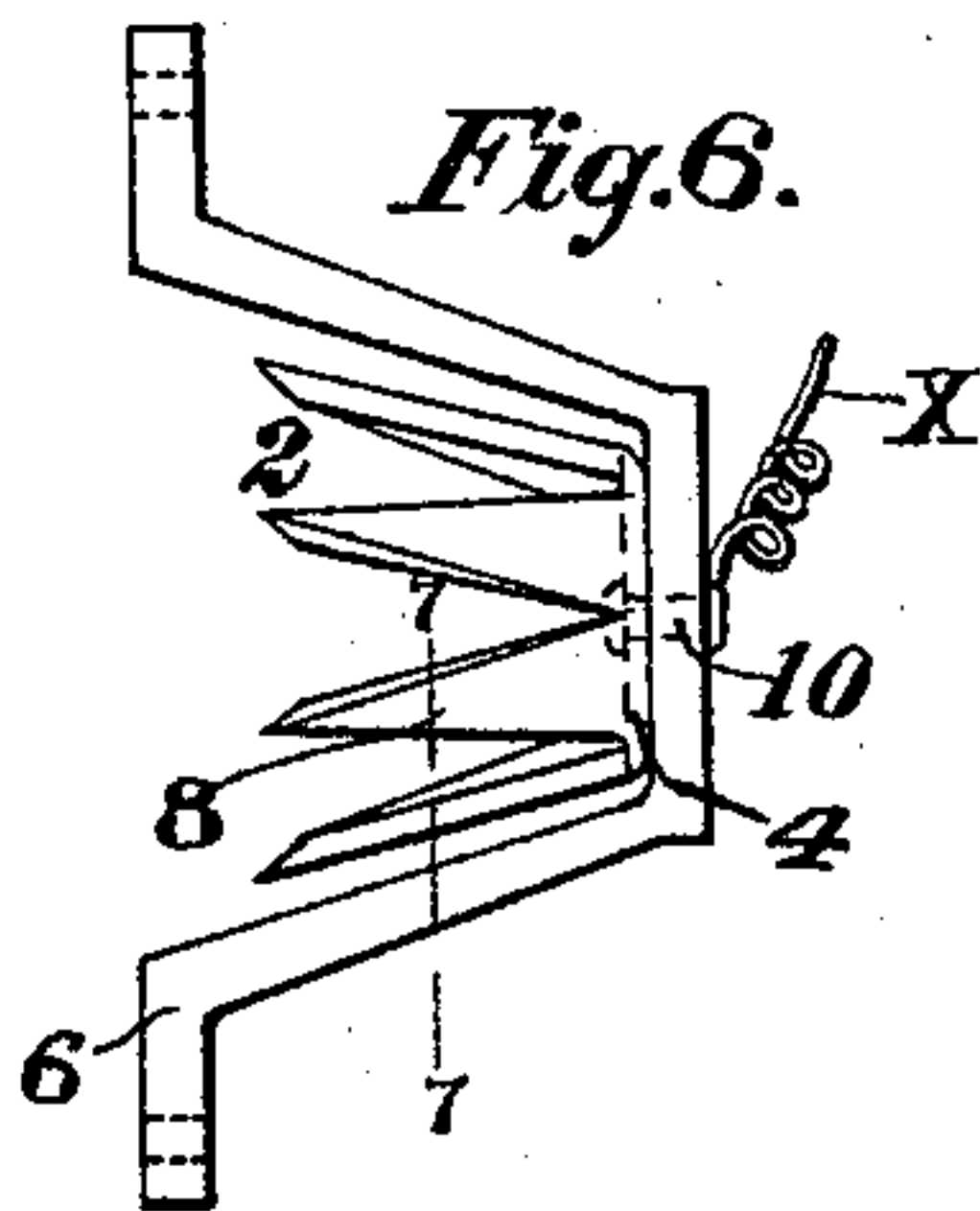
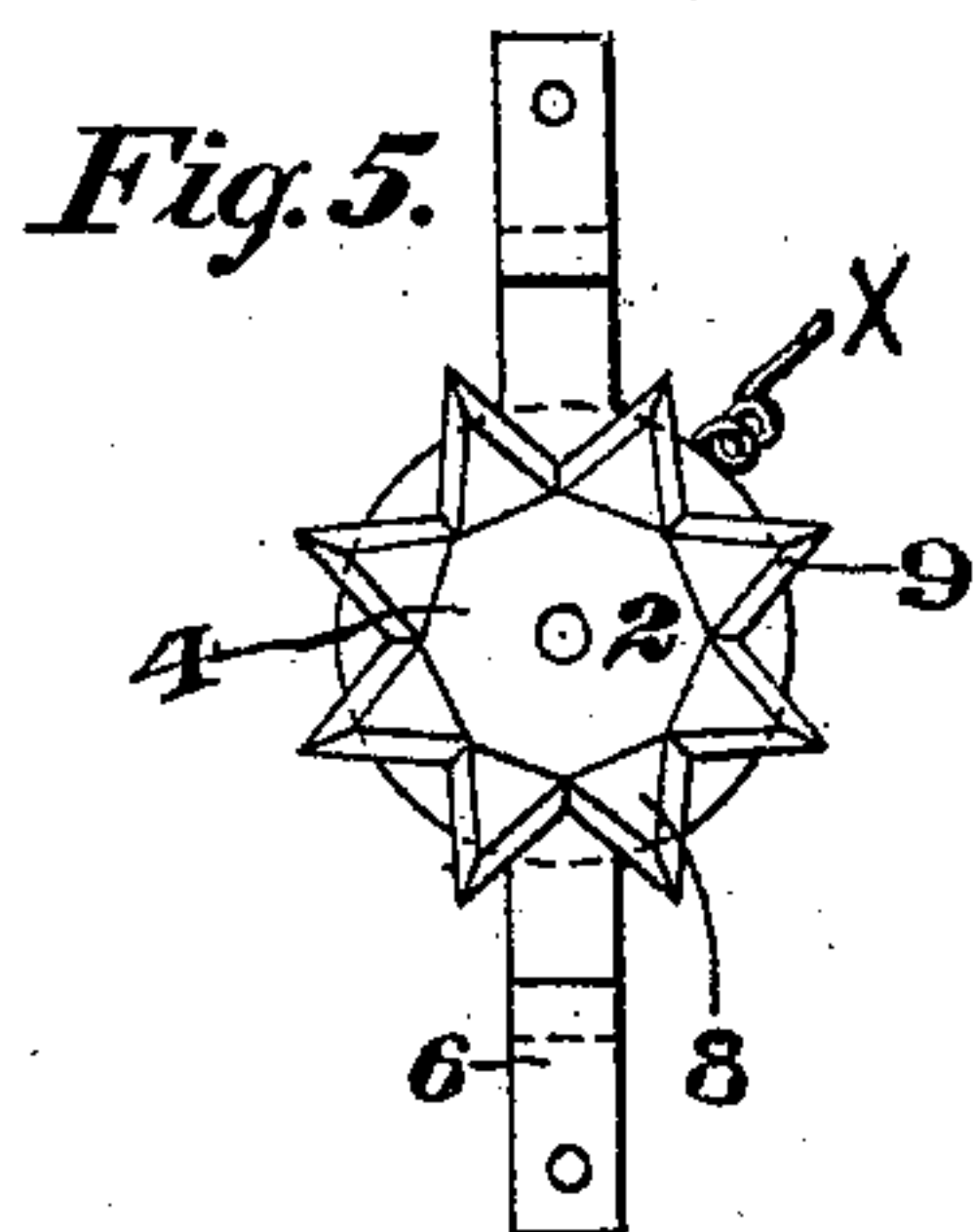
