

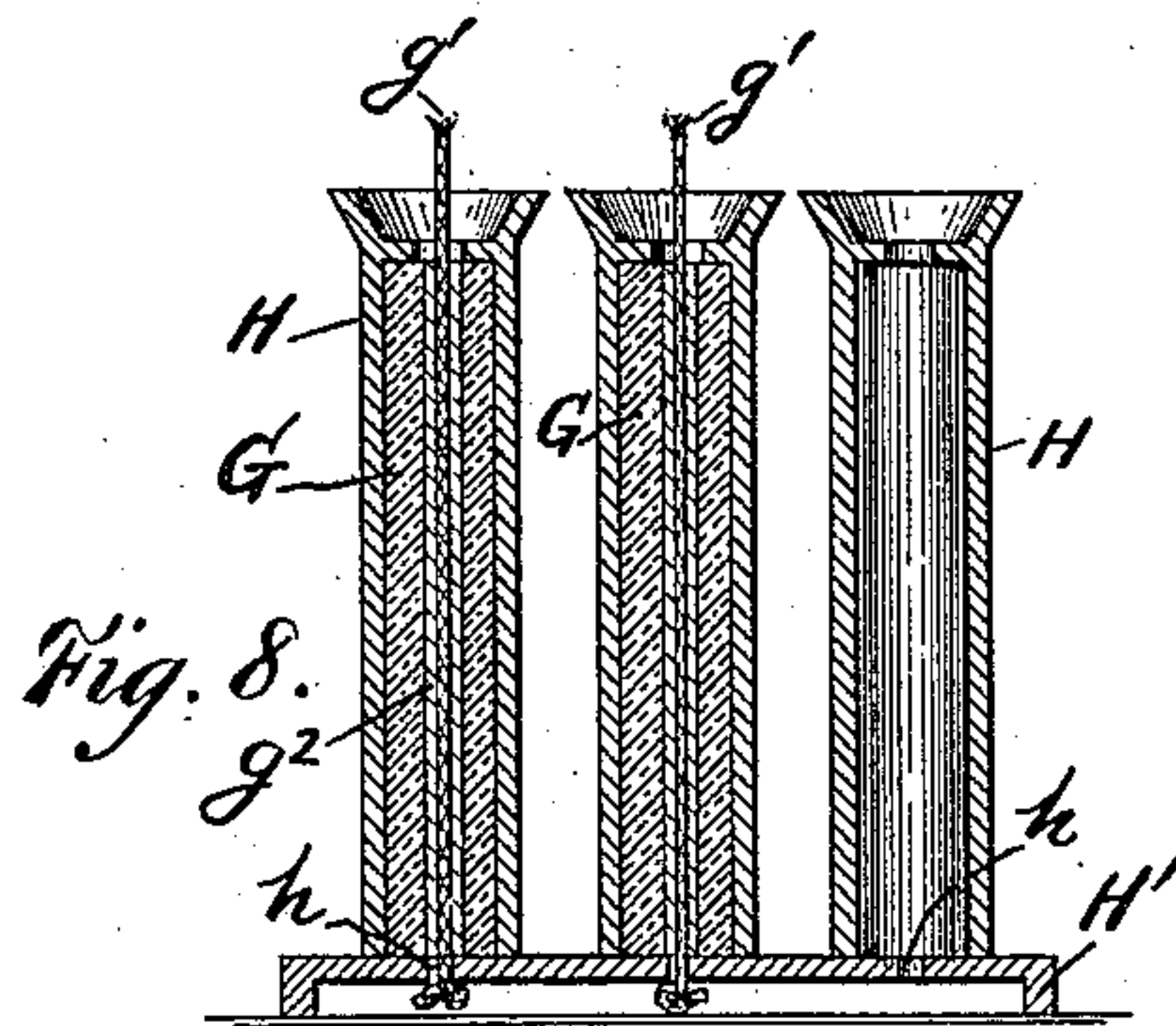
