

D. D. PARMELEE.
MACHINE FOR TRITURATING AND POLISHING METALLIC
POWDERS.
No. 187,302.

Patented Feb. 13, 1877.

Fig. 1.

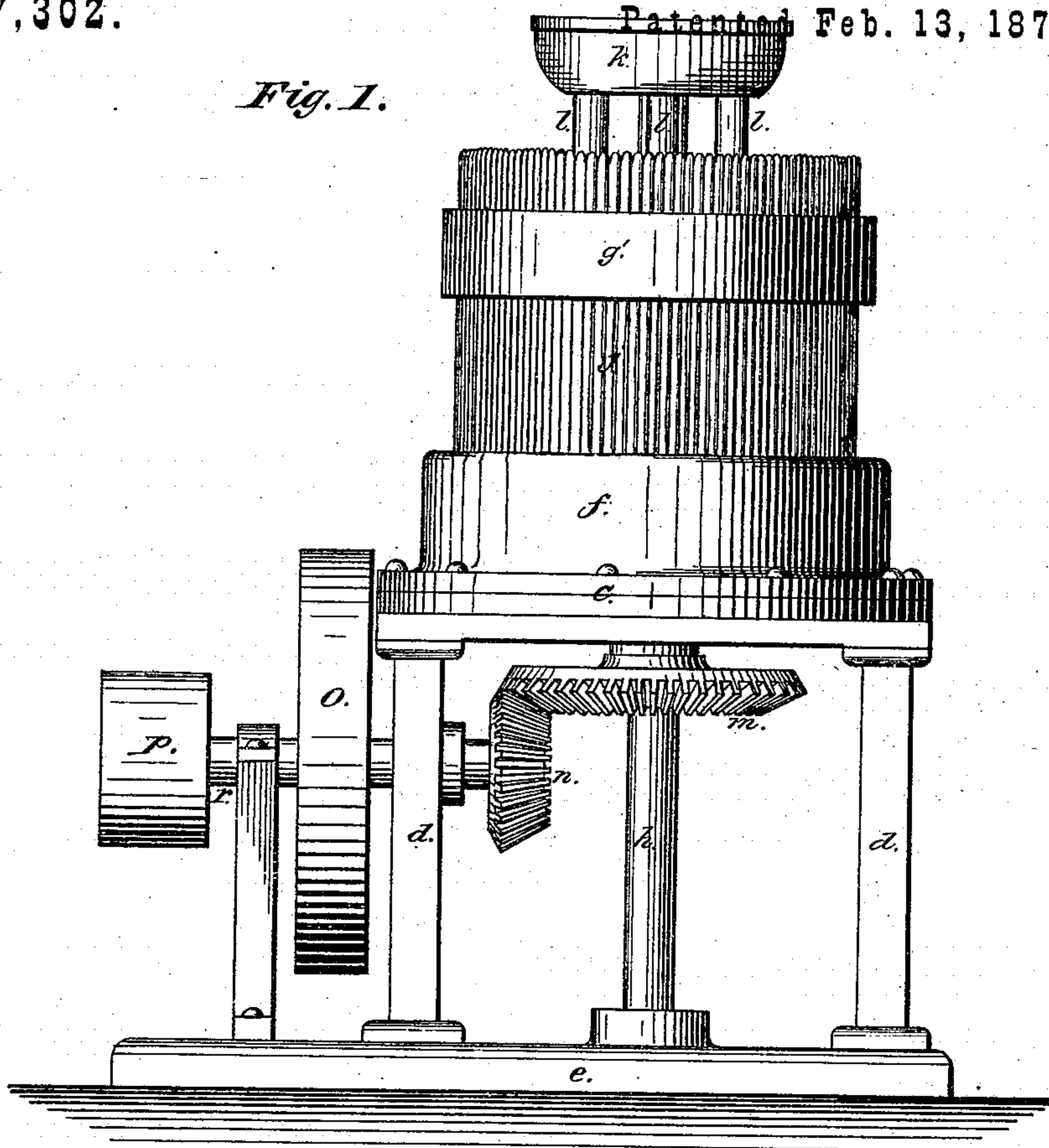
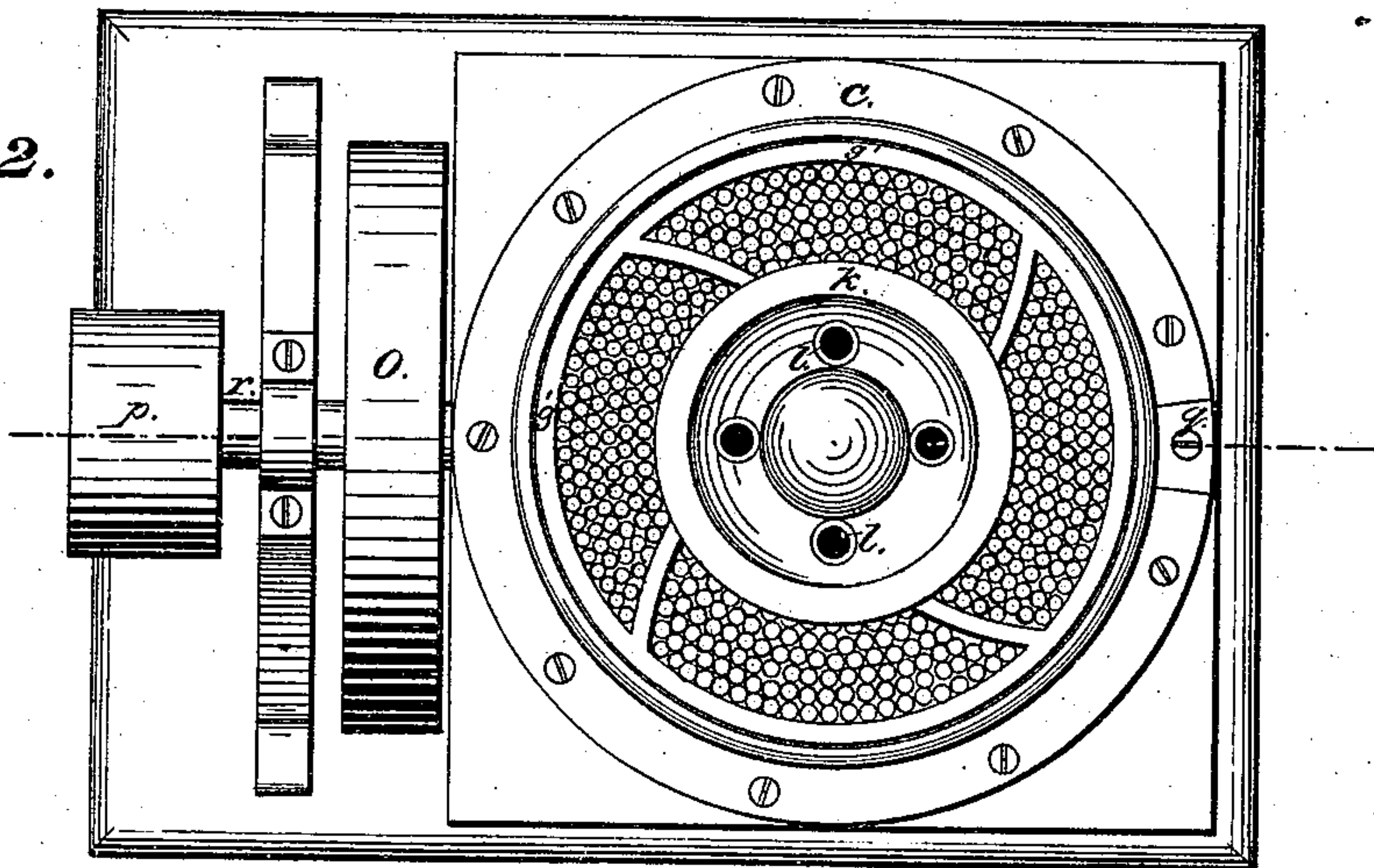


