

No. 721,152.

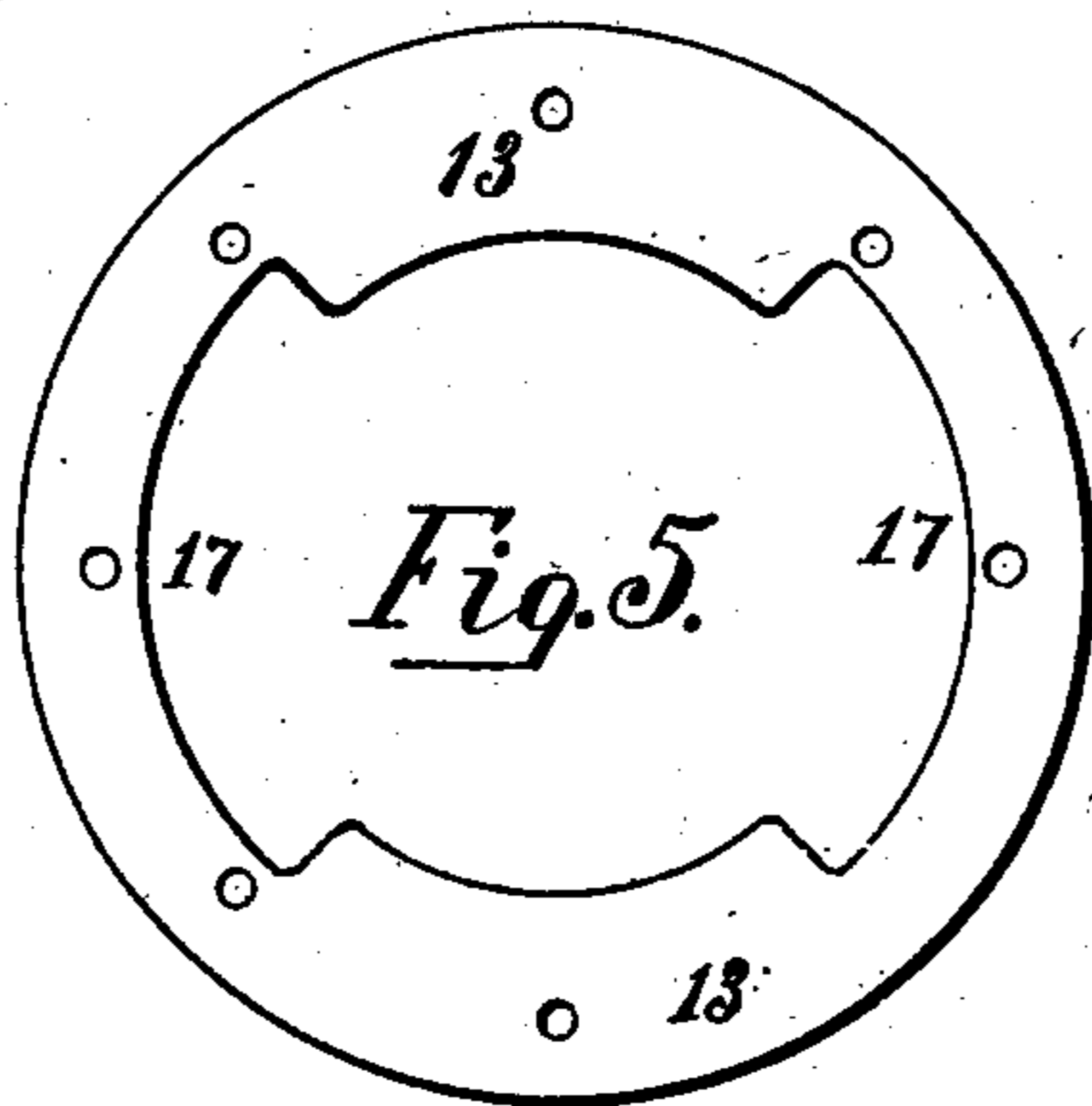
