

No. 724,959.

PATENTED APR. 7, 1903.

E. S. SHIMER.
EXPANSION CUTTER HEAD.
APPLICATION FILED SEPT. 15, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

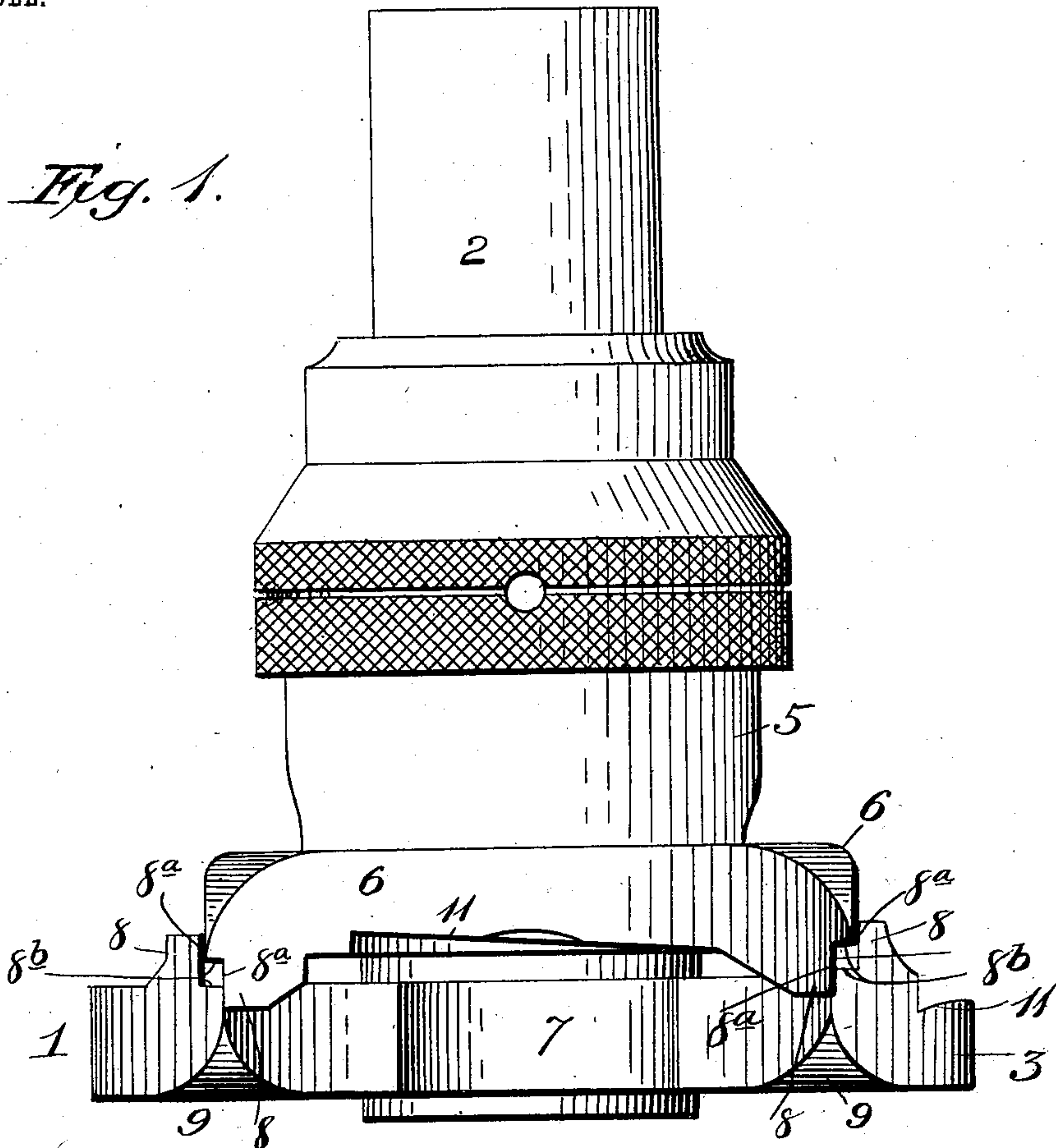
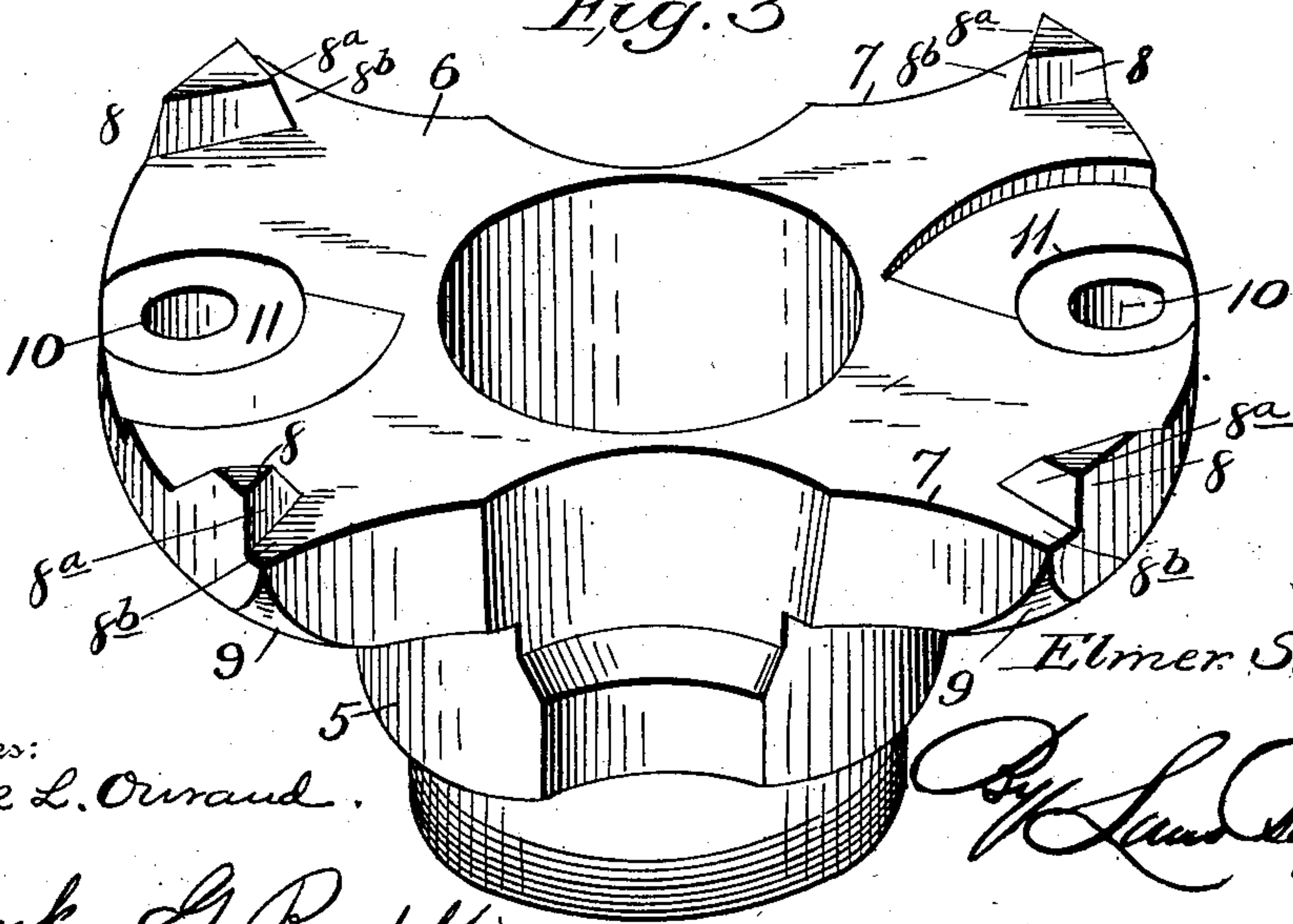


Fig. 3



Witnesses:
Frank L. Ouraud.