Fig. 2.



Witnesses:

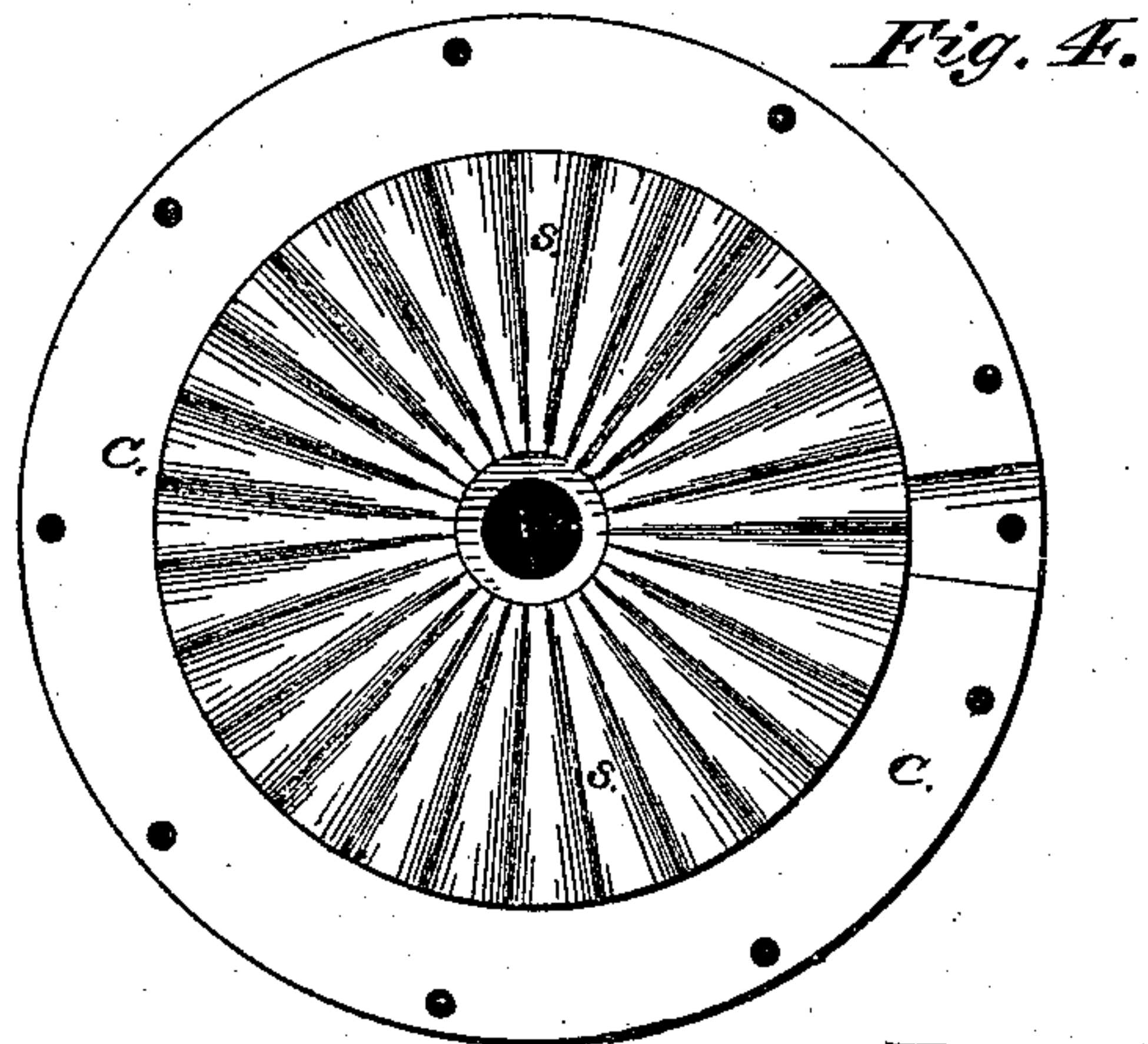
