

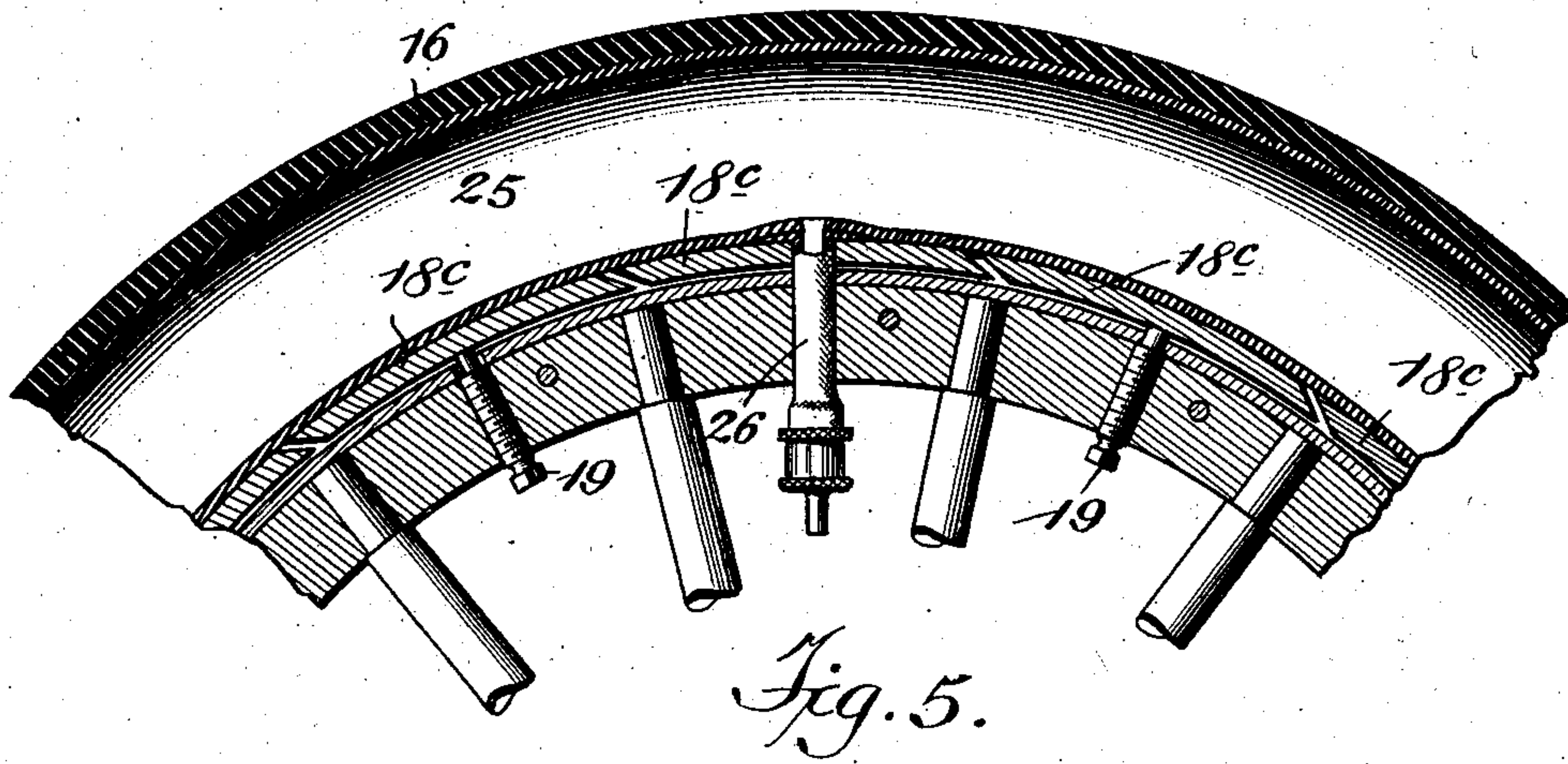
