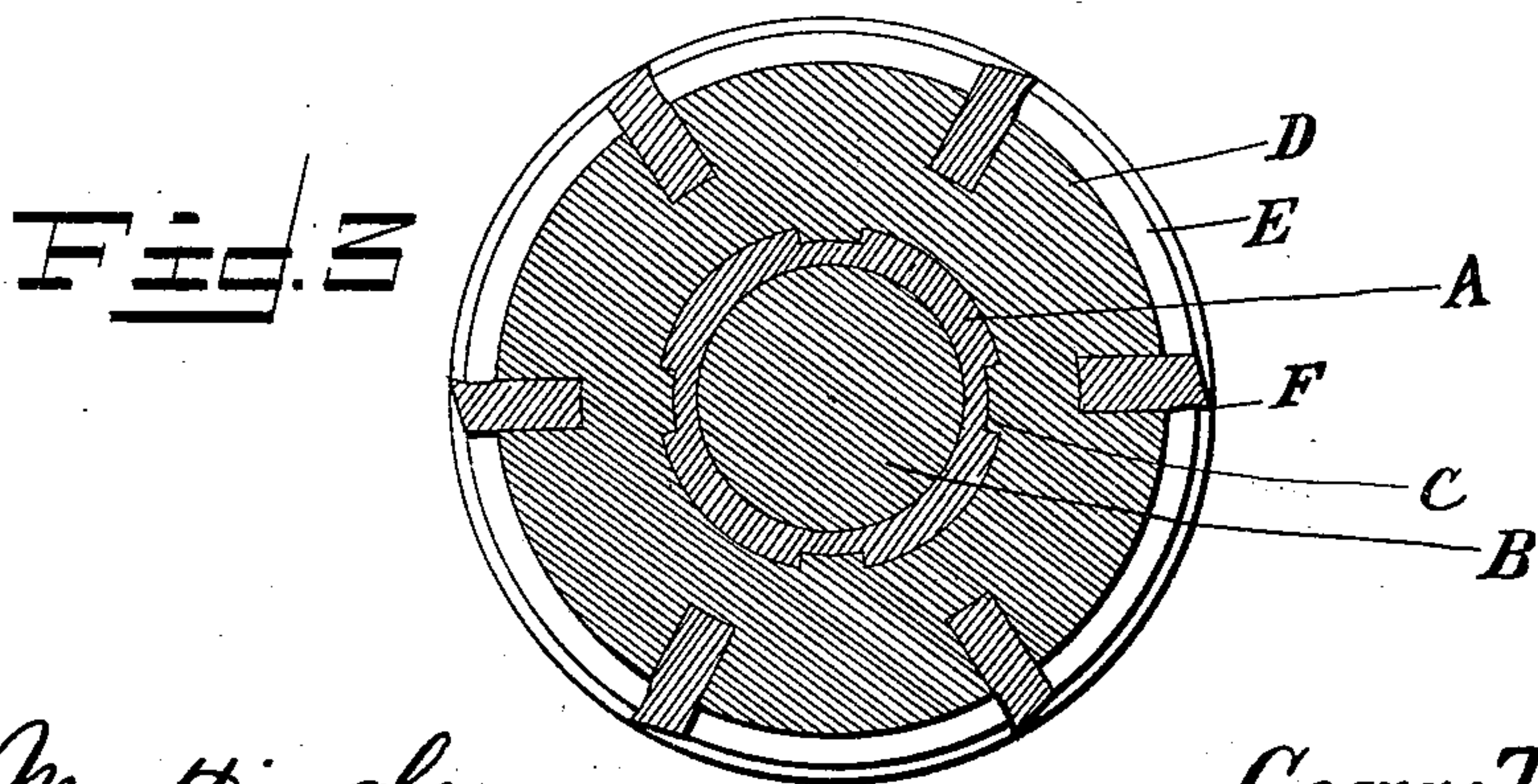
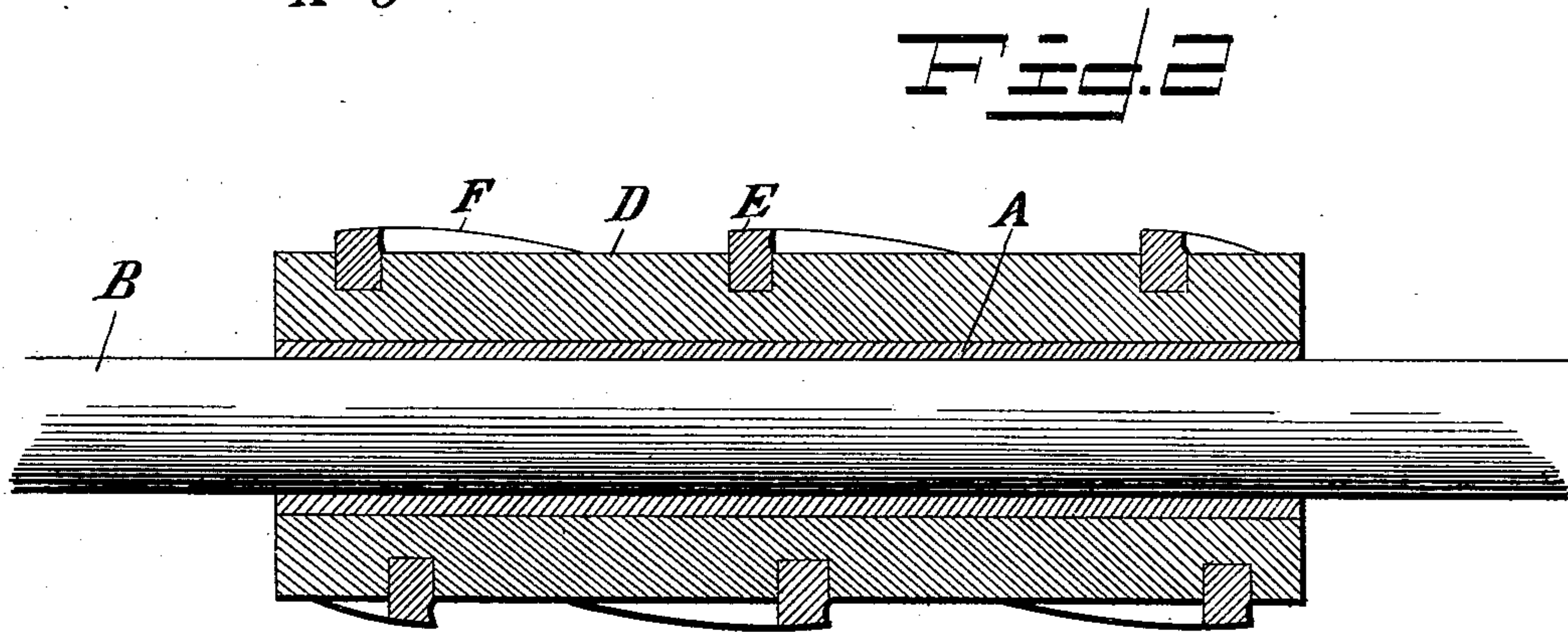
