

No. 677,637.

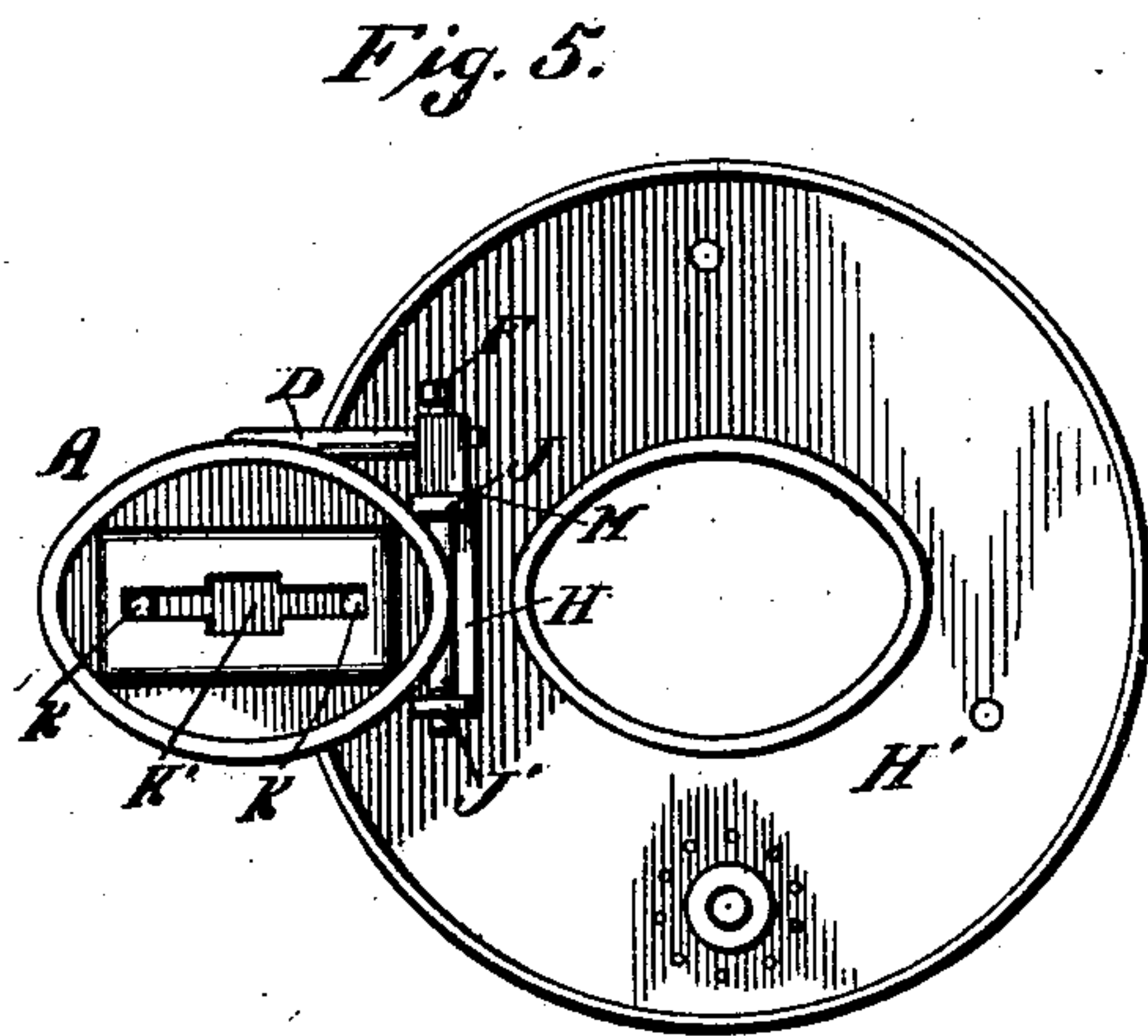