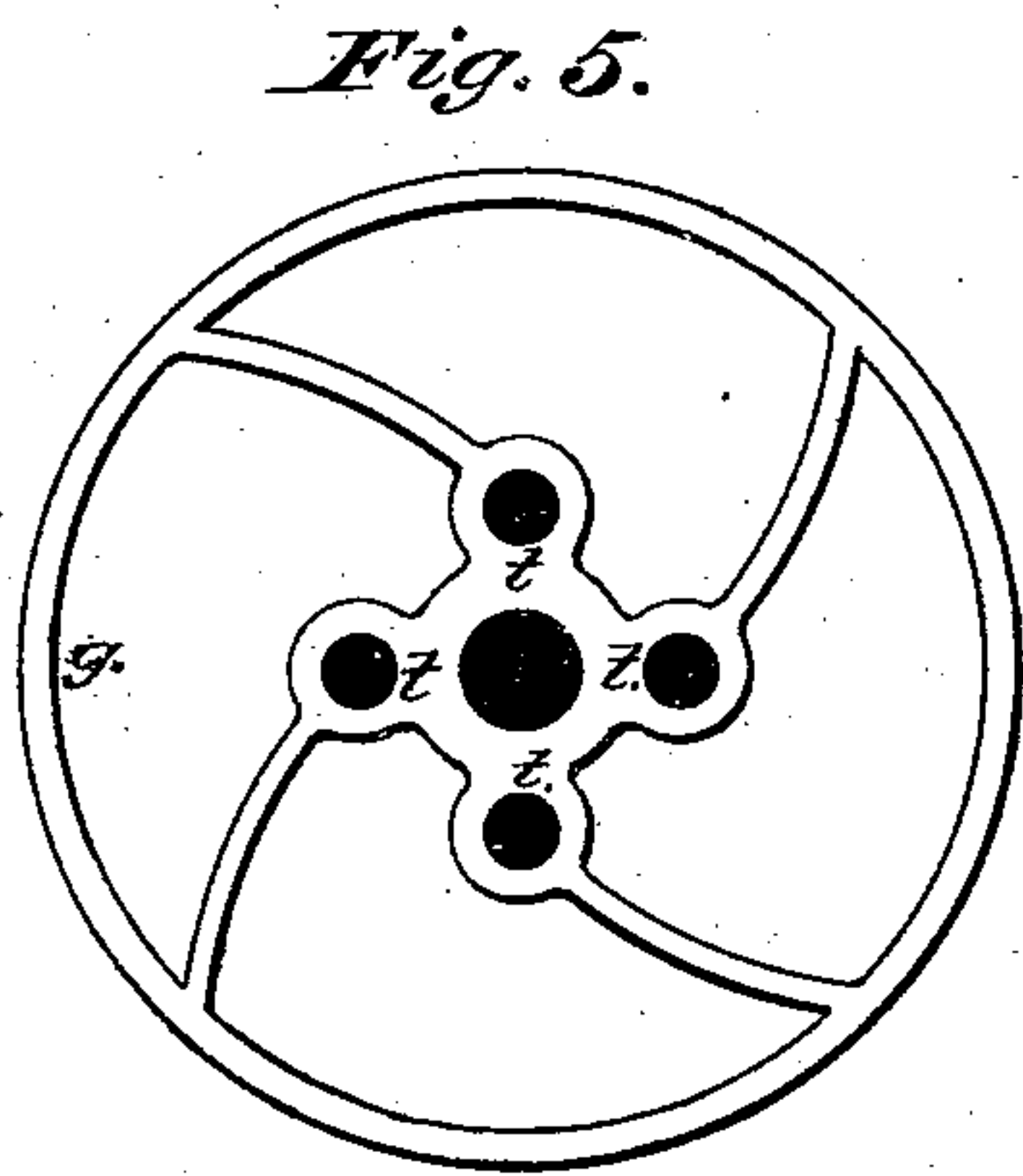
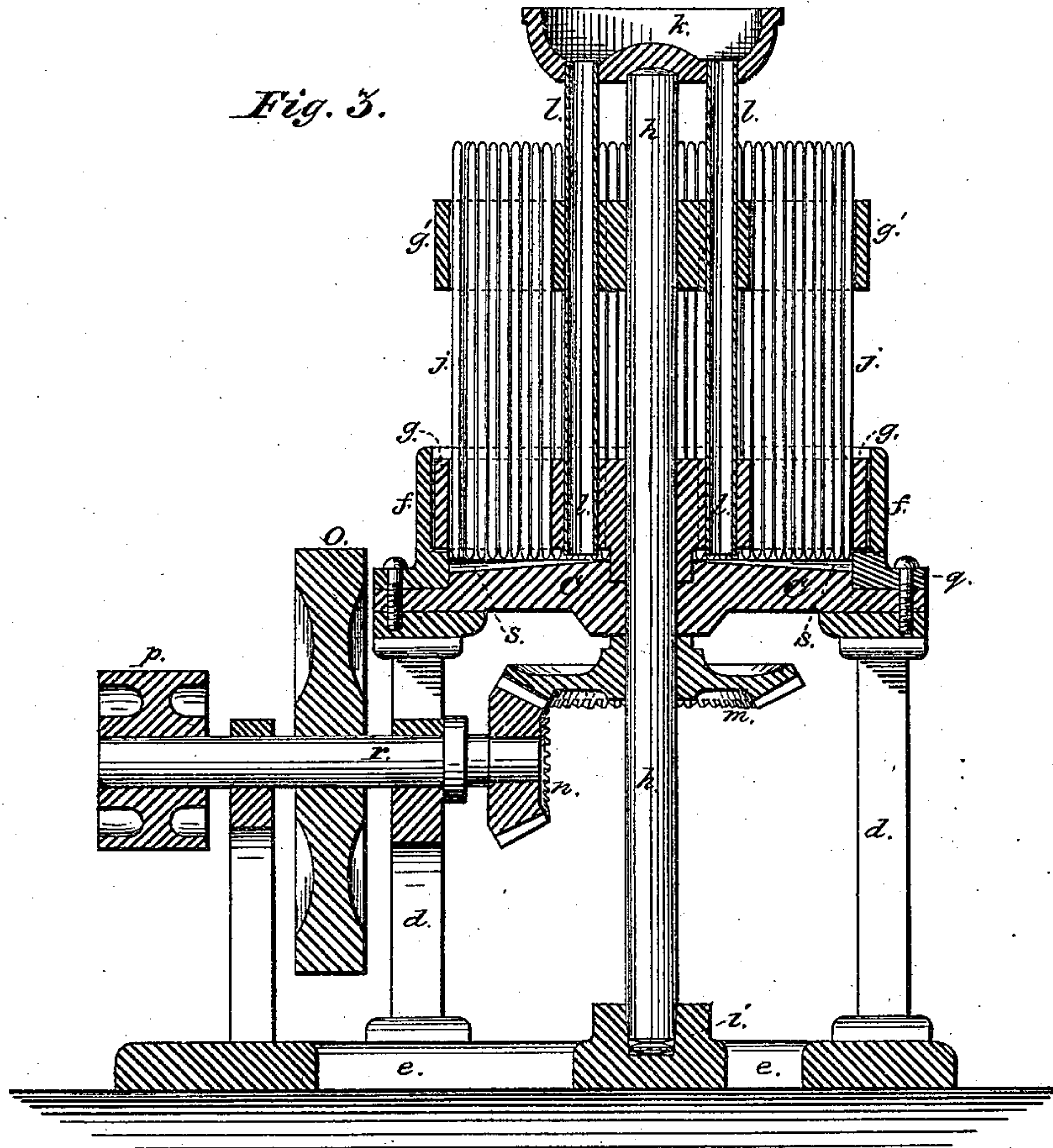
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D. P. Cowl