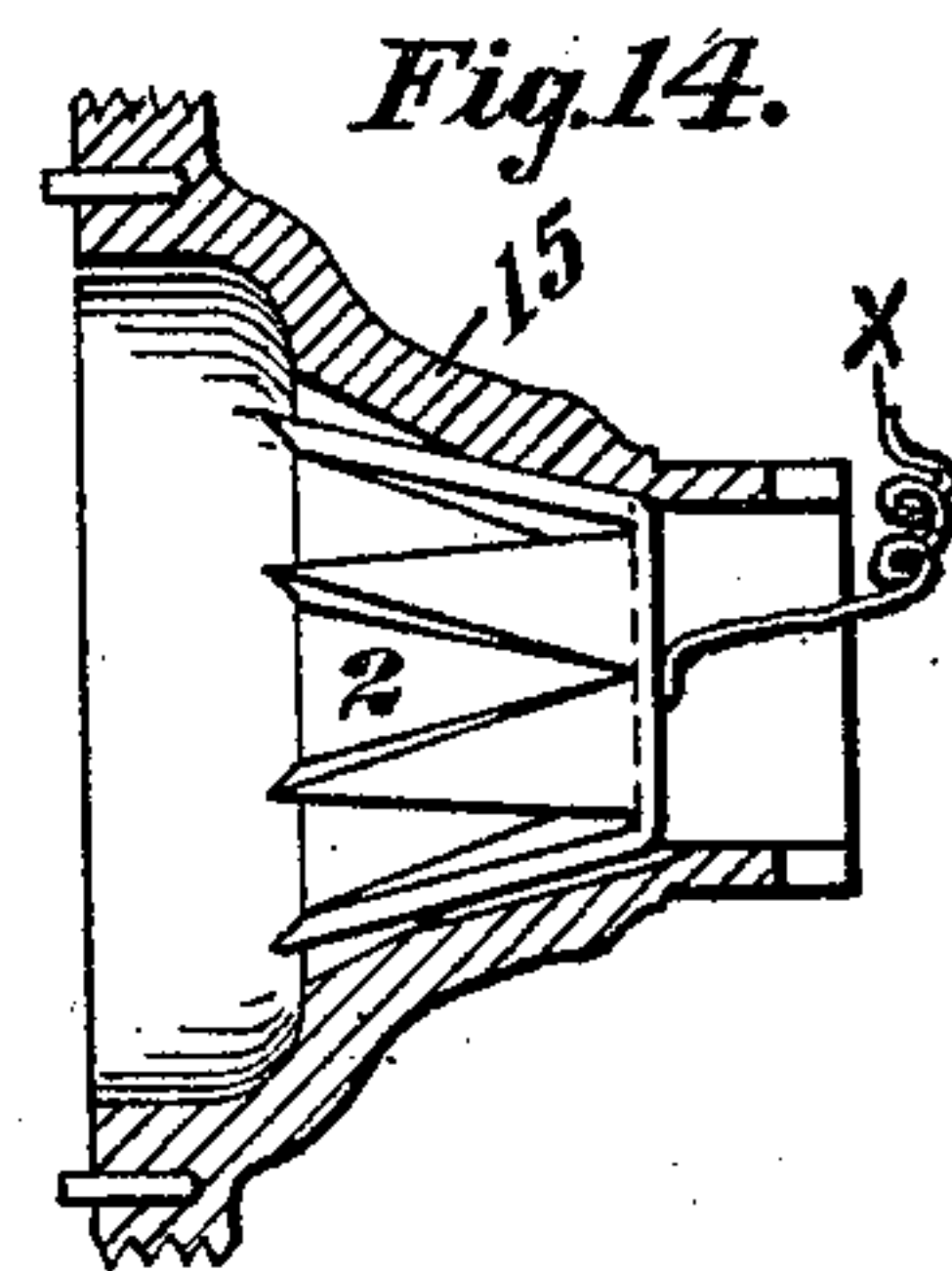
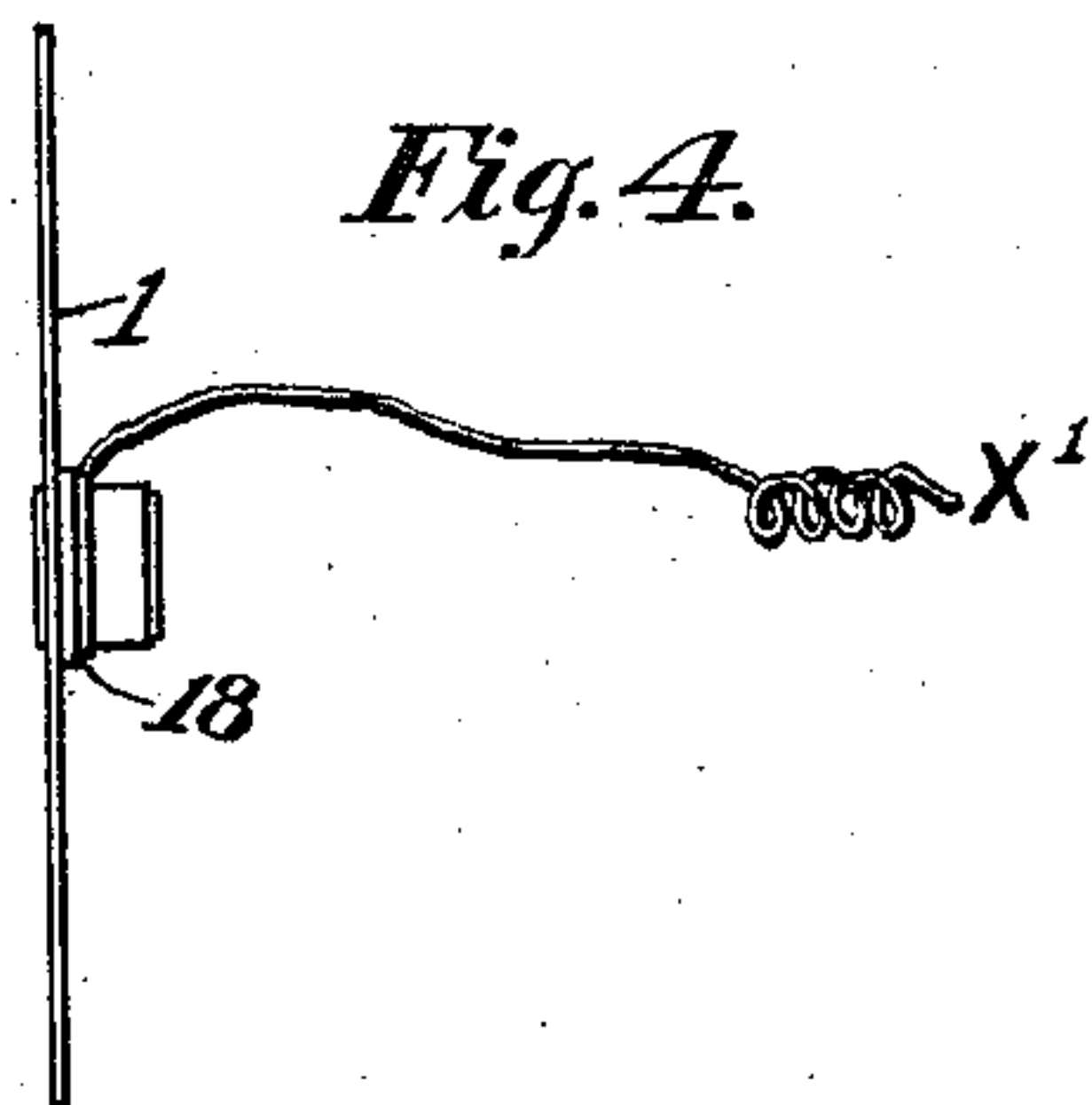