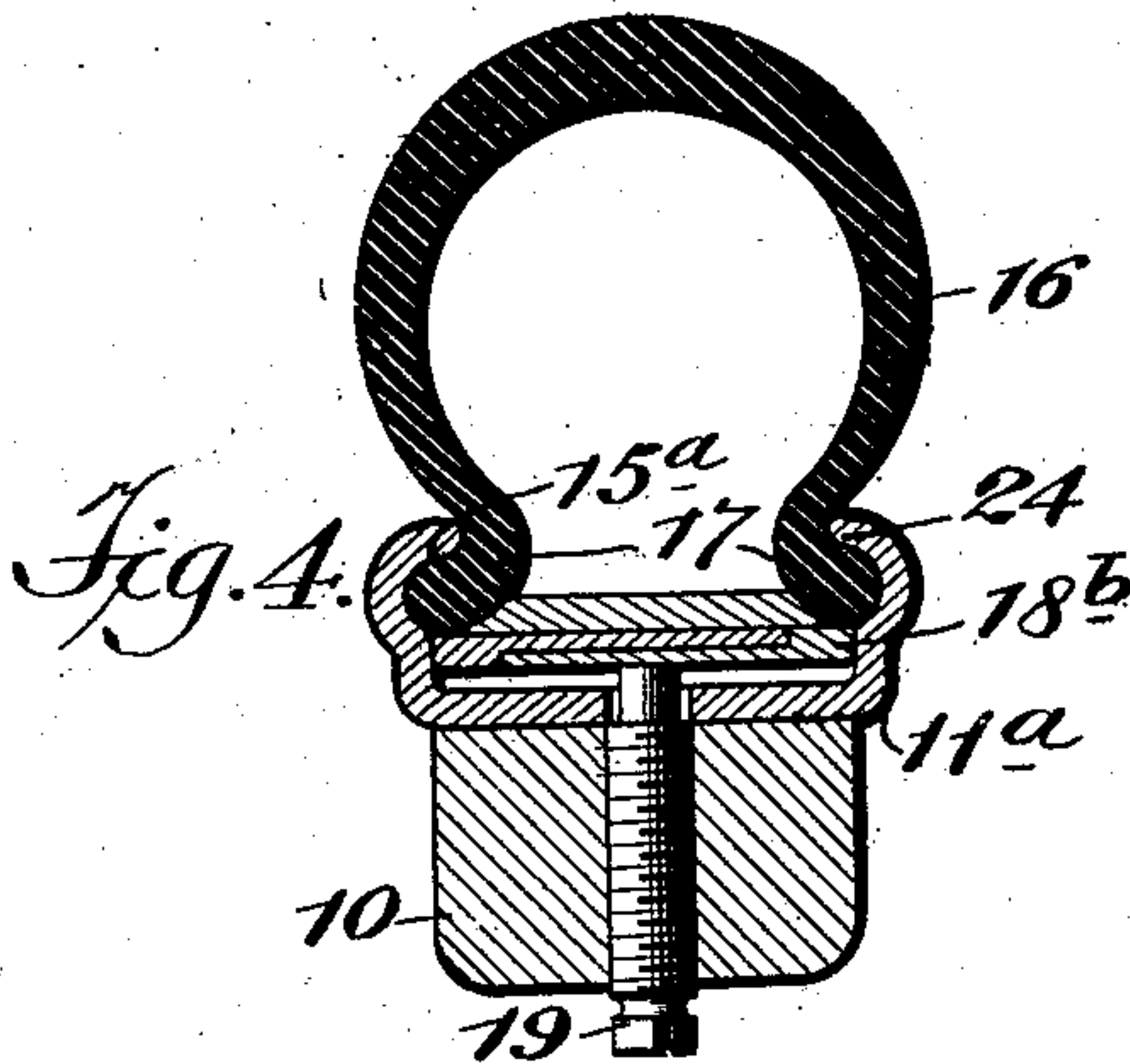