Frank G. Radelfinger.

Inventor:
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2 SHEETS—SHEET 2.

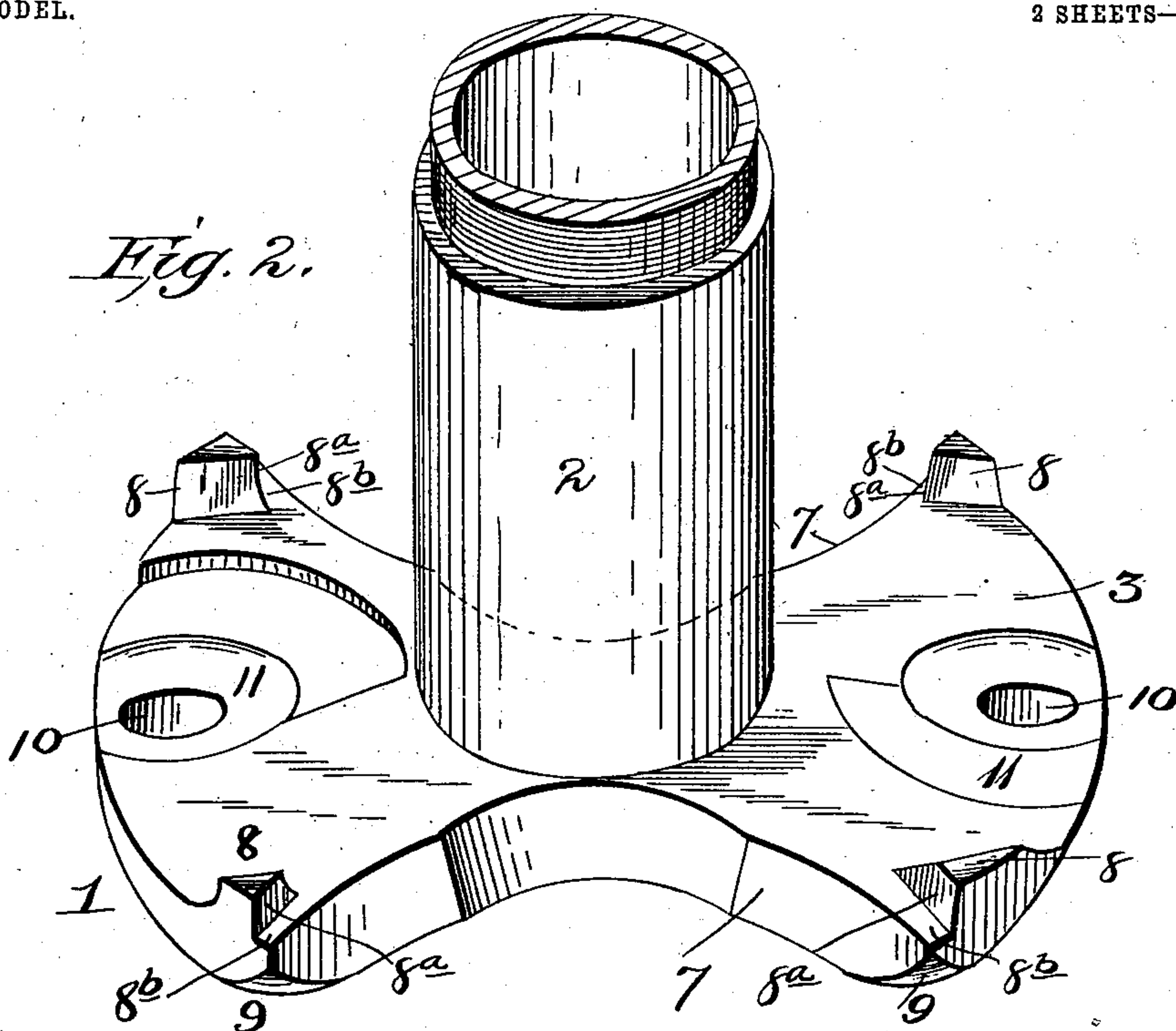


Fig. 4.