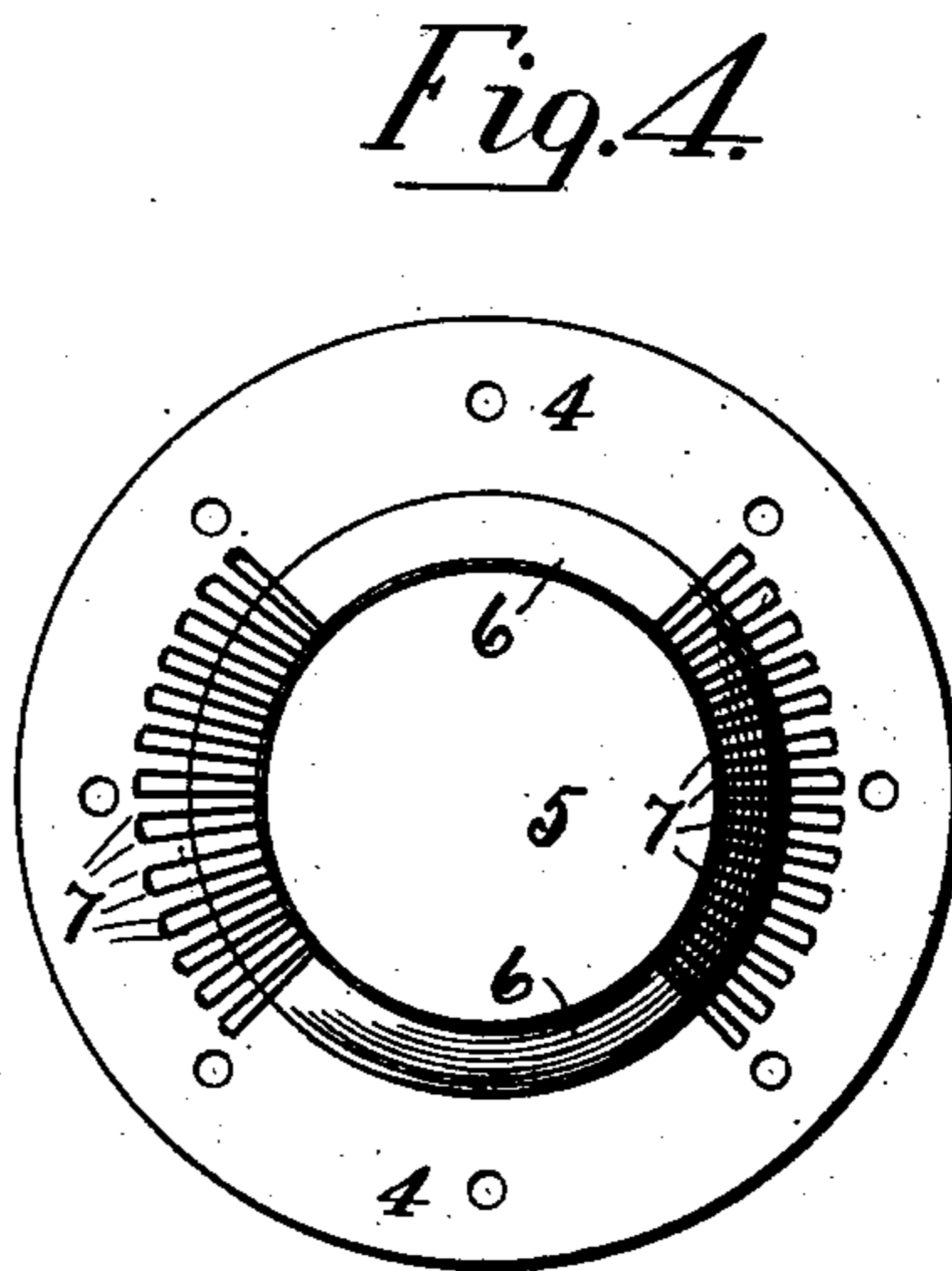
