

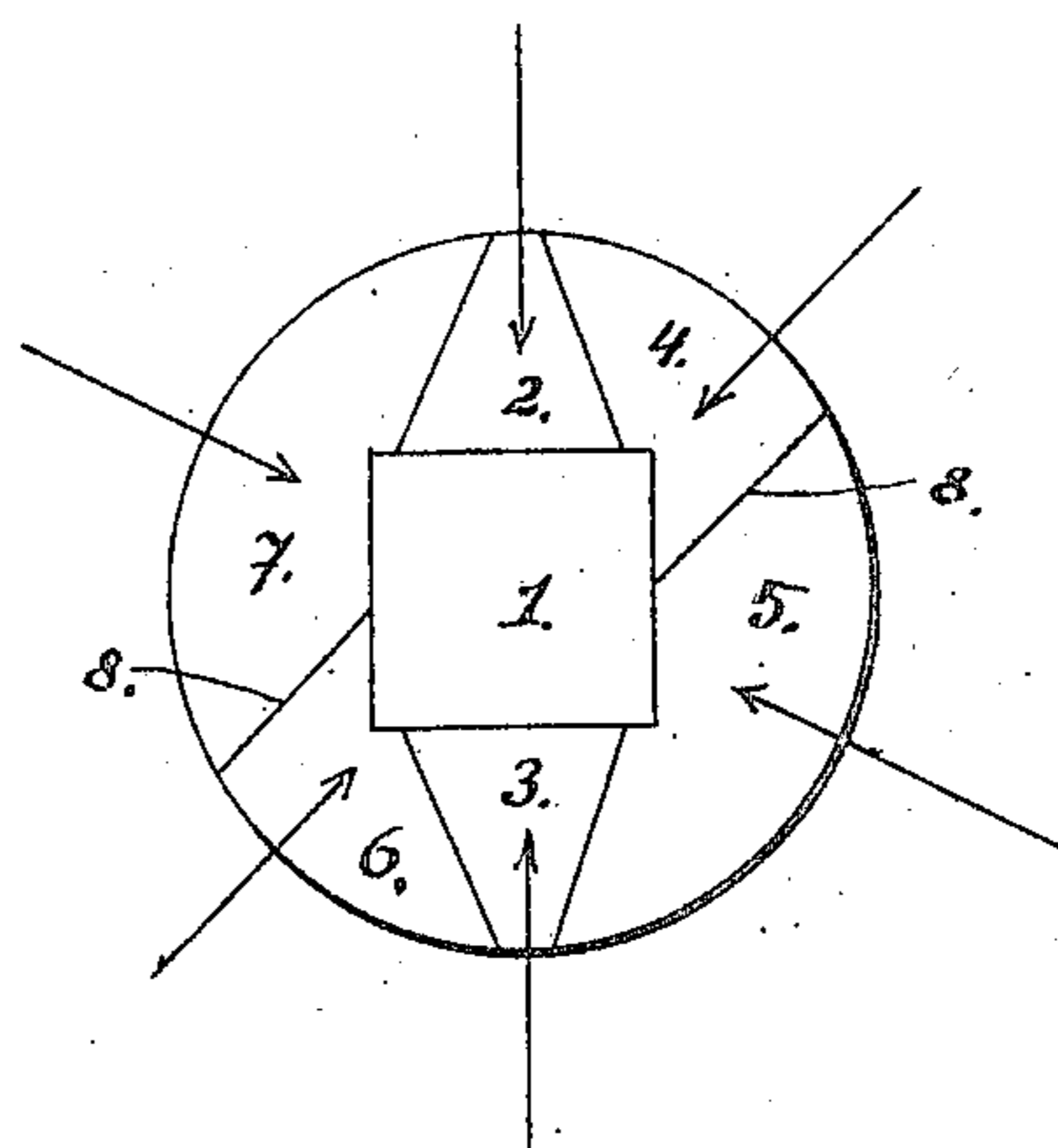