Inventor:

Darius H. Parmelee
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2 Sheets—Sheet 2.

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Witnesses:

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UNITED STATES PATENT OFFICE.

DUBOIS D. PARMELEE, OF NEW YORK, ASSIGNOR TO ANDREW W. BILLINGS,
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IMPROVEMENT IN MACHINES FOR TRITURATING AND POLISHING METALLIC POWDERS.

Specification forming part of Letters Patent No. **187,302**, dated February 13, 1877; application filed
January 18, 1877.

To all whom it may concern:

Be it known that I, DUBOIS D. PARMELEE, of the city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in the Manufacture of Metallic Paints or Powders; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification, in which—

Figure 1 is a side view of the machine; Fig. 2, a plan view; Fig. 3, a sectional view through *x x* of Fig. 2; Fig. 4, a view of the bed-plate, and Fig. 5 a top view of one of the drums for holding the tritulating-rods.

My invention has reference to a machine designed to be used for tritulating and burnishing the fine metallic powders or scales made by the invention described in an application for a patent for making bronze powders, heretofore filed by me.

By reference to the specification referred to it will be found that micrometrically thin scales are produced by the action of reaming knives or cutters on the faces of metal ingots. To triturate and burnish the scales thus produced is the object of the machine forming the subject of this invention. It is suitable, however, for tritulating pigments of any character, or for mixing them with oil or varnishes, and when made of porcelain or proper vitreous material, in place of iron and steel, it is adapted for use as a drug-mill.

The machine which constitutes my invention involves the principle of the simultaneous rubbing and beating of the fine metallic scales, to effect which I make use of a cylinder with a fluted bed-plate, and a series of metallic rods or bars, which are supported in an upright position and allowed a vertical play, so that when they are revolved the irregular surface of the bed-plate will cause the rods to rise and fall, and the beating thus effected, together with the rubbing produced by the revolution of the rods, triturate and burnish the powders.

In the accompanying drawing, C represents the fluted bed-plate resting upon a substantial frame, *d e*. *f* is a cylinder, fitted and bolted to a flange on the outer edge of the fluted bed; it has also a flange, as shown at S, Fig. 3. Into this flange the wheel or drum shown at Fig. 5 is closely fitted, but so that it will easily revolve. A shaft, *h*, passes through the hub of this wheel, is keyed to it, and passes upward. About eight inches above the first wheel is another, its exact counterpart, which is also firmly keyed to the shaft, and revolves with it. The shaft *h* rests on and revolves in a steel socket, *i*, and is turned by gearing or cog-wheels shown at *m n*, driven by the belt and pulley *p* at the end of the shaft *r*. O is a balance-wheel. Between the partitions of drum *g g'* are steel rods *j j*, having their ends turned spherically, and standing vertically on the flutes of the bed-plate C. A hopper or funnel, *k*, rests above the whole on pipes passing through the holes of the arms of the cylinder, Fig. 5, *t t*. These pipes are shown at *l*. There are four pipes passing to the bottom of the arms and within a half-inch of the flutes.

The fluted bed-plate is made of cast steel or cast iron, made perfectly smooth and case-hardened. The steel rods are also made smooth, and their ends tempered.

The machine from which the drawings or figures are made has a bed-plate twenty-six and one-half inches diameter; around the outer edge is a flange four inches wide, in the center is a bore of two and one-half inches for the shaft, and a flange for the journal-box of the shaft to rest on, of one inch in width. The space filled with the flutes is seven inches across. The flutes at the outer edge are two inches from the center of one hollow to the center of the next, and the depth of the hollow is half an inch. As the width of the flutes is narrowed toward the center, so is the depth diminished. The steel rods are twenty-four inches long, one-eighth inch diameter, and in the aggregate weigh about one thousand pounds.

In practice, the material to be trituated and polished is placed in the hopper *k*, from which it falls through the pipes *l* to the face of the

fluted bed. The machine being in motion by means of the gearing beneath the bed-plate, the rods pass over the flutes and perform the work required. The powder is carried gradually to the outer edge of the flutes, and at intervals is allowed to pass out of the opening *q*, which has a gate adjusted to it for the purpose.

The bed-plate is represented as being flat, but instead of being of that form it may be either concave or convex.

Having described my invention, what I claim is—

1. A triturating and burnishing machine, composed of the following parts, to wit: A cylinder provided with a corrugated or fluted bed-plate, and a series of metallic bars or

rods resting on the bed-plate, and supported in an upright position by a frame or drum which will allow the rods a vertical play, and appropriate gearing for revolving the frame, substantially as set forth.

2. The combination of the cylinder and bed-plate *f C*, rods and frame *j g g'*, hopper and conveying-tubes *k l*, shaft *h* and its gearing, substantially as set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

DUBOIS D. PARMELEE. [L. S.]

Witnesses:

THOMAS J. RICE,
WM. H. LOCKWOOD.