

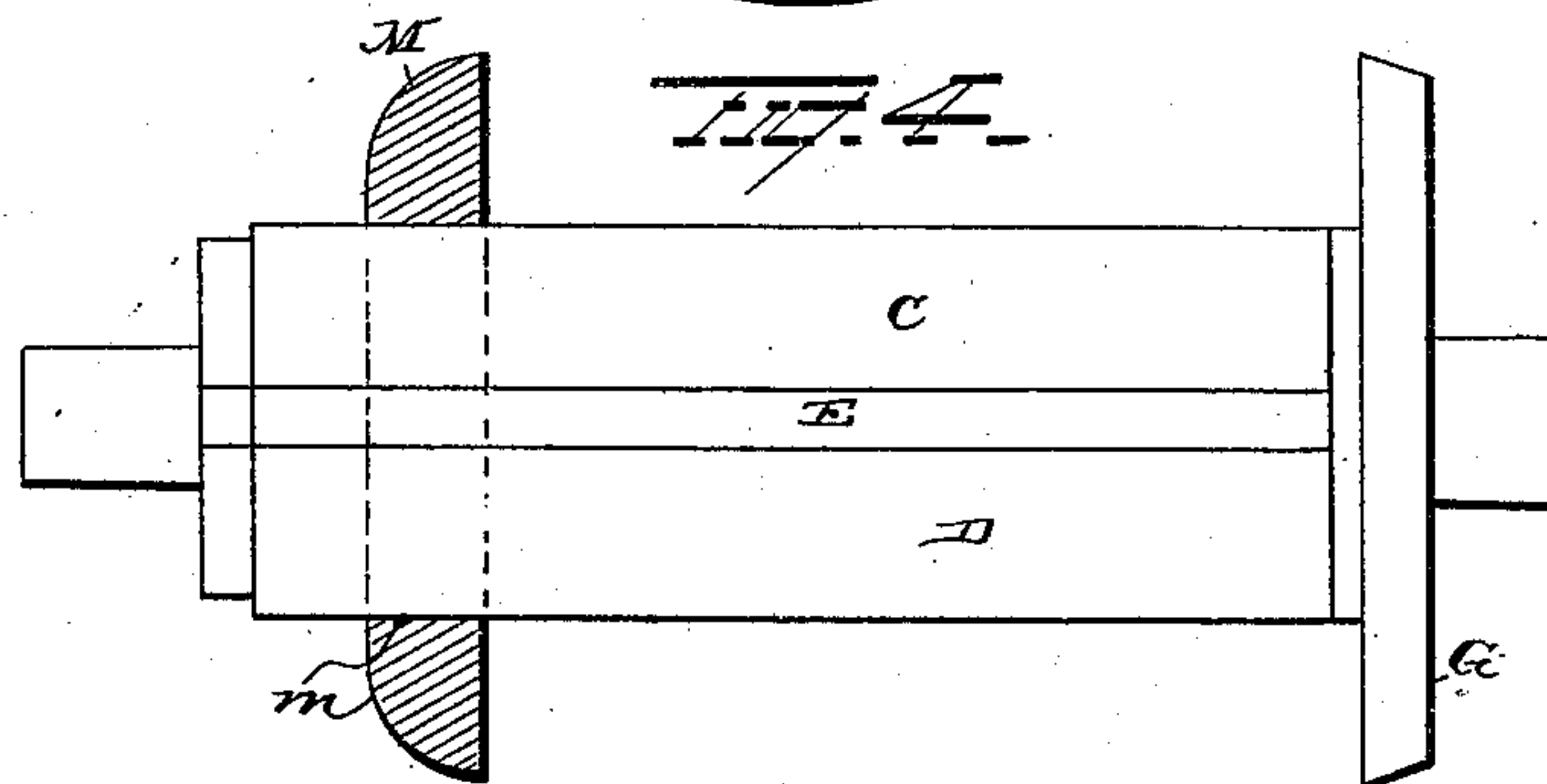