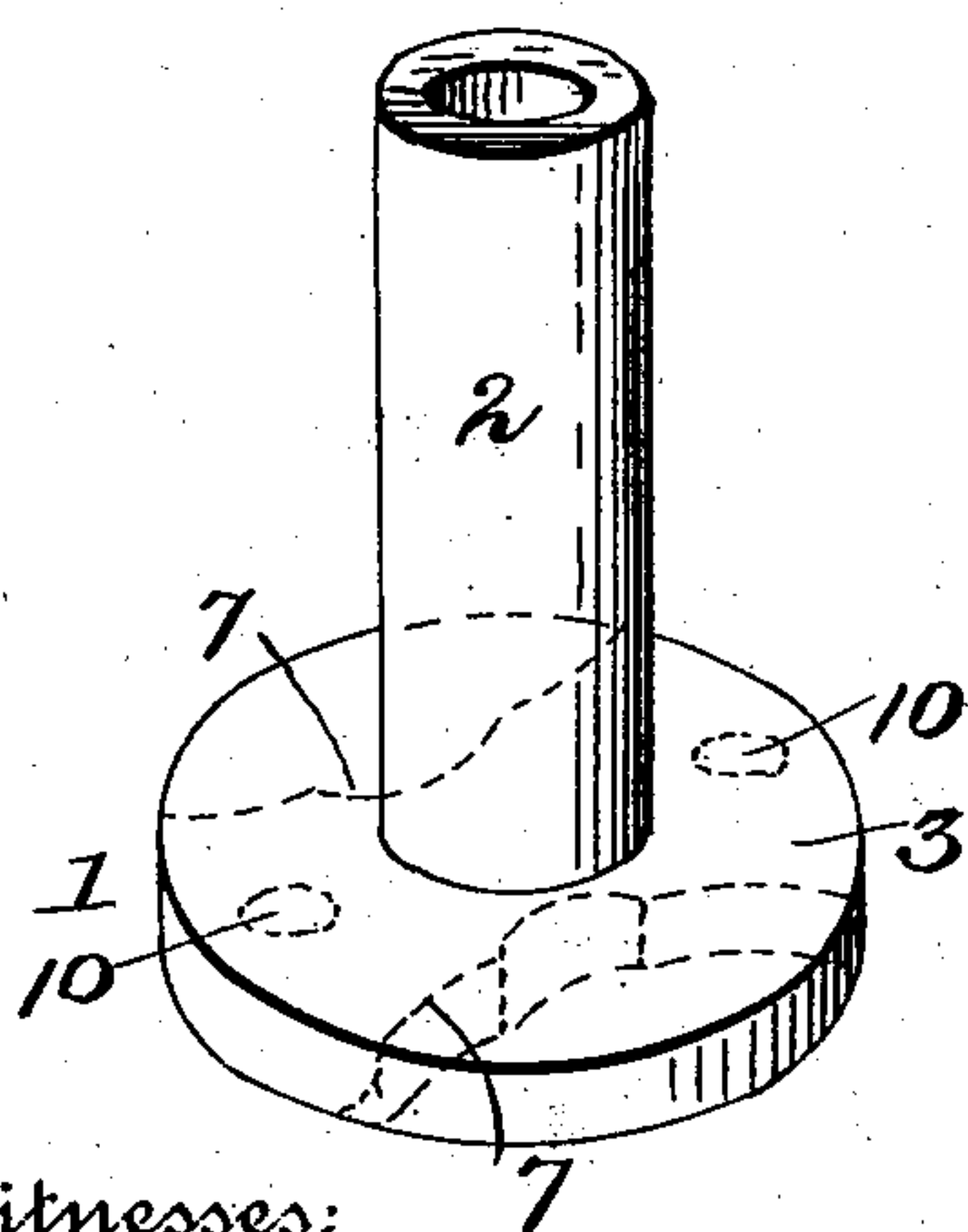