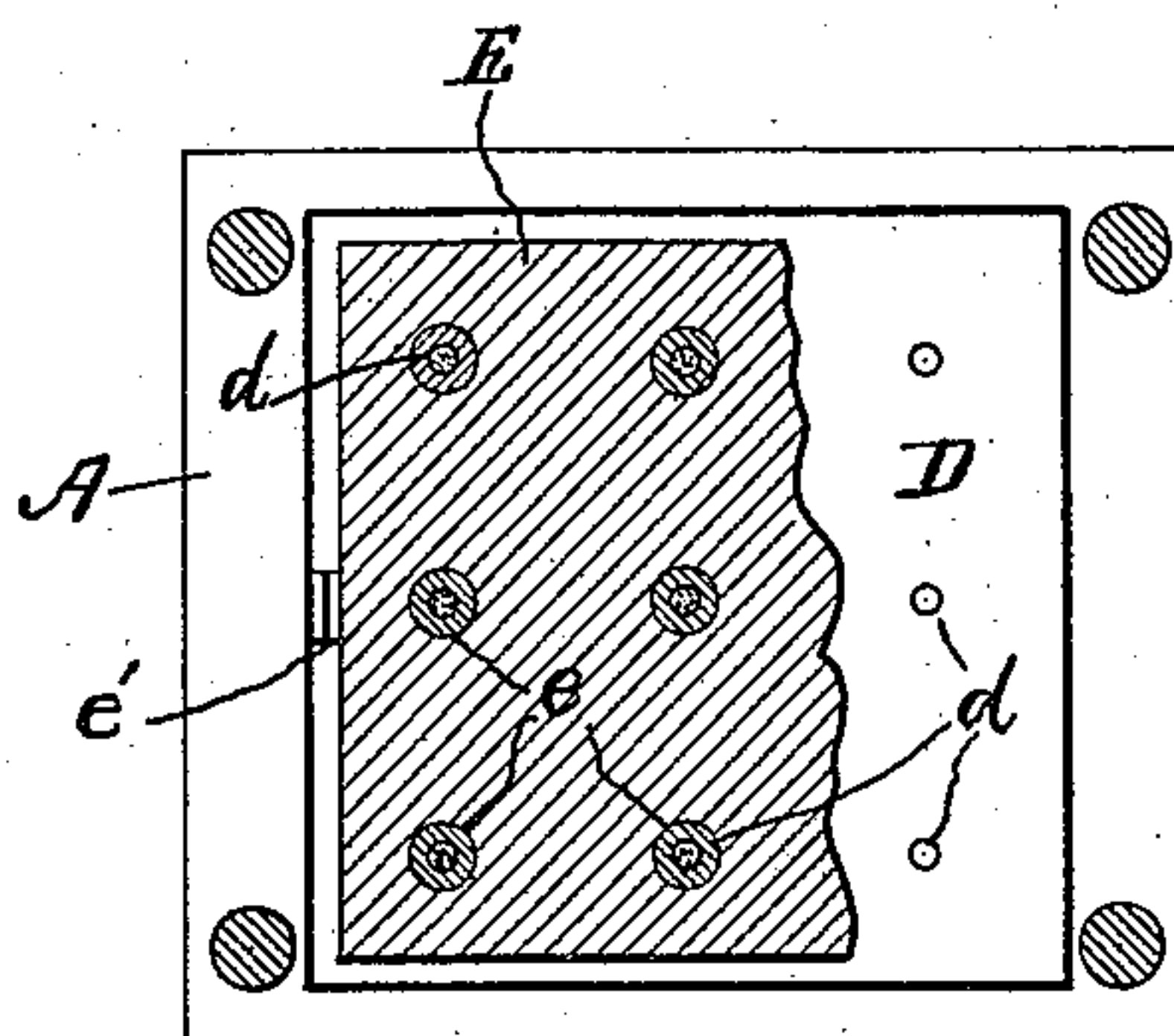
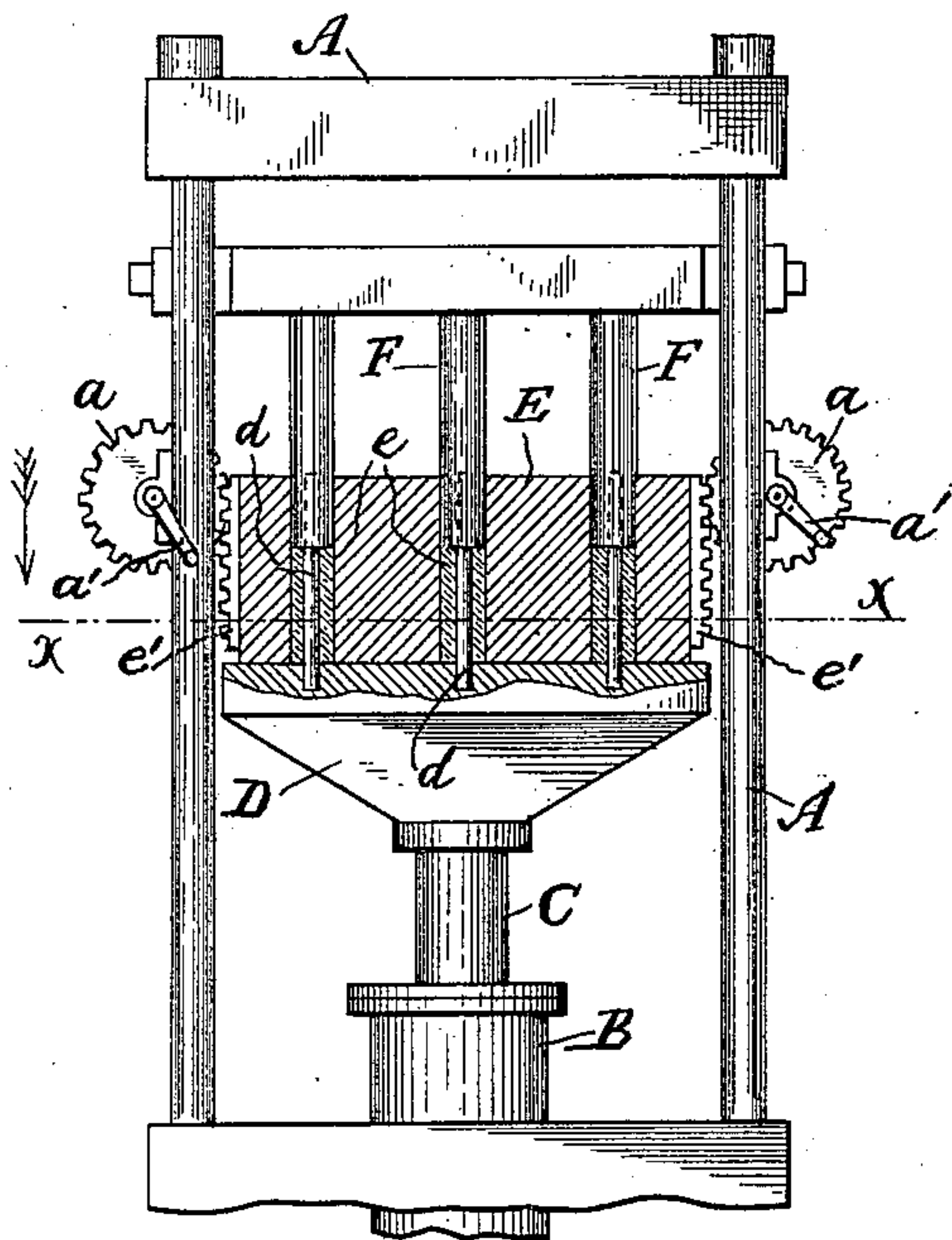
