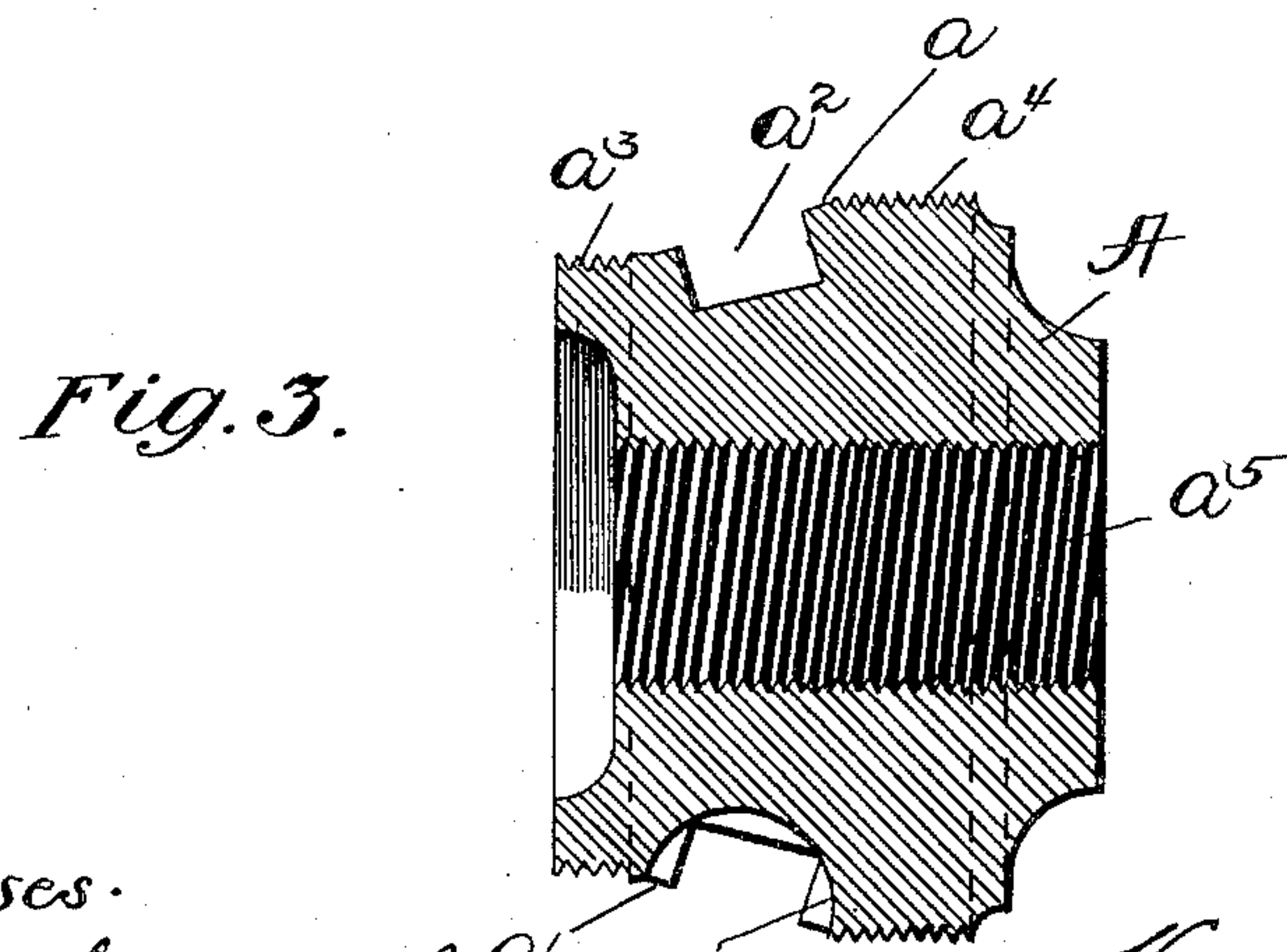