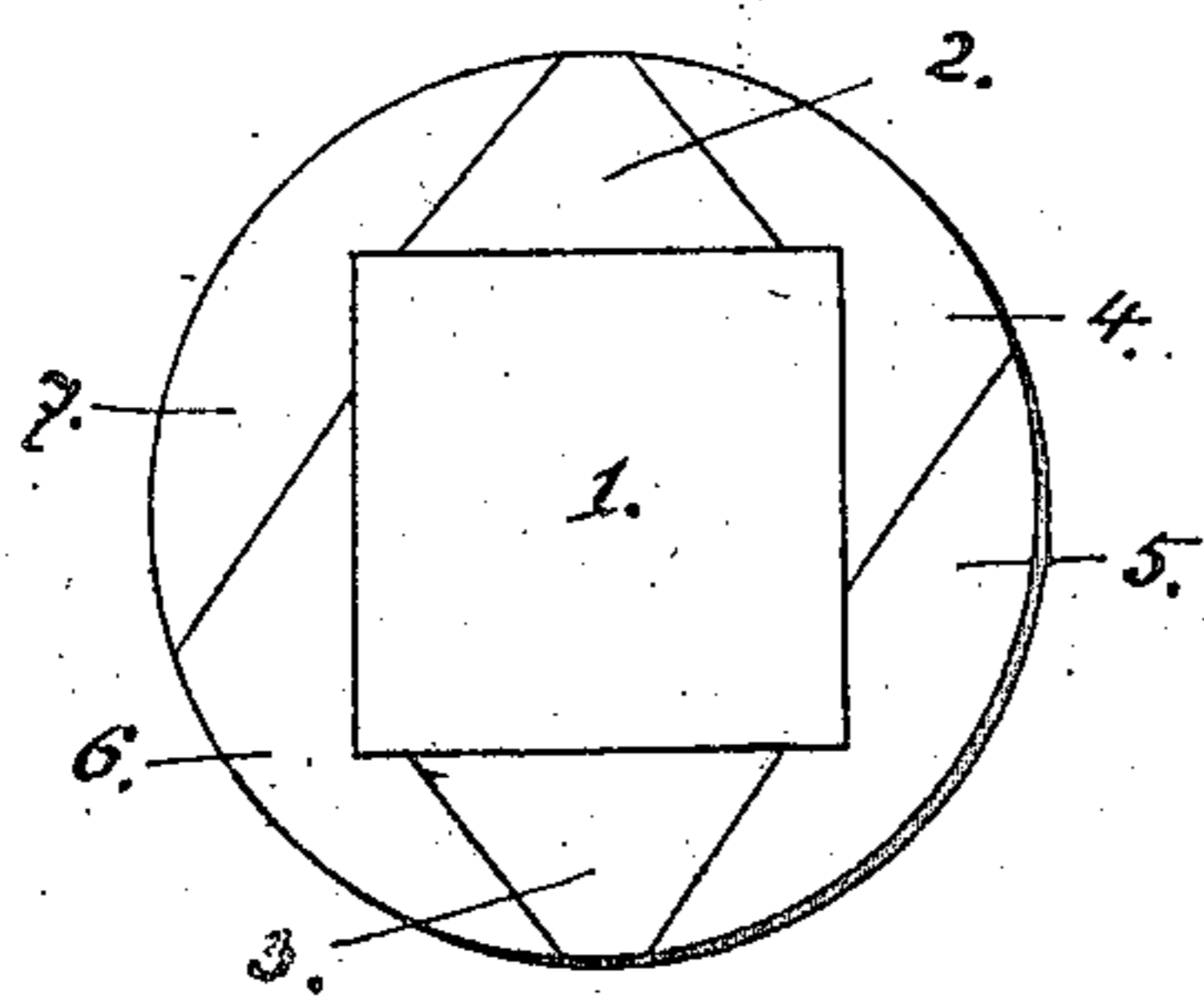
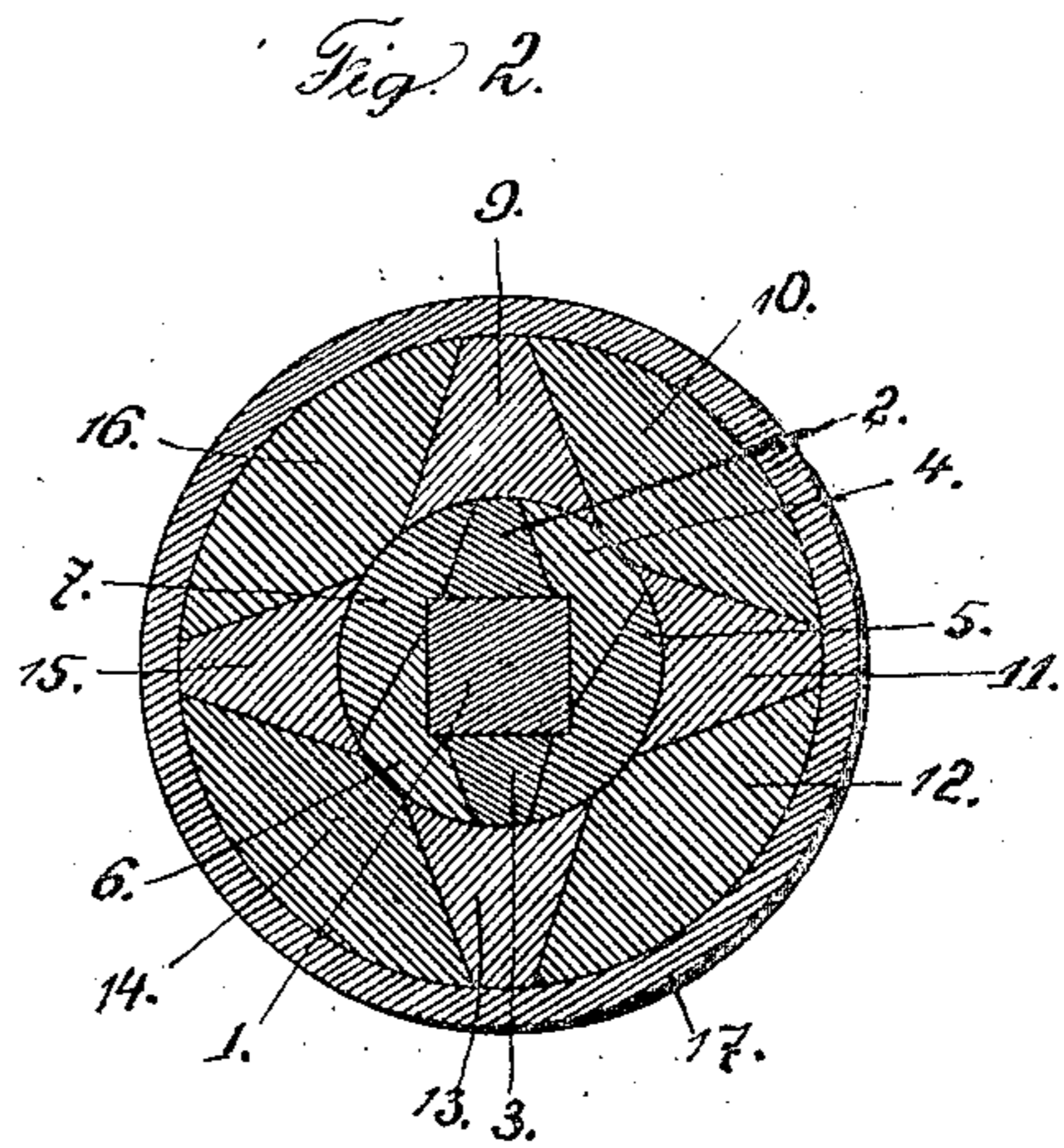