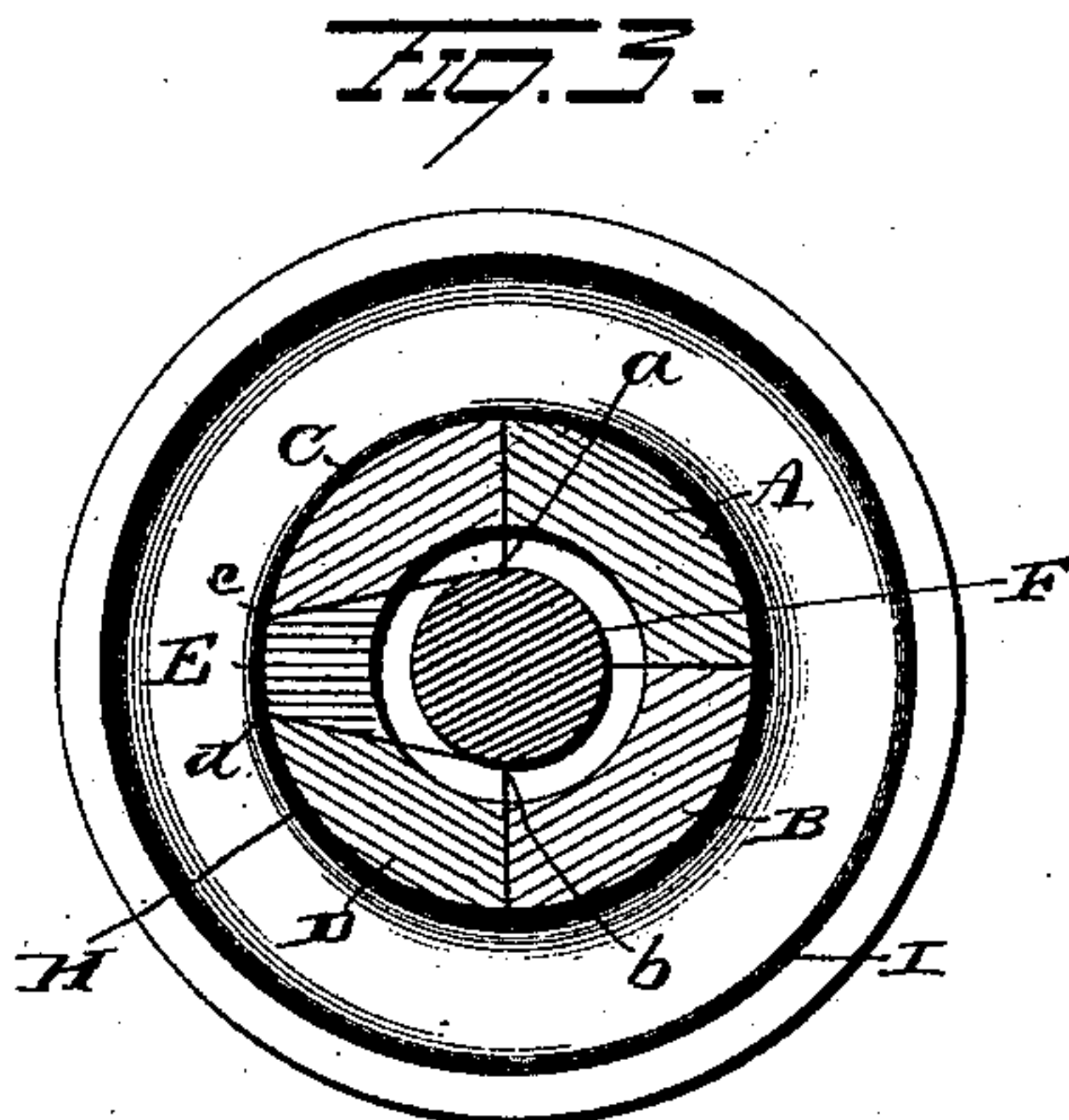