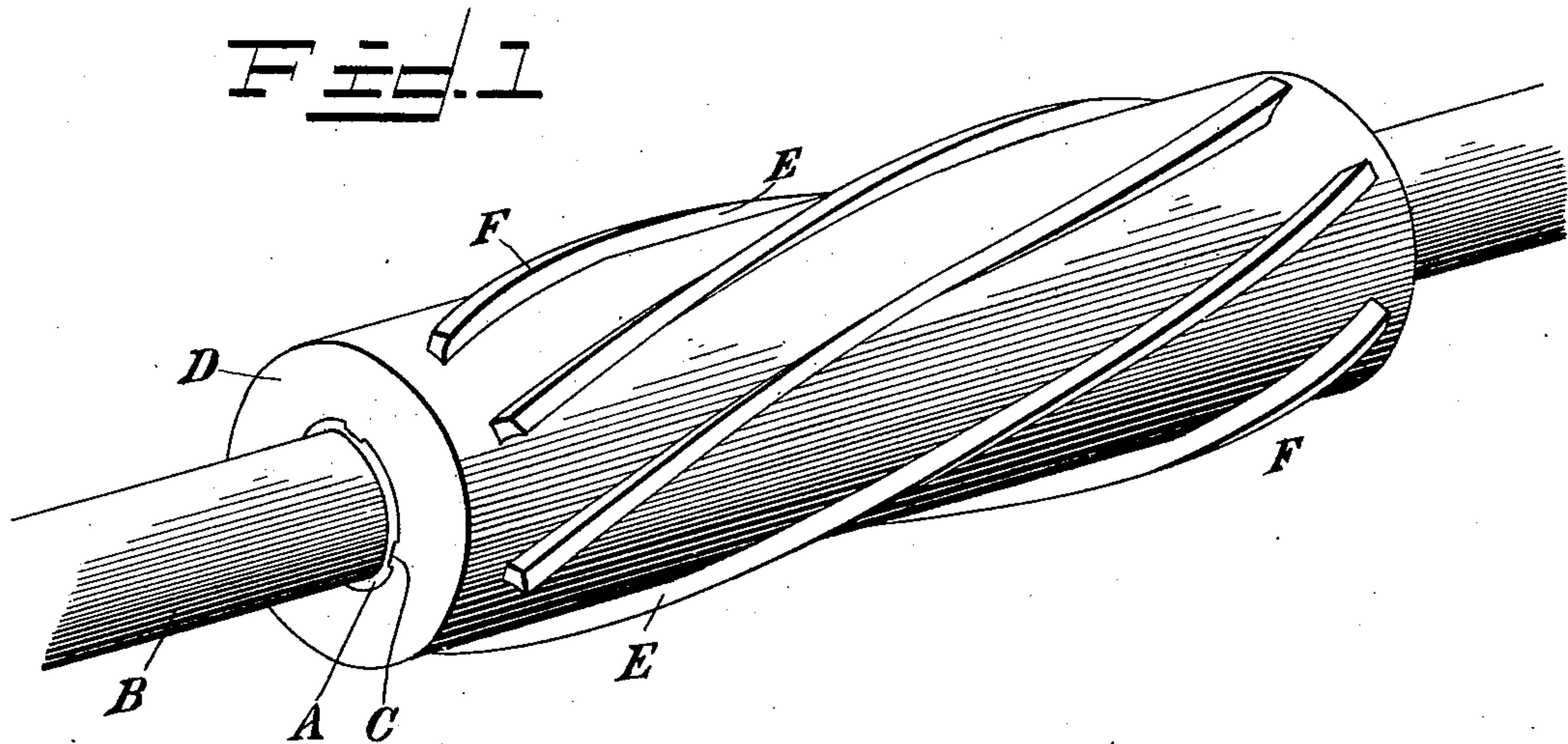


