

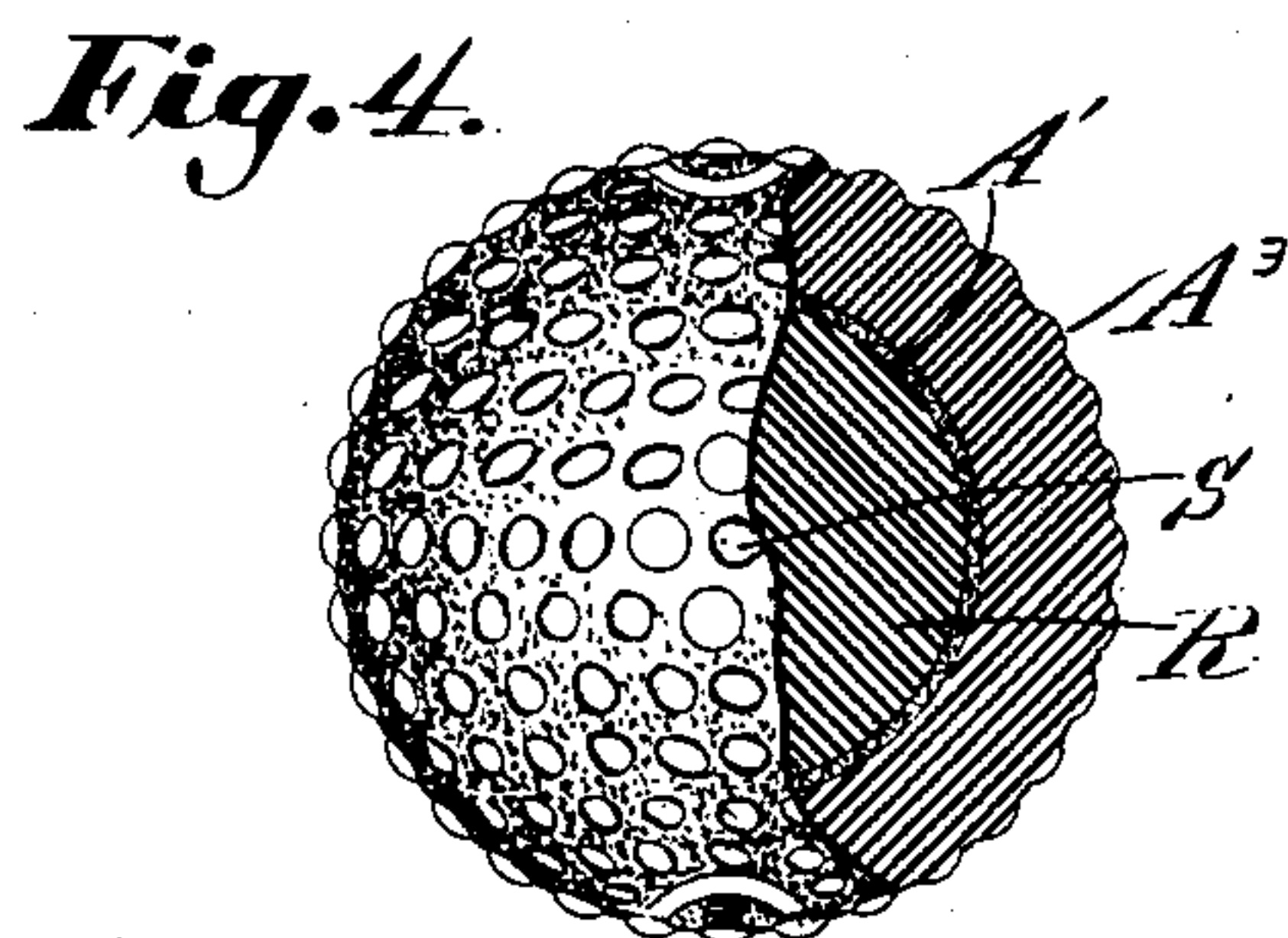