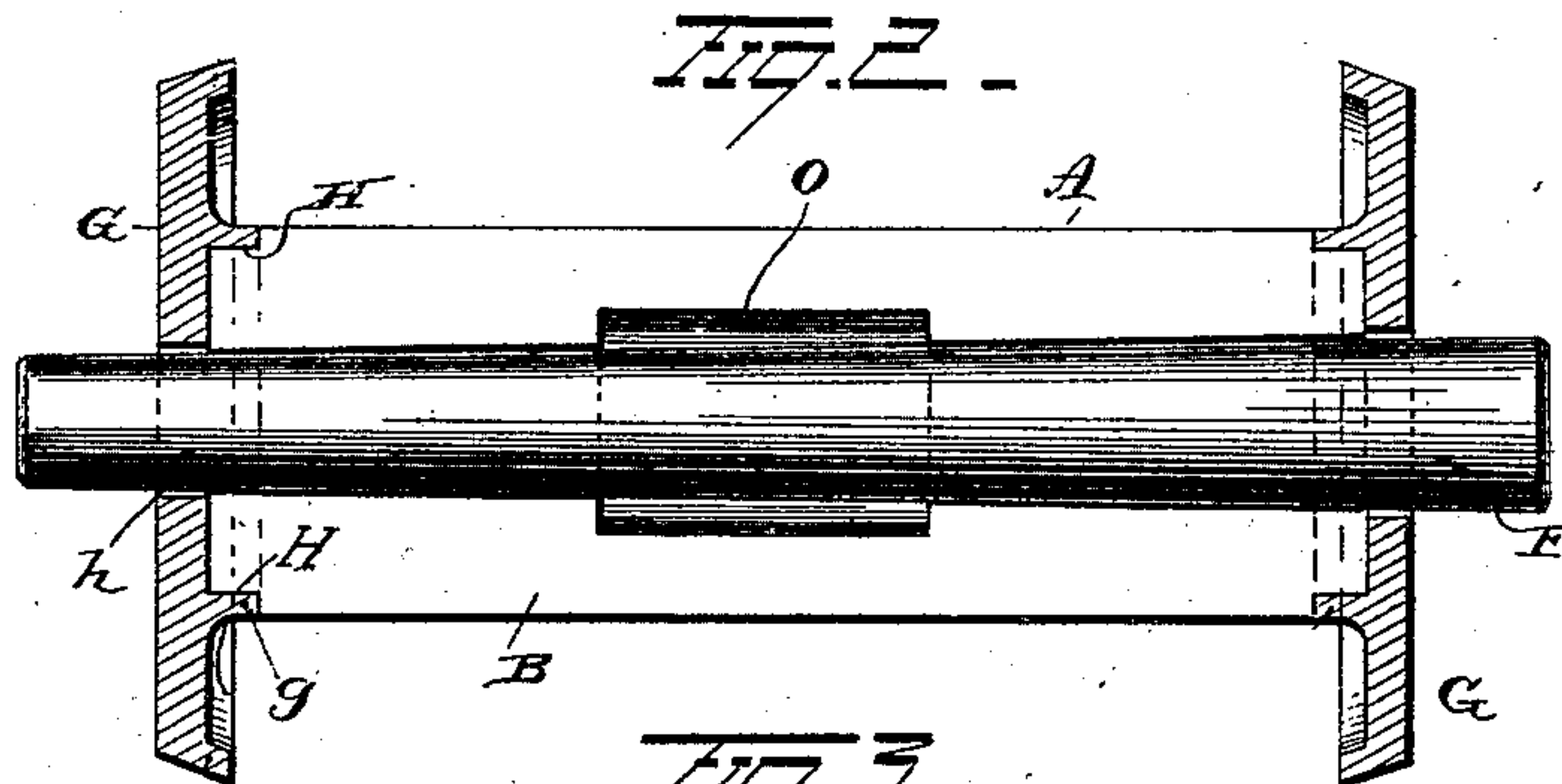