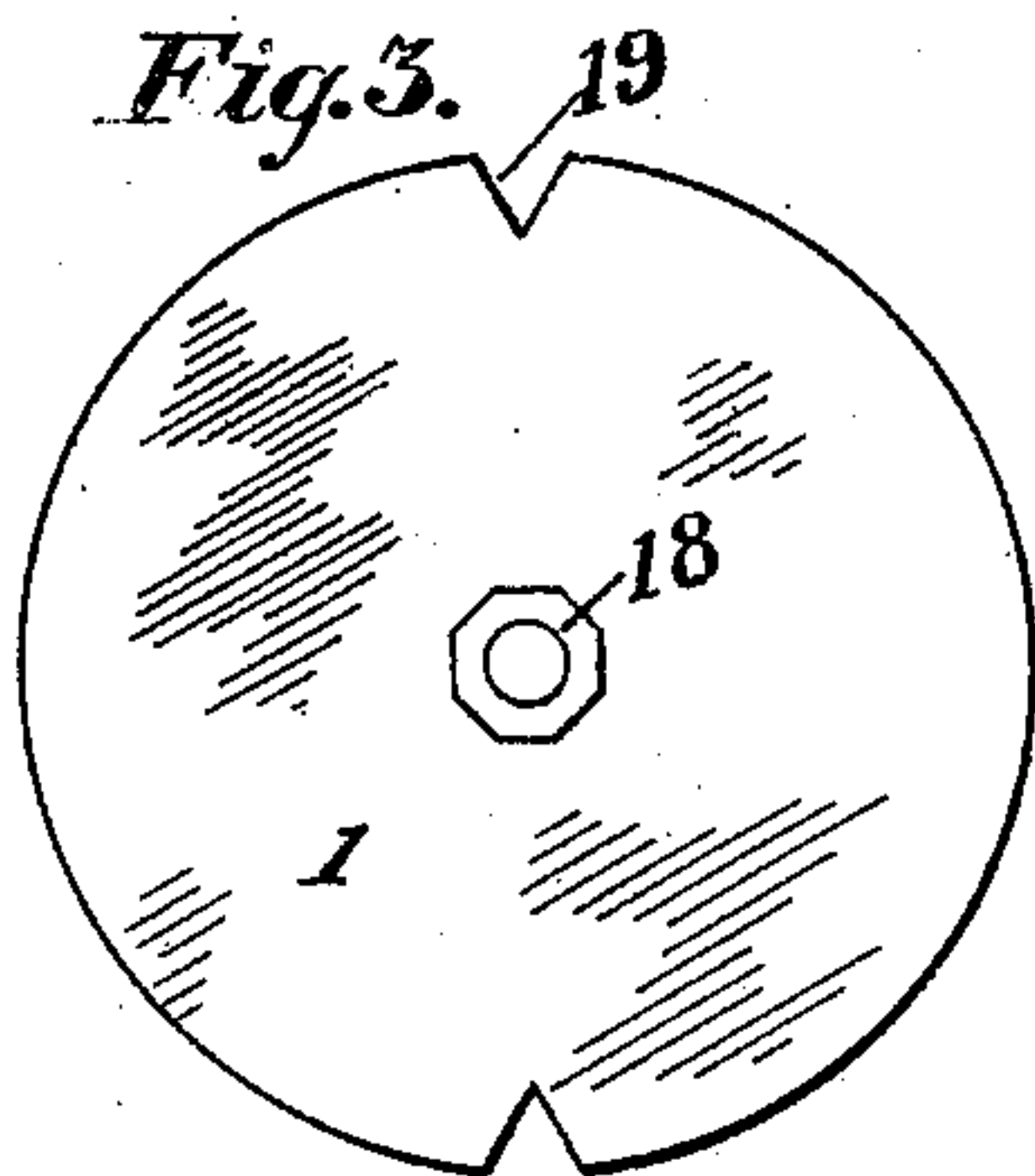