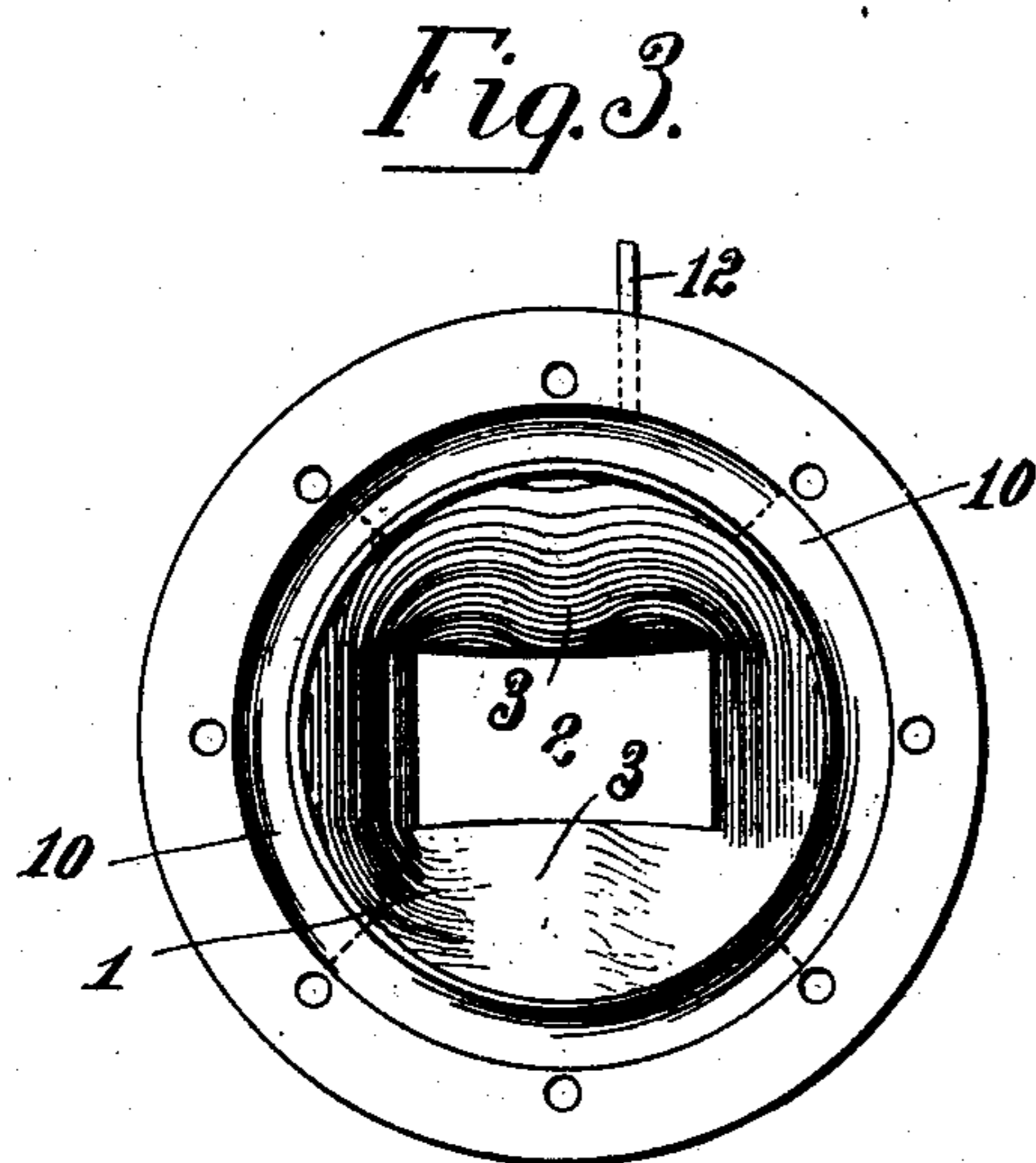