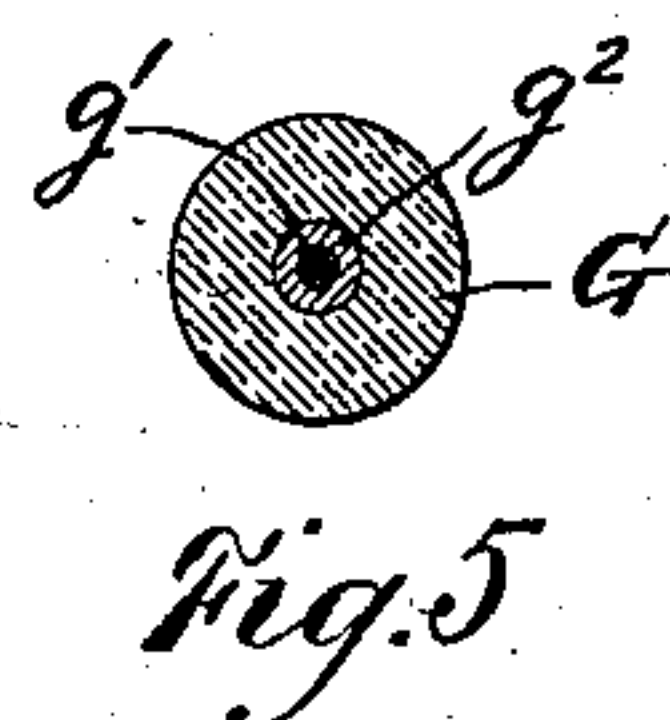