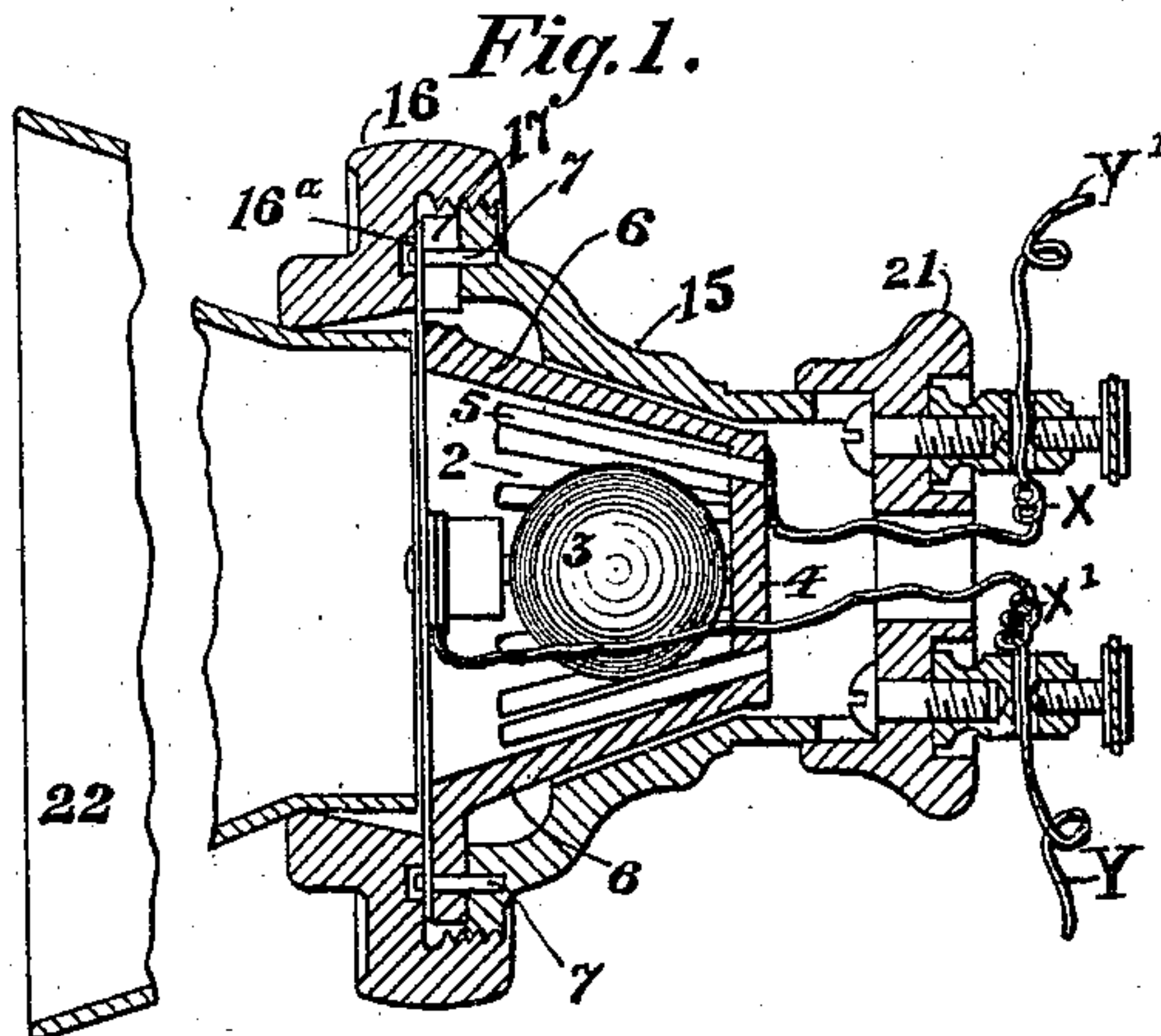
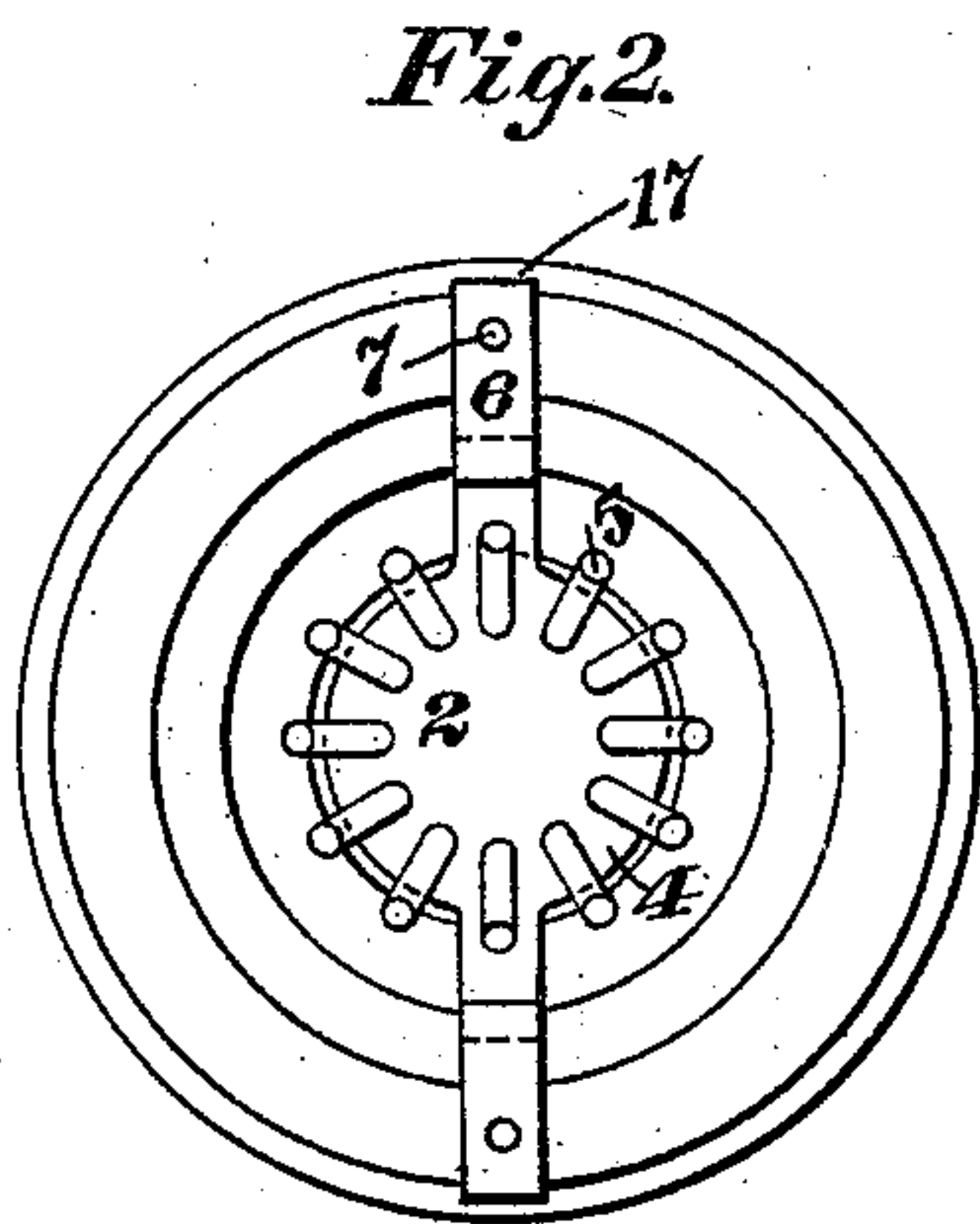
(No Model.)