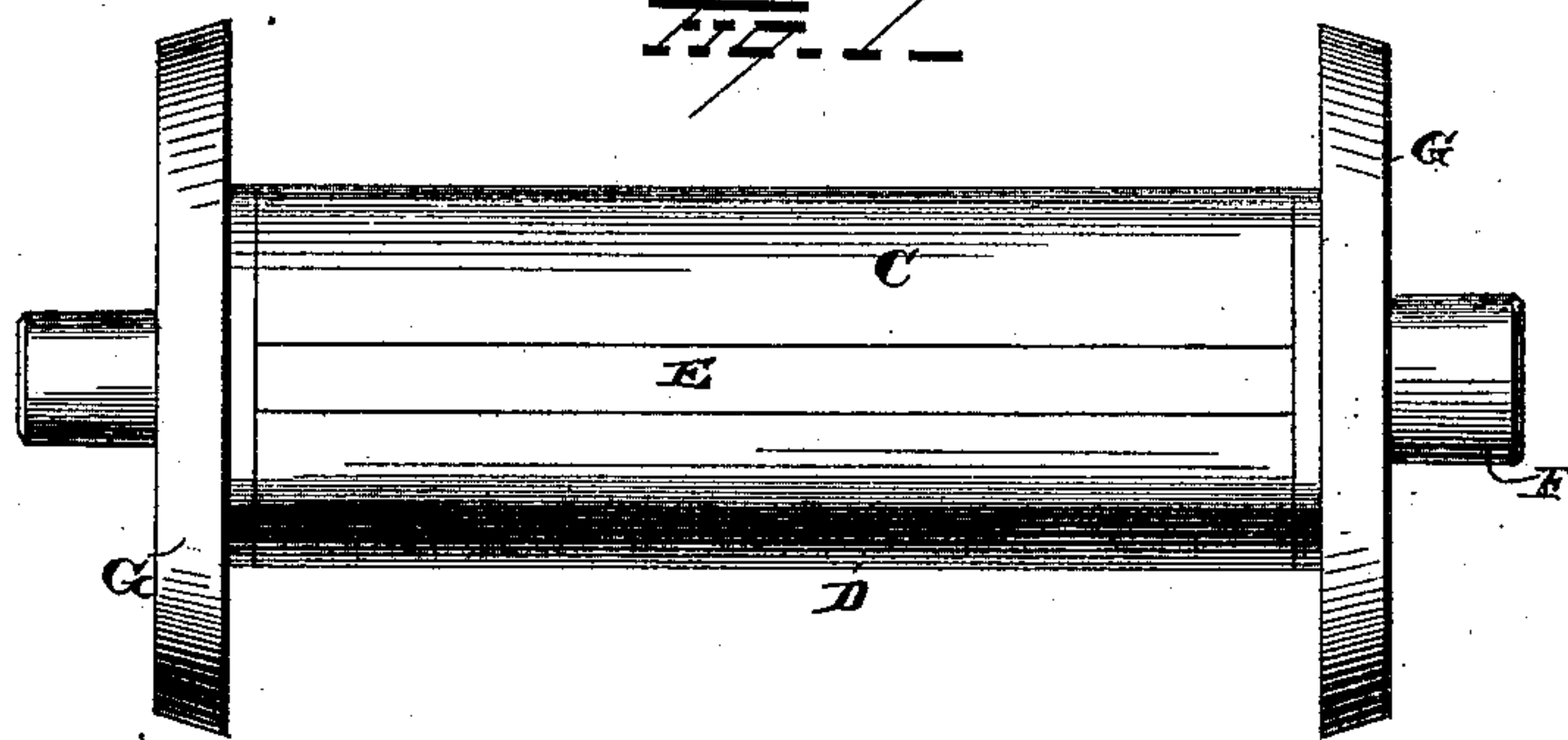
(No Model.)