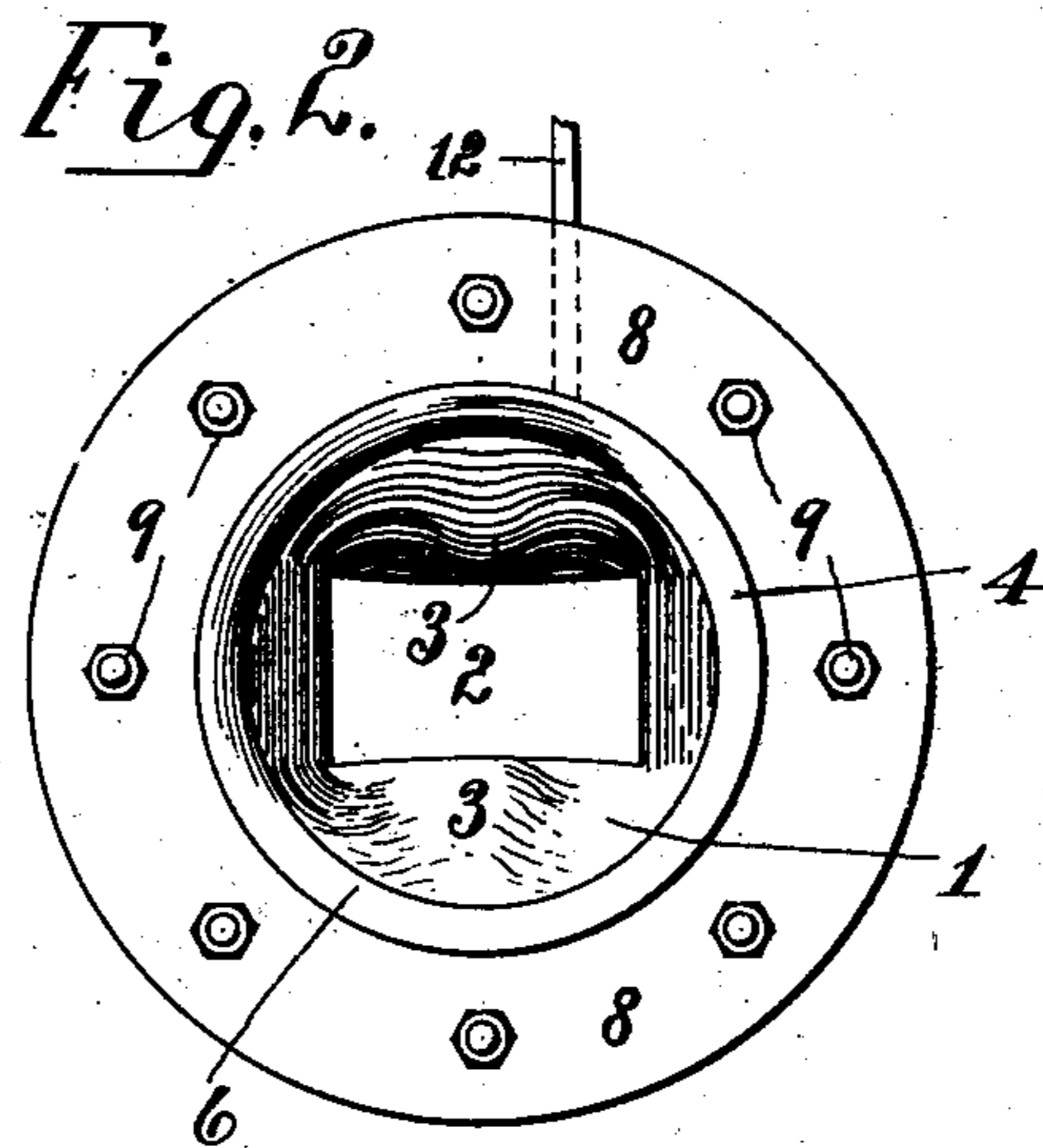