2 Sheets—Sheet 1.

C. C. GOULD.
TELEPHONE.

No. 574,901.

Patented Jan. 12, 1897.



WITNESSES:

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ATTORNEY

(No Model.)

2 Sheets—Sheet 2.

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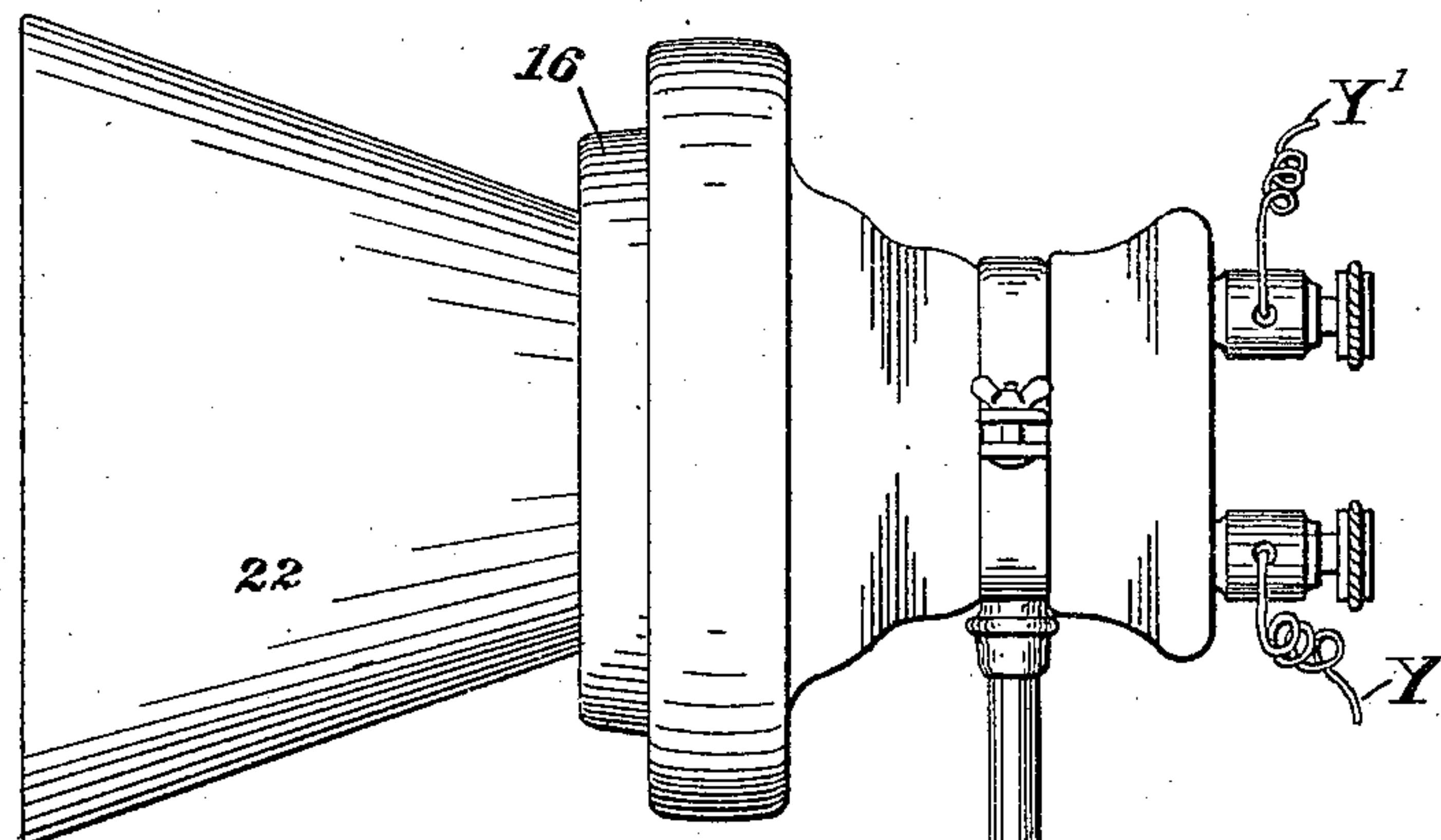


Fig. 8.

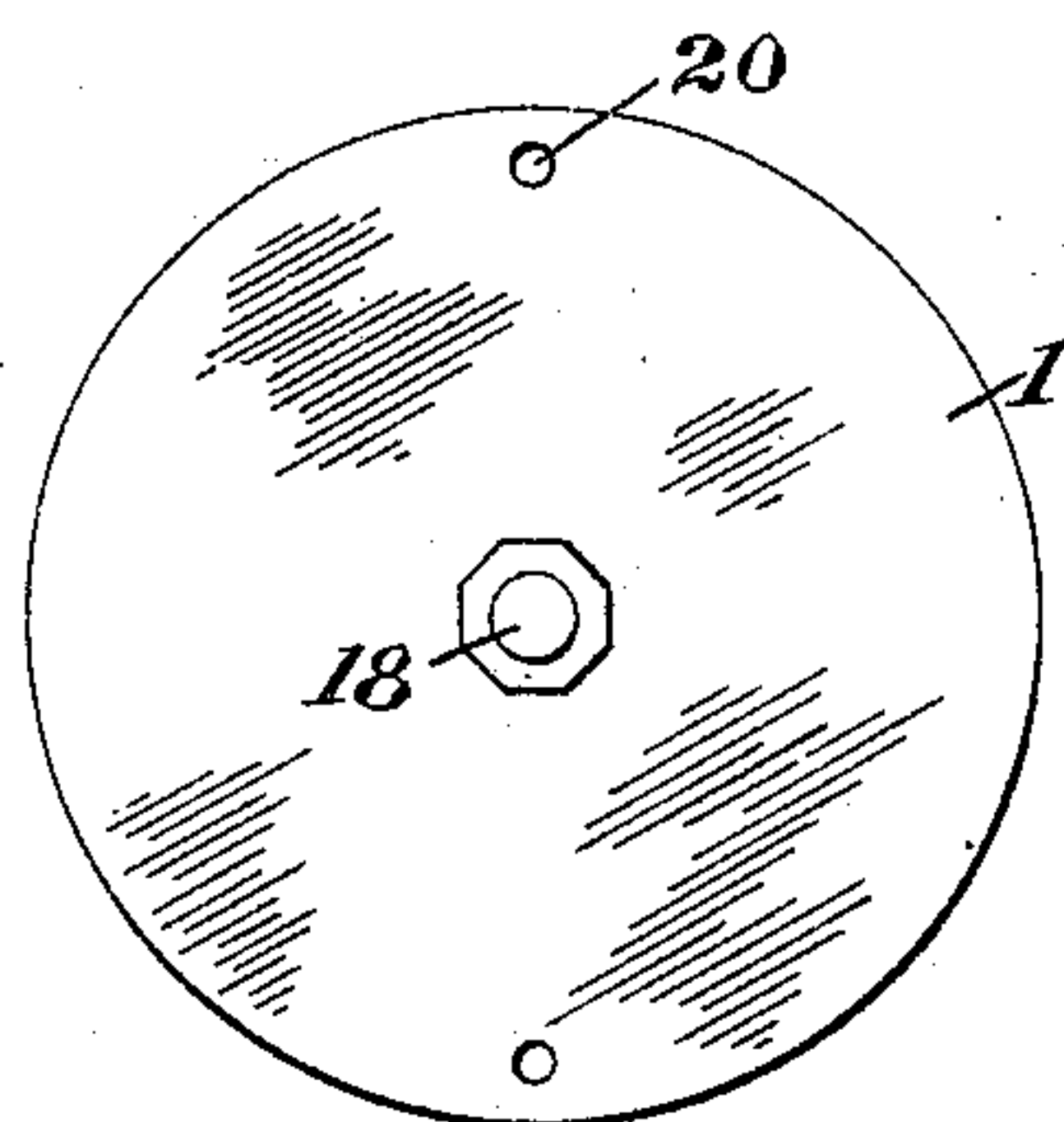


Fig. 13.

