

(No Model.)

J. E. COMPTON.

WHEEL FOR GRINDING OR POLISHING SURFACES.

No. 310,799.

Patented Jan. 13, 1885.

Fig. 1.

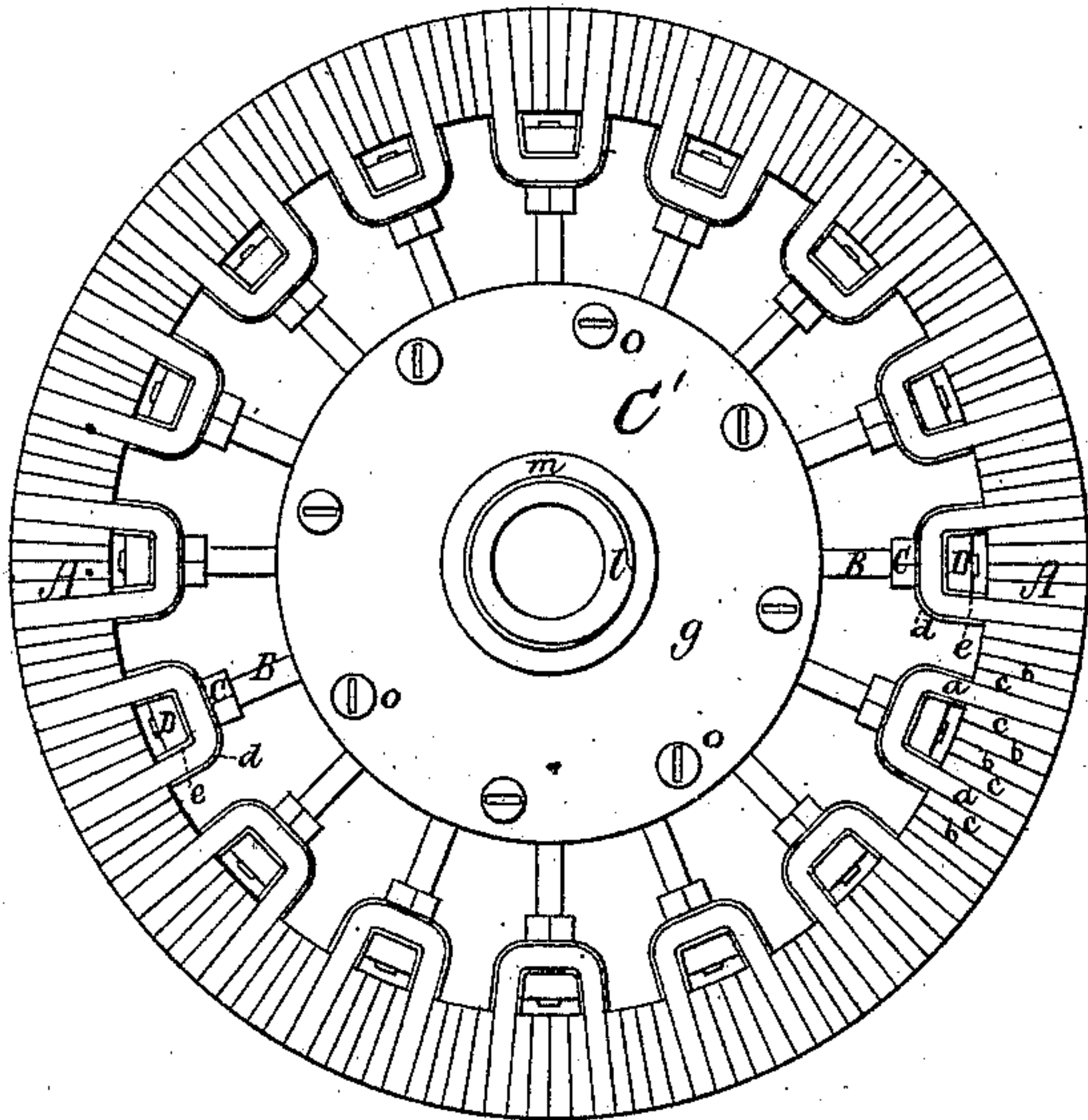


Fig. 2.