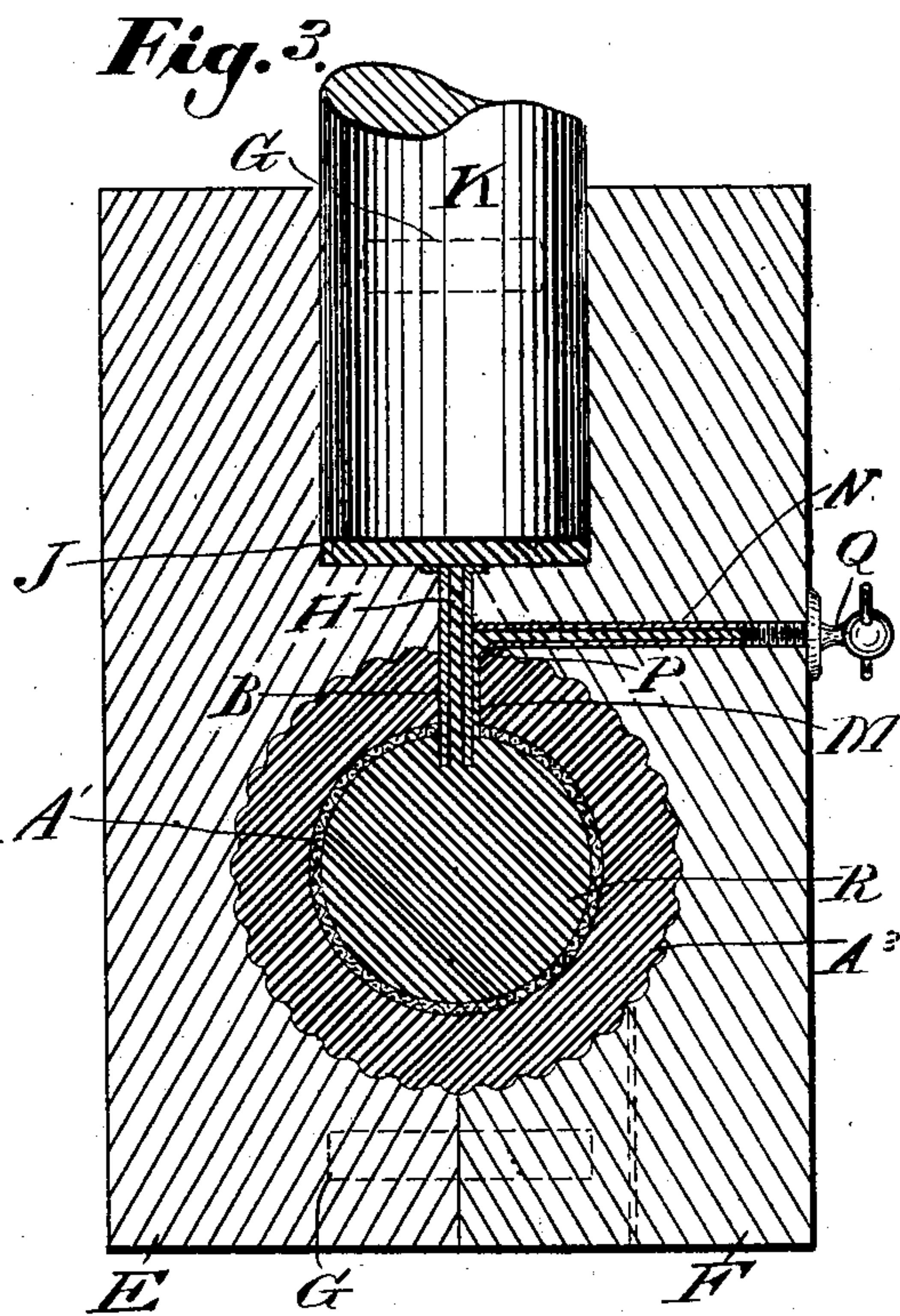
