

(No Model.)

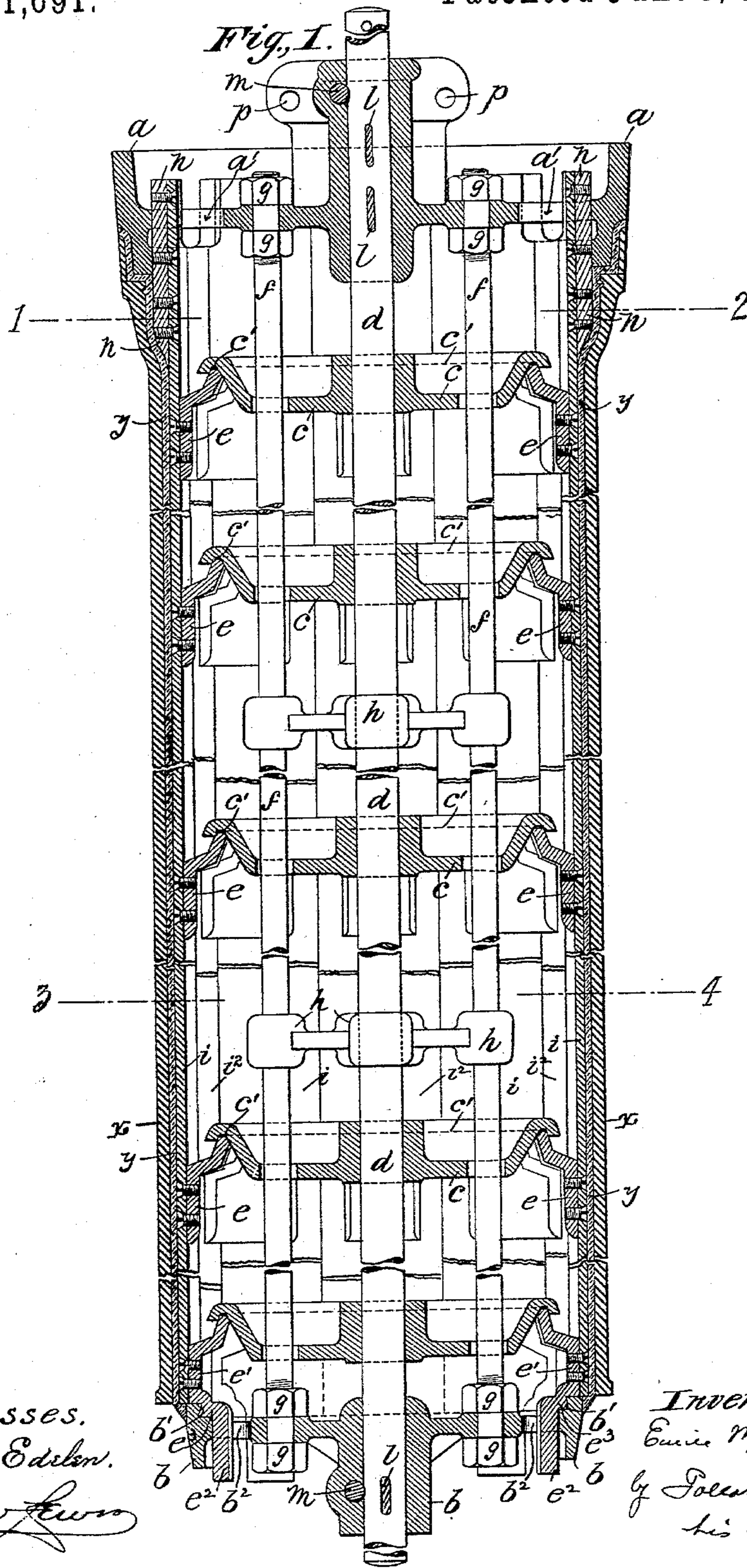
3 Sheets—Sheet 1.

E. M. D. ANDRÉ.

LANTERN FOR USE IN MANUFACTURING PIPES.

No. 561,691.

Patented June 9, 1896.



Witnesses.

Wm Rees Edelen.

Have fun

Inventor.

Lucie M. D. Andre'

by Joseph Marino.
his attorney

(No Model.)

