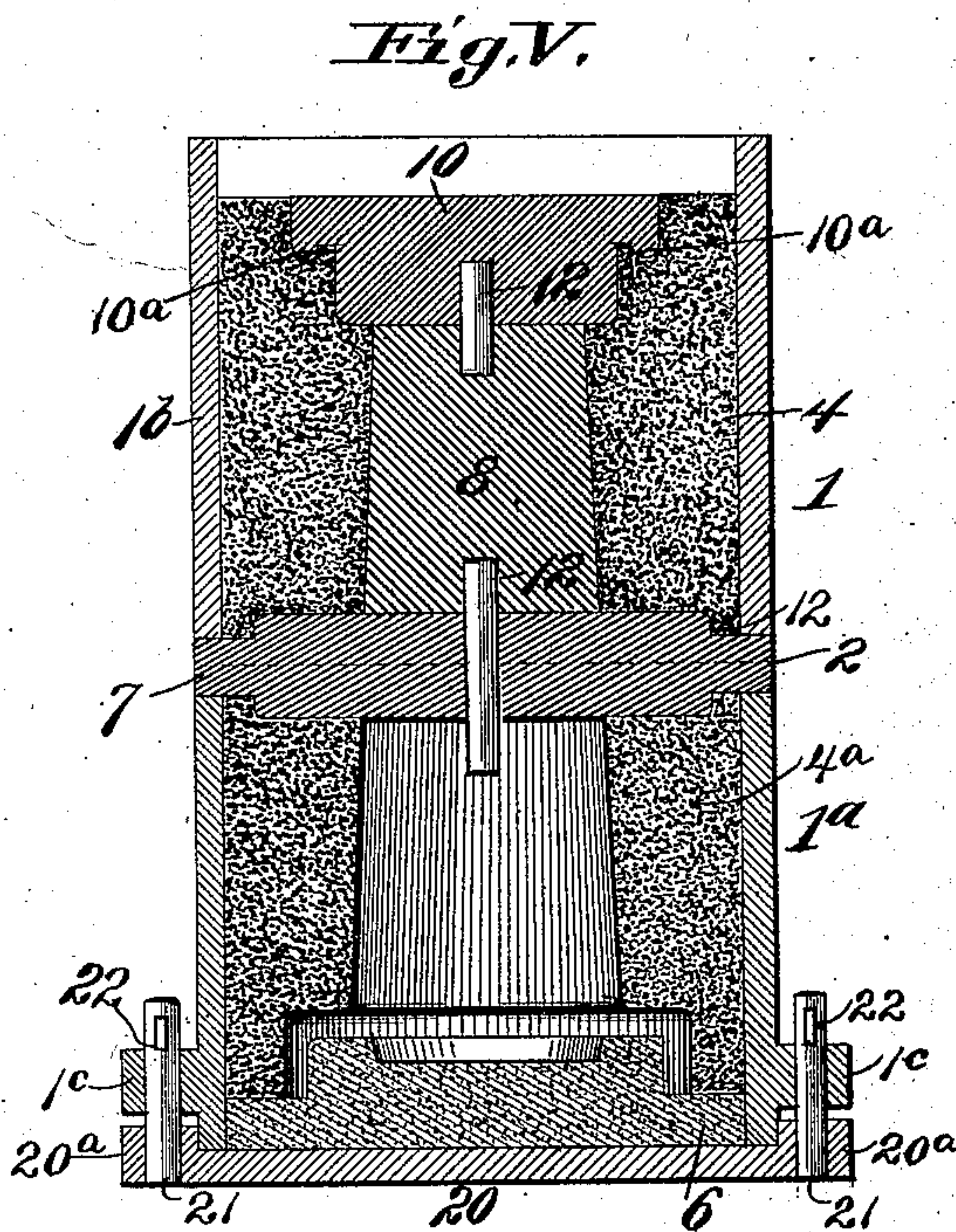