2 Sheets—Sheet 1.

J. J. CARR.
CHILL FOR USE IN CASTING METAL.

No. 343,559.

Patented June 8, 1886.



WITNESSES
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INVENTOR
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(No Model.)

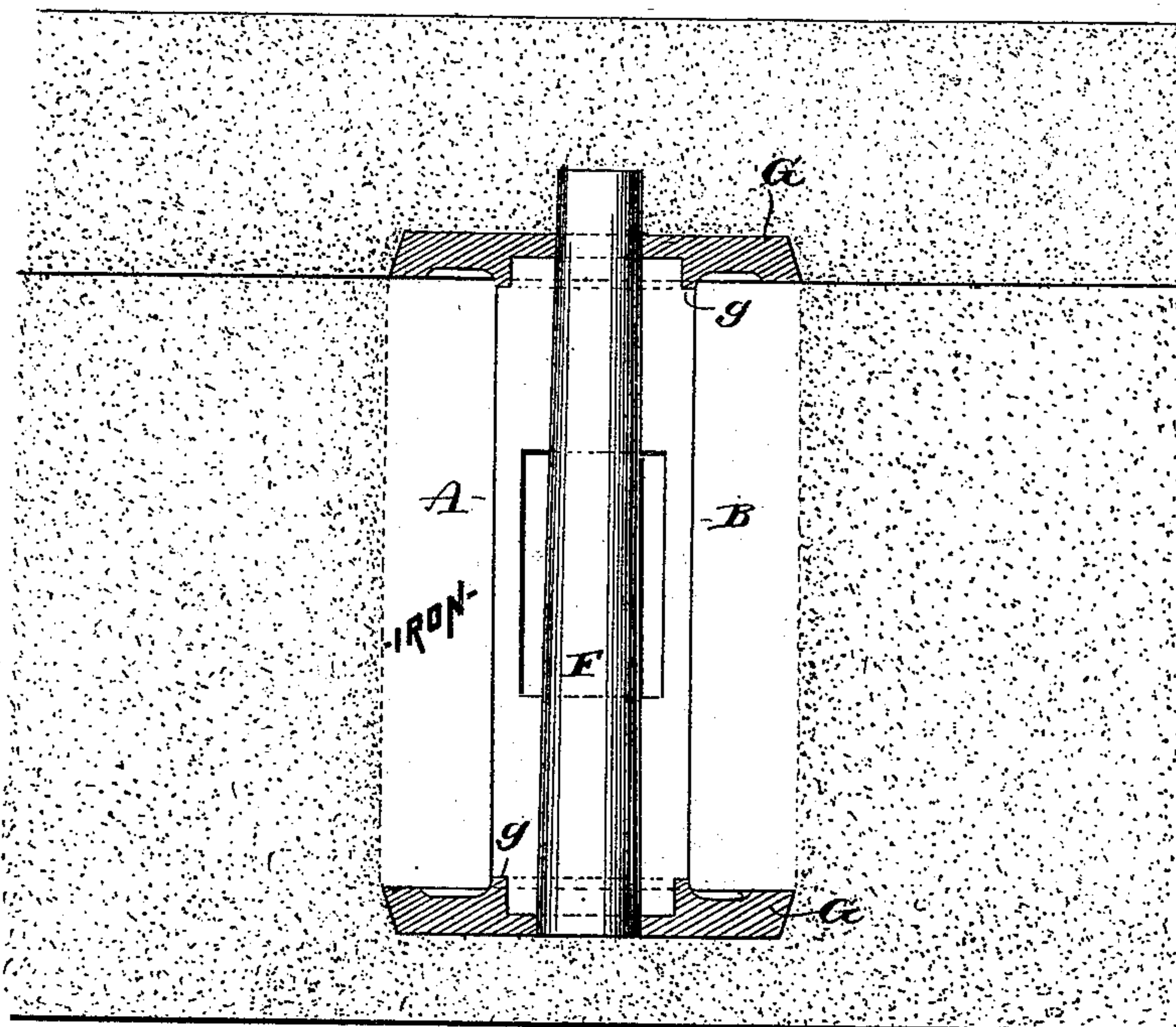
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Fig. 5.



WITNESSES
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Joseph J. Carr INVENTOR
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UNITED STATES PATENT OFFICE.

JOSEPH J. CARR, OF WILKES-BARRÉ, PENNSYLVANIA.

CHILL FOR USE IN CASTING METAL.

SPECIFICATION forming part of Letters Patent No. 343,559, dated June 8, 1886.