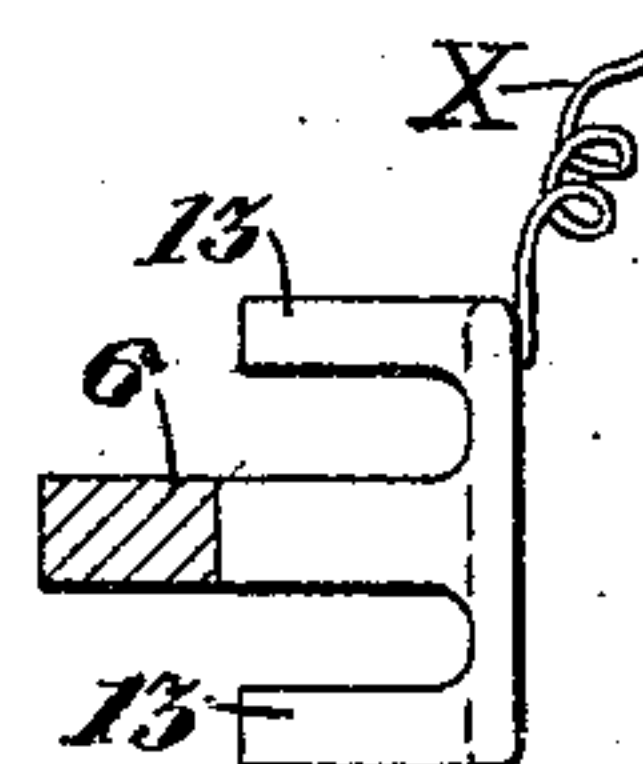


Fig. 12.

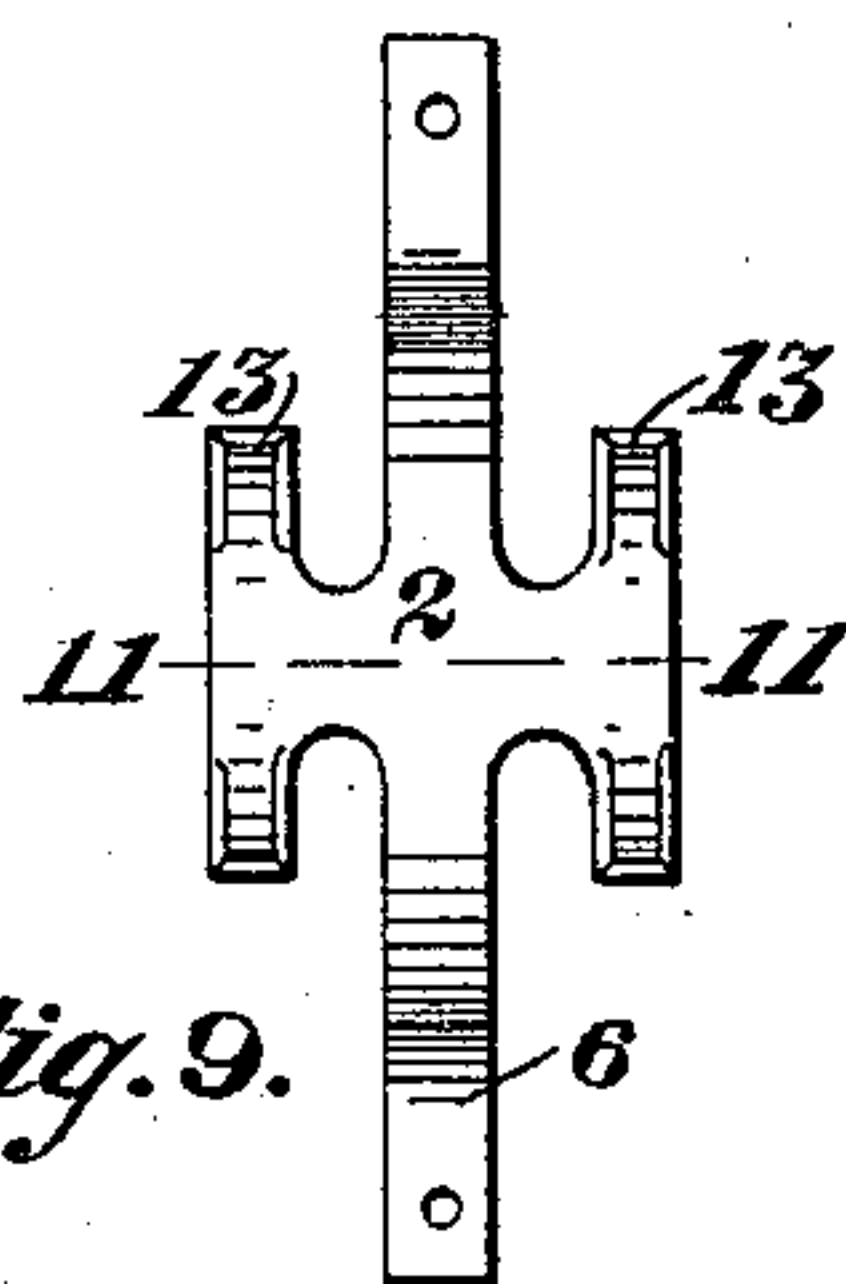


Fig. 9.