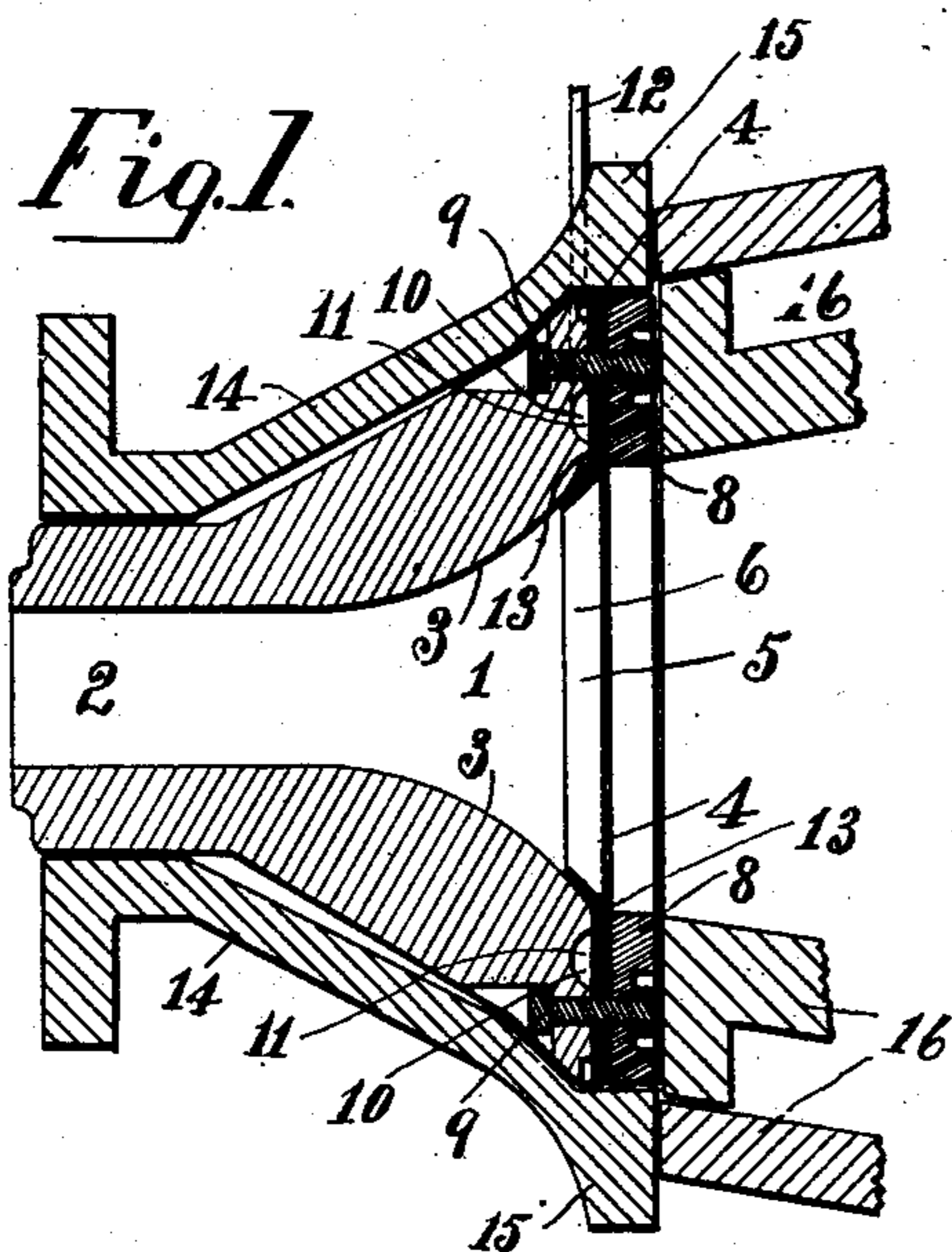
PATENTED FEB. 24, 1903.