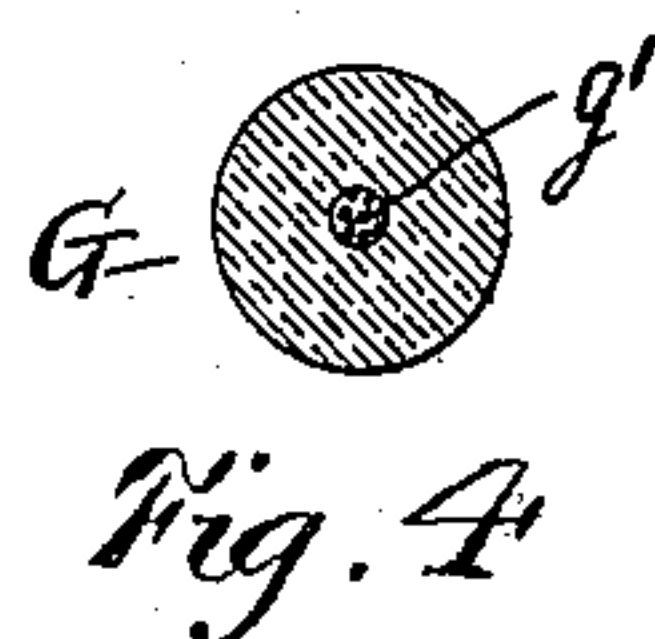
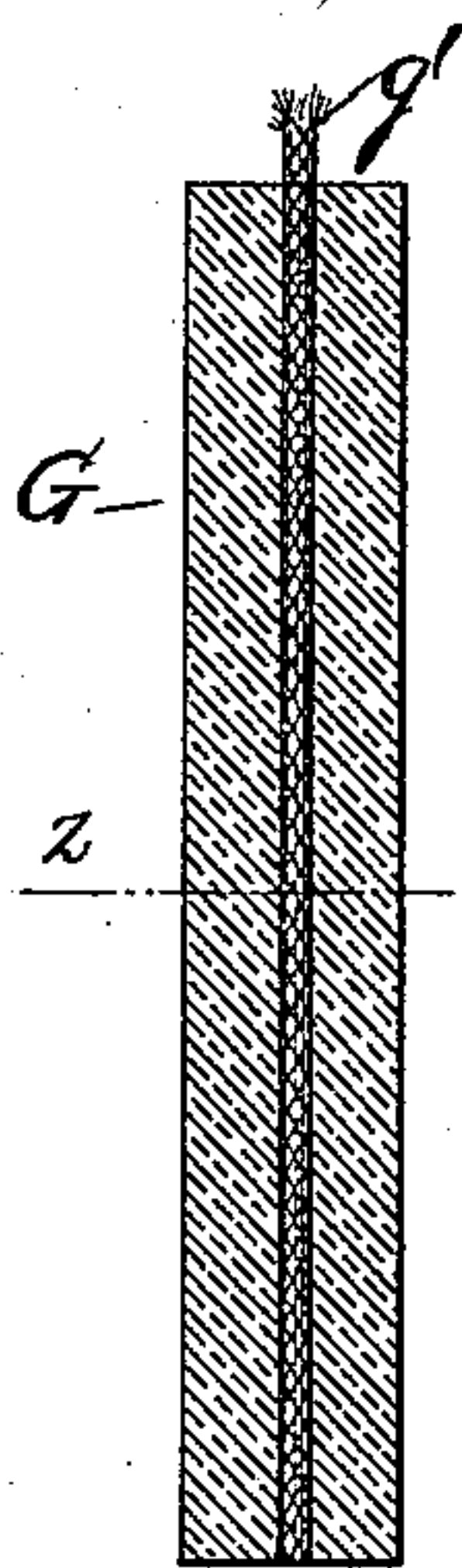