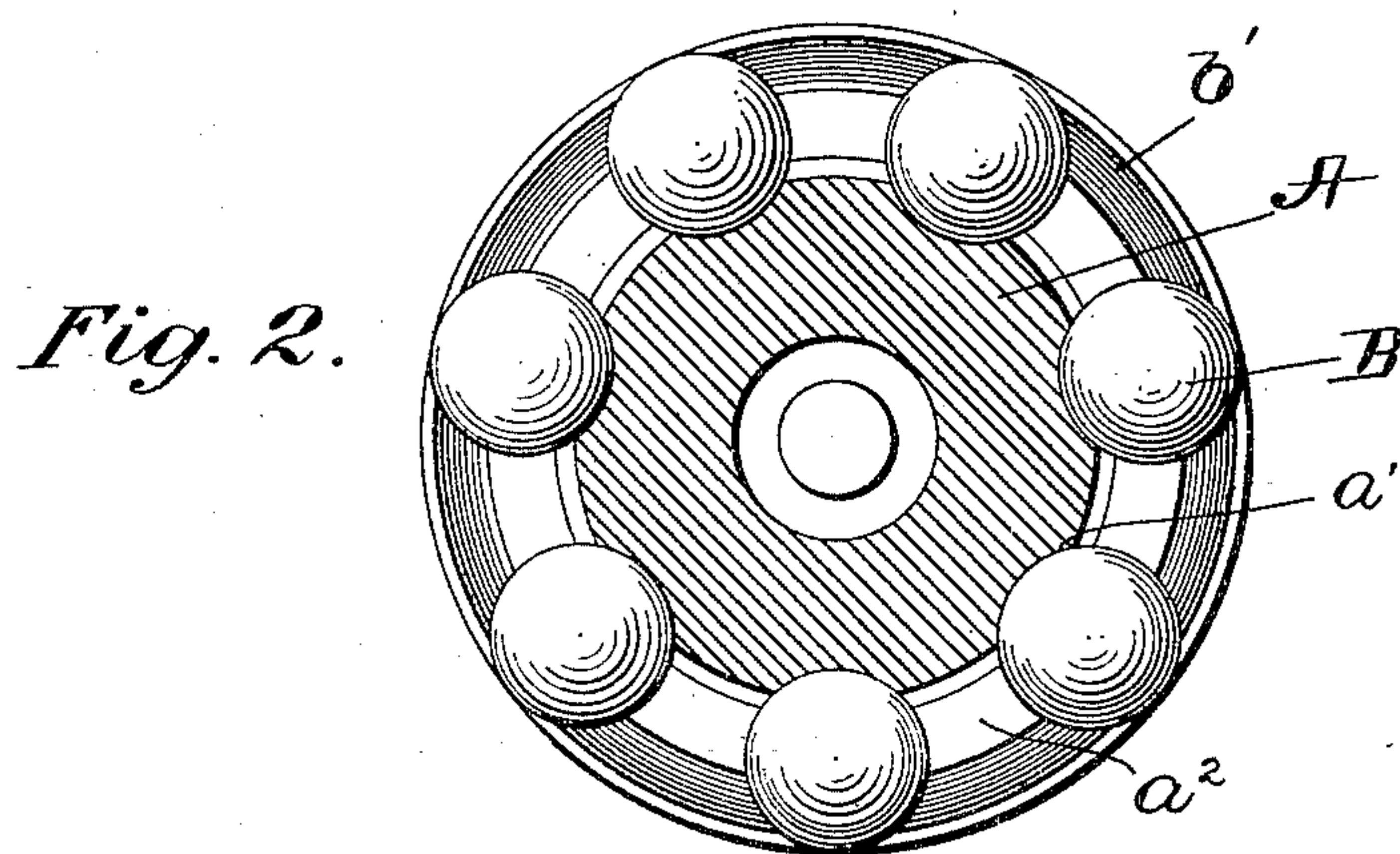