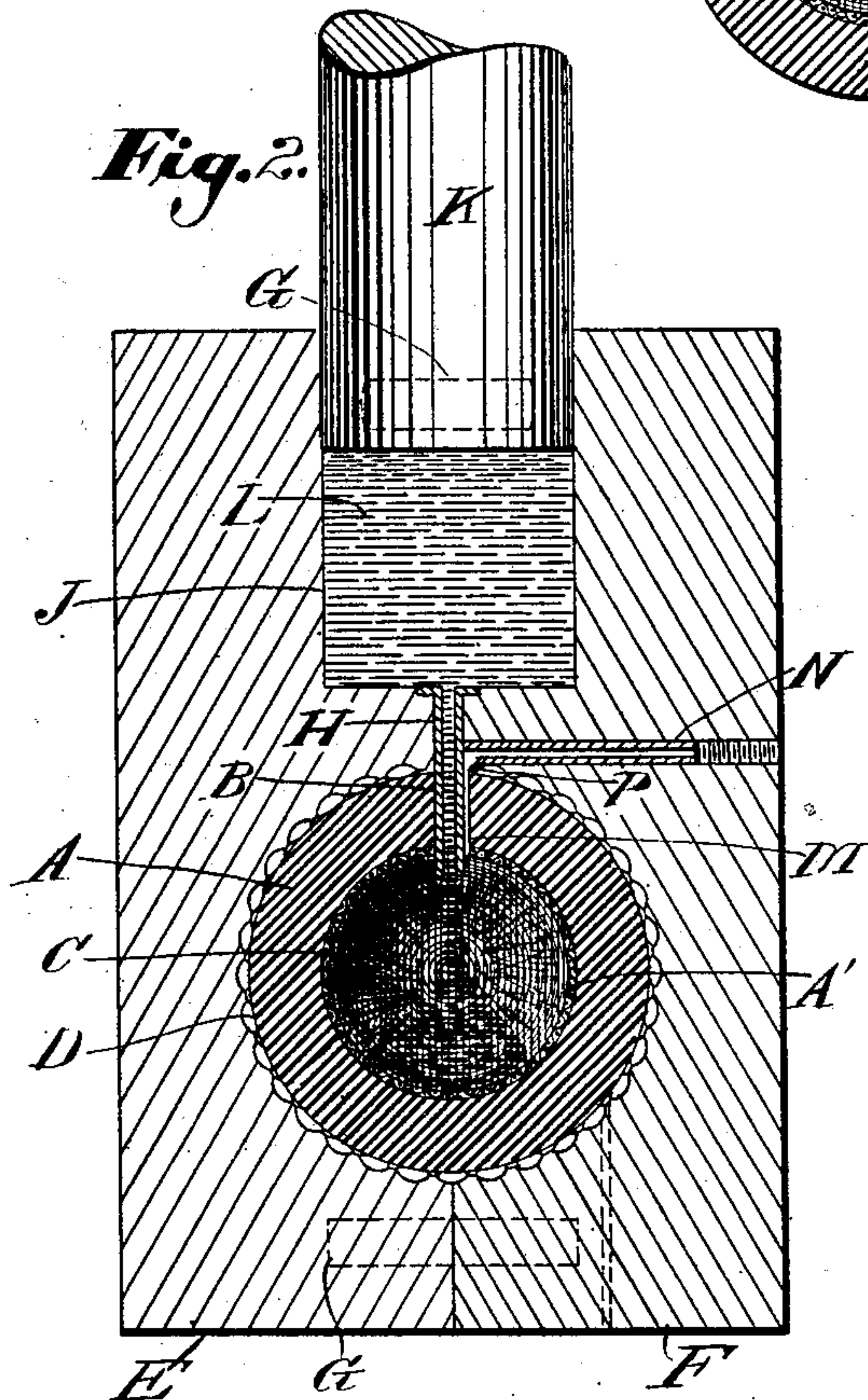