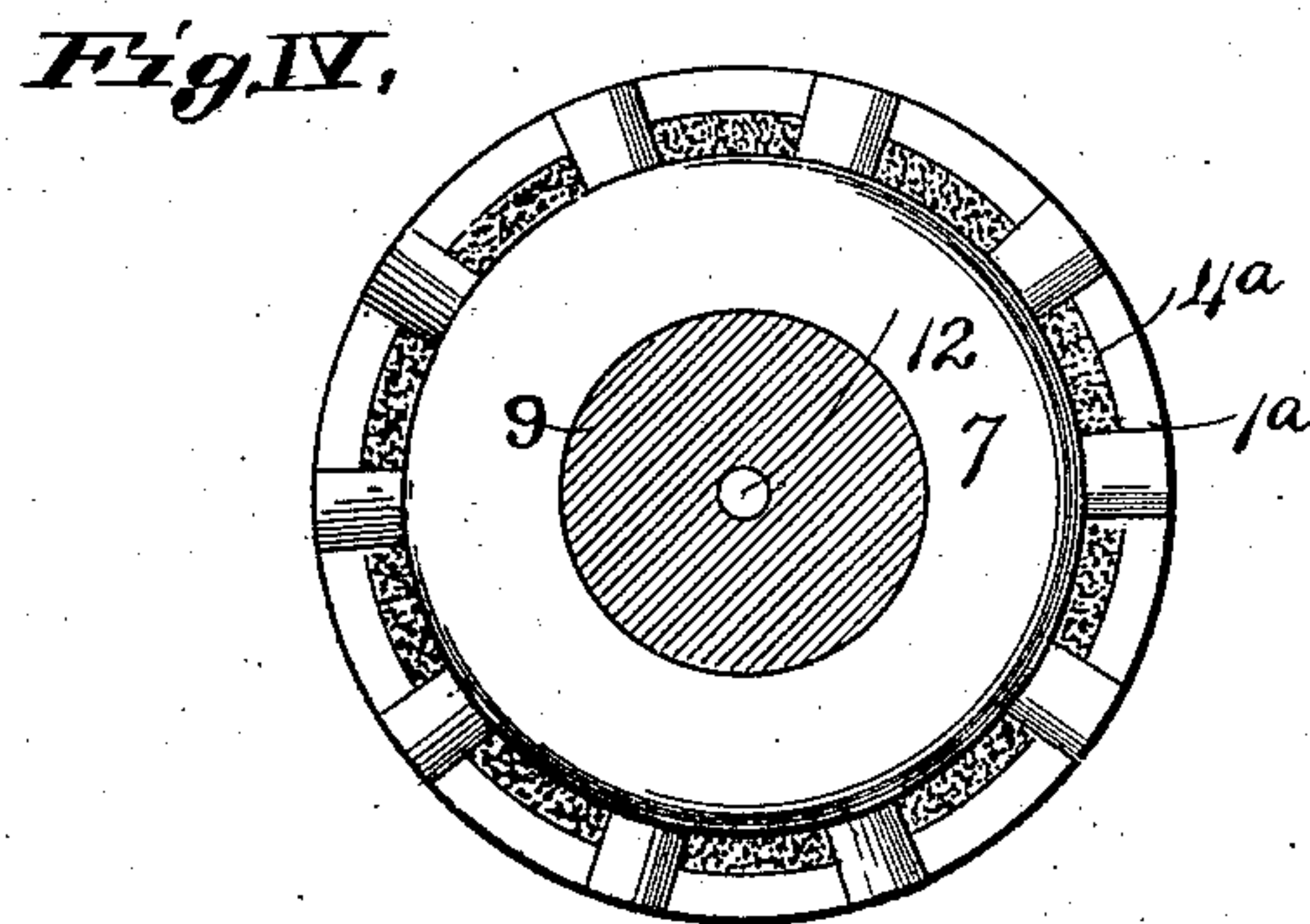
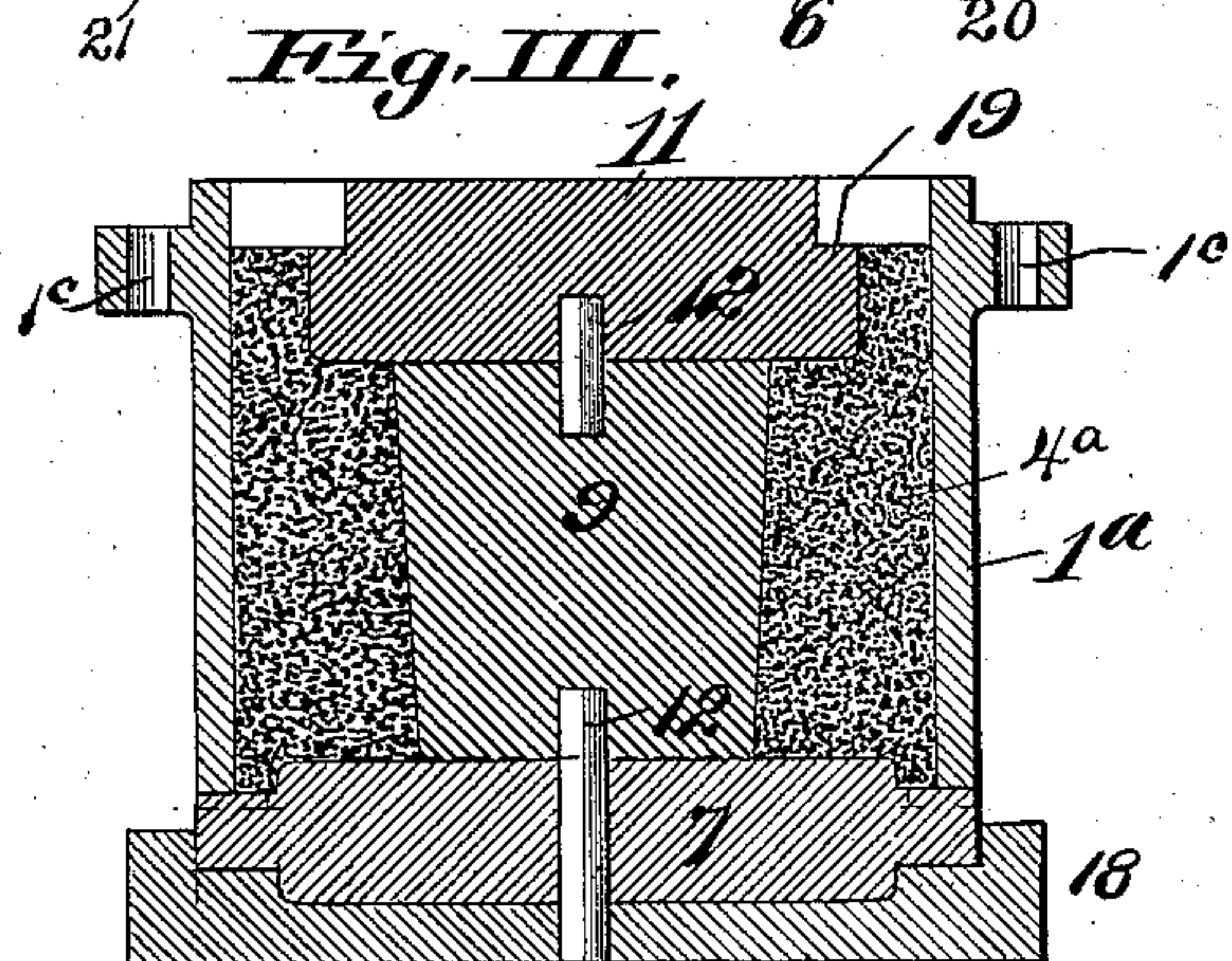