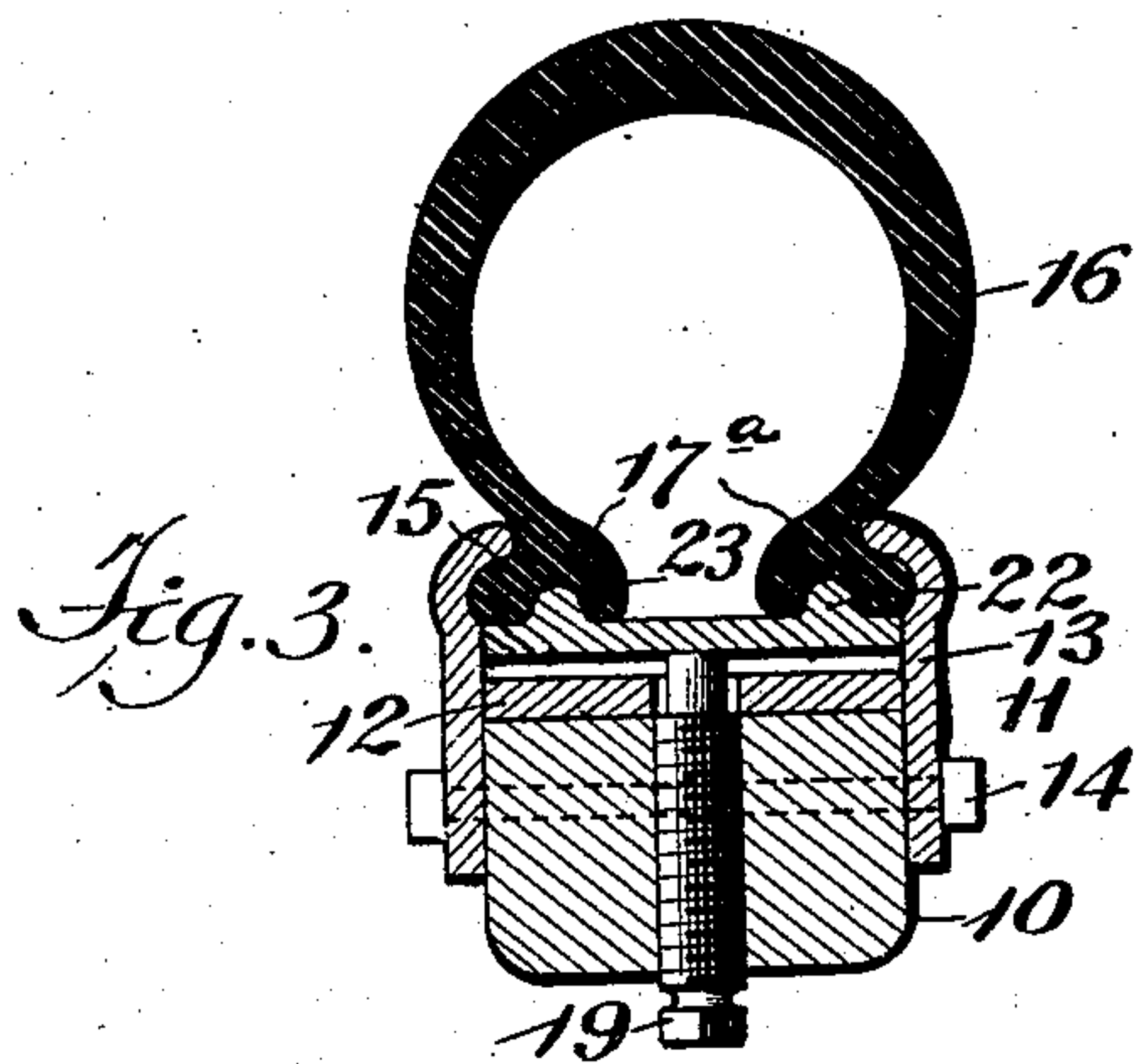