3 Sheets—Sheet 2.

E. M. D. ANDRÉ.
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Fig. 4.

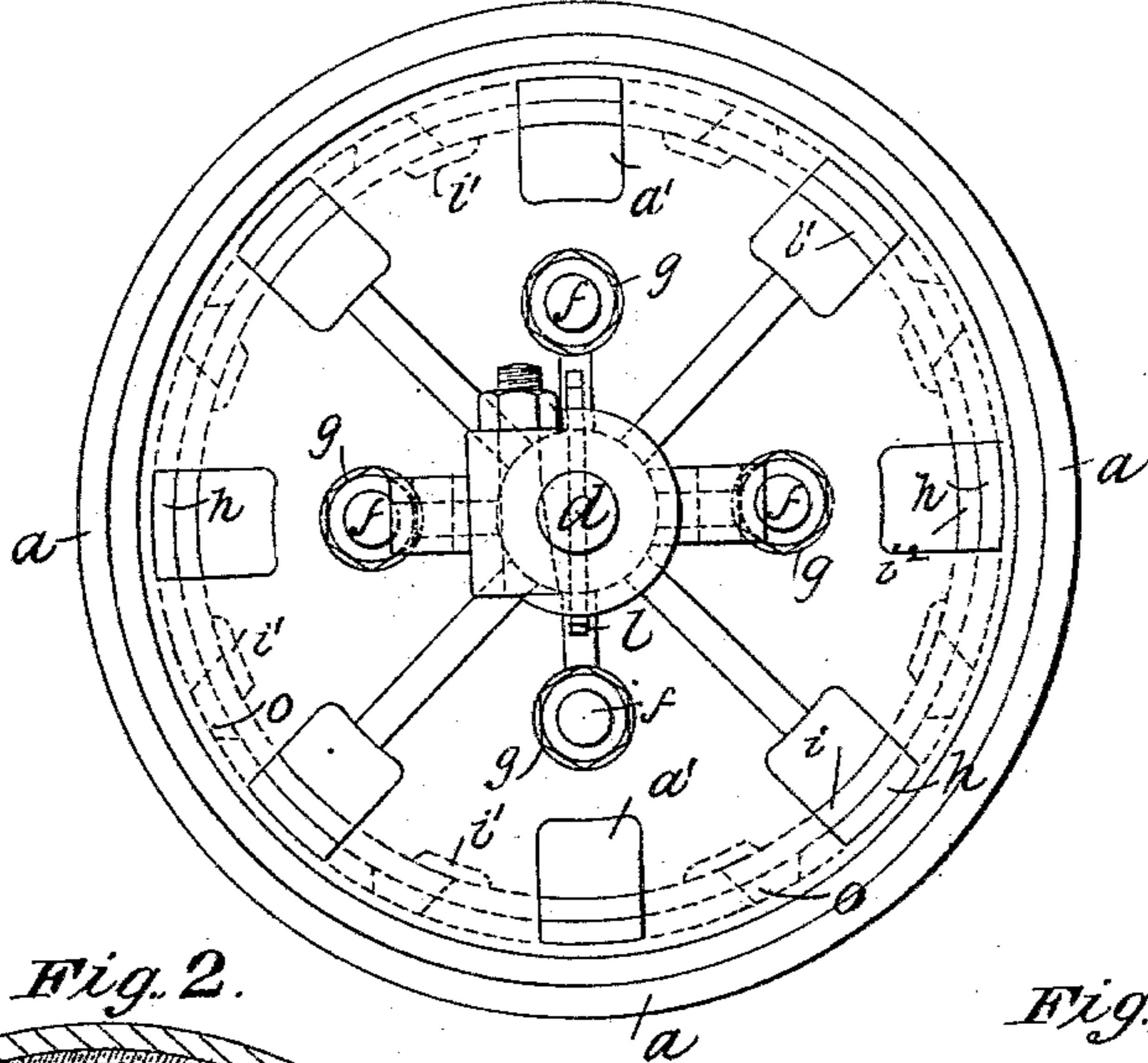


Fig. 2.