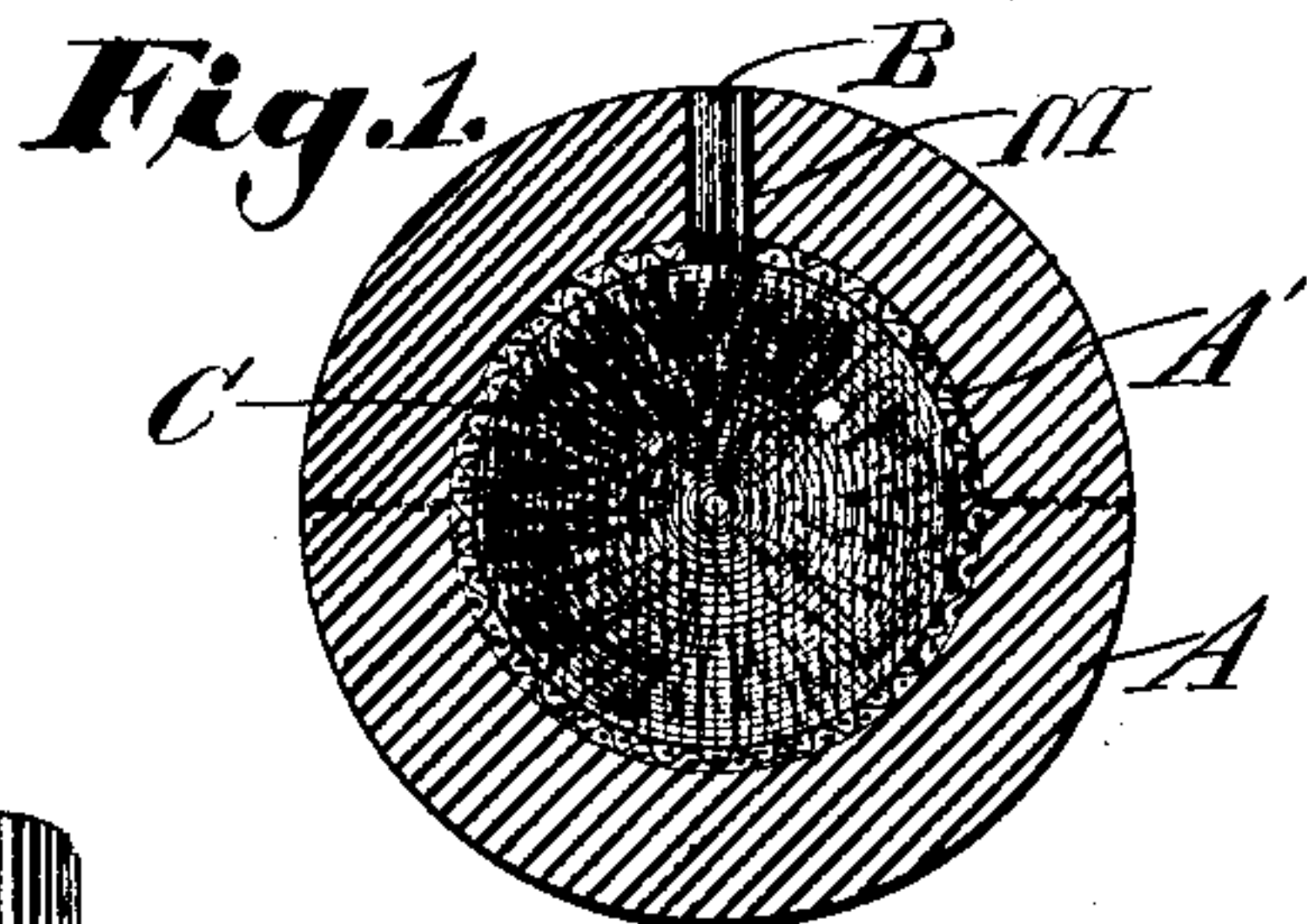
No. 701,737.