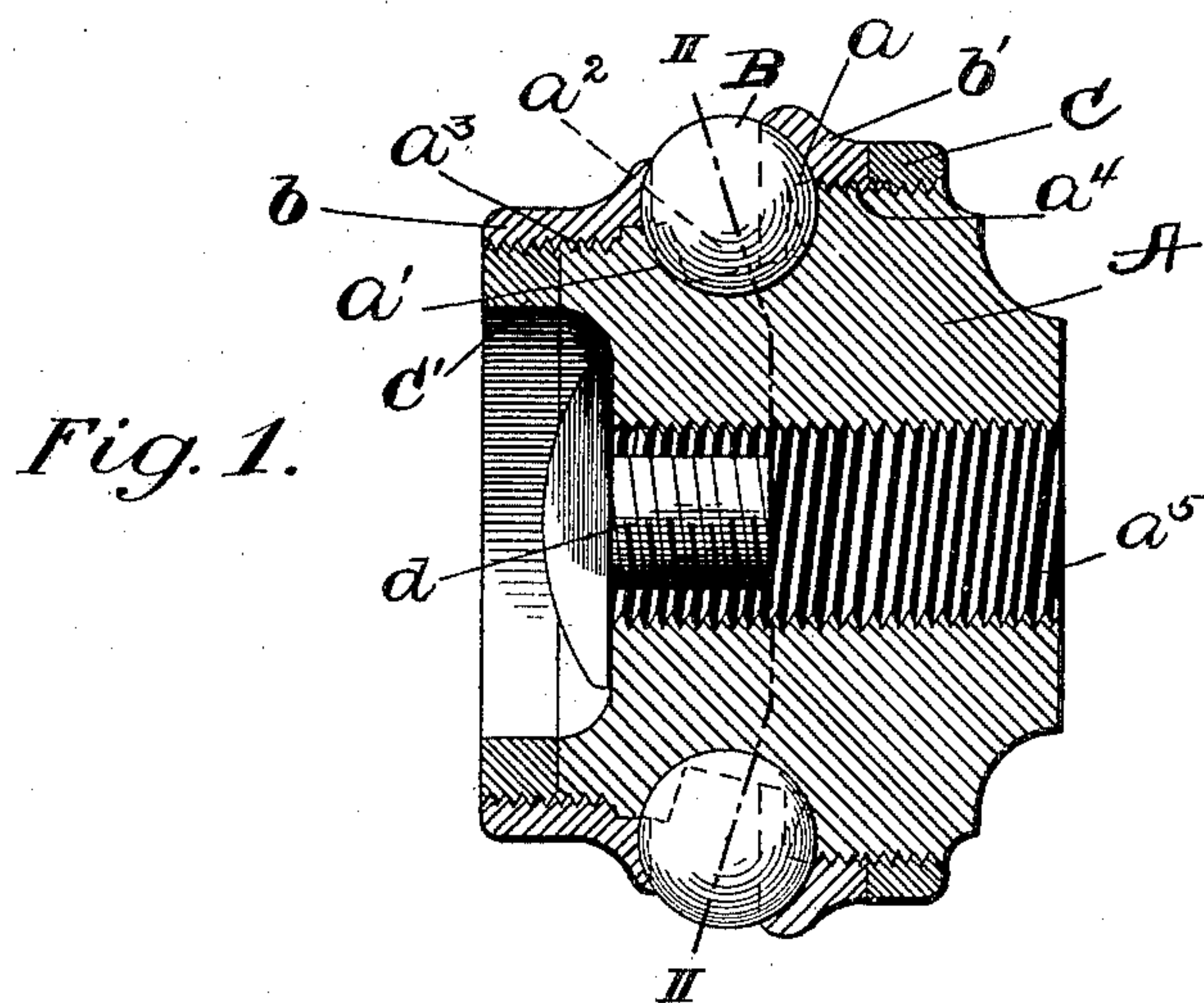