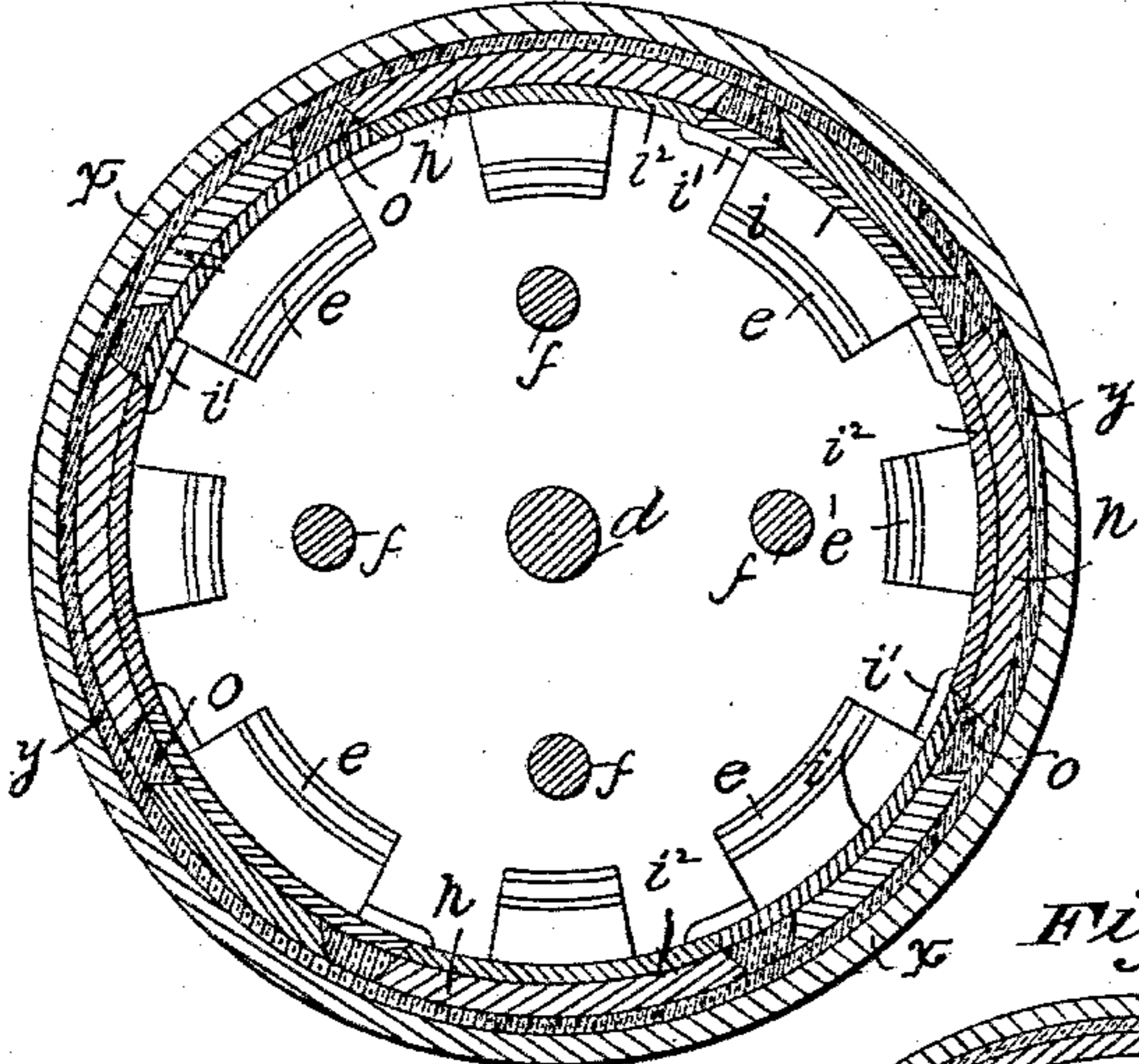


Fig. 5.