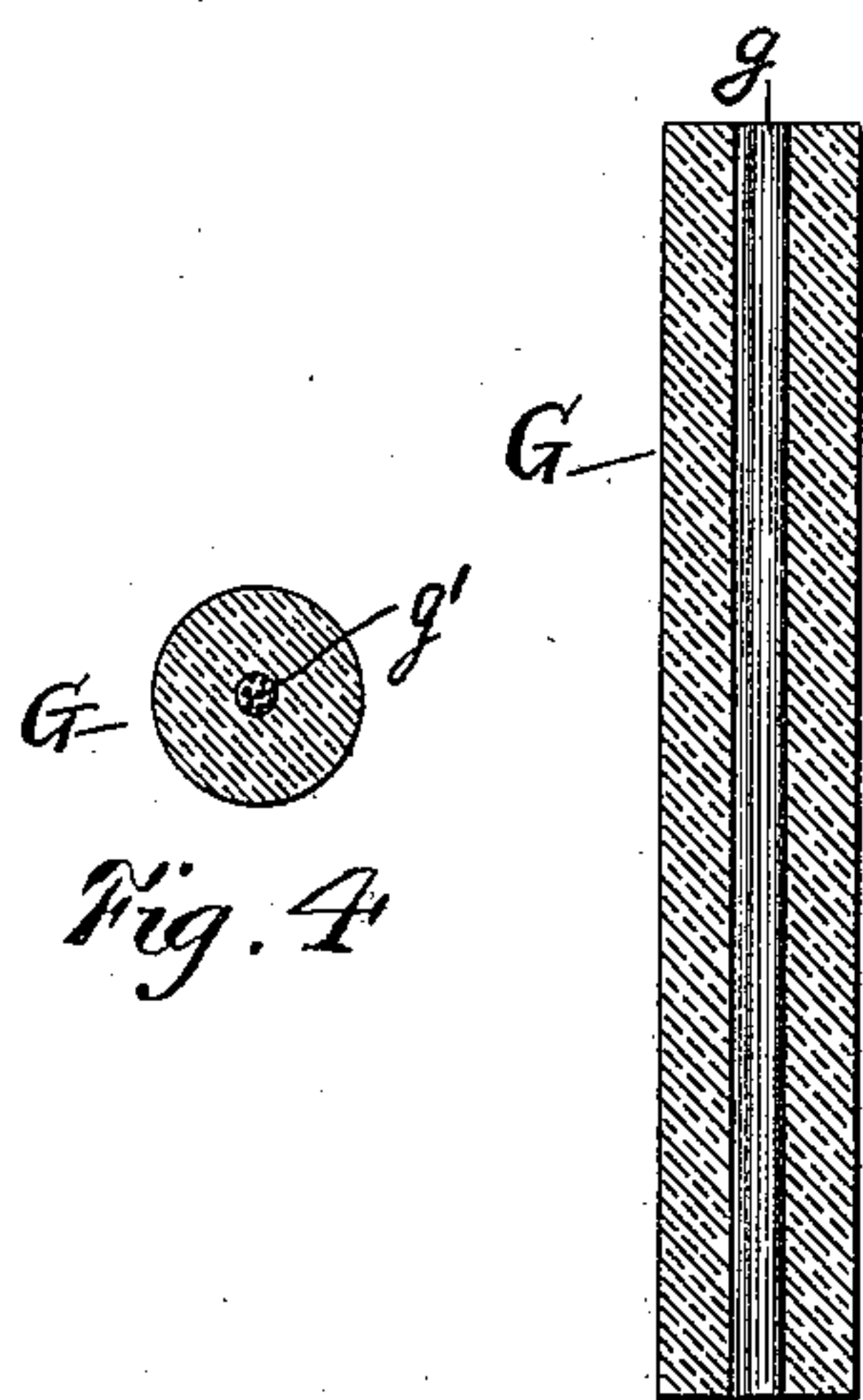
(No Model.)