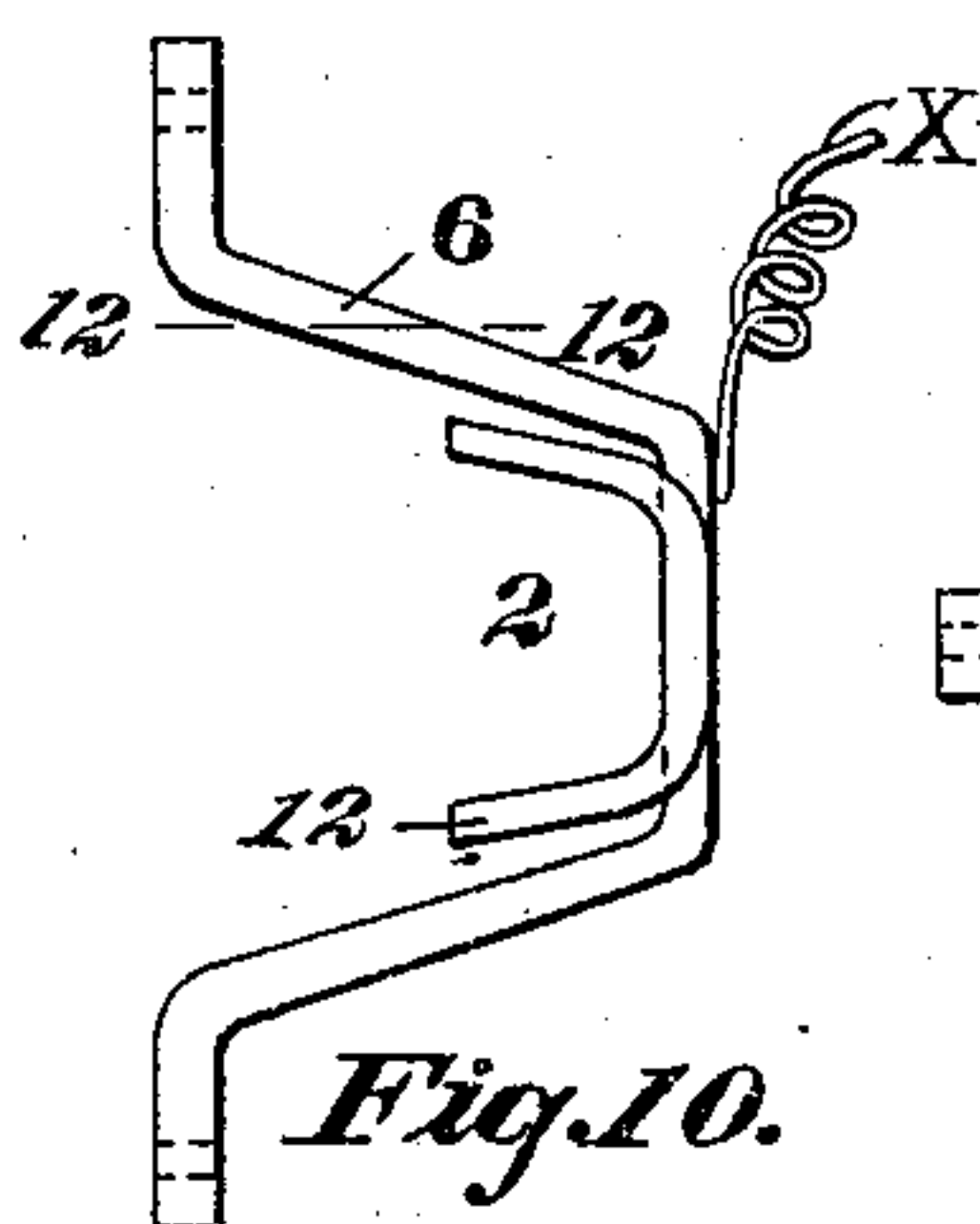


Fig. 10.

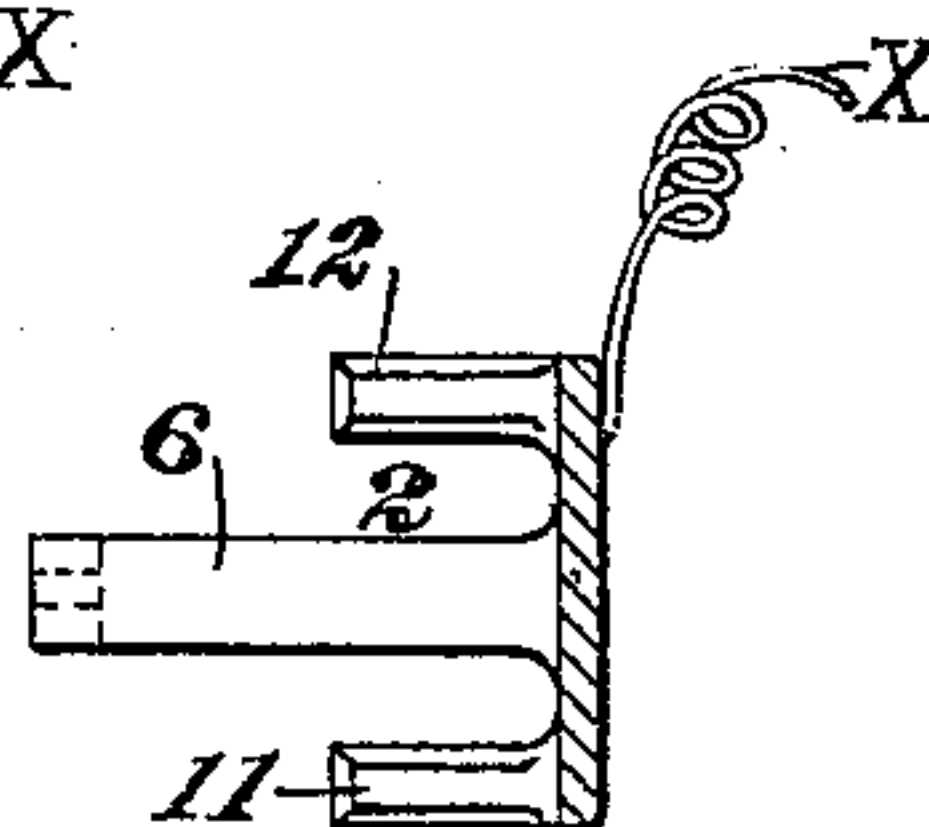


Fig. 11.

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UNITED STATES PATENT OFFICE.

CLAUDE C. GOULD, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE
MAKE AND BREAK TELEPHONE COMPANY, OF NEW JERSEY.

TELEPHONE.

SPECIFICATION forming part of Letters Patent No. 574,901, dated January 12, 1897.

Application filed April 29, 1895. Serial No. 547,490. (No model.)

To all whom it may concern:

Be it known that I, CLAUDE C. GOULD, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Telephones, of which the following is a specification.

My invention relates to improvements in telephone instruments, and it is applicable to that type of instruments which operate in substantial accordance with the methods referred to by James W. Bonta, for example, in his Patent No. 361,124, of April 12, 1887.

The principal objects of my present invention are, first, to improve and perfect the tone and distinctness of articulate speech and the volume and quality of sound received at the receiver from the transmitter, and, second, to provide a simple, efficient, durable, and comparatively inexpensive instrument that is not affected deleteriously by climatic conditions, such as moisture and the like, and that is adapted to meet the various requirements of service in practicing the method of Bonta above referred to.

Accordingly my invention consists in the improvements and in the construction and arrangement of parts hereinafter more fully set forth and claimed.

The nature, characteristic features, and scope of my invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, and in which—

Figure 1 is a transverse central sectional view of a telephone-transmitter embodying features of my invention. Fig. 2 is a front view of the same with the rolling electrode omitted for the sake of clearness. Figs. 3 and 4 are respectively front and side elevations of the diaphragm, as mica. Figs. 5 and 6 are respectively front and transverse sectional views of a modified construction of the basket illustrated in Figs. 1 and 2. Fig. 7 is a sectional view taken on the line 7 7 of Fig. 6. Fig. 8 is a view illustrating a telephone of my invention arranged upon a pedestal or support. Figs. 9 and 10 are respectively front

and side elevational views of a basket adapted for use in connection with the instrument shown in Fig. 8. Fig. 11 is a sectional view taken on the line 11 11 of Fig. 10. Fig. 12 is a sectional view taken on the line 12 12 of Fig. 10. Fig. 13 is a view illustrating a modification of the diaphragm shown in Figs. 3 and 4, and Fig. 14 is a sectional view illustrating the basket fitted to the interior of the housing of the instrument.