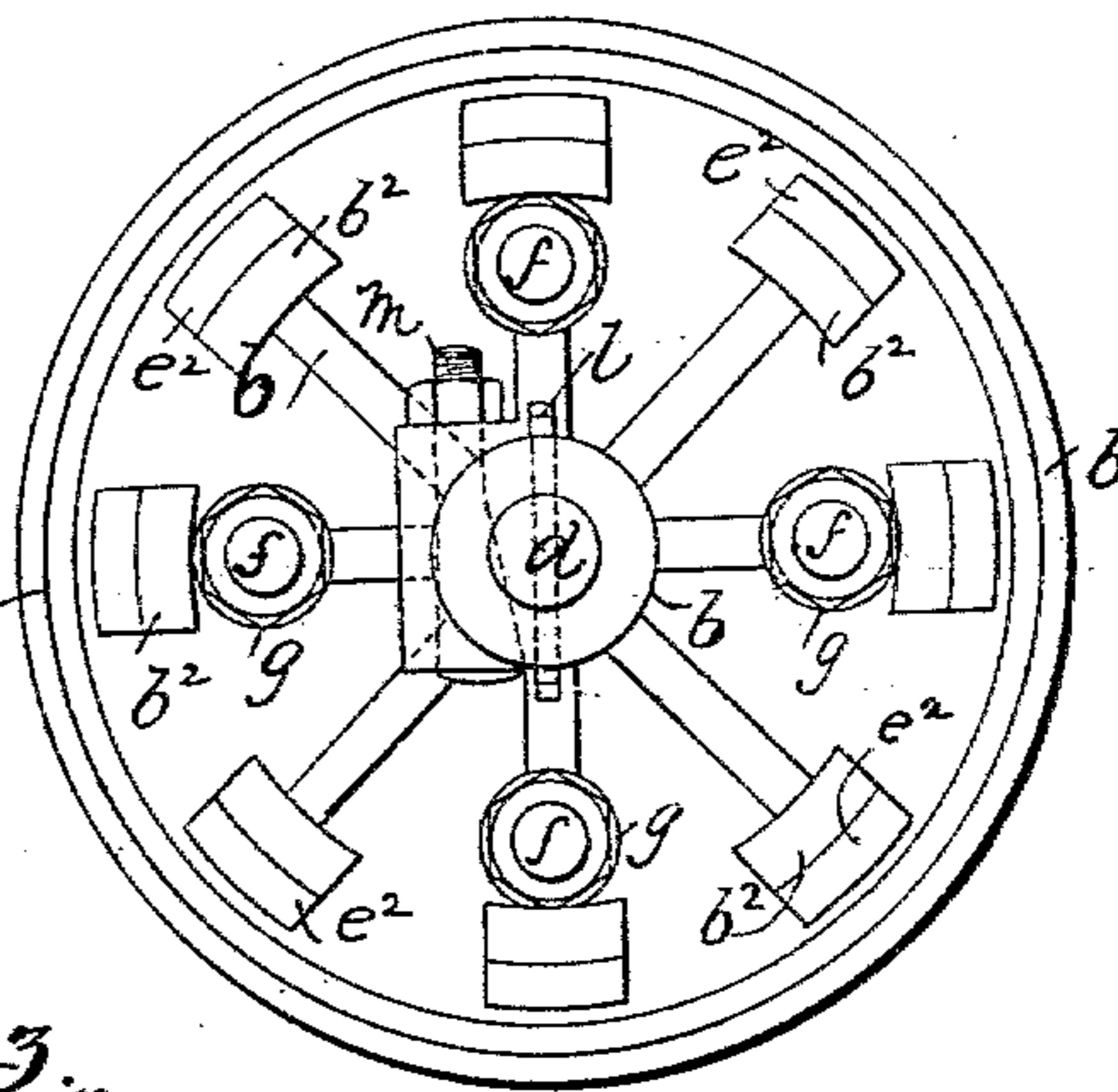
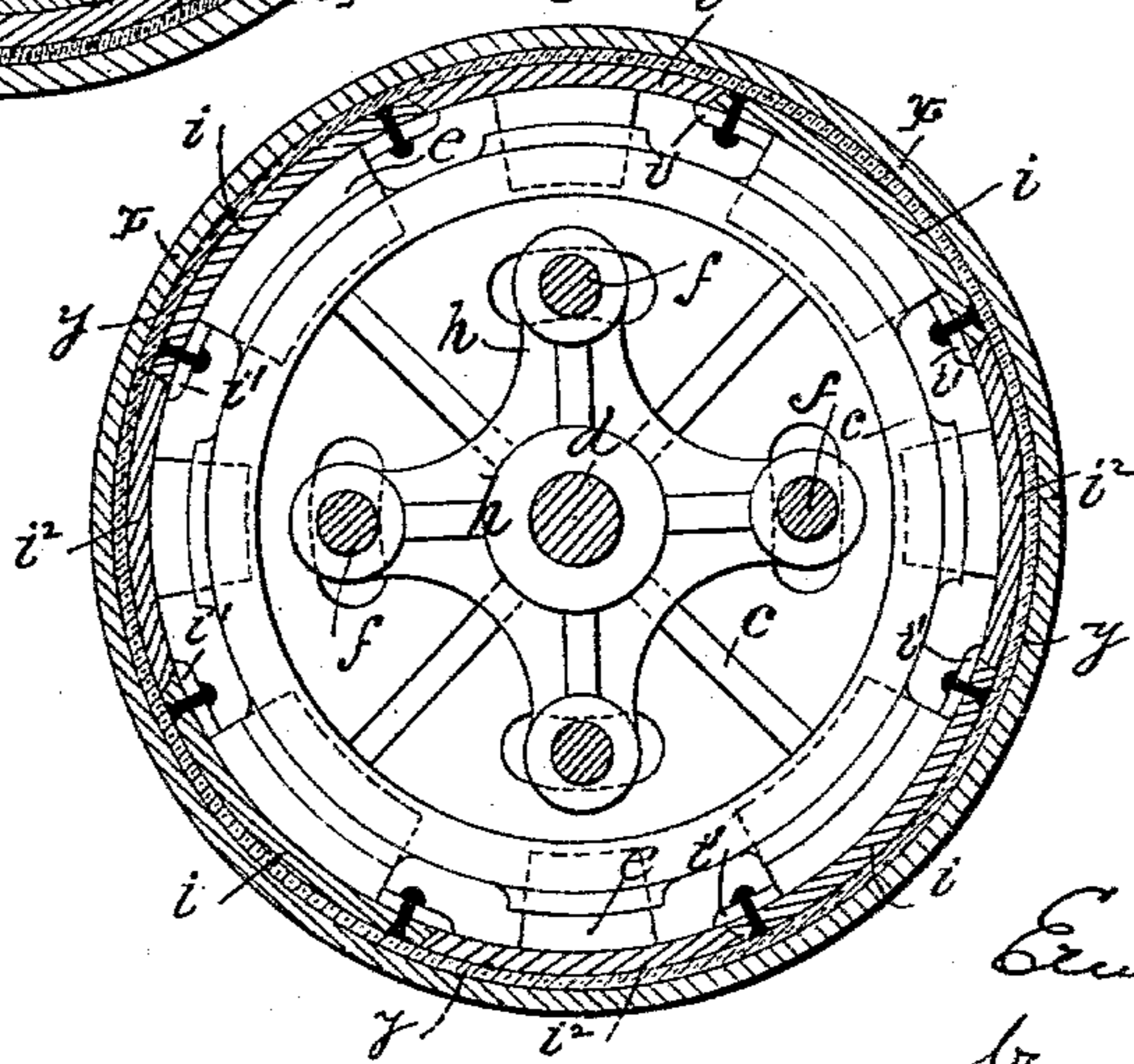