E. L. BROWN.

CANDLE.

No. 345,272.

Patented July 13, 1886.



Witnesses:
Saml B. Dover.
Arthur Kolladay

Inventor:
Edwin Lee Brown
By Gridley & Fletcher
Attys.

UNITED STATES PATENT OFFICE.

EDWIN LEE BROWN, OF CHICAGO, ILLINOIS.

CANDLE.

SPECIFICATION forming part of Letters Patent No. 345,272, dated July 13, 1886.

Application filed July 20, 1885. Serial No. 172,135. (No specimens.)

To all whom it may concern:

Be it known that I, EDWIN LEE BROWN, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful
5 Improvements in Candles, of which the following is a description, reference being had to the accompanying drawings, in which—

Figure 1 is a central vertical section of the candle body or cylinder before the insertion
10 of the wick. Fig. 2 is a like view of the completed candle. Fig. 3 is a modification thereof. Fig. 4 is a transverse sectional view of said candle on the line *z z*, Fig. 2. Fig. 5 is a like view of said modified construction on
15 the line *y y*, Fig. 3. Fig. 6 is a side view, partly in section, of a hydrostatic press, with molds and plungers for forming said candle-cylinders. Fig. 7 is a plan view of the same, in which the molding block or die is but partly
20 shown, said part being in section upon the line *x x*, Fig. 6, as viewed in the direction of the arrow there shown; and Fig. 8 is a sectional view of a mold, showing one mode of inserting the wicks.

25 Like letters of reference indicate like parts in the different figures.

The object of my invention is to prevent unnecessary waste in the use of candles by so treating the same in their manufacture that
30 they will melt very slowly, which object I accomplish by forming the body or cylinder of said candle under extreme pressure. In doing this I first mold the candle-cylinder substantially in the usual way, and then compress it
35 by means of a hydrostatic press, or said fatty substance may be first compressed in blocks and the candle-cylinders cut therefrom, all of which is hereinafter more particularly described and claimed.

40 In the drawings, A represents the frame of a hydrostatic press, of which B is the water-pipe, C the usual piston, and D the table, rigidly attached to said piston, for supporting the compressing-mold.

45 Upon the table D, I place a metal mold or die, E, which is provided with a series of perforations or holes, *e*, of the diameter required for a candle, the thickness of said block being somewhat greater than the length intended for
50 the finished candle.

Rigidly attached to the part D, and projecting vertically therefrom, as shown, at points

representing, respectively, the center of each of said holes, are rods *d*, Figs. 6 and 7, the length of which may be that of the finished
55 candle or the thickness of the block E, as hereinafter stated.