(No Model.)

H. B. KEIPER.
GEARING.

No. 604,534.

Patented May 24, 1898.



Witnesses.
Edw. Q. Duwall Jr.
Charles E. Riordan

Inventor.
Henry B. Keiper
By Julian C. Lowell
His Attorney.

UNITED STATES PATENT OFFICE.

HENRY B. KEIPER, OF LANCASTER, PENNSYLVANIA.

GEARING.

SPECIFICATION forming part of Letters Patent No. 604,534, dated May 24, 1898.

Application filed October 8, 1897. Serial No. 654,563. (No model.)

To all whom it may concern:

Be it known that I, HENRY B. KEIPER, a citizen of the United States, residing at Lancaster, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Gearing; 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.

The present invention relates to that class of gearing in which rollers take the place of teeth in transmitting motion; and the principal object of the invention is to provide improved means for retaining the rollers in place, while permitting their free revolution, and also making provision for adjustment to compensate for wear and prevent lost motion. The roller-retaining means employed heretofore in gearing of this character have not been of such a nature as to allow for their ready adjustment, an objection entirely obviated by the present invention.

With the above-stated object in view the invention consists in certain peculiarities of construction and combinations of parts hereinafter described, and particularly pointed out in the appended claims.

The drawings which accompany and form part of this specification illustrate an embodiment of the invention.

Of said drawings, Figure 1 represents an axial section of a miter-wheel having my improvements. Fig. 2 represents a cross-section of the same, taken on the line II II of Fig. 1; and Fig. 3 represents a longitudinal section of the body of the wheel without the balls and ball-retainers.

In the drawings the reference-letter A designates the body of the gear-wheel, which is made with a beveled peripheral surface a , a series of hemispherical recesses or sockets a' therein, and an encircling groove a^2 , passing centrally through the sockets and of reduced width and depth as compared with the same. On either side of the said beveled face a the body A is made with straight or cylindrical portions exteriorly screw-threaded, as shown at a^3 and a^4 .

A series of balls B seat in the sockets a' and are confined thereto by means of rings b

and b' , interiorly screw-threaded for engagement with the screw-threads a^3 and a^4 , respectively, the said rings being concaved, so as to lie closely over the surface of the balls and absolutely prevent dislodgment thereof while permitting a free rolling movement of the same.

An auxiliary ring C, interiorly screw-threaded, is engaged with the screw-threads a^4 behind the retainer-ring b' , and is used after the manner of a lock-nut to secure the latter at the proper adjustment. Similarly the retainer-ring b' is secured at the proper adjustment by means of an exteriorly-screw-threaded ring C', engaged with the interior screw-threads of said retainer-ring where the latter projects beyond the body of the wheel, the said ring C' being screwed tightly against the end of the latter to produce a binding effect between the interior screw-threads of the retainer-ring and the threads a^3 on the body.

It will be seen that by the construction described provision is made for adjustment of the ball-retaining means to compensate for wear and obviate lost motion.

The form of ball-carrying gear-wheel here shown is designed for association with a bevel-wheel having teeth to intermesh with the balls B and enter the channel or groove a^2 , so as to effect an extended engagement with the balls such as to insure the best results in transmission of motion.

The body of the wheel is shown in the drawings as having a screw-threaded bore a^5 , by means of which it may be applied to the screw-threaded end of a shaft. The drawings also show a screw d to enter the end of the shaft and lock the wheel therein, said screw having a flat head to bear against the end of the latter.

It is evident that the construction here shown is susceptible of many variations within the scope of the invention, and I do not therefore limit myself in the claims which follow to the particular form of embodiment here shown and described.

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

1. A gear-wheel comprising a body having sockets in its acting face and screw-threads on opposite sides of the sockets, balls seated in

the sockets, and ball-retaining rings interiorly screw-threaded and engaged with the screw-threads on the body.

2. A gear-wheel comprising a body having
5 a series of sockets in its acting face and screw-threaded in said acting face on opposite sides of the sockets, balls seated in the sockets, ball-retaining rings interiorly screw-threaded and engaged with the body on opposite sides

of the balls, and securing-rings engaged with the body and with the retaining-rings, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY B. KEIPER.

Witnesses:

HARVEY B. LUTZ,
LUCY R. KEIPER.