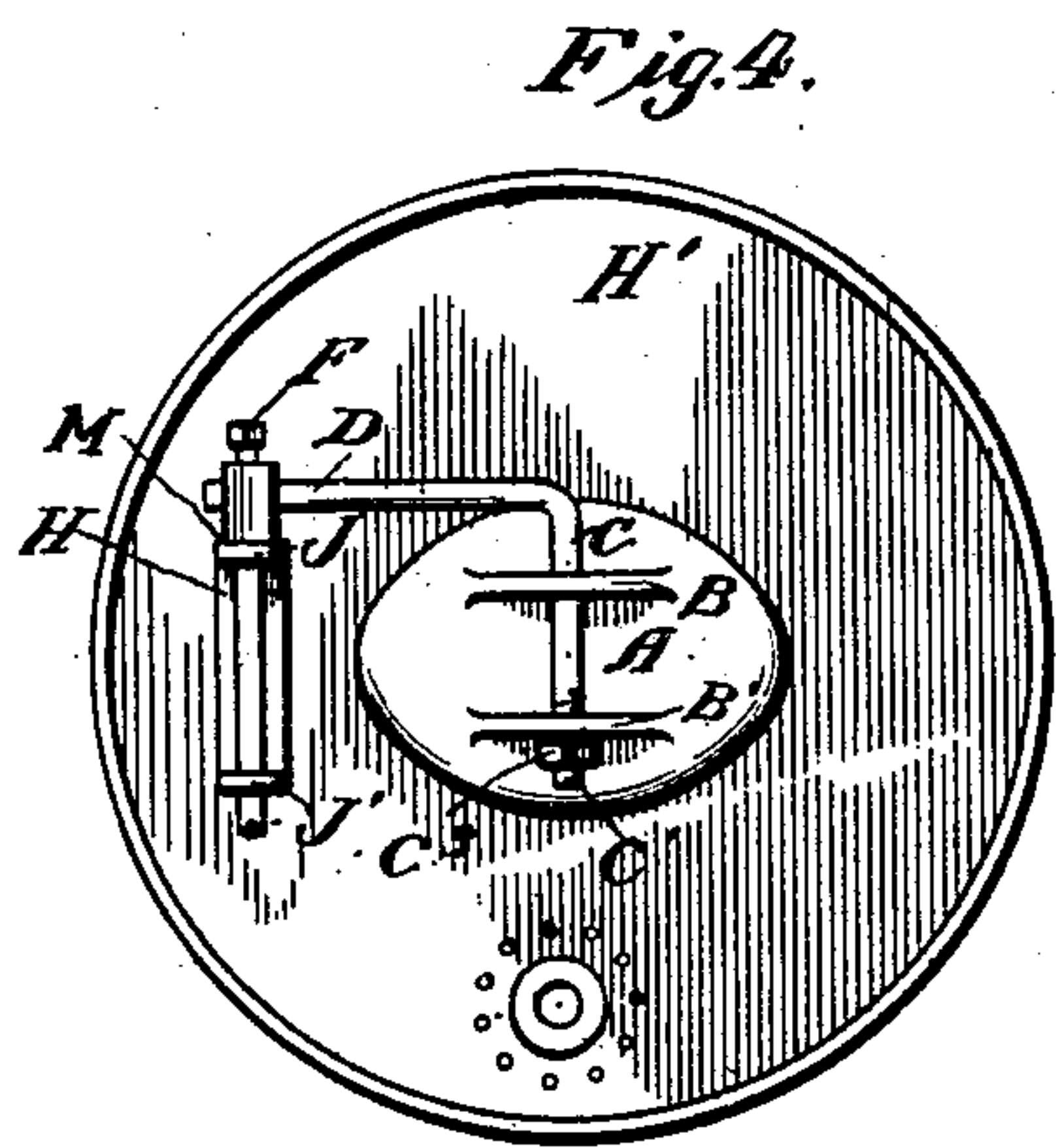
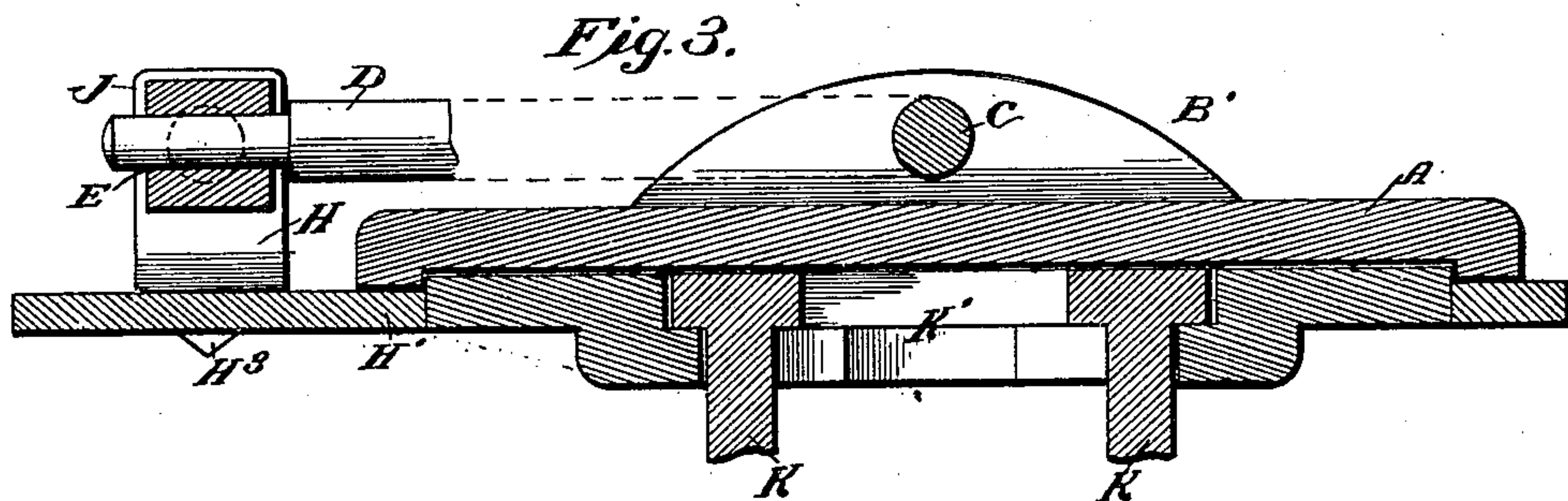