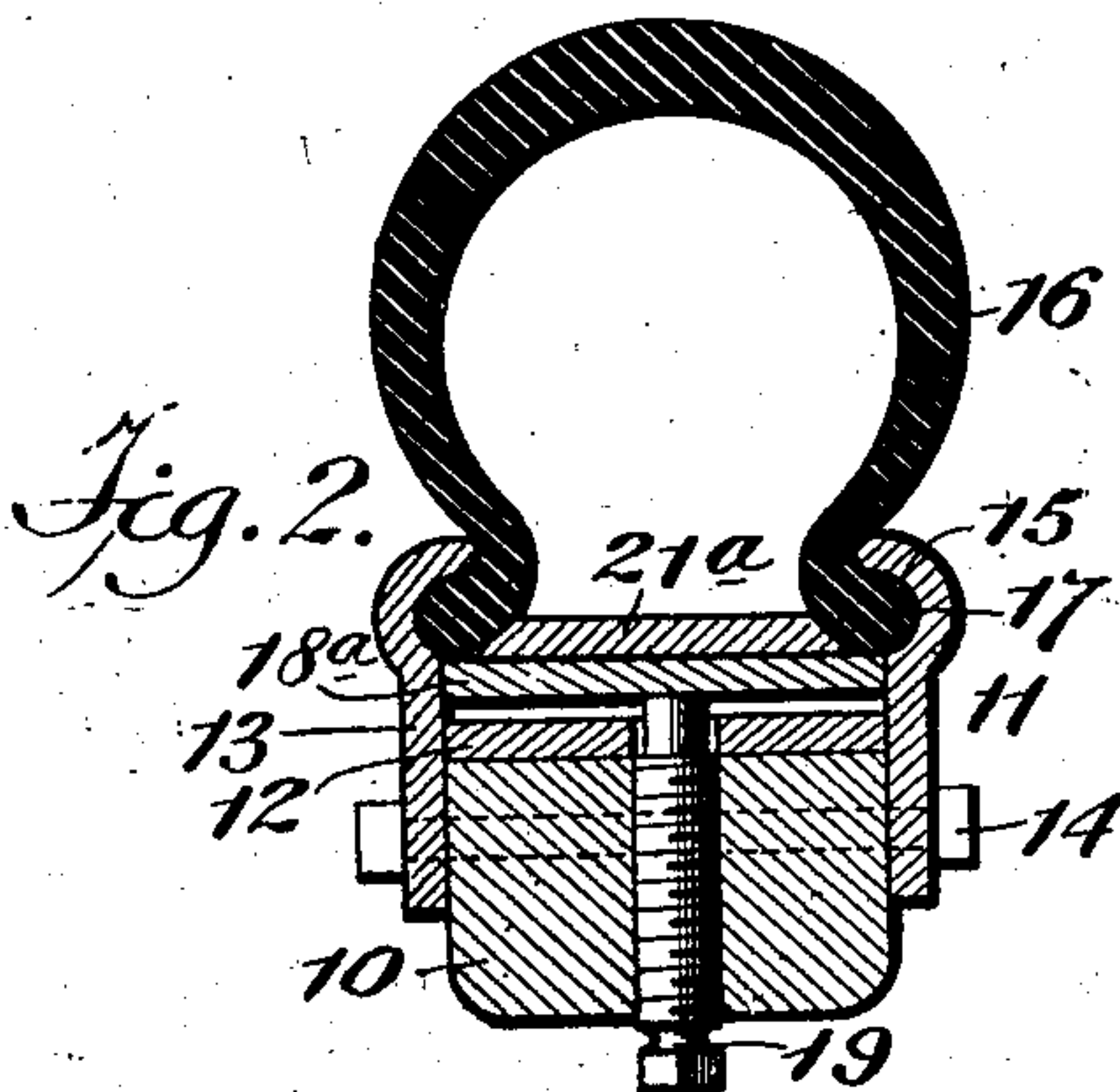