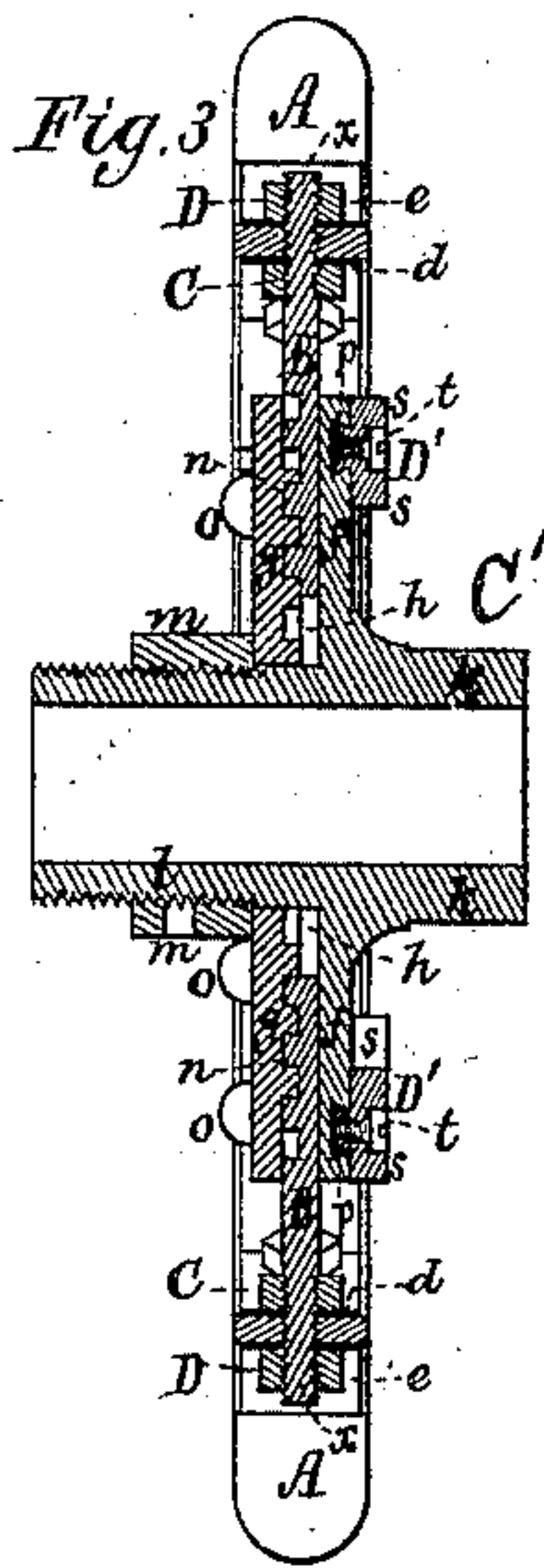
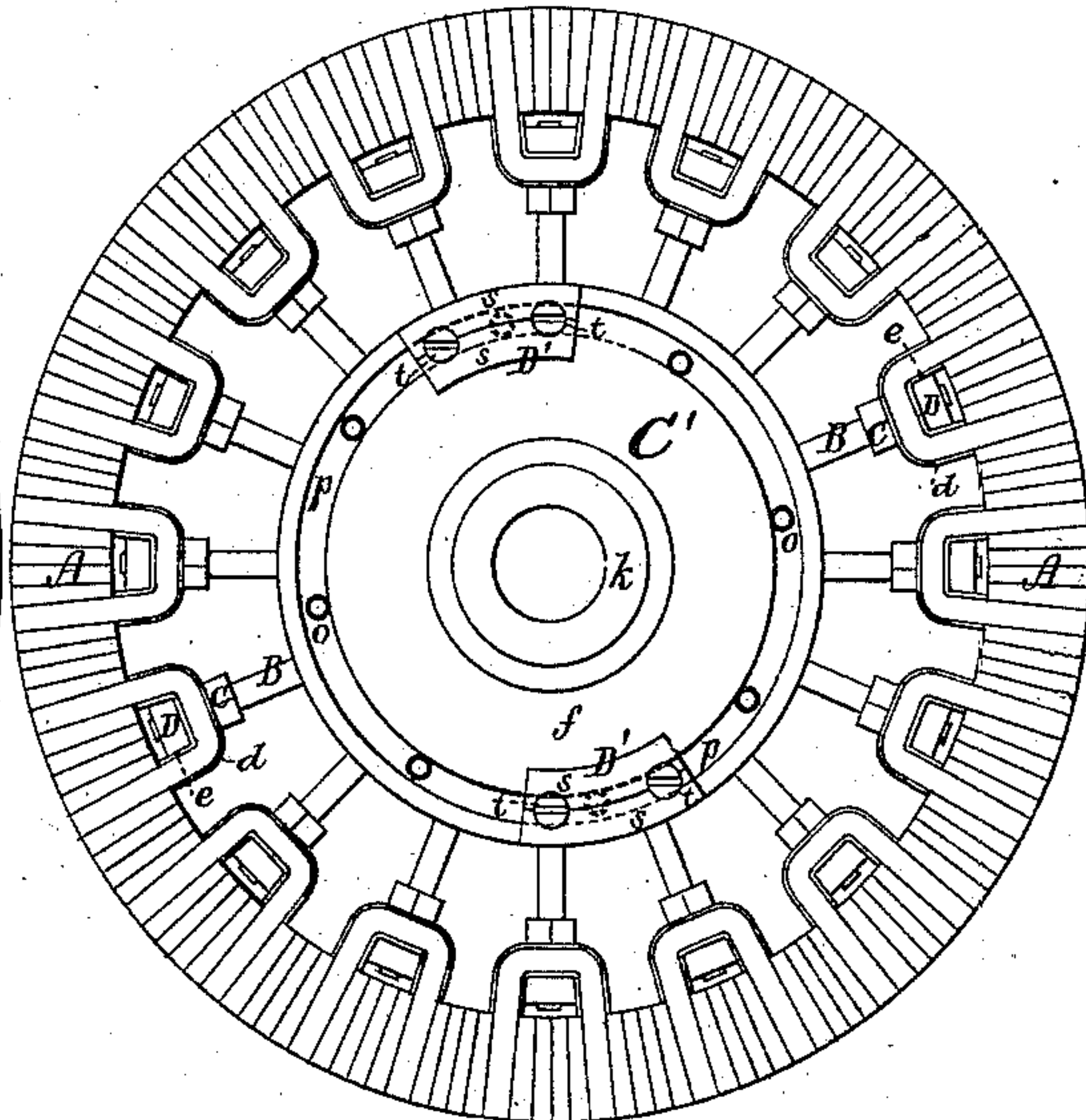