Fig. 3.



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(No Model.)

3 Sheets—Sheet 3.

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Fig. 6.

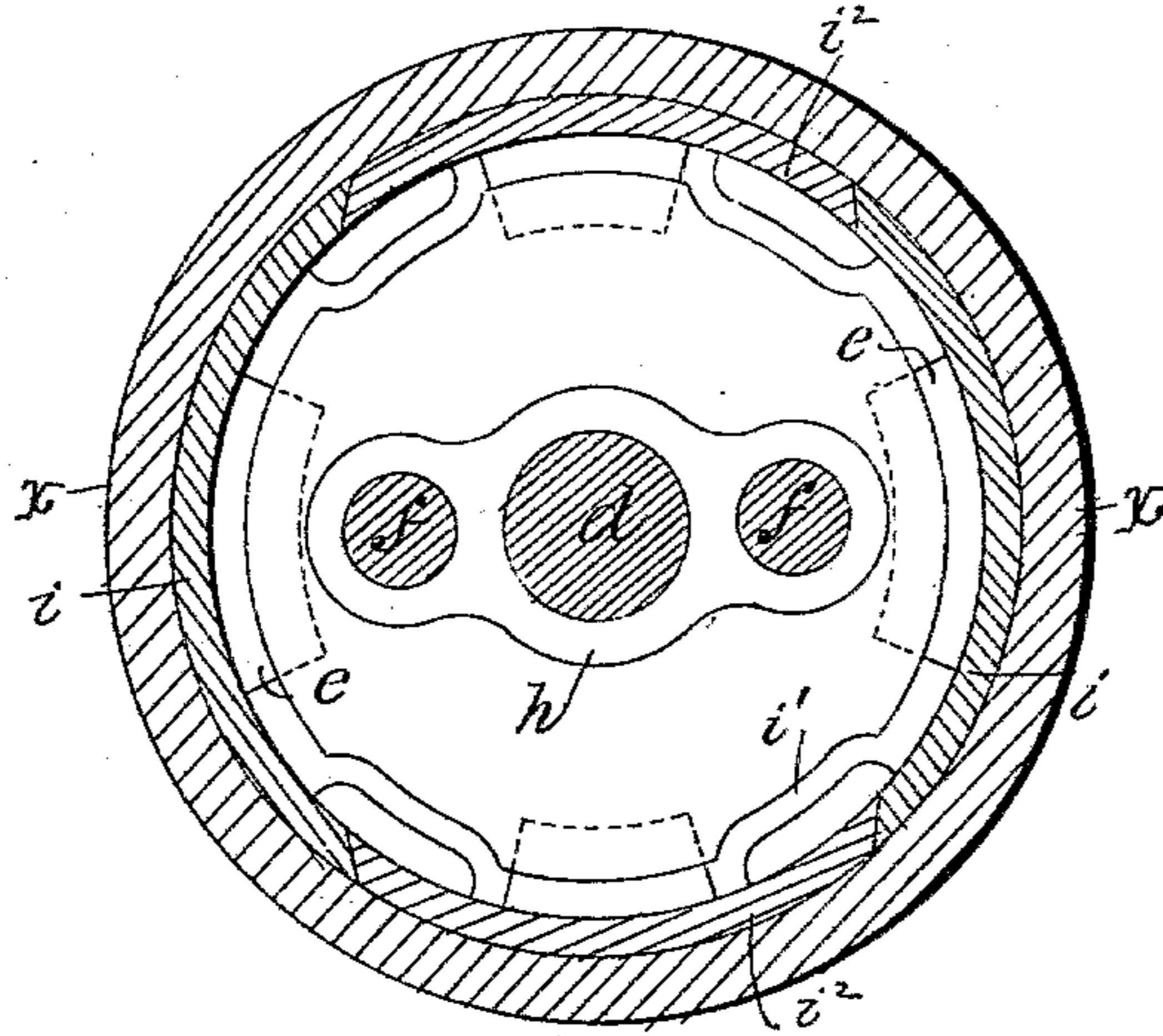
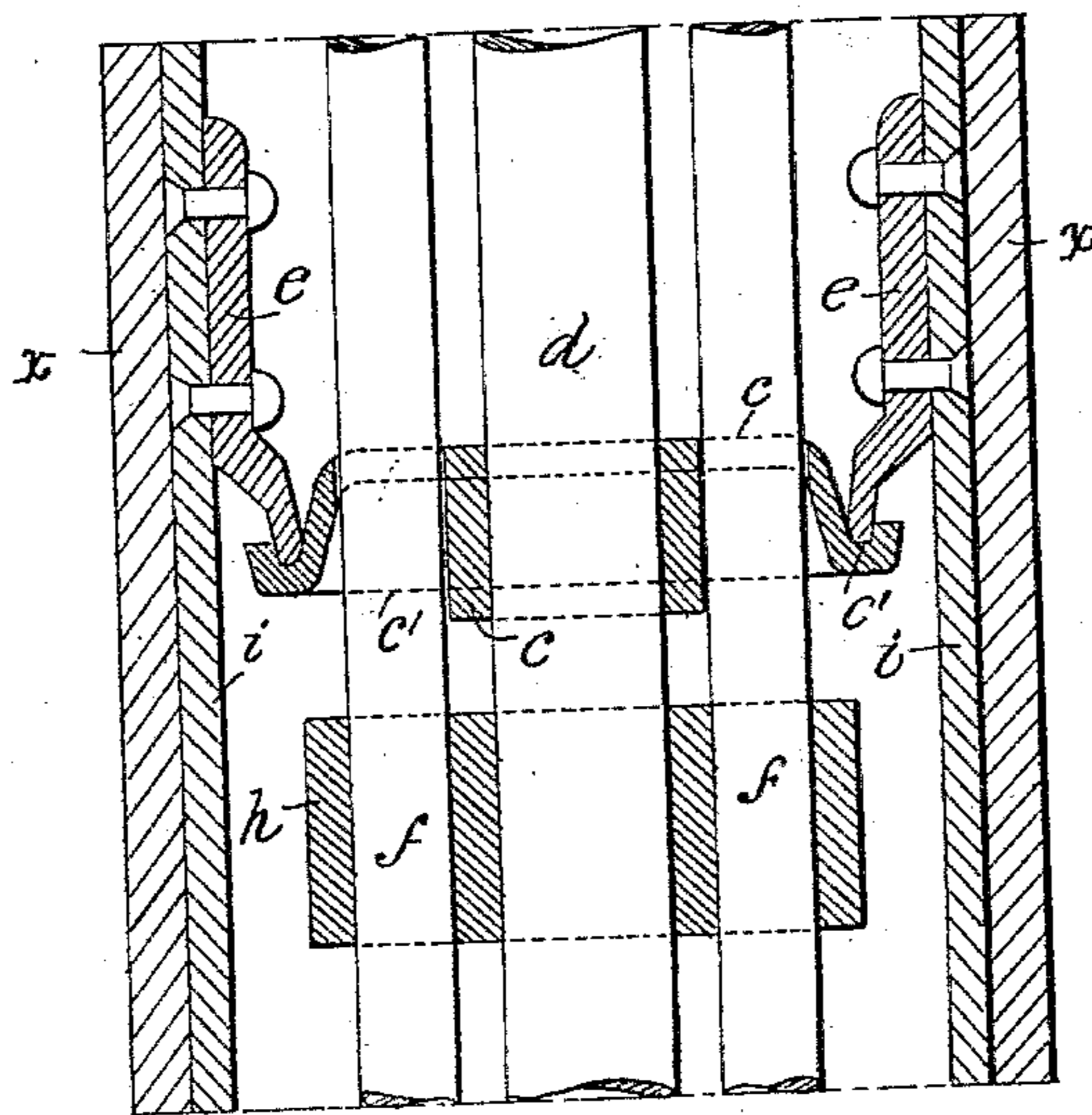


Fig. 7.