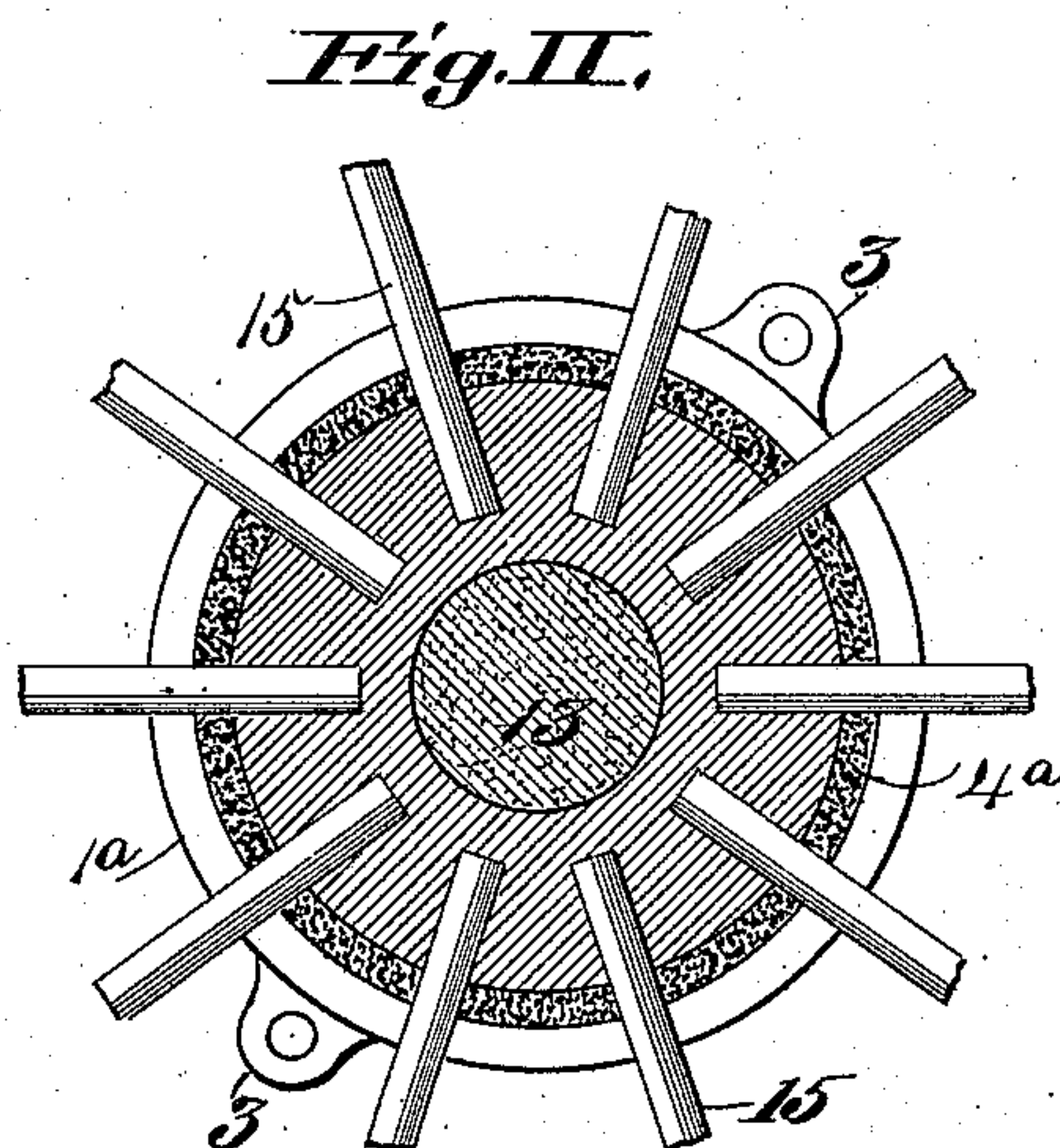