Fig. 4.

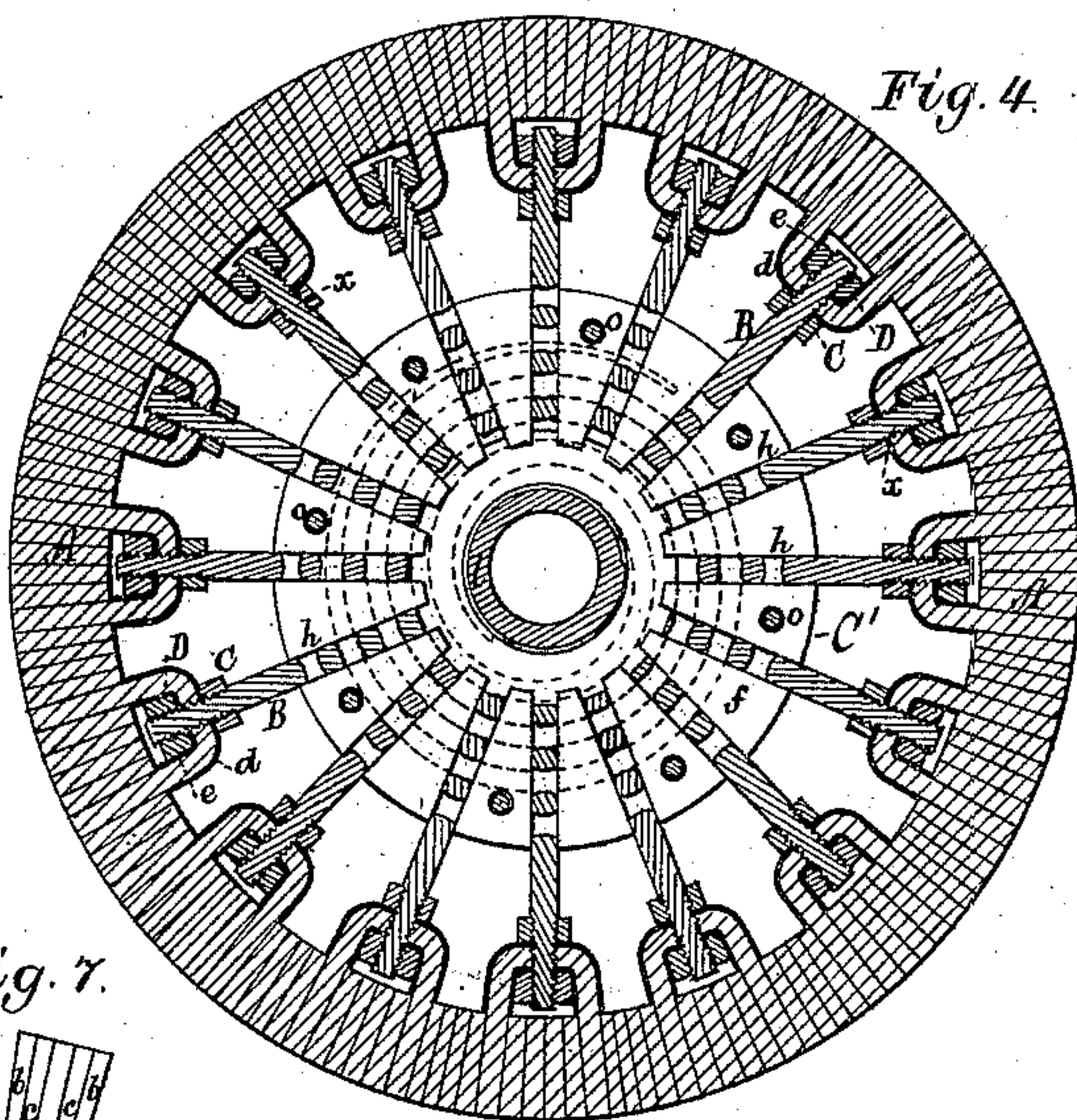


Fig. 7.

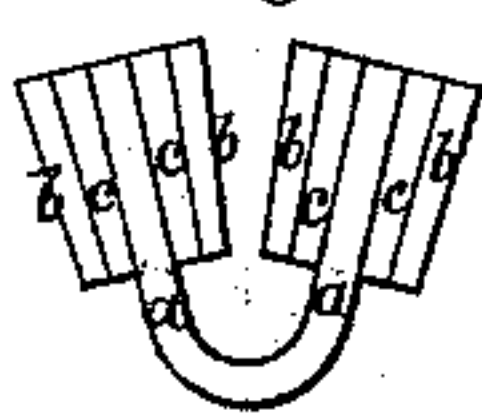


Fig. 8.



Fig. 9.

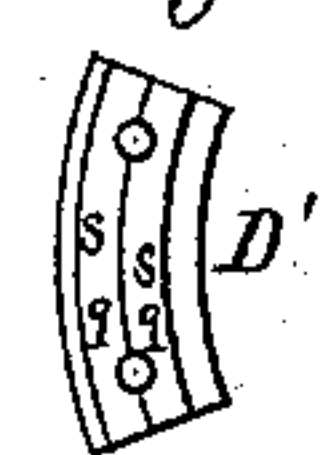


Fig. 10.



Fig. 5.

