(No Model.)

S. HARRIS.

GEAR WHEEL.

No. 468,767. Patented Feb. 9, 1892.

Fig. 3.

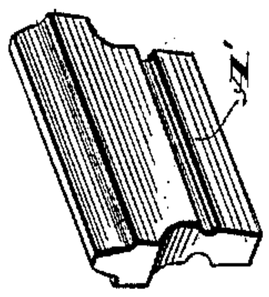


Fig. 2.

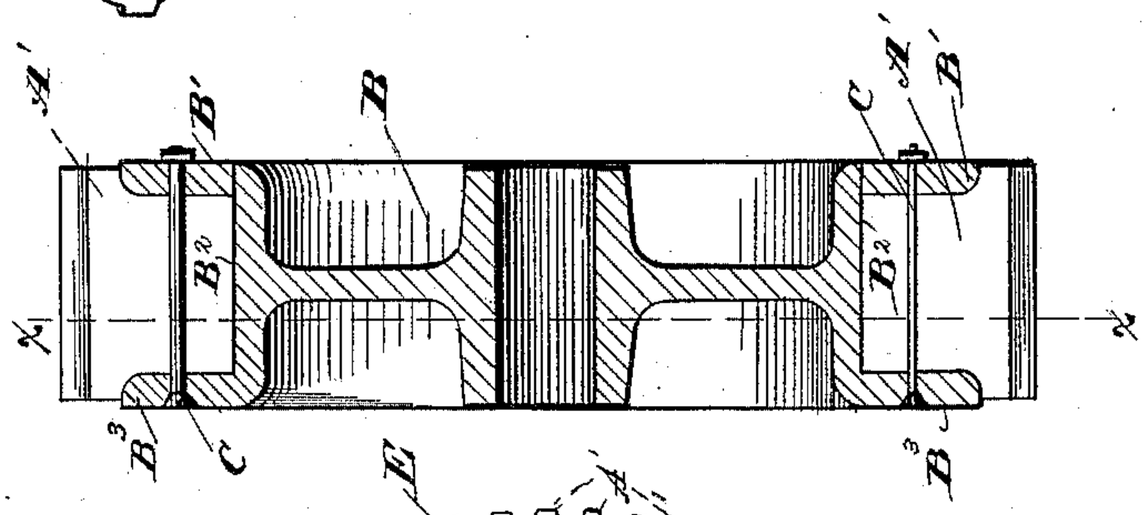
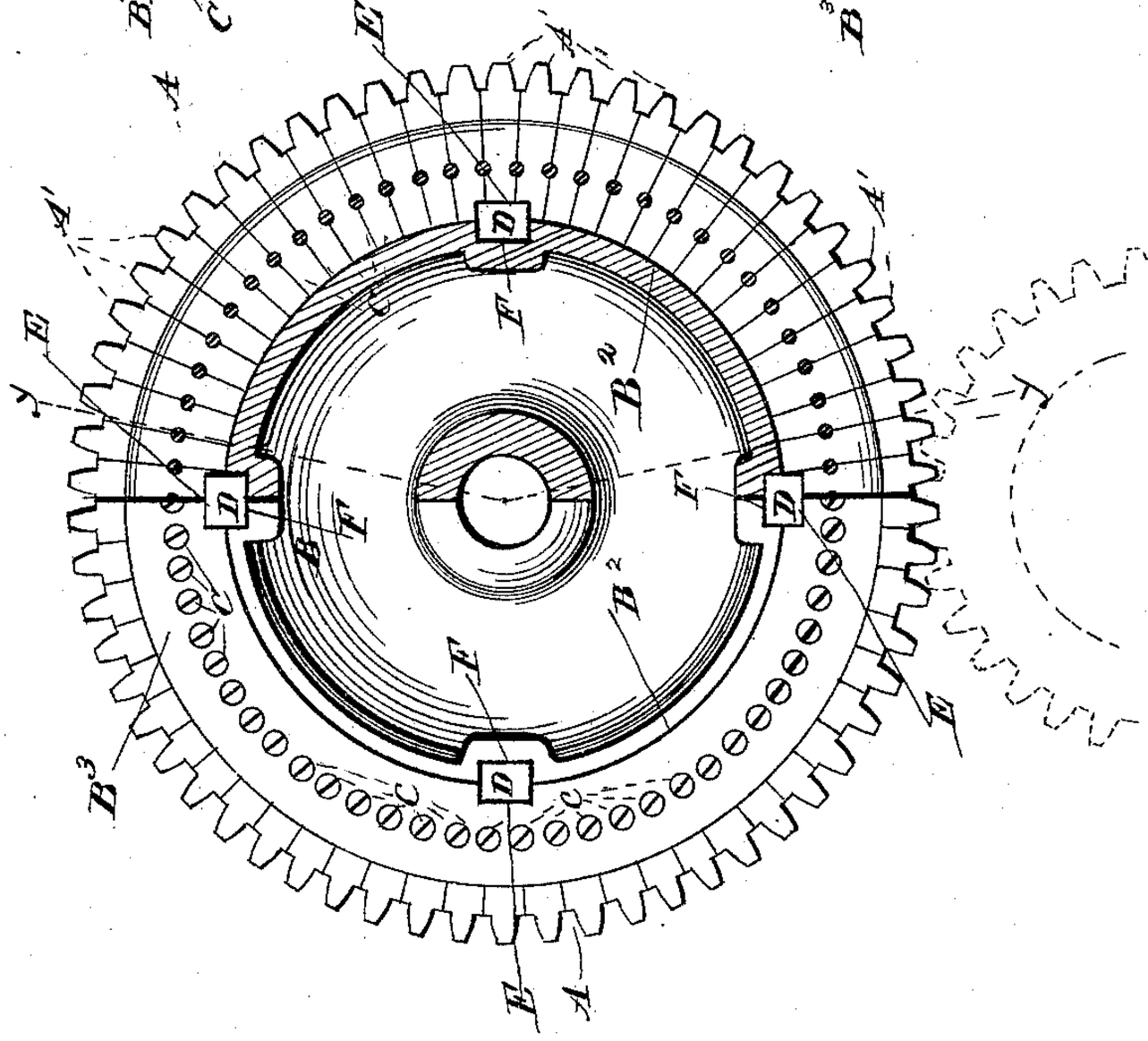