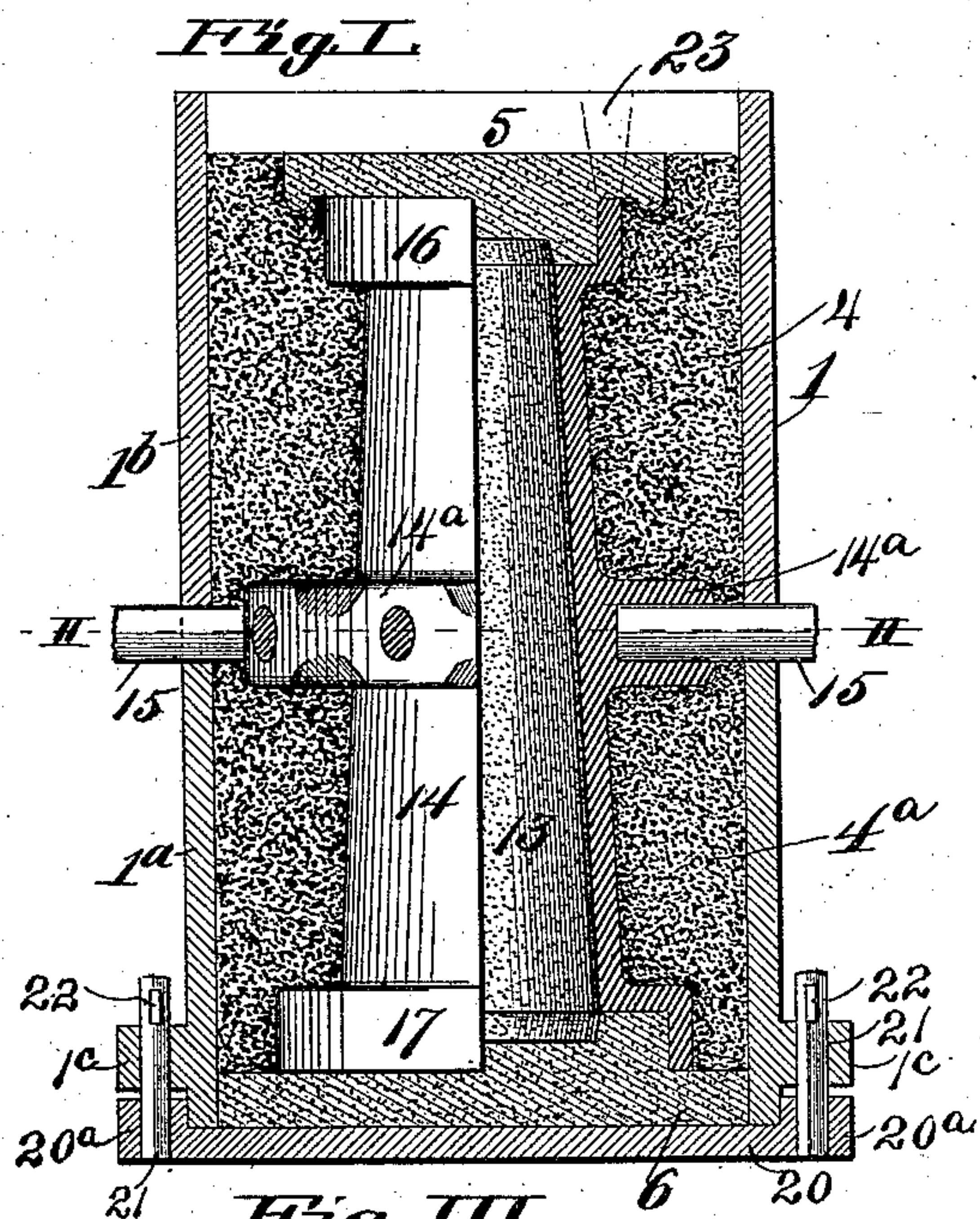