Rigidly attached to the frame A, and projecting downwardly therefrom, in positions corresponding, respectively, with those of the
60 holes *e*, I place plungers F, Fig. 6, of the diameter of the holes *e*. Should the length of the rods *d* correspond with the thickness of the block E, said plungers F should be made hollow, as indicated in dotted lines in Fig. 6, in
65 order to permit said plungers to pass into the holes *e*. Racks *e' e'*, Figs. 3, 6, and 7, are rigidly attached to the block E, which are adapted to engage with pinions *a a* upon shafts supported in suitable bearings upon
70 the frame A, said shafts being provided with cranks *a' a'*, Fig. 6. By this or any equivalent mechanism the block or mold E may be lifted from the part D and raised above the point to which it would normally be raised
75 by the piston C, for the purpose hereinafter stated. The block or mold E being in position, and the piston C lowered to its greatest extent, the material to be treated, consisting of tal-
80 low, wax, paraffine, stearine, spermaceti, or other oleaginous material, or any approved compound of two or more of said substances, as may be desired, is melted and poured into the holes *e* until the same are full. After cooling suf-
85 ficiently, as may be found most advantageous, according to the ingredients used, hydraulic pressure is applied to the piston C, when the plungers F, entering the holes *e*, serve to compress said fatty material into a hollow cylinder, as shown in Fig. 1, of great hardness and
90 density. Should the nature of the materials require it, the molten matter may be compressed while hot, or when just beginning to solidify, and allowed to cool under pressure, either of which methods might afford good re-
95 sults, according to the nature of the materials used. When the mold is sufficiently cooled, the piston C is lowered, and upon turning the cranks *a' a'* the block E is raised still farther, thus causing the candle-cylinders G to be
100 pushed out of the molds by the stationary plungers F. The object of the rods *d* is to provide holes *g*, Fig. 1, for the insertion of the candle-wick. These holes may be large or small, ac-

cording to the size of the wick used and the
 manner of its insertion. Said wick is shown
 at g' , Figs. 2 to 5, inclusive. Should the hole
 g be of the same size as the wick, the latter may
 5 be simply inserted by means of a needle or
 rod, and as upon lighting the candle the fat
 next to the wick is first melted, said molten
 material would at once fill up any spaces be-
 tween the wick fibers and the cylinder G ; but
 10 I prefer in inserting said wicks that they be
 drawn through a bath of molten fat directly
 into the holes g ; or, as a modification of said
 method, said holes may be formed somewhat
 larger than the wick, and the cylinders G placed
 1 into the molds H , Fig. 8, which are provided
 with a flat detachable base, H' , said base having
 perforations h therein for the reception of the
 wicks. The wicks g' are then inserted, and
 when drawn tight in the usual way melted wax
 2 or fat is poured into the space g^2 around said
 wick and permitted to harden, thus complet-
 ing the operation.

A candle formed in the manner above de-
 scribed, by reason of its great density and hard-
 25 ness, will only melt with sufficient rapidity to
 support combustion without causing unneces-
 sary waste.

I am aware that a process for making can-
 dles has been described, in which the tallow,

either melted or solid, was designed to be forced 30
 through a long tube open at both ends, and
 around a concentric wick, the tube, intended
 to be cooled by water or otherwise, being of
 sufficient length to permit the tallow to cool
 while passing through, thus forming a continu- 35
 ous cylinder or candle, to be cut into shorter
 lengths, as desired, a sufficient amount of
 pressure only being required to push the ma-
 terial through the tube. This process will not
 produce the result desired to be obtained by 40
 me—viz., extreme hardness and density of the
 candle-body—and I make no claim thereto, as
 my purpose can only be accomplished by ex-
 traordinary pressure.

What I claim as new is—

1. The process, in the manufacture of can- 45
 dles, of making the body in the form of a hol-
 low cylinder, under pressure, and afterward
 inserting the wick, substantially in the man-
 ner and for the purposes set forth. 50

2. As a new article of manufacture, a can-
 dle the body or cylinder of which is formed
 under hydraulic or other extreme pressure,
 substantially as and for the purposes specified.

EDWIN LEE BROWN.

Witnesses:

D. H. FLETCHER,
 JOHN S. THOMPSON.