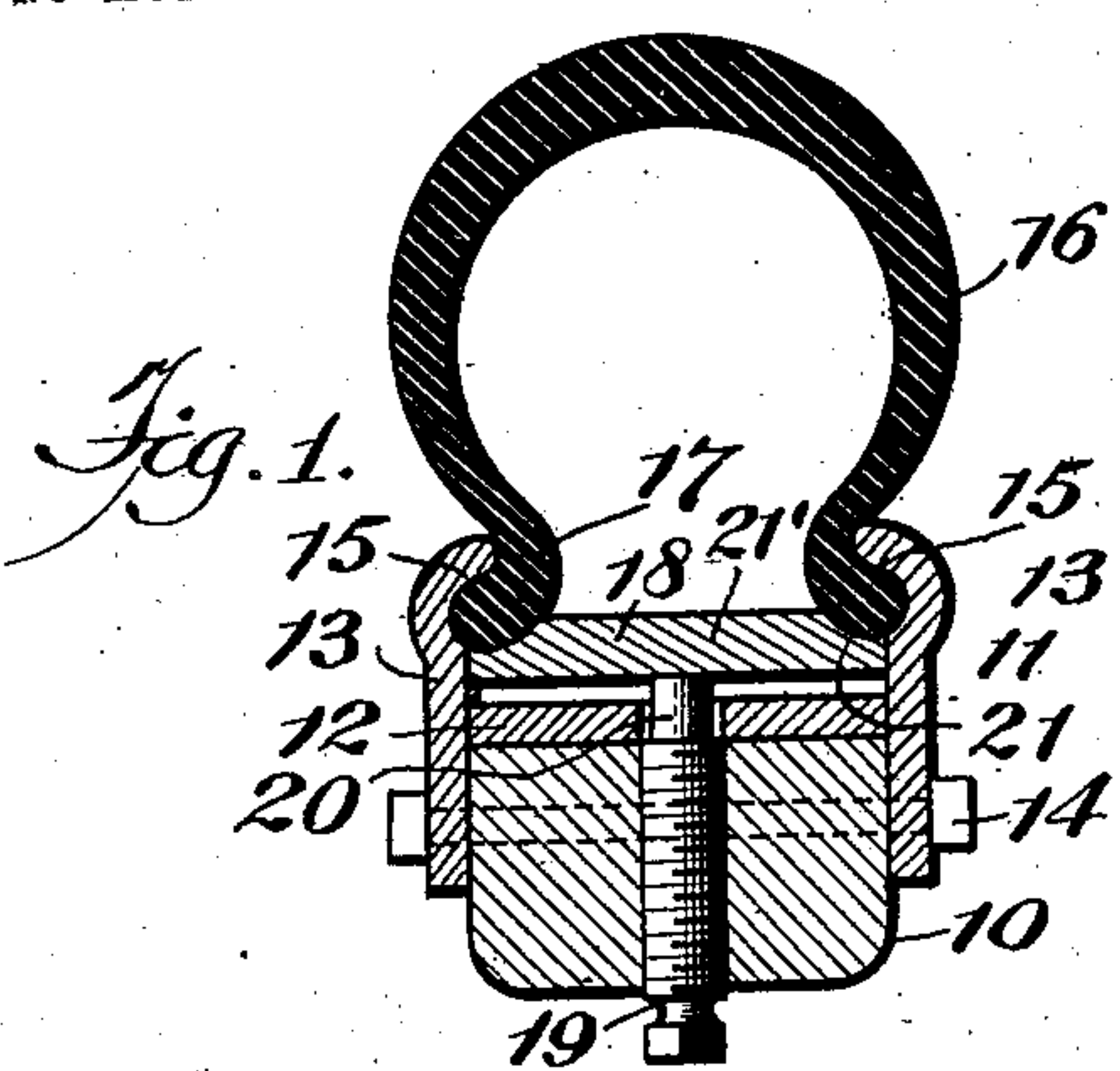
No. 744,493.