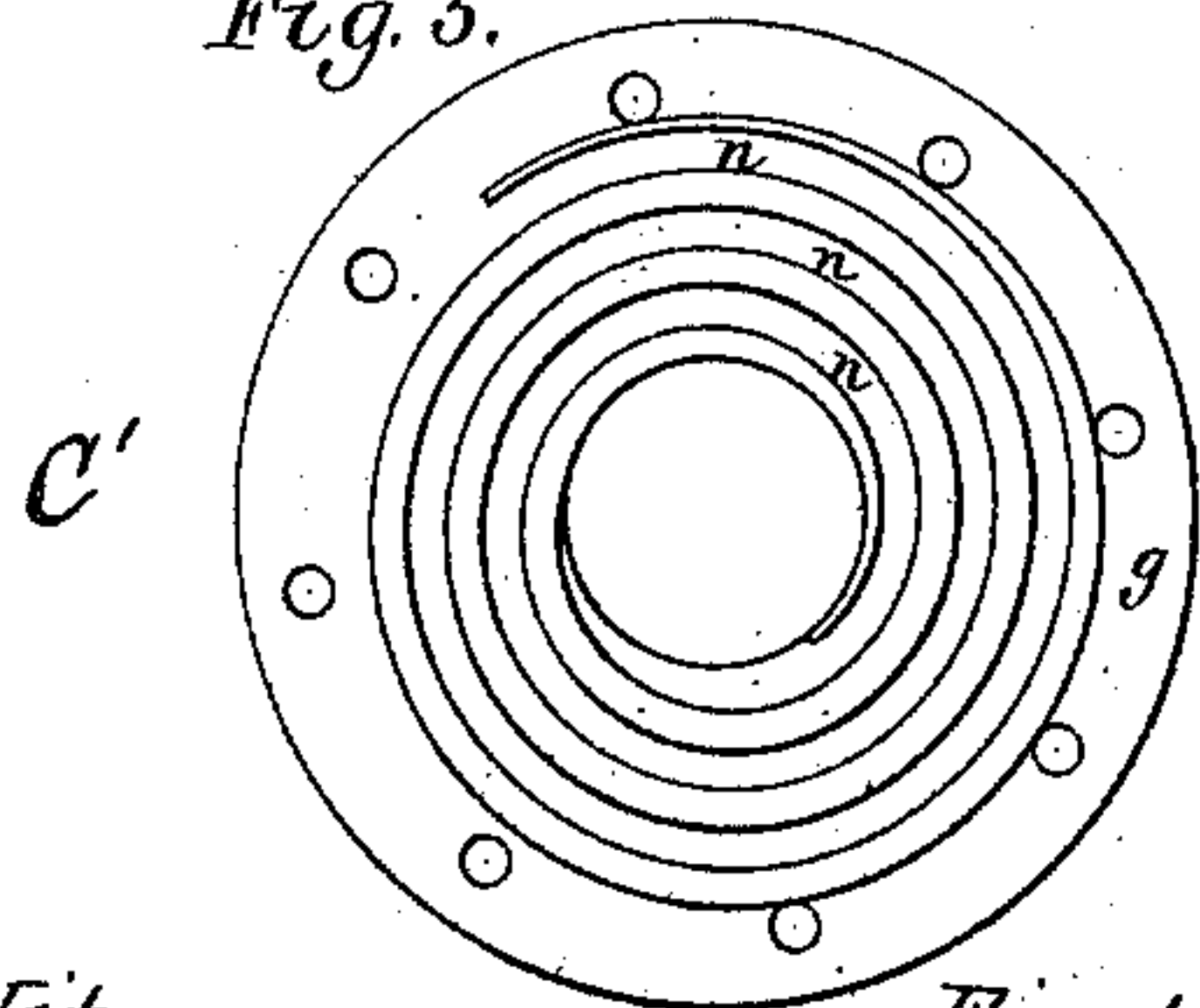
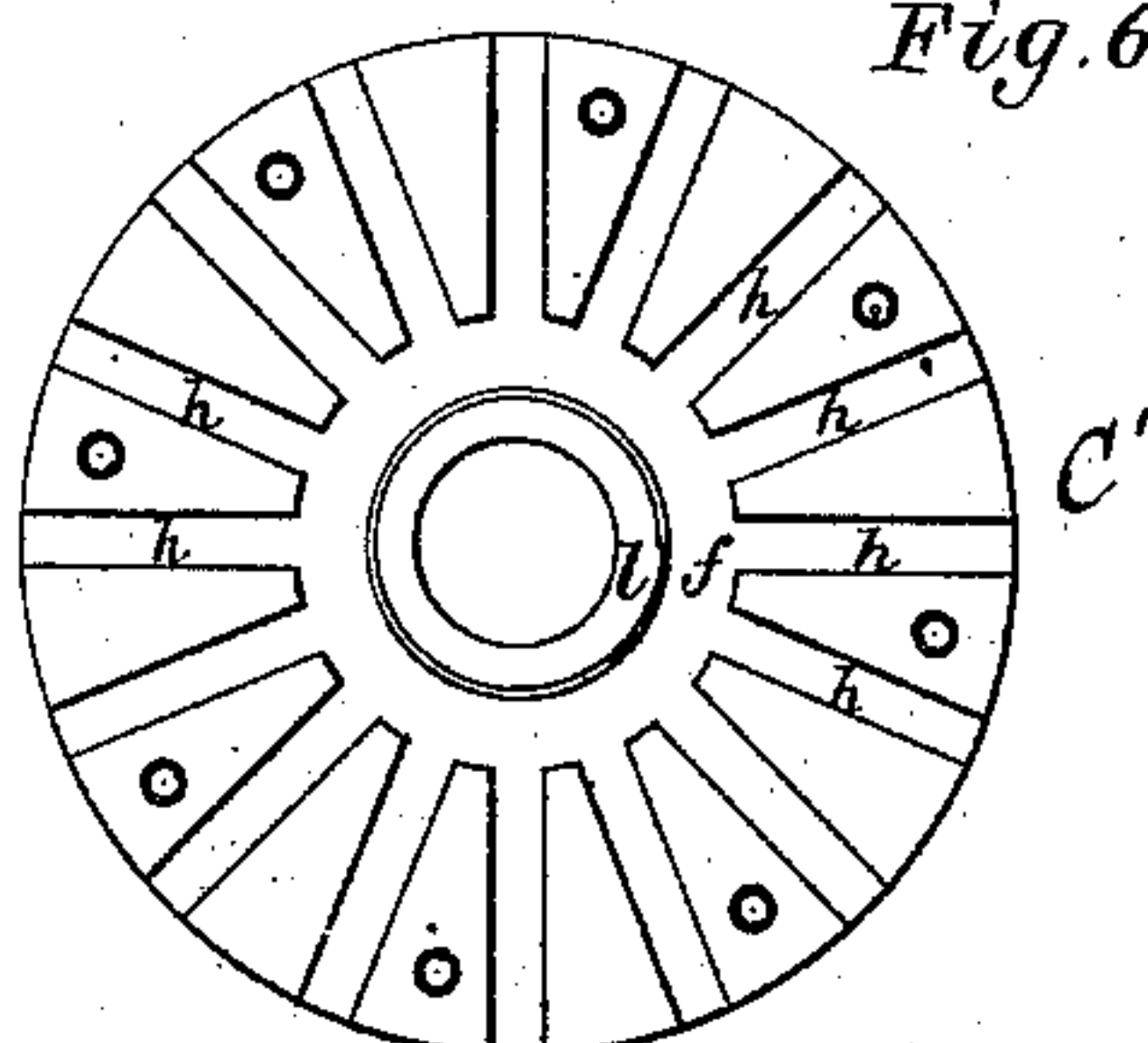
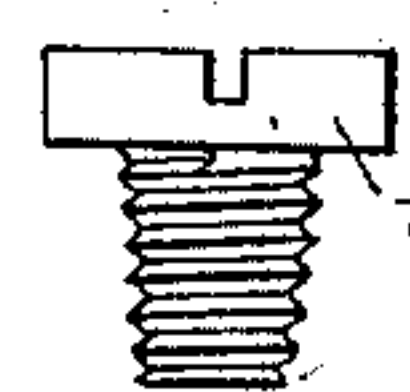