(No Model.)

G. T. BECHTOL.  
MILLING CUTTER.

No. 512,463.

Patented Jan. 9, 1894.



Witnesses

*Ed B. Mattingly*  
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# UNITED STATES PATENT OFFICE.

GEORGE T. BECHTOL, OF ELMIRA, NEW YORK.

## MILLING-CUTTER.

SPECIFICATION forming part of Letters Patent No. 512,463, dated January 9, 1894.

Application filed March 1, 1893. Serial No. 464,249. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE T. BECHTOL, a citizen of the United States, residing at Elmira, in the county of Chemung and State of New York, have invented a new and useful Milling-Cutter, of which the following is a specification.

This invention relates to milling cutters for surfacing wood and metal; and it has for its object to provide certain improvements in cutters of this character whereby the cutting teeth or knives thereof will last longer and can be manufactured so as to have a uniform temper throughout which cannot be secured in cutters of this character where the body and the cutting edges are all a single piece of metal.

To this end the main and primary object of the invention is to provide a milling cutter, which, owing to the disposition of the knives, can employ a less number of knives and at the same time secure a very rapid cut and can be used by re-sharpening until they are almost completely worn away.

With these and many other objects in view which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated and claimed.

In the accompanying drawings:—Figure 1 is a perspective view of a milling cutter constructed in accordance with this invention. Fig. 2 is a central longitudinal sectional view of the same. Fig. 3 is an enlarged transverse sectional view thereof.

Referring to the accompanying drawings, A represents a hard metal tube that is designed to fit the mandrel or spindle B, of any suitable machine which may be employed for driving the cutter in surfacing metal or wood. The said metal tube A, is provided with a series of longitudinal peripheral metal-grooves C, into which runs the metal of the cylindrical cast cutter or knife body D. The cylindrical body D, which is cast permanently onto the inner tube A, is preferably of Babbitt metal, but of course may be any other soft metal body, and even cast iron. When the cylindrical body D, is cast onto the inner tube A, at the same time, a parallel

series of steel cutter knives E, is permanently cast longitudinally into said body so as to project beyond the periphery thereof. The steel cutter knives E, are provided with outer beveled cutting ends F, and while being uniformly parallel with each other in the periphery of the cast body, the same are also disposed spirally and longitudinally in the said body, in order to secure a rapid sliding cut of the object being surfaced. It will be readily apparent to those skilled in the art; that by disposing the projecting cutter knives, or more properly speaking knife ribs E, spirally, the same can be arranged in a less number on the cutter body than in ordinary cutters having straight knives, for the reason that before one knife has barely commenced to cut, the next following knife has already started in, so that a rapid effective cut can be secured. Furthermore, it may be well to observe that not only is the cost of the cutter materially lessened by employing a less number of the tempered knives, but at the same time, by providing a construction which allows the knives to be widely separated, wider spaces are left between the cutters for the chips, so as to prevent clogging. By having a soft metal cast body, the knives can be worn almost completely out, inasmuch as the same need not necessarily be very wide and can therefore be of a uniform temper throughout, and when the same are worn close to the soft metal body, such body can be readily filed down below the plane of the cutting edges so as to expose more of the knives, thus insuring the use of the knives until almost completely worn away.

From the foregoing it is thought that the construction and many advantages of the herein described milling cutter will be readily apparent.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

In a milling cutter, the combination of an inner hard metal tube provided with a peripheral series of longitudinal metal grooves, a cylindrical shell or body of soft metal permanently cast about the hard metal tube and into the peripheral grooves thereof, and a series of parallel spirally disposed tempered

cutter knife ribs cast permanently and longitudinally into said shell or body and provided with outer beveled cutting edges, the portions of the soft metal shell or body between said knife ribs being adapted to be reduced below the plane of said cutting edges as said knife ribs wear away, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

GEORGE T. BECHTOL.

Witnesses:

WILLIAM LANG,  
KITTY JACOB.