PATENTED NOV. 17, 1903.

R. M. CONNABLE.  
VEHICLE TIRE.

APPLICATION FILED JULY 17, 1903.

NO MODEL.



Witnesses  
A. Appleman  
Charles L. Williams.

Ralph M. Connable,  
Inventor,

By his Attorney Frederick S. Stitt



# UNITED STATES PATENT OFFICE.

RALPH M. CONNABLE, OF BALTIMORE, MARYLAND.

## VEHICLE-TIRE.

SPECIFICATION forming part of Letters Patent No. 744,493, dated November 17, 1903.

Application filed July 17, 1903. Serial No. 165,909. (No model.)

*To all whom it may concern:*

Be it known that I, RALPH M. CONNABLE, of Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Vehicle-Tires; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to vehicle-tires, and particularly to that class of tires known as "clencher-tires," in which an inflatable tube or core is contained within a sheath or protective cover clenched to the rim of the vehicle-wheel.

The object of the invention, as will hereinafter more fully appear in connection with the accompanying drawings, is to provide an improved tire of the type mentioned above which will embody serviceability and strength to a marked degree and which can be readily applied to, adjusted to the desired tension on, and removed from a vehicle-wheel without the employment of specially-devised tools or the services of a skilled mechanic.

In the accompanying drawings, Figure 1 is a vertical transverse section of the rim portion of a vehicle-wheel embodying the invention in one of its forms. Fig. 2 is a similar view illustrating another form of the invention. Figs. 3 and 4 are similar views illustrating other forms in which the invention is embodied; and Fig. 5 is a longitudinal section of the rim portion of a vehicle-wheel, illustrating still another form of the invention.

Referring to the drawings, and more especially now to Fig. 1, the reference-numeral 10 designates the felly of a vehicle-wheel, to which is secured a preferably metal channeled rim 11, consisting in this instance of a band 12, secured in any suitable manner on the felly and constituting the bottom of the channel, and two annular side plates 13, rigidly secured by bolts 14 to the felly at opposite sides of the band 12. Each of the side plates is provided with a downwardly-facing shoulder 15, which in this instance is formed by the inwardly-extending outer edge of the side plate. The sheath or protective cover 16, designed to contain an inflatable tube or core, is provided along its edges with bead-

like ribs 17, designed to be respectively inserted underneath the shoulders 15 of the channeled rim 11, and interposed between said ribs and the bottom of the channel is a centrifugally-acting presser-band 18, which is forced outwardly by some mechanical adjusting means against the bottoms of the ribs, thereby clenching the latter tightly to the shoulders 15 and holding the sheath 16 securely in place. The means for forcing the presser-band 18 against the ribs 17 preferably consists of a series of adjusting-pins 19, threaded and working in coincident openings in the felly 10 and band 12 and provided with heads 20, impinging against the face of the presser-band. Any desired number of these pins may be employed and at any desired intervals around the circumference of the wheel. To hold the ribs 17 of the sheath in place as against any lateral movement toward each other, I have provided various means. For instance, as illustrated in Fig. 1, the presser-band 18 may be provided on its outer face and at opposite edges with grooves 21, which conform in cross-section to the contour of the portions of the ribs against which they lie and which produce between them a laterally-acting abutment or spacing device 21', which fits to a sufficient extent between the ribs to hold them in place, or, as illustrated in Fig. 2, the presser-band 18<sup>a</sup> may be substantially flat in cross-section and the lateral abutment 21<sup>a</sup> may be a band or cross-bars separate from the presser-band. Again, for the same purpose the presser-band may be provided on its outer face, as illustrated in Fig. 3, with ridges or protuberances 22 of any desired shape, fitting within corresponding recesses 23 in the bottom, of the sheath-ribs 17<sup>a</sup>, and, on the other hand, if desired, the presser-band 18<sup>a</sup> may be constructed flat in cross-section, as illustrated in Fig. 2, and the laterally-acting abutment or spacing device 21<sup>a</sup> dispensed with, thus depending solely on the centrifugal or outward pressure of the band 18<sup>a</sup> to clench the ribs sufficiently against the downwardly-facing shoulders of the wheel-rim.

