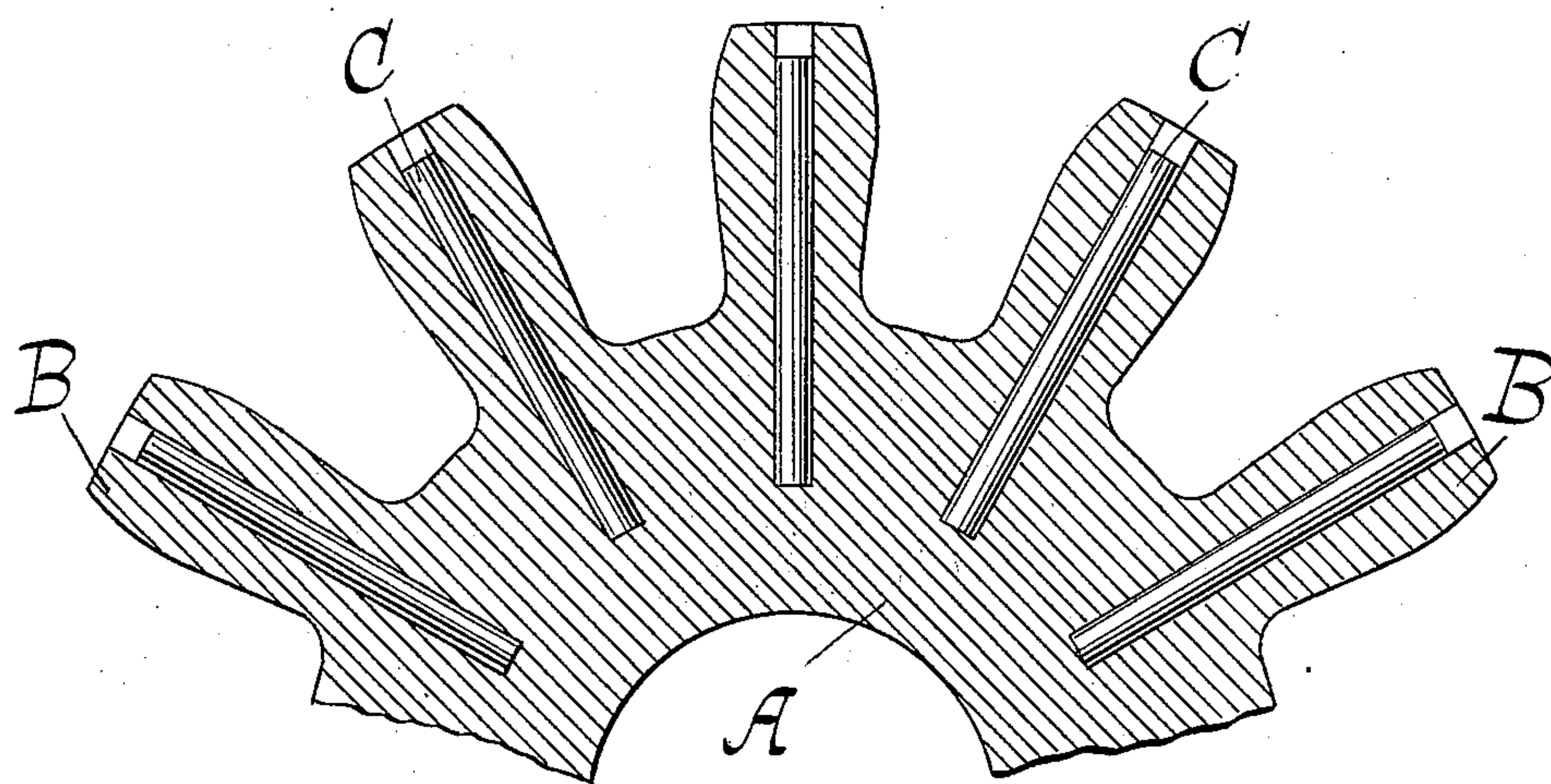


(No Model.)

W. COURTENAY.  
COGGED GEARING.

No. 404,826.

Patented June 11, 1889.



WITNESSES:  
*J. Moore*  
*Margaret M. Harvey*

*William Courtney* INVENTOR

BY  
*Wyllie Bodge*  
ATTORNEY

# UNITED STATES PATENT OFFICE.

WILLIAM COURTENAY, OF NEW YORK, N. Y.

## COGGED GEARING.

**SPECIFICATION** forming part of Letters Patent No. 404,826, dated June 11, 1889.

Application filed February 13, 1889. Serial No. 299,696. (No model.)

### *To all whom it may concern:*

Be it known that I, WILLIAM COURTENAY, a citizen of the United States, residing in the city, county, and State of New York, have invented a new and useful Improvement in Cogged Gearing, of which the following is a specification.

My invention relates especially to that class of gearing made of vulcanized fiber—a material well known in the arts—or its equivalent; and it consists in a particular manner of strengthening the teeth or cogs, which will be readily understood by reference to the drawing, which represents a segment of a gear in elevation, showing several teeth.

A represents the body of the gear.

B B B are the teeth, and C C C represent pins or strips of metal driven into or inserted in the teeth in the direction of their axes and sufficiently far into the body to thoroughly connect the latter with the teeth and strengthen the point of junction between the two. In preference, the outer ends of the pins or strips should not extend to the edge of the teeth, so that the metal parts of different pieces of gearing will not come in contact with each other, and the metal used may be steel, iron, copper, brass, or other metal, but preferably some rigid material, so as to at once receive and check any strain sufficient to make the fiber yield.

I use either pins or strips of metal, and in the latter case the strips may either extend entirely across the edges of the teeth or partially so, and one or more pins or strips may be used in the same tooth.

Vulcanized fiber is made of cotton paper treated with chloride of zinc, which contracts it to a hard dense substance without entering into chemical combination with it. There are other salts of zinc and other acids—such as sulphuric and nitric acids—which produce a similar astringent effect, and the materials produced by such astringents are for the purposes of this invention practically equivalent to vulcanized fiber. It is obvious also that a portion of the body of the gear-wheel or rack might be made of other material than vulcanized fiber without departing from the principle of my invention.

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

Cogged gearing composed of vulcanized fiber, having strengthening-pins extending from the body of the gear into each tooth, said body and teeth being integral, substantially as described.

WILLIAM COURTENAY.

Witnesses:

E. J. MITCHELL,  
G. L. COURTENAY.