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Inventor.
Emile M. D. André
by *[Signature]*
his attorney,

UNITED STATES PATENT OFFICE.

EMILE MICHEL DENIS ANDRÉ, OF MERU, FRANCE.

LANTERN FOR USE IN MANUFACTURING PIPES.

SPECIFICATION forming part of Letters Patent No. 561,691, dated June 9, 1896.

Application filed December 23, 1895. Serial No. 573,093. (No model.) Patented in France December 26, 1894, No. 241,205.

To all whom it may concern:

Be it known that I, EMILE MICHEL DENIS ANDRÉ, professor of chemistry, residing at Meru, Department of Oise, France, have invented certain new and useful Improvements in Lanterns for Use in the Manufacture of Pipes, &c., (patented in France December 26, 1894, No. 241,205,) fully and clearly described in the following specification.

This invention has reference to lanterns or core-bars for use in the manufacture of pipes, hollow castings, &c.

The lanterns heretofore most extensively used consist of a cylindrical bar of cast-iron, upon which, after first being wrapped with materials, such as flax, hemp, &c., is placed an exterior coating of loam, clay, sand, or its equivalent. This latter coating (on account of the yielding nature of the surface upon which it is placed) must be of considerable thickness to form a sufficiently rigid surface when dried to withstand the effects of the heat, &c., of the molten metal coming in contact therewith. In the building up of a core in this manner a large amount of loam, as before stated, must be employed, requiring much care and trouble in shaping, handling, &c. Much difficulty is also experienced and time expended in removing the lantern subsequently to the casting of the pipe or hollow casting.

The object of the present invention is to avoid the difficulties above enumerated, as well as many others attending the use of lanterns of the type now generally employed, and in accordance therewith a lantern is so constructed that while during the casting of the pipe it supplies a perfectly rigid surface for the loam, (which together with the lantern forms the completed core,) but which when such operation is completed can be readily contracted, collapsed, or folded together, so as to much reduce its diameter, thereby permitting its removal from the casting with ease and facility. The lantern constructed in accordance with my invention also has the advantage of requiring but a thin layer, of about twelve millimeters in thickness, of loam, clay, or the like, to form the completed core.

Other features of the invention will be understood by reference to the accompanying drawings, forming part of this specification, wherein—

Figure 1 is a longitudinal vertical section of a lantern constructed in accordance with my invention and having a section of pipe cast thereon. Fig. 2 is a transverse section on line 1 2 of Fig. 1. Fig. 3 is a similar view on line 3 4 of Fig. 1. Fig. 4 is a top plan, and Fig. 5 a bottom plan, of Fig. 1; and Figs. 6 and 7 are transverse and longitudinal sections, respectively, of a simplified form of my invention.

The lantern herein described consists principally of three parts—viz., first, a fixed skeleton frame; second, a movable frame mounted and sliding upon said fixed frame, and, third, an exterior envelop or casing (inclosing parts one and two) constructed of segmental sections normally held in a rigid position by the movable frame, and thereby forming a compact and continuous casing, but which are adapted to be released by movement of the movable frame, so that they may be contracted, folded together, or collapsed, as hereinafter described.

The fixed skeleton frame comprises a cap *a* and a base *b*, connected by a number of rods *f*, having nuts *g* screw-threaded thereon for securing them to the cap and base. Rods *f* pass loosely through openings in plates *c c* of the movable framework and carry the spiders *h*, arranged at suitable intervals therealong, to give firmness and rigidity to the fixed frame.

The movable frame comprises an arbor *d*, passing through central openings in cap *a* and base *b*, in which it is secured by bolts *m* and keys *l*, as clearly shown in the drawings. Arbor *d* passes loosely through the central portions of spiders *h* and carries plates *c*, keyed thereon at suitable intermediate points or intervals. These plates *c* have a depending peripheral flange, forming on the under side thereof a groove *c'*.