(No Model.)

C. SMITH.
MOLD FOR CASTING METAL HUBS.

No. 575,995.

Patented Jan. 26, 1897.



Attest:
Stanley Stoner.

Inventor:
Ceylon Smith
By *Wright Bros* Attys

UNITED STATES PATENT OFFICE.

CEYLON SMITH, OF QUINCY, ILLINOIS, ASSIGNOR TO THE ELECTRIC WHEEL COMPANY, OF SAME PLACE.

MOLD FOR CASTING METAL HUBS.

SPECIFICATION forming part of Letters Patent No. 575,995, dated January 26, 1897.

Application filed April 1, 1895. Serial No. 543,974. (No model.)

To all whom it may concern:

Be it known that I, CEYLON SMITH, a citizen of the United States, and a resident of Quincy, Adams county, in the State of Illinois, have
5 invented certain new and useful Improvements in Molds for Casting Metal Hubs, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this
10 specification.

My invention relates to an improvement in molds used in the art or method of casting the hubs of metal wheels; and my invention consists in features of novelty hereinafter
15 fully described, and pointed out in the claims.

In the accompanying drawings, Figure I is a sectional view, part in elevation, and illustrates the manner of carrying out my improvement in the art to which my invention
20 relates. Fig. II is a transverse section taken on line II II, Fig. I. Fig. III is a sectional view illustrating the manner of building up the mold, the lower half of the mold shown thereby being inverted. Fig. IV is a bottom
25 view of that shown in Fig. III, the follow-board being omitted. Fig. V is a longitudinal section showing the mold, flask, and patterns complete, with the exception of one (the lower) section of the pattern.

30 Referring to the drawings, 1 represents the flask, divided at a central line 2, Fig. V, the two parts 1^a 1^b being connected at this point by suitable tie-bolts (not shown) passed through perforated ears 3, Fig. II.

35 4 represents the upper portion, and 4^a the lower portion, respectively, of the body of the mold, which is made of green sand.

5 represents the outer dry-sand core that forms the band on the small end of the hub.

40 6 represents the inner dry-sand core that forms the band on the large end of the hub.

7 represents the central pattern for forming the recess or chamber in the mold for producing the central ring or bead on the hub.