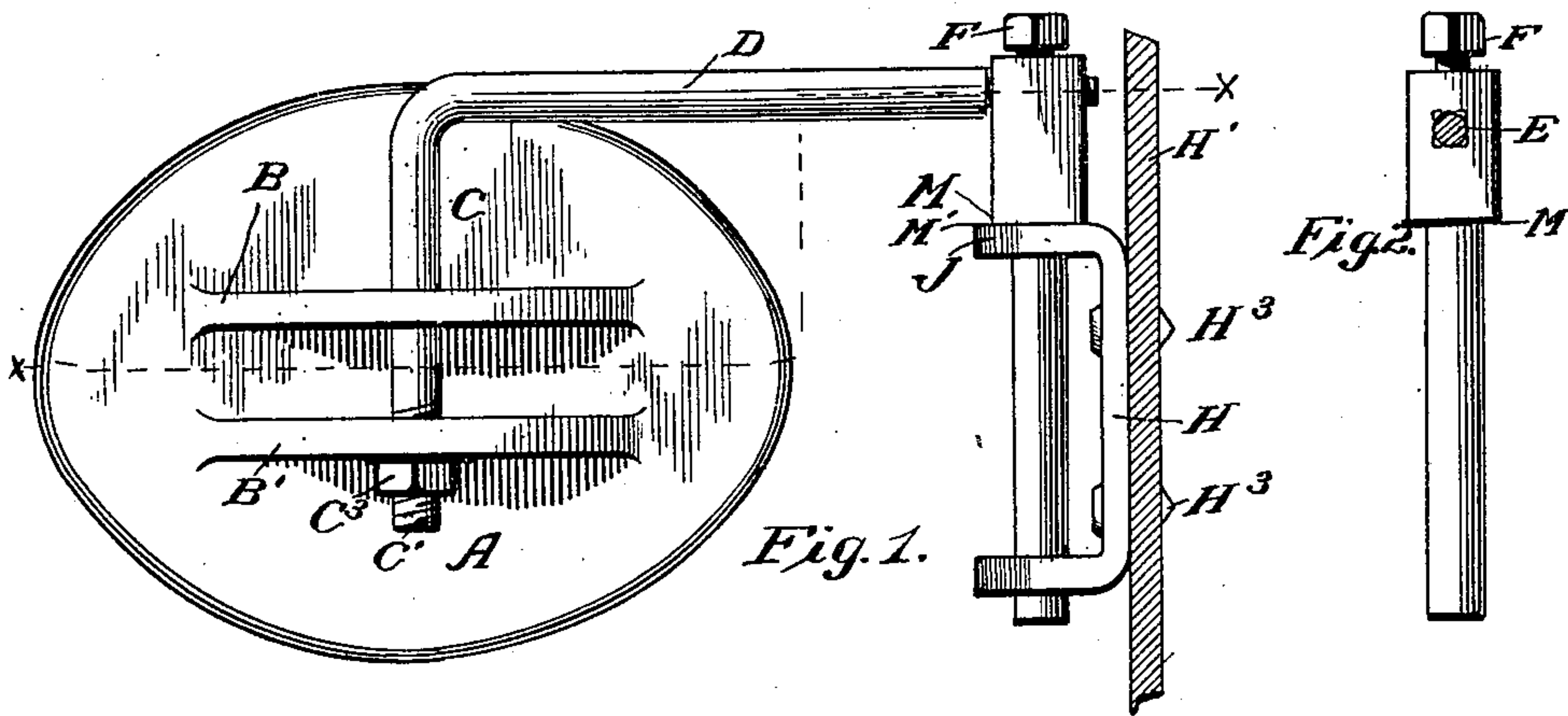
Patented July 2, 1901.