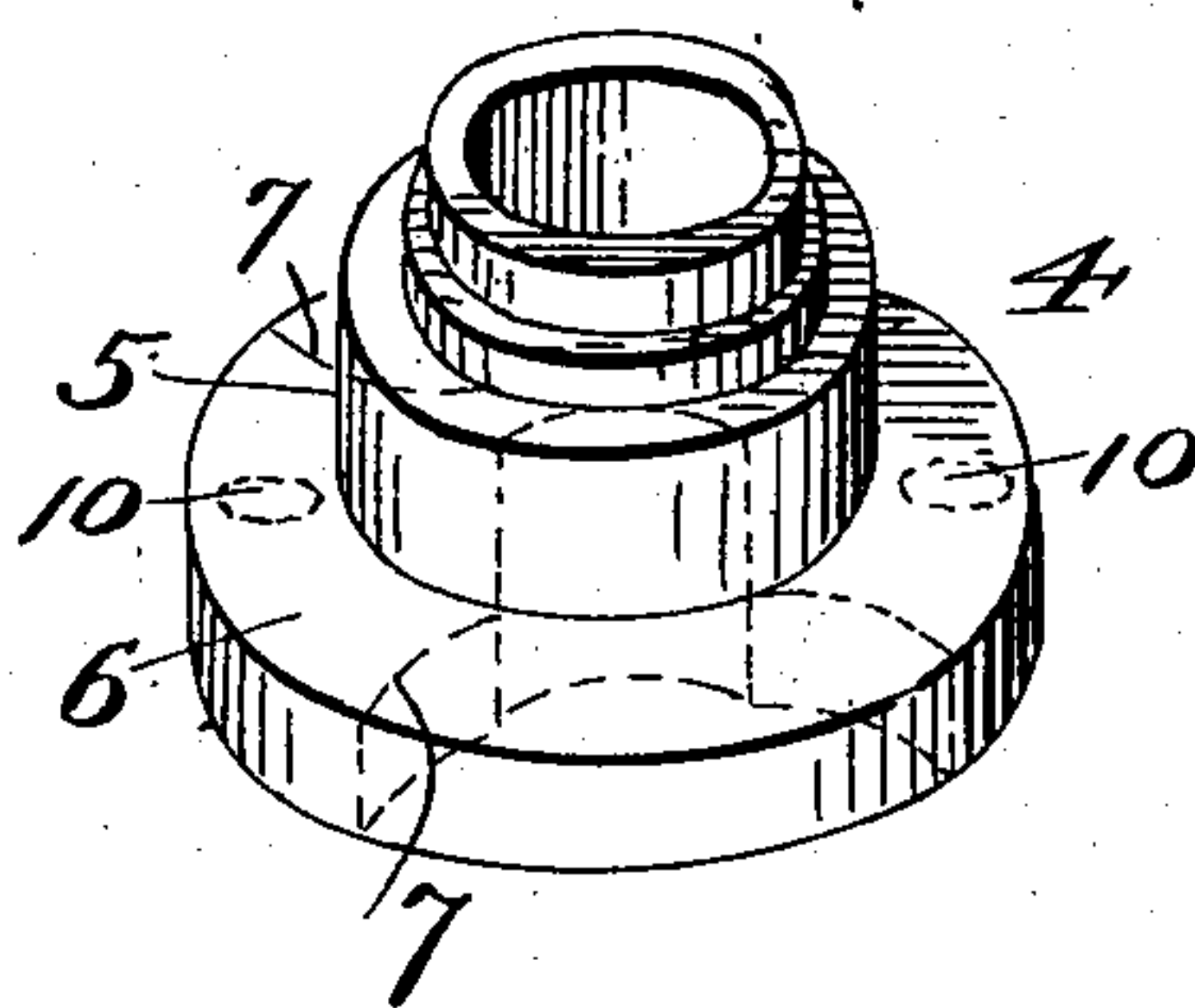