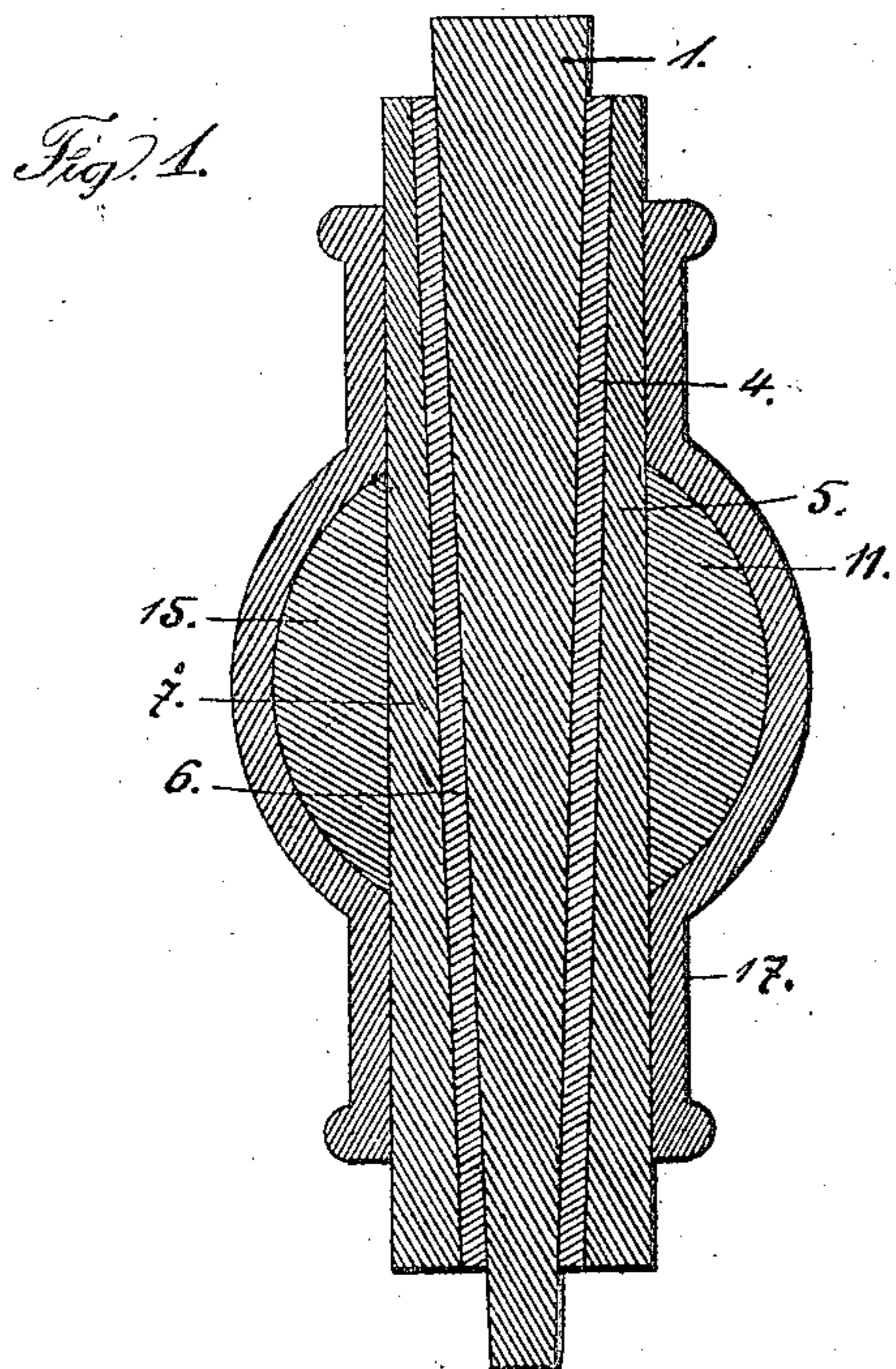
No. 875,097.