M. E. CASEY.

ADJUSTABLE SWINGING MANHOLE PLATE.

(Application filed Nov. 22, 1900.)

(No Model.)



Witnesses

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UNITED STATES PATENT OFFICE.

MICHAEL EDWARD CASEY, OF MANSFIELD, OHIO.

ADJUSTABLE SWINGING MANHOLE-PLATE.

SPECIFICATION forming part of Letters Patent No. 677,637, dated July 2, 1901.

Application filed November 22, 1900. Serial No. 37,371. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL EDWARD CASEY, a citizen of the United States, residing at Mansfield, in the county of Richland and State of Ohio, and whose post-office address is Mansfield, Ohio, have invented a new and useful Adjustable Swinging Manhole-Plate, of which the following is a specification.

My invention relates to any apparatus that requires a manhole in its construction, and especially adapted to be used on steam-boilers; and the objects of my improvements are, first, to provide a new and useful method of constructing swinging manhole-plates; second, to afford facilities to adjustably support swinging manhole-plates, and, third, to provide a simple and effective means of supporting a manhole-plate and adjusting it to fit the inner surface of the manhole, thereby obviating the annoyance and inconvenience incident to fitting the ordinary manhole-plate to the manhole. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side view of the manhole-plate as it appears swung away from the manhole. Fig. 2 is a plan view of the pivot collar-bolt, showing a square or round hole in the collar. Fig. 3 is a top view showing the manhole-plate fitted to the inner surface of the head or drum closing the manhole. Fig. 4 is a plan view of the manhole-plate attached to the head of the boiler. Fig. 5 is a front view of the manhole-plate swung inwardly, leaving the manhole clear for the purpose of cleaning or repairing the boiler.

Similar letters refer to similar parts throughout the several views.

The manhole-plate A is made of cast-iron and is constructed similar to the ordinary manhole-plates. One or more ribs B and B' are cast on the back of the manhole-plate, longitudinally therewith, and serve to strengthen the manhole-plate at a point where the manhole-plate is subject to the most strain. The size, number, or shape of the ribs can be varied. The primary function of the ribs B and B' is to afford means of supporting and vertically adjusting the manhole-plate. The ribs B B' have holes drilled in them at right angles with the long side of the manhole-plate, into which the short end C of an L-shaped

swing-bar is inserted, having said end C threaded. A nut C³ is screwed on the projecting end C' and is brought in contact with the bottom of the lower rib B', supporting the manhole-plate and providing a means of vertical adjustment. When it is desired to adjust the manhole-plate vertically, the nut C³ is turned to the right or left, thereby providing a means of raising or lowering the manhole-plate to fit the manhole centrally. The long end D of the L-shaped swinging bar is fitted to the round or square hole E E in the collar of the pivot-bolt, providing a means of longitudinally adjusting the manhole-plate. When the manhole-plate is adjusted longitudinally or with the long end of the ellipse, the set-screw F holds the swinging bar L in its proper place and obviates any liability of the swinging bar slipping, holding the manhole-plate centrally over the manhole.

A U-shaped brace H is attached to the drum or head H' of the boiler or other apparatus by the rivets H³. The projecting ends of the brace are turned inwardly, and the brace is attached to the boiler, leaving the flat or top portions of the projecting ends J and J' horizontal with the boiler.

The brace H⁴ has holes in the projecting ends into which the pivot collar-bolt is inserted. The face M of the pivot collar-bolt rests on the bearing M', formed by the projecting end J of the brace. The brace H provides a bearing and journal for the pivot collar-bolt, which, in connection with the L-shaped swinging bar, suspends and sustains the manhole-plate when it is swung in and out of contact with the inner edge of the head of the boiler outlined by the manhole cut therein.

Reference-letter K', Fig. 5, designates an ordinary T-slot.

Reference letters K K designate two ordinary T-bolts used to bolt the manhole-plate in the usual way.

It is well known that in order to make a perfect joint between the face of the manhole and the manhole-plate the utmost care must be taken to have the plate covering the manhole centrally in order to bring a uniform pressure upon the packing and gasket. If the manhole-plate does not cover the manhole centrally, an imperfect joint is the result.