Fig. 6.



Witnesses  
S. N. Piper  
C. A. Pratt

Fig. 11.



Inventor.

James Ebenezer Compton  
by R. H. Eady atty.



# UNITED STATES PATENT OFFICE.

JAMES EBENEZER COMPTON, OF LYNN, MASSACHUSETTS.

## WHEEL FOR GRINDING OR POLISHING SURFACES.

SPECIFICATION forming part of Letters Patent No. 310,799, dated January 13, 1885.

Application filed May 20, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES EBENEZER COMPTON, a citizen of the Dominion of Canada, but now residing at Lynn, in the county of Essex, of the Commonwealth of Massachusetts, have invented a new and useful Improvement in Wheels for Grinding or Polishing Surfaces or for other Mechanical Purposes; and I do hereby declare the same to be described in the following specification and represented in the accompanying drawings, of which—

Figures 1 and 2 are opposite side elevations, Fig. 3 a transverse section, and Fig. 4 a longitudinal section, of a wheel embracing my invention. Fig. 5 is an inner side view of the helically-grooved plate-section or annulus constituting part of the hub of such wheel. Fig. 6 is an inner side view of the radially-grooved section of the hub, and Fig. 7 is an edge view of one of the loops and its two voussoirs, to be described. Fig. 8 is an end view, Fig. 9 a rear view, and Fig. 10 a transverse section, of one of the adjustable weights *D'*, hereinafter described, the said section being taken through one of its confining-screws. Fig. 11 is a side view on an enlarged scale of one of the tapering screws *t*, hereinafter referred to.

The nature of my invention is duly defined in the claims hereinafter presented.