Patented June 3, 1902.

E. KEMPSHALL.  
GOLF BALL.

(Application filed Apr. 23, 1902.)

(No Model.)



**Witnesses:-**  
Herbert J. Smith  
Fred E. Maynard.

**Inventor:-**  
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By his Attorney. F. A. Richards.



# UNITED STATES PATENT OFFICE.

ELEAZER KEMPSHALL, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE KEMPSHALL MANUFACTURING COMPANY, A CORPORATION OF NEW JERSEY.

## GOLF-BALL.

SPECIFICATION forming part of Letters Patent No. 701,737, dated June 3, 1902.

Application filed April 23, 1902. Serial No. 104,315. (No model.)

*To all whom it may concern:*

Be it known that I, ELEAZER KEMPSHALL, a citizen of the United States, residing in Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Golf-Balls, of which the following is a specification.

This invention relates to playing-balls, and particularly to those used in the game of golf.

10 In the accompanying drawings, Figure 1 is a sectional view of a shell-blank. Fig. 2 illustrates a stage in the production of a ball. Fig. 3 is a view similar to Fig. 2, but illustrating a later stage. Fig. 4 is a finished ball made  
15 in accordance with my present improvements and partly broken away, so as to exhibit its construction.

In the several views similar parts are designated by similar characters of reference.

20 Preferably I employ a previously-formed thick shell or hollow sphere A, of gutta-percha, and lined with fabric at A', said fabric being incorporated with the gutta-percha. This blank may be formed of compressed  
25 hemispherical or other segments suitably cemented or joined. Although it is illustrated as round, still in this stage the shell need not be a true sphere. I preferably form said shell-blank with an opening B, communicating with the hollow C thereof.  
30

I place the sphere A in a spherical chamber D, formed in a mold consisting of opposing halves E and F, having registering dowels G and clamped together by any suitable  
35 means. Into the opening B in the latter I insert the mouth of a funnel H, whereby the interior C of the ball is placed in communication with a vessel or receptacle J, formed or provided in the apparatus above the chamber D, said receptacle having a plunger K.  
40

I place in the receptacle J a quantity of plastic or other mobile material, preferably gutta-percha, which may by the action of heat be reduced to a fluent condition, as at  
45 L, Fig. 2. This material flows down the funnel H into the hollow of the sphere A and drives out the air through a vent M, which in this instance is illustrated as a groove formed in the side wall of the main opening  
50 B and lying without the funnel H. In the portion F of the mold there may be provided

a vent N, communicating at P with the ball-vent M, so the air escaping from the ball may be conducted out of the apparatus. The fluid or plastic gutta-percha may therefore settle  
55 or be forced by the plunger K through the funnel H, so as to completely fill the interior of the ball A, whereupon the vent N in the mold may be closed by a screw-plug Q, Fig. 3. The plunger K may then be pressed still  
60 farther down, so as to force more of the filling material into the interior of the ball, causing the walls thereof to yield and expanding the shell until it completely fills the  
65 large spherical chamber D, as at Fig. 3. The gutta-percha filling is allowed to pass from a liquid into a dry or hard condition while the plunger is still pressed down, so that the expanded condition of the shell A<sup>3</sup> is made  
70 permanent, as indicated by R, the hole left thereby in the ball being filled with a plug S, Fig. 4. Not only is a ball thus produced extremely compact or solid, but it will also be understood that the material of the ball from center to periphery is in an abnormal  
75 condition, the core being held under compression by the shell, thereby increasing the efficiency of the ball largely, because the compressed core effectually maintains the shell in a true spherical form and immediately and  
80 powerfully resists distortion thereof by a blow and by reaction aids in speeding the ball when struck by an implement. The stiff fabric lining A' prevents the shell A from collapsing under the heat of the dies  
85 and keeps the core quite distinct from the shell. It increases the durability of the ball and also renders the same sufficiently dead for "putting" without reducing its driving qualities.  
90

Having described my invention, I claim—

1. A playing-ball comprising a highly-compacted substantial fabric-lined gutta-percha shell expanded by plastic material injected  
95 thereinto and forming a core, the shell constantly tending to compress the core and the latter to expand the shell.

2. A playing-ball comprising a highly-compacted substantial fabric-lined gutta-percha shell distended by gutta-percha injected  
100 thereinto.

3. A playing-ball comprising a gutta-per-

cha shell consisting of fabric-lined segments, and distended by gutta-percha injected thereinto.

4. A playing-ball consisting of a highly-  
5 compacted shell built up from compressed gutta-percha fabric-lined segments, said segments being cemented edge to edge, and said shell being expanded by gutta-percha forced thereinto.

10 5. A playing-ball comprising a shell built up of highly solidified or compacted thick hemispherical sections of well-seasoned gutta-percha and lined with fabric, said shell being expanded by mobile material injected there-  
15 into.

6. A playing-ball comprising a highly-compacted fabric-lined gutta-percha shell dis-

tended by gutta-percha injected thereinto and forming a core; the diameter of said core being about one-half that of the complete 20 ball.

7. A playing-ball comprising a shell formed at least partially from plastic material lined with fabric, and distended by similar plastic material injected thereinto. 25

8. A playing-ball comprising a highly-compacted substantial fabric-lined gutta-percha shell, and a sphere of gutta-percha held under permanent compression by said shell.

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Witnesses:

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