The envelop or casing upon which the coating *y* of loam is applied to form the completed core is formed of a number of staves or segmental sections *i* and *i'*, respectively,

extending parallel with rods *f* and arbor *d*. As shown in Figs. 2 and 3, sections *i* and *i*² alternate, the meeting edges being inclined and the joints thus formed covered and hermetically sealed (after the application of the loam) by plates *i'*, riveted to the edges of stays *i*. On each of the stays are secured brackets or angle-pieces *e*, corresponding in number to the plates *c* and each projecting at its edge into the grooves *c'* on the under side of its corresponding plate *c*, thereby rigidly securing the stays with their meeting edges in close contact. The lower bracket *e'* on each of the stays has an extension *e*² depending through openings *b*² and furnishing a gripping-surface for any convenient implement, such as tongs or pincers, for moving the staves preparatory to removal of the lantern from the pipe *x*, as hereinafter explained. On extension *e*² is formed a shoulder *e*³, engaging an undercut groove *b'* in base *b*.

At their upper ends the staves project through openings *a'* in the cap *a* and have secured thereto plates *n*, which form an enlargement on the exterior surface of the casing corresponding to the flared end of the pipe, as shown in the drawings. Between the adjacent edges of plates *n* are spaces *o*, permitting the staves to be moved inwardly toward the axis of the lantern, which would not be permissible if the edges fit closely together. These spaces are filled in with loam and the entire surface of the casing covered with a layer of the same material of uniform thickness, (about twelve millimeters.)

After the lantern, assembled as above described and shown in Fig. 1, has been placed in operative position and before the molten metal (which eventually forms the casting or pipe *x*) is run into the mold the bolts *m* and keys *l* are removed, freeing the movable frame, so that it may be moved longitudinally. The weight of the movable frame causes it to normally retain the position it occupies in Fig. 1, holding the staves firmly in place during the casting operation. After this latter operation is completed, however, the movable frame is raised, disengaging the grooves *c'* of plates *c* from brackets *e*, freeing the staves to be moved inwardly by means of the upper ends thereof (which project through cap *a*) and the extensions *e*² on the lower bracket *e'*, thus collapsing or contracting the lantern, much reducing its diametrical and circumferential dimensions and permitting its easy removal from the pipe *x*. This latter step is effected by means of a suitable derrick or crane, which may be connected to the lantern through openings *p* in the cap *a*.

In Figs. 6 and 7 I have shown a simplification of the construction above described, wherein only two rods *f* are employed, the position of the brackets *e* and plates *c* being reversed—that is to say, the grooves *c'* open upwardly and the brackets point downwardly—

and in which the plates *i'* form arches over the joints formed by the meeting edges of the staves.

Modifications may be made within wide limits without departing from the principle of the invention, and I am in no way limited to the precise construction herein shown and described.

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

1. In a lantern or core-bar for use in the manufacture of pipes and similar castings, the combination with a fixed frame consisting of a cap and a base connected by suitable rods, being of about the length of the pipe or casting, of a movable frame extending through the fixed frame and mounted to slide in bearings therein, and a casing formed of sections or staves supported by the fixed frame and held rigidly in position by the movable frame, and adapted to be released by movement thereof, substantially as described.

2. In a lantern the combination with a fixed frame consisting of a cap and a base connected by suitable rods, being of about the length of the pipe or casting, of a movable frame comprising an arbor extending longitudinally through and sliding in bearings in the fixed frame and plates on said arbor, having perforations therein through which the rods of the fixed frame pass and a casing formed of segmental sections or staves loosely assembled upon said fixed frame and normally held in position by the plates to form a continuous compact casing, and adapted to be released upon the movement of said plates with the arbor, whereby the lantern may be collapsed or folded together, substantially as described.

3. In a lantern the combination with a fixed frame, consisting of a cap and a base connected by suitable rods being of about the length of the pipe or casting, of a movable frame consisting of a longitudinal arbor extending through and sliding in central openings in the cap and base of the fixed frame, and plates on said arbor each having a groove therein, and perforations through which the rods of the main frame pass, a casing about said fixed and movable frames formed in segmental sections or staves loosely supported by the fixed frame, and brackets on said sections engaging the grooves in the plates, whereby the sections are adapted to be normally held rigidly in place and to be released upon movement of the movable frame, substantially as described.

4. In a lantern the combination with a fixed frame, consisting of a cap and a base connected by suitable rods, of a movable frame comprising an arbor sliding longitudinally in central openings through the cap and base of the fixed frame, and plates on said arbor each having a groove therein, a casing formed in segmental sections or staves, brackets on said sections engaging the grooves in the plates, whereby the sections are adapted to be normally held

rigidly in place and to be released upon movement of the movable frame, and plates extending the length of the sections and internally overlapping the joints formed by the meeting
5 edges of adjacent sections or staves, substantially as and for the purpose set forth.

In testimony whereof I have signed my

name to this specification in the presence of the two subscribing witnesses.

EMILE MICHEL DENIS ANDRÉ.

Witnesses:

A. GUINAUD,
GOBY.