In the drawings, 1 is a diaphragm, for example, of mica or of glass.

2 is a basket having the form of the frustum of a cone or pyramid and adapted to contain the rolling electrode 3. This basket may be advantageously composed of non-corrosive electrically-conducting material, as aluminium or an alloy thereof or other suitable material. As shown in Figs. 1 and 2, this basket comprises a circular plate 4, provided with a series of round outwardly-projecting arms 5, arranged in a circle, and in this connection it may be remarked that the round form of the arms not only provides, as it were, a track or ways between each of the adjacent arms for the accommodation of the rolling electrode 3, but also prevents the latter from being in a state of equilibrium if accidentally placed or moved on top of one of the arms.

The basket 2 is, in the exemplification of my invention illustrated in Figs. 1, 5, 6, 9, 10, and 11 of the accompanying drawings, supported or carried by a yoke 6, of which the ends may be connected with the casing by providing them with apertures for the reception of dowel-pins, screws, or other fastening devices 7. This yoke may be composed of aluminium or an alloy thereof or of other suitable material. In Fig. 1 the yoke 6 is formed integral with or is a continuation of the circular plate 4. As shown in Fig. 5, the plate 4 (which in this instance is polygonal) and the arms 8 may be struck in stellar form from one piece or plate or otherwise constructed. In such case the arms 8 comprise, as it were, the points of the star and are flat and have their adjacent edges beveled, as at 9, in order to constitute the tracks or ways between each of them for the accommodation of

the rolling electrode 3, and in order to prevent the latter from remaining in a state of equilibrium upon the face of any of the arms.

As shown in Fig. 6, the basket 2 is connected with the yoke 6 by means of a pin, rivet, or fastening device 10, which may constitute a convenient terminal for one of the leading-in wires or circuit connections x .

The basket shown in Figs. 9 to 12 may be struck from one piece or plate, as aluminium or an alloy thereof, from which the yoke 6 may be also struck. As shown in said figures, the adjacent edges of the arms 11 and 12 are beveled in order to constitute the tracks or ways for the accommodation of the rolling electrode 3, while the arms 13 overlie the rolling electrode and prevent its accidental displacement. The yoke 6 may be dispensed with, and in such case the basket 2 is fitted to the interior of the housing or case of the instrument, which is or may be made conical or tapering for its reception, as shown in Fig. 14.

It may be remarked that the basket illustrated in Figs. 1, 2, 5, 6, and 14 is adapted for use when the instrument has been rotated into any position, as is likely to happen when it is used by simply grasping it in the hand, whereas the basket of Figs. 9 and 10 is useful in the position shown, and consequently is applicable to instruments mounted upon a base or pedestal, for example, such as is shown at 14 in Fig. 8.

As illustrated in the drawings, the housing or case of the instrument may consist of hard rubber, glass, or the like, and comprises a sleeve 15, having its larger end threaded or otherwise adapted for the reception of a ring 16 and notched, as at 17, for the accommodation of the ends of the yoke 6. The diaphragm 1, already referred to, has an electrode or contact 18 riveted or otherwise applied to it and provided with a leading-in wire x' . The edges of the diaphragm may be notched, as shown at 19, Fig. 3, or perforated, as shown at 20, Fig. 13, for the accommodation of the dowel-pins, screws, or fastenings 7. The diaphragm is mounted between the end face of the sleeve 15 and the inner face of the ring 16, which may be recessed, as at 16^a, for the accommodation of the ends of the dowel-pins 7.

21 is a cap applied or fitted to the smaller end of the sleeve 15, and provided with an opening for the passage of the leading-in wires x and x' and with binding-posts to which the necessary battery and induction-coil connections y and y' may be made.

22 is a funnel-shaped mouthpiece which may be conveniently applied to the ring 16. From the foregoing description the skilful mechanic will readily understand the construction of the various parts and the advantages of the combinations embodying features of my invention. However, it may be stated that the basket 2, by reason of its truncated pyramidal or conic form, or, in other words,

by reason of the inclination, disposition, and form of its arms, not only prevents accidental displacement of the rolling electrode when the instrument is transported, turned, or handled, but also, by effecting a reduction of friction and an advantageous application of the force of gravity, insures the proper cooperation and mobility of the rolling electrode with the contact of the diaphragm when the axis of the basket occupies a substantially horizontal or natural position in respect to its case or housing. Moreover, the presence of the arms or rods, with their intervening spaces that constitute tracks for guiding the rolling electrode, are important because they constrain the latter to partake of rectilinear motion, which results in the transmission of articulate sound or speech.

It will be obvious to those skilled in the art to which my invention relates that modifications may be made in details without departing from the spirit thereof. Hence I do not limit myself to the precise construction and arrangement of parts hereinabove set forth, and illustrated in the accompanying drawings, but,

Having thus described the nature and objects of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a telephone, the combination with a diaphragm, of a basket comprising a series of arms and having the form of a conic or pyramidal frustum, and a rolling electrode mounted in said basket and adapted to collide with said diaphragm and partake of rectilinear motion between said arms, substantially as described.

2. In a telephone, the combination with a diaphragm and a rolling electrode, of a basket comprising a plate and a series of arms projecting outward from said plate for the accommodation of said rolling electrode, substantially as described.

3. In a telephone, the combination with a diaphragm and a rolling electrode, of a plate provided with outwardly-projecting pointed arms having beveled edges for the accommodation of said rolling electrode, substantially as described.

4. In a telephone, the combination with a diaphragm and a rolling electrode, of a series of arms having beveled edges and disposed nearer together at one of their ends than at the other of their ends and having spaces between them in which said electrode is afforded rectilinear motion in respect to the diaphragm, substantially as described.

5. The combination in a telephone, of a casing or housing, a diaphragm, a rolling electrode, a basket for said electrode, and a yoke attached to said casing and basket, substantially as described.

6. The combination in a telephone, of a casing or housing comprising a detachable sleeve and ring, a yoke carrying a basket and having its end adapted to recesses in

said sleeve, dowel-pins for said yoke, and a rolling electrode and diaphragm, substantially as described.

5 7. A telephone-transmitter comprising the combination of, a casing or housing comprising a sleeve provided at its respective ends with a ring and a cap, a basket comprising a plate and diverging arms circularly arranged, a yoke attached to said basket and doweled
10 between the sleeve and ring, a diaphragm,

as mica, interposed between the sleeve and ring and provided with apertures for the pins of the dowel, a rolling electrode, and circuit connections, substantially as described.

In testimony whereof I have hereunto 15 signed my name.

CLAUDE C. GOULD.

In presence of—

A. B. STOUGHTON,

K. M. GILLIGAN.