C. CHAMBERS, JR.

LUBRICATING DEVICE FOR BRICK MACHINES.

APPLICATION FILED MAY 1, 1897.

NO MODEL.



Witnesses:

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UNITED STATES PATENT OFFICE.

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LUBRICATING DEVICE FOR BRICK-MACHINES.

SPECIFICATION forming part of Letters Patent No. 721,152, dated February 24, 1903.

Application filed May 1, 1897. Serial No. 634,715. (No model.)

To all whom it may concern:

Be it known that I, CYRUS CHAMBERS, Jr., a citizen of the United States, residing at Overbrook, in the county of Montgomery and State of Pennsylvania, have invented certain new and useful Improvements in Lubricating Devices for Brick-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

My invention relates to brick-machines wherein the clay is forced from the "tempering-case" into a "former," and thence through a die which gives the final shape in cross-section of the bar of clay that is cut off into suitable brick lengths—as, for example, in the machine shown in Letters Patent of the United States No. 275,467, granted to me April 10, 1883. In the said machine the clay expressed from the tempering-case by means of a screw enters the former in a body circular in cross-section, and this plastic moving body or stream of clay must be gradually diminished in size and shaped into rectangular form in such manner that the bar that issues from the die (which is a continuation of the former) shall be solid, smooth, and homogeneous. As the width of the bar is much greater than its thickness, it is necessary to cause the stream of clay to spread laterally when it has entered the former. To this end the stream is retarded at the top and bottom—that is, the portions corresponding with the top and bottom of the bar of clay that issues from the die by means of suitable swells or projections on the interior of the wall of the former—whereby the stream is caused to move with substantially equal rapidity at the sides and the top and bottom, and thus fills up the sides and corners of the die, as well as the other parts. I have found in practice that the side portions of the clay did not move with sufficient ease or speed and uniform velocity, and consequently the edges and corners of the bar as it issued from the die were imperfect.

The object of my invention is to obviate this difficulty by providing means or devices for applying oil or other suitable lubricant to the side portions only of the stream of clay

that finally forms the edges and corners of the bricks, whereby the said side portions will be caused to advance with reduced friction and wear, thereby producing better bricks, in that they are smoother and more compact at the edges and corners.

Referring to the accompanying drawings, which show a former-die structure wherein my invention is embodied, Figure 1 is a vertical longitudinal section of the former and die, the one being in the present instance integral with the other, of a brick-machine in which my invention is embodied; Fig. 2, a rear end elevation of the same; Fig. 3, a similar elevation, the valve-plate hereinafter described and other parts being removed; Fig. 4, a front end elevation of said plate detached. Fig. 5 is an elevation of the packing between the valve-plate and the rear end of the former detached.

1 designates the former, 2 the die, and 3 the clay-retarding swells or projections of the top and bottom parts of the former, hereinbefore referred to.

4 is a plate or annulus, (hereinafter termed the "valve-plate,") preferably of thin steel, having a central circular aperture 5, corresponding to that of the rear part of the former. This plate has also an inwardly-projecting inclined flange 6, the front face of the side portions of which are provided with a series of radial grooves or ducts 7, that continue some distance along the side of the flat part of the plate, as seen in Fig. 4. The inclination or taper of the said flange corresponds with that of the end portion of the interior of the former. I secure the plate to the circular rear plane end of the former by means in the present instance of a ring 8 and a series of bolts 9, that pass through holes in the said ring and the flat part of the plate and in the end of the former, as seen in Fig. 1. When the plate is thus in place, its flange fits closely to the interior of the former, as seen in Fig. 1. I make in the rear end of the wall of the former an annular groove 10, Figs. 1 and 3, which, with the flat side of the valve-plate, constitutes a chamber 11 for the reception of the oil or other suitable liquid lubricant. This chamber communicates by means

of a pipe 12 with a force-pump or other device (not shown) for supplying the lubricant under pressure. It also communicates by means of the grooves or ducts 7 of the valve-plate with the interior of the former, which grooves extend into the chamber 11. The valve-plate is, however, joined to the former in a manner to prevent the lubricant from passing into the former, except by way of the grooved part of the said plate. To this end I usually interpose a thin gasket or packing 13, of paper or the like, Figs. 1 and 5, between that part of the plate and the former. As seen in Fig. 5, this packing is of annular form, corresponding in external and internal diameter with that of the flat portion of the valve-plate and also of the end of the former and having sections cut at 17, as shown, corresponding with the portions of the flat part of the plate traversed by the ducts 7. Thus when the packing is in place the oil cannot escape from the chamber 11 except by way of the said ducts. The former, with the described adjuncts thus constructed, is secured to the end of the screw-case of the brick-machine, the exit-opening of the latter being substantially of the circular form and diameter as that of the contiguous opening of the former. Usually the former-die is contained in a casing 14, Fig. 1, with a flange 15 on its rear end, which is secured to the end of the screw-case 16.