It is to be understood that all the forms of presser-band above described are transversely split at one point, so that they will



yield outwardly when the adjusting-pins 19 are screwed thereagainst, and with the construction of channeled rim illustrated in Figs. 1, 2, and 3 such bands may be formed in one  
 5 piece and put in place over the bottom 12 of the rim 11 before the last one of the side plates is attached to the felly; but if the channeled rim is constructed with the two side plates integral with the bottom, as illustrated  
 10 by Fig. 4, in which figure the rim is designated 11<sup>a</sup>, the presser-band 18<sup>b</sup> may be constructed in two sections overlapping with a break-joint, each of said sections being in  
 15 inwardly-turned edges 24, but the combined width thereof being greater than said space. Hence the band 18<sup>b</sup> may be inserted in the channel of the rim 11<sup>a</sup> one section at a time, and when overlapped, as illustrated, they will  
 20 extend laterally underneath the shoulders 15<sup>a</sup>, so as to press the ribs of the sheath properly thereagainst.

As illustrated in Fig. 5, the presser-band may consist of a circumferentially-extending  
 25 series of separate sections 18<sup>c</sup> of any length and located at various intervals around the circumference of the wheel. I have also illustrated in Fig. 5 the inflatable inner tube or core 25, which is provided with an inflation-  
 30 valve 26, whose stem is intended to extend through the rim and felly in the usual manner and also through an opening made for it in the presser-band. For the sake of clearness and simplicity this tube is not shown in  
 35 the other views of the drawings.

It is obvious that a tire constructed in accordance with this invention can be readily clenched to the wheel by screwing up the pins 19 against the presser-band, can be kept se-  
 40 cure by tightening the pins from time to time with a wrench or any other convenient tool, and can be readily removed from the wheel and replaced without the employment of specially-devised tools or the services of a skilled  
 45 mechanic, and it is also obvious that the abutments or spacing devices which engage the ribs of the sheath will effectually prevent the ribs from moving toward each other and from

becoming disengaged from the shoulders of the rim.

I claim as my invention—

1. In a vehicle-tire, a channeled rim provided with downwardly-facing shoulders, a sheath provided on its edges with ribs designed to take undersaid shoulders, a presser-  
 55 band interposed between said ribs and the bottom of the channel, and adjusting devices arranged to force the presser-band against the ribs whereby to clench the sheath to the rim.

2. In a vehicle-tire, a channeled rim, a sheath for an inflatable core, provided with ribs designed for insertion in said rim, centrifugally-acting means for clenching said  
 60 ribs to the rim, and an abutment engaging the ribs and preventing the ribs from moving laterally toward each other.

3. In a vehicle-tire, a channeled rim provided with downwardly-facing shoulders, a sheath provided with ribs designed to take under  
 65 said shoulders, a presser-band interposed between said ribs and the bottom of the channel, means for forcing said band outwardly against the ribs whereby to clench the latter against the shoulders, and an abutment or  
 70 spacing device engaging the sheath and preventing the ribs from moving laterally toward each other.

4. In a vehicle-tire, a channeled rim provided with downwardly-facing shoulders, a  
 75 sheath provided with ribs designed to take under said shoulders, a presser-band interposed between said ribs and the bottom of the channel, means for forcing said band outwardly against the ribs, and an abutment or spacing  
 80 device fitting between the ribs to hold the same against movement in a lateral direction toward each other, as and for the purpose set forth.

In testimony whereof I have signed this  
 90 specification in the presence of two subscribing witnesses.

RALPH M. CONNABLE.

Witnesses:

CHAS. J. FOX,

G. HOWARD WHITE.