PATENTED DEC. 31, 1907.

G. F. MOKEE & W. F. SCHILLING.

COLLAPSIBLE CORE.

APPLICATION FILED AUG. 16, 1906.



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UNITED STATES PATENT OFFICE.

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COLLAPSIBLE CORE.

No. 875,097.

Specification of Letters Patent.

Patented Dec. 31, 1907.

Application filed August 16, 1906. Serial No. 330,829.

To all whom it may concern:

Be it known that we, GEORGE F. MCKEE and WILLIAM F. SCHILLING, citizens of the United States of America, residing at Aspinwall, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Collapsible Cores, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to collapsible cores for use in molding metal, and its primary object is to provide a core so constructed as to compensate, or allow for, the shrinkage of the metal forming the casting as it cools.

It is a well known fact in the molding art that the shrinkage of the molten metal as it cools within a mold is at the rate of one-eighth of an inch to the foot; and one of the serious obstacles to what is known as continuous molding or the repeated using of a mold, without destroying it, is the difficulty of allowing for this shrinkage.

The present invention aims to overcome this difficulty by providing a collapsible core comprising a tapered center pin or plug of wood, asbestos or other yielding material in combination with a core body made up of separable sections having meeting surfaces beveled in such a manner as to cause all of said sections to collapse or move towards the center of the core, thus permitting them to free themselves readily from the casting without liability of cracking or otherwise damaging either the cast product or the mold.

The improved core is especially well adapted for casting pipes and conduits, pipe couplings and plumbers supplies generally, although the invention is not restricted to use for any particular line of castings.

The construction of the improvement will be more fully described hereinafter in connection with the accompanying drawing which forms a part of this specification, and its features of novelty will be defined in the appended claims.

In the drawing, Figure 1 is a central longitudinal section of a core embodying our invention, Fig. 2 is a transverse section of the same, Fig. 3 is an elevation of one end of the improved core, on an enlarged scale, and Fig. 4 is an elevation of the opposite end of the same.