Having now described the construction of my invention, I shall describe the mode of operation, which is as follows: As the round column of clay enters the former from the screw-case it is retarded at the top and bottom by the swells 3, which causes a portion of it on each side to spread laterally, as hereinbefore described. At the same time the oil, supplied under suitable pressure from the pump to the chamber 11, passes by way of the grooves or ducts 7 of the valve-plate into contact with the adjacent portions of the stream of clay, (which finally forms the edges and corners of the bar that issues from the die,) which portions thus lubricated slide rapidly with comparatively little friction and wear, although under great pressure, onto the die.

I do not limit myself to the precise construction shown. It is, however, essential that there shall be a narrow and practically continuous passage-way for the ingress of the oil under pressure from the chamber 11 to the interior sides of the rear end of the former—that is, to the side portions of the stream of clay, which finally form the narrow edges and corners of the bar that issues from the die.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination with the former and die of a brick-machine, said former being provided at the upper and lower portions of its

rear end with swells to retard the passage of the entering clay and thereby spread the clay laterally in the former, of a chamber or reservoir in the rear end of the former for receiving a suitable lubricant, and a valve-plate fitted and secured to the former and extending over and closing said lubricant chamber or reservoir, said valve-plate having ducts or passage-ways leading from said chamber or reservoir to the interior of the side portions only of the former.

2. The combination with the former and die of a brick-machine, said former being provided at the upper and lower portions of its rear end with swells to retard the passage of the entering clay and thereby spread the clay laterally in the former, of a chamber or reservoir in the rear end of the former for receiving a suitable lubricant, a valve-plate fitted and secured to the former and extending over and closing said lubricant chamber or reservoir, said valve-plate having ducts or passage-ways leading from said chamber or reservoir to the interior of the side portions only of the former, and a packing interposed between said valve-plate and the former and having portions thereof cut away adjacent to the portions of the valve-plate having the ducts or passage-ways, whereby the lubricant is permitted to pass into the former only through said ducts or passage-ways.

3. The combination with the former and die of a brick-machine, said former being provided with means to retard the passage of the entering clay and thereby spread the clay laterally in the former, of a chamber or reservoir in the rear end of the former for receiving a suitable lubricant, and a valve-plate fitted and secured to the former and extending over and closing said lubricant chamber or reservoir, said valve-plate being provided with an annular inclined flange conforming to and fitting within the rear end of the former and provided with ducts or passage-ways leading from the lubricant chamber or reservoir to the interior of the side portions only of the former.

4. The combination with the former and die of a brick-machine, said former being provided with means to retard the passage of the entering clay and thereby spread the clay laterally in the former, of a chamber or reservoir in the rear end of the former for receiving a suitable lubricant, a valve-plate fitted and secured to the former and extending over and closing said lubricant chamber or reservoir, said valve-plate being provided with an annular inclined flange conforming to and fitting within the rear end of the former and provided with ducts or passage-ways leading from the lubricant chamber or reservoir to the interior of the side portions only of the former, and a packing interposed between said valve-plate and the former and having portions thereof cut away adjacent to the portions of the valve-plate having the ducts

or passage-ways, whereby the lubricant is permitted to pass into the former only through said ducts or passage-ways.

5 The combination of the rectangular die, the former having the aperture therein, substantially circular at its rear end and tapering forward therefrom to the die, and having the top and bottom swells adjacent to its rear end; the annular groove in said end of the
10 former, and the flanged valve-plate secured to said rear end of the former and closing said groove at the rear by its base-flange; together with the interposed packing arranged as shown and described, whereby oil
15 or the like contained within the chamber formed by the said groove and packing is prevented from passing into the former except at the side portions thereof, substantially as and for the purpose set forth.

6. The combination with the former and die 20 of a brick-machine, of the oil-chamber in the rear end of the former, the flanged valve-plate fitted and secured to the former and closing said chamber at the rear by its base-flange and also having ducts or passage-ways 25 on its inner side at opposite portions only, and a packing interposed between the valve-plate and former, and having portions thereof cut away adjacent to those portions of said plate having the ducts or passage-ways, 30 substantially as set forth.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

CYRUS CHAMBERS, JR.

Witnesses:

WALTER C. PUSEY,
E. S. MAYNE.