Fig. 5.



Witnesses:
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UNITED STATES PATENT OFFICE.

ELMER S. SHIMER, OF MILTON, PENNSYLVANIA.

EXPANSION CUTTER-HEAD.

SPECIFICATION forming part of Letters Patent No. 724,959, dated April 7, 1903.

Application filed September 15, 1902. Serial No. 123,515. (No model.)

To all whom it may concern:

Be it known that I, ELMER S. SHIMER, a citizen of the United States, residing at Milton, in the county of Northumberland and State of Pennsylvania, have invented new and useful Improvements in Expansion Cutter-Heads, of which the following is a specification.

My invention relates to expansion cutter-heads; and the object of the same is to construct a cutter-head of the Shimer type of minimum weight and with minimum waste of material.

The simple and novel construction employed by me in carrying out my invention is fully described in this specification and claimed, and illustrated in the accompanying drawings, forming a part thereof, in which—

Figure 1 is a side elevation of my cutter-head. Fig. 2 is a perspective of the lower section of the same. Fig. 3 is a perspective of the upper section, inverted, of the same. Fig. 4 is a detail perspective of one of the forgings used in constructing my improved head. Fig. 5 is a detail perspective of the other.

Like numerals of reference designate like parts in the different views of the drawings.

The numeral 1 designates a forging comprising a spindle 2 and a circular flange 3, formed integral with said spindle. A second forging 4 is also employed, which comprises a hollow hub 5, having a circular flange 6 formed integral therewith. The hub 5 is designed to fit over the spindle 2, and the flanges 3 and 6 are of uniform thickness. To form a cutter-head of minimum weight, the flanges 3 and 6 are cut away at two diametrically opposite points on curves 7. (Indicated by dotted lines in Figs. 4, 5.)

In order that the members 1 and 4 may be fitted together to form a cutter-head, they are reheated and placed on a die in a press and guide-lugs 8 struck up on the flanges 3 and 6 by bending up the corners 9 thereof and drawing them. The outer faces 8^a of the lugs 8 are then finished and ledges 8^b formed thereon to serve as stops to limit the movement of the cutter-head and determine the point of zero expansion. Holes 10 are then drilled in the flanges 3 and 6 at diametrically opposite points to accommodate bolts

for securing bits in shallow seats 11, cut in the flanges and surrounding the bolt-holes 10.

In assembling the cutter-head the members are fitted together, as shown in Fig. 1, with the guide-lugs 8 on the flange 3 engaging the flange 6 and the reverse.

I do not wish to be limited as to details of construction, as these may be modified in many particulars without departing from the spirit of my invention.

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

1. In an expansion cutter-head, the combination of a spindle bearing a flange having guide-lugs struck up from the body thereof, a hub fitting said spindle and bearing a flange having guide-lugs struck up from the body thereof, the said lugs on one of said flanges being located to engage the other of said flanges, said lugs being located near the periphery of said flanges, substantially as described.

2. In an expansion cutter-head, the combination of a spindle bearing a flange of substantially uniform thickness, a hub slidably mounted on said spindle and bearing a flange of substantially uniform thickness having four guide-lugs struck up from the body thereof, said lugs being located to engage the said first-mentioned flange, substantially as described.

3. In an expansion cutter-head, the combination of a spindle bearing a flange having guide-lugs struck up from the body thereof and located adjacent to the edge of said flange thereby forming a ledge, and a hub slidably mounted on said spindle and bearing a flange having guide-lugs struck up from the body thereof, said lugs being located adjacent to the edge of said flange thereby forming a ledge, the ledges on said first-mentioned flange being located to engage the ledges on said last-mentioned flange, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ELMER S. SHIMER.

Witnesses:

FRANK G. RADELFINGER,
BENNETT S. JONES.