The rim *A* of the wheel is made of sole-leather or rawhide, or of strong leather-board or other suitable like material, and, as shown, is composed of a series of loops of such leather or material and two voussoirs to each loop, each of such voussoirs consisting of part of the loop and two or other suitable number of pieces of the leather or material arranged side to side in pack and on opposite sides of the loop, in manner as shown in Fig. 7, in which *a* denotes the loop, and *b b* and *c c* the pieces of leather, applied to each other and to the loop at and near each end of it, the pack composed of the said pieces having the form of or being tapering like the voussoirs of an arch. The parts composing each voussoir may be secured together by cement arranged between them or by pegs or nails driven into them. There are to each loop, and to extend between its voussoirs, two bent or arched re-enforcers or metallic plates, *d* and *e*, through which and the loop at its middle an arm, *B*, is extended, the part

*x* of such arm, that goes through the loop, being screw-threaded to receive two nuts, *C* and *D*, arranged with the loop and its re-enforcing plates *d* and *e* in manner as represented. By means of the screw-threads and the nuts, or such and the plates, the arm is secured to the loop. The said arms *B*, arranged in radial directions, extend within the wheel-hub *C'*, between its two sections *f* and *g*, and are adapted to slide in radial grooves *h*, formed in the inner face of the section *f*, such grooves being shown in Fig. 6. The section *f* is disk-shaped and provided with a hub, *k*, the part *l* of which is cylindrical, and has upon and concentric with it the flat annulus or part *g*, which is held in place in a measure by a nut, *m*, screwed on the said part *l*. A helical groove, *n*, is made in the inner face of the part *g*, into which groove each of the arms is extended where it covers such groove. By turning the helically-grooved annulus *g* one way on the extension *l*, all the arms will be simultaneously moved inward in radial directions, so as to draw the several voussoirs inwardly and toward each other. By continuing to revolve the annulus these voussoirs may be drawn tightly together, so as to form a very strong rim to the wheel. Screws *o*, inserted through one of the sections *f g* and screwed into the other, are arranged between the arms, as shown. They are to aid in firmly holding the sections to the arms, but have to be removed from the sections before the helically-grooved one can be revolved. The rim of a grinding or polishing wheel so made is, when in use, to have on its sides and periphery, or on the latter, some proper grinding or polishing or abrasive solution—such as emery, corundum, sand, or rotten-stone, for instance. In one of the sections *f g* of the hub there is formed near its edge, and concentrically therewith, a circular groove, *p*, dovetailed in transverse section. This groove has extending into it the dovetailed ribs *q* of two adjustable weights, *D'*. Each of the said weights is in two separate curved sections, *s s*, formed as shown. (See Figs. 8, 9, and 10.)

Into and between the two sections *s s* screws *t t* are screwed and abut against the bottom of the groove, each screw being tapering, so as on being screwed down between the two sections and against the said bottom it will force them



apart and laterally or outwardly in a manner to cause their separable dovetailed rib to be extended and moved, so as to hold the weight firmly in position on or to the hub-section.

5 These adjustable weights are to properly balance the wheel to cause it to run correctly while in operation. By reason of the weights  $D'$  being in sections, they are the more readily placed within or removed from the groove  $p$ .

10 I claim—

1. The combination of the helically and radially grooved sections of the hub with the series of arms applied, as described, to such section, and with the rim consisting of a series of voussoirs, each of which is composed of 15 pieces of leather, as set forth, and connected with the arms, the whole being so that by revolving in one direction the helically-grooved section of the hub the several voussoirs, by 20 means of the arms, shall be drawn and held firmly together, essentially as explained.

2. The wheel-rim consisting of a series of voussoirs, each of which is composed of pieces of leather in pack, in combination with a hub, 25 and with arms adapted thereto and to such voussoirs, and provided with mechanism for moving such arms in radial directions toward the hub, so as to draw together the several

voussoirs, all being substantially as set forth, the said mechanism for moving such arms consisting of the disk  $g$ , provided with the helical groove  $n$ , having the arms, where covering it, extended into it, as set forth. 30

3. The wheel provided with the circular groove dovetailed transversely, and with one or more weights, made in two sections, dovetailed 35 as described, and arranged with such groove and held in place thereto by screws going into and between the two sections, all being substantially as set forth. 40

4. The wheel-hub, made in sections, helically and radially grooved and connected, substantially as described, in combination with the series of radial arms, arranged between and applied, as described, to the said sections, 45 and with the rim composed of the loops and voussoirs of leather, and of the strengthening metallic plates applied to each loop, the said arms being extended through the loops and such plates and connected therewith by screws 50 and nuts, substantially as represented.

JAMES EBENEZER COMPTON.

Witnesses:

R. H. EDDY,  
E. B. PRATT.