Fig. 1.



Witnesses
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UNITED STATES PATENT OFFICE.

SAMUEL HARRIS, OF ST. LOUIS, MISSOURI.

GEAR-WHEEL.

SPECIFICATION forming part of Letters Patent No. 468,767, dated February 9, 1892.

Application filed June 27, 1891. Serial No. 397,722. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL HARRIS, a citizen of the United States, and a resident of St. Louis, State of Missouri, have invented certain new and useful Improvements in Gear-Wheels, of which I hereby declare the following to be a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of my invention is to provide an improved gear-wheel of the kind usually having wooden teeth.

In the accompanying drawings, Figure 1 is a side elevation of a complete wheel, showing one-half of the flange covering the teeth broken away on line *x x*, Fig. 2, to expose the composite rim. Fig. 2 is a vertical section of the same on line *y y*. Fig. 3 is a detail of one tooth.

In the figures, A′ A′ A′ are the several teeth which compose the body of the rim A. These teeth are formed of suitable hard wood, cut lengthwise of the fiber of the wood so as to endure the maximum cross-grain. The shanks of these teeth are cut radially, so that when united the teeth will form a circular rim A. Strong glue or cement is then placed upon the meeting edges of the teeth, and they are bound closely together until rigid, when they are cut and the circular rim turned true to size. The rim A thus formed is then placed upon the periphery B^2 of the wheel B and against the flange B^3. A flat ring B′ is then placed over the wooden rim on the side opposite the flange B^3, and bolts C are passed through the flange B^3, wooden rim A, and ring B′, which secures the parts immovably together. It will be observed that when the composite rim has been placed in position any one of the several teeth is liable to become detached and drop out of place. To prevent this the bolts C are driven through openings in the radial lines, separating the teeth in such a manner that one-half of the bolt will engage one side of each tooth and thus prevent their being detached from the ring in case the glue or cement holding them together should give way. It will be seen that each segment of the wooden ring consists in one tooth and one-half a space on each side, so that the division will always occur half-way between the centers of the teeth. This will always insure straight grain in the wood and the strongest possible form of teeth. In order to equalize this pressure so that it may be borne by the main part of the wheel, keys D are inserted in the rim A and body of the wheel, keyways E F being prepared for this purpose which receive the thrust from the teeth A′.

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

As an improved article of manufacture, the herein-described improved gear-wheel, comprising the body portion B, having on its perimeter the integral flange B^3 and a removable ring or flange B′, a rim A, composed of removable teeth secured between said flanges, and keys D, seated in the perimeter of the wheel and extending into and assisting in taking the thrust of the flange or ring B′ and the rim of teeth A′, substantially as described.

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