The difficulty in keeping the manhole-plate in its proper place is obviated by the method herein described of constructing a manhole-plate, and an absolutely tight joint is obtained without inconvenience or annoyance. It will also be observed that the manhole-plate can be detached from the boiler without the removal of any bolts, nuts, rivets, or other means of fastening the manhole-plate.

10 I claim as my invention and desire to secure by Letters Patent—

1. A manhole-plate provided with a rib cast integral therewith, and apertures formed in the rib, a swinging bar secured to the manhole-plate, a stationary brace, a pivot-bolt received in the brace, and a collar formed on the bolt, the collar provided with an aperture therein to receive the end of the swinging bar.

20 2. An adjustable manhole-plate having ribs cast integral therewith, the ribs provided with apertures therein, a swinging bar received in the apertures in the ribs, the end of the bar turned to receive a nut whereby the plate is capable of being vertically adjusted on the bar, a brace, and a pivot-bolt held therein, the other end of the swinging bar being held in the pivot-bolt.

30 3. An adjustable manhole-plate having ribs cast integral therewith the ribs provided with apertures therein, a swinging bar received and held in these apertures, a brace, a pivot-bolt held loosely in the brace, a collar formed on the head of the pivot and having an aperture therein, the end of the swinging bar adjustably received and supported in the aperture in the collar of the pivot-bolt and means for retaining the swinging bar in any of its adjusted positions in the pivot-bolt.

40 4. An adjustable manhole-plate having ribs cast integral therewith, the ribs provided with apertures, a swinging bar loosely received and adjustably held in the apertures in the ribs, to permit the plate to swing on the bar as a pivot, a brace and a collar pivot-bolt loosely received and held on the brace, the bolt having an aperture to receive and secure the end of the swinging bar, whereby the plate and bar are supported by the pivot-bolt which turns in the brace as the swinging bar is moved.

5. The combination with a support, of a manhole-plate, a bar pivotally connecting the plate with the support, and a nut for adjusting the plate on the bar.

6. The combination with a support, and manhole-plate, of a connecting-bar pivotally connected to each of said parts, and a nut screwed on the bar upon which the plate rests whereby the plate may be adjusted vertically.

7. The combination with a support, and manhole-plate, of a connecting-bar pivotally connected to each of said parts, and means

whereby the plate may be adjusted vertically, horizontally and axially with relation to its support.

8. An adjustable manhole-plate, a swinging bar pivotally and adjustably secured to the manhole-plate, a brace, a pivot-bolt loosely held in the brace, a collar formed on the pivot-bolt having an aperture therein to receive the swinging bar and a set-screw whereby the swinging bar may be adjusted with relation to the pivot-bolt.

9. An adjustable manhole-plate, ribs cast integral therewith having apertures therein, an L-shaped bar received in the apertures, a brace, and a pivot-bolt loosely journaled in the brace, the L-shaped bar secured to the pivot-bolt whereby the manhole-plate, the L-shaped bar and the pivot-bolt may be easily disengaged from the brace without the use of tools.

10. In a steam-boiler, the combination with a manhole-plate having two horizontal ribs cast thereon, said ribs having holes drilled therein, of an L-shaped bar received in the holes, the bar having a thread cut on the end to receive a nut whereby to raise or lower the manhole-plate vertically, a U-shaped brace attached to the head of the boiler, the projecting ends of the brace having holes drilled therein, a pivot-bolt, a collar on the upper portion of the pivot-bolt provided with a hole drilled at right angles therewith, the L-shaped bar adapted to be received in the hole, the pivot-bolt also provided with a hole drilled in its top, a set-screw held therein whereby to retain the L-shaped bar in place, after adjustment.

11. An adjustable swinging manhole-plate having ribs cast integral therewith and holes formed in the ribs, the holes adapted to receive one end of an L-shaped bar, the bar having a thread cut on one end thereof to receive a nut whereby to adjust said plate vertically, on the L-shaped bar, a U-shaped brace, a pivot-bolt received in the brace, the bolt having a collar on the upper portion thereof, adapted to come in contact with the end of the brace and act as a bearing, said pivot-bolt having a hole drilled in the collar end thereof, to receive the opposite end of the L-shaped swinging bar.

12. In a boiler, a manhole-plate, a U-shaped brace, a pivot collar-bolt, an L-shaped swinging bar with a thread cut thereon and a set-screw to provide a means of vertically and laterally adjusting the manhole-plate, substantially as and for the purpose described.

Signed by me at Mansfield, Ohio, this 15th day of November, 1900.

MICHAEL EDWARD CASEY.

Witnesses:

JOHN H. COSS,
MICHAEL CASEY.