The reference numeral 1 designates a tapered plug or center pin made of wood, asbestos, fiber, or other yielding material.

This tapered member of the core may be of any desired shape in cross section but is preferably round or square in cross section, the square form being here shown. Upon this central member are placed a series of core sections; two or more of which are oppositely beveled to adapt them to serve as key-pieces for the complete core. The key sections 2 and 3 are disposed on opposite sides of the central plug or pin 1, and between these sections 2 and 3 are fitted other sections 4, 5, 6 and 7 the meeting edges 8 of which are so beveled as to direct all of said sections toward the center of the core, as illustrated by arrows in Fig. 4, when the tapered center plug is loosened or removed. The core sections are composed of any desirable fire-proof material having a greater heat resisting quality than the material to be cast, such materials as asbestos, copper, iron and composition alloy, or the like, being advantageously employed. The material used for these core sections depends upon the nature of the material being cast, and it will be understood that while we have specified certain materials which can be advantageously used, we do not wish to confine ourselves to the materials enumerated. It will be noted from this Fig. 4 that if the core be removed or sufficiently loosened to loosen the frictional connection of the other core sections, the tendency of all of said sections will be to collapse inward. The key pieces 2 and 3 will be directed toward each other and this inward movement of the key-pieces imparts a tendency to the other sections to move toward the center, thus insuring a practically equal collapsing movement throughout the circumference of the core.

The importance of employing a central tapered plug of soft material is that in the making of certain castings, particularly heavy pipes, the contraction of the soft central plug is frequently sufficient to take up the shrinkage of the metal without loosening the plug and as such shrinkage is always toward the center the inward movement of the core sections toward the center distributes the strain of the shrinkage equally toward the center avoiding undue binding and consequent cracking of the casting at any point. It is obvious that the core may be easily removed from the casting by first removing the central tapered plug and afterward the other core sections.

As shown in Fig. 2 more than a single se-

ries or layer of core sections may surround the central tapered plug. In the construction shown in this figure, the plug 1 and the sections 2 to 7 inclusive are similar to parts 5 designated by same numerals in Figs. 3 and 4, but the core is enlarged by the addition of a second series of sections numbered from 9 to 16. This particular form of the core is adapted for the casting of a pipe connection 10 17 shown in Figs. 1 and 2. It will thus be seen that the improved core is adapted for a variety of castings, the required core sections necessary to impart the desired contour to the article being built up around the tapered 15 center pin.

In employing our improved core for light metal castings it is usually necessary to loosen the tapered plug by a slight blow on its smaller end at the proper time in the casting 20 process, as the metal is not of sufficient strength or thickness to compress the soft core plug to the extent necessary to compensate for the shrinkage of the metal.

The invention comprehends and includes 25 all such constructions as fall within the terms and scope of the following claims, or which embody the distinguishing features of the present improvement which are the tapered pin of yielding material, in combination with 30 core sections beveled to cause them to collapse toward the center of the core.

What I claim and desire to secure by Letters Patent, is:—

1. A collapsible core comprising a tapering 35 central pin or plug of yielding material, and a plurality of tapering core sections arranged around the plug, each abutting the central pin or plug and arranged around the latter with their tapering ends extending in the op-

posite direction to the tapering end of the 40 pin or plug, and having their meeting faces so disposed that all of the said core sections will move towards the center and collapse, when the central pin or plug is removed.

2. A collapsible core comprising a central 45 pin or plug of yielding material, tapering from one end to the other, and a plurality of core sections arranged around the plug, and each abutting the plug, the said core sections having their meeting faces so disposed as to 50 match neatly with each other and with the central pin or plug and with the latter to form a practically solid core when the sections are in assembled position, the said meeting faces of the core sections being also dis- 55 posed so that all of the sections will move toward the center and collapse when the tapering plug or pin is removed.

3. A collapsible core comprising a tapered central pin or plug of yielding material, and a 60 body portion consisting of separable core sections arranged around the center core of plug with their meeting faces so disposed as to engage throughout with the plug and adjacent 65 core sections to form a practically solid core, the said meeting faces of the core sections being so disposed that all of said core section will tend to move towards the center and collapse when the tapering pin or plug is 70 withdrawn.

In testimony whereof I affix my signature in the presence of two witnesses.

GEORGE F. McKEE.
WILLIAM F. SCHILLING.

Witnesses:

BESSIE LOWREY,
W. P. LOWREY.