45 8 represents the upper upwardly-tapering pattern for forming the upper chamber in the mold which produces the part of the hub between the central ring or bead and the outer band of the hub.

50 9 represents the lower upwardly-tapering pattern for forming the lower chamber in the

mold that produces the part of the hub between the central ring or bead and the inner band of the hub.

10 represents the outer pattern for forming
55 the outer chamber in the mold that receives the dry-sand core 5.

11 represents the inner pattern that forms the inner chamber in the mold to receive the
60 dry-sand core 6.

12 represents central dowel-pins by which the patterns 7, 8, 9, 10, and 11 are held in position while the mold is being formed, and 13 represents the central upwardly-tapering dry-sand
65 core that forms the central upwardly-tapering cavity of the hub when the metal is poured.

14 represents the finished hub, and 15 the spokes, the hub having spoke-sockets 14^a.

16 represents the band at the small or outer
70 end of the hub, and 17 the band at the large or inner end of the hub.

In getting ready to make a casting under my improvement I first place the central pattern 7 on the follow-board 18, Fig. III, the
75 board being recessed to receive the lower half of the pattern, and I place the lower half 1^a of the flask 1 in an inverted position on said follow-board. (See Fig. III.) The lower pattern 9 is then put in place with a dowel-pin
80 connection 12 between it and the follow-board, and the green sand is rammed in around the lower pattern until the flask is filled up to the top of the lower pattern. The inner

pattern 11 is then inserted and green sand
85 rammed in up to the shoulder 19 of the inner pattern. The patterns 9 and 11 are next withdrawn and the inner dry-sand core 6 is dropped into place, and the bottom 20 of the flask is applied on top of the core 6 and se-

90 cured in position by means of clamp-bolts 21, projecting from lugs 20^a on the bottom 20 and entering perforated lugs 1^c on the lower section 1^a of the flask and secured by keys 22.

The lower section 1^a of the flask, containing
95 the green-sand mold and the dry-sand core 6, is now lifted, with the central pattern 7, up off of the follow-board 18 and inverted, with the bottom 20 resting on the casting-floor. The next step is to put on the upper half 1^b
100 of the flask, as shown in Fig. V, and to apply the upper pattern 8. Green sand is now

rammed in around the upper pattern 8 and up to the top of the upper pattern, when the outer pattern 10 is applied, and green sand is then rammed in up to the top of the outer pattern 10 and forced into the groove 10^a of the outer pattern. When this has been done, the outer pattern 10 is removed and the upper half 1^b of the flask, with its part of the mold, is removed, which permits the removal of the central pattern 7 and the withdrawal of the upper pattern 8. The central dry-sand core 13 is now inserted. Then the spokes 15 are placed in position in the prints formed by the central pattern 7, and then the upper half 1^b of the flask is replaced and the outer dry-sand core 5 is placed in position, as shown in Fig. I. The mold is now in condition to receive the molten metal, which may be poured through a gate 23, (see Fig. I,) and the entire hub is cast complete, the bands on the ends of the hub being formed by the dry-sand cores 5 and 6, thus avoiding the necessity of shrinking bands on the hub, and by making the body of the mold of green sand there is less liability of the hub cracking or checking before the mold is shaken out, for the reason that the lateral projections on the hub, that is to say, the central ring and the bands 16 and 17, are surrounded by green

sand, which is more elastic and yielding than a dry-sand mold would be.

By this method of molding hubs a two-part flask is used, whereas by the old method a four-part flask was necessary, and thus a large saving in floor-space and labor is obtained.

I claim as my invention—

1. A vertical mold comprising the flask 1 having a lower section 1^a, and an upper section 1^b, the bottom 20, the inner pattern 11, having a shoulder 19, the lower upwardly-tapering pattern 9, the central pattern 7, the upper upwardly-tapering pattern 8, the outer pattern 10 formed with groove 10^a and the centering dowel-pins 12; substantially as described.

2. A vertical mold comprising the flask 1 having a lower section 1^a formed with lugs 1^c and an upper section 1^b, the bottom 20, formed with lugs 20^a, the inner sand core 6, the spokes 15, the green-sand body having a lower portion 4^a and an upper portion 4, the upwardly-tapering central sand core 13, and the outer sand core 5; substantially as described.

CEYLON SMITH.

In presence of—

E. A. HENDERSON,
L. E. EMMONS, Jr.