Application filed November 10, 1885. Serial No. 182,338. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH J. CARR, of Wilkes-Barré, in the county of Luzerne and State of Pennsylvania, have invented certain
5 new and useful Improvements in Chills for Molding Metal; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it ap-
10 pertains to make and use the same.

My invention relates to an improvement in chills for molding metal.

The object is to provide a chill which will present a smooth regular surface to the metal
15 around the core, and which may be easily and quickly removed from its position after the metal has set.

A further object is to provide end facings adapted to form a rounded edge at the ends of
20 the core.

With these ends in view my invention consists in certain features of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

25 In the accompanying drawings, Figure 1 is a view in side elevation of the chill adjusted for use. Fig. 2 is a longitudinal section. Fig. 3 is a transverse central section. Fig. 4 shows a modified form of a face-plate; and
30 Fig. 5 is a view in longitudinal section, showing the chill in position in a mold for casting.

The chill consists of a hollow cylindrical core composed of three or more sections constructed and combined as follows: The core
35 herein shown is composed of five sections. (Represented by the letters A, B, C, D, and E.) The sections A and B have their edges beveled to correspond with radial planes from the axis of the core. The sections C and D,
40 which lie adjacent to the sections A and B, have their edges which rest in contact with the edges of A and B formed to correspond with radial planes from the axis of the core, while their opposite edges are so formed that
45 the outer corners, *c* and *d*, are nearer to each other than the inner corners, *a* and *b*. The section E, which may be termed the "key-section," is shaped to correspond with the space between the sections C and D—that is,
50 it is formed reverse wedge-shaped. The object of the peculiar reversed slant on the edges of the section E is to enable the central pin,

F, when forced into the central opening in the core, to press the section E outwardly, and thereby close the joints between the sev- 55
eral sections, and on the other hand to admit of the core being readily and easily removed by withdrawing the pin F, and allowing the core to collapse by the movement of the section E toward the axis. The central open- 60
ing, in which the pin F fits, is somewhat tapering, and the said pin is also formed tapering and made sufficiently large to snugly fill the said central opening when driven home. When heated by the surrounding metal, the 65
core is liable to warp out of shape by expansion due to the heat. To prevent this, I cut away the inner central portions of the sections, as shown at O, which serves to give the said sections relief when the expansion takes place. 70
The ends of the sections are cut away on their outer sides to receive the binding and end facing rings G. The rings G are provided with central sockets, H, adapted to receive the ends of the core, and with central per- 75
forations, *h*, adapted to admit of the free passage of the pin F. The inner faces of the rings G are provided with annular flanges *g*, curved on their outer faces, as shown at *g'*, and surrounding the sockets H, which serve 80
to relieve the interior end edges of the casting from the sharpness and abruptness which are so liable to cut the shaft or axle.

The modification represented in Fig. 4 consists in a ring, M, smooth-faced on its inner 85
side and rounded on its outer side, provided with a central perforation, *m*, which is sufficiently large to slide snugly over the core, and thereby, in conjunction with one of the ends, shortening or increasing the length of 90
the casting, or by taking the place of either of the end rings facing that end of the casting smoothly. The taper of the pin F and the reverse slant of the sides of the section E enable the core to present a smooth outside sur- 95
face for the metal, and at the same time admit of its quick and easy removal, while the annular flanges and recesses on the faces of the end rings combine with its other advantages to make the chill eminently practicable. 100

It is evident that slight changes might be resorted to in the form and arrangement of the several parts described without departing from the spirit and scope of my invention;

hence I do not wish to limit myself strictly to the construction herein set forth; but,

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

1. In a core-chill, the combination, with rings, each having a central opening for the passage of a pin, and a socket surrounding the pin-opening, of a sectional core, the ends
10 of which rest in the sockets in the ring, and a tapering pin passing through the core and rings, substantially as set forth.

2. The combination, with rings, each hav-

ing a centrally-located pin-hole and a socket, of the sectional core, the inner faces of the
15 sections being recessed, substantially as described, and a wedge-shaped pin for locking the parts together, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscrib-
20 ing witnesses.

JOSEPH J. CARR.

Witnesses:

E. D. NICHOLS,
JOHN G. WOOD.