

(No Model.)

J. RIGBY.
PROCESS OF MAKING CAR WHEELS.

No. 362,113.

Patented May 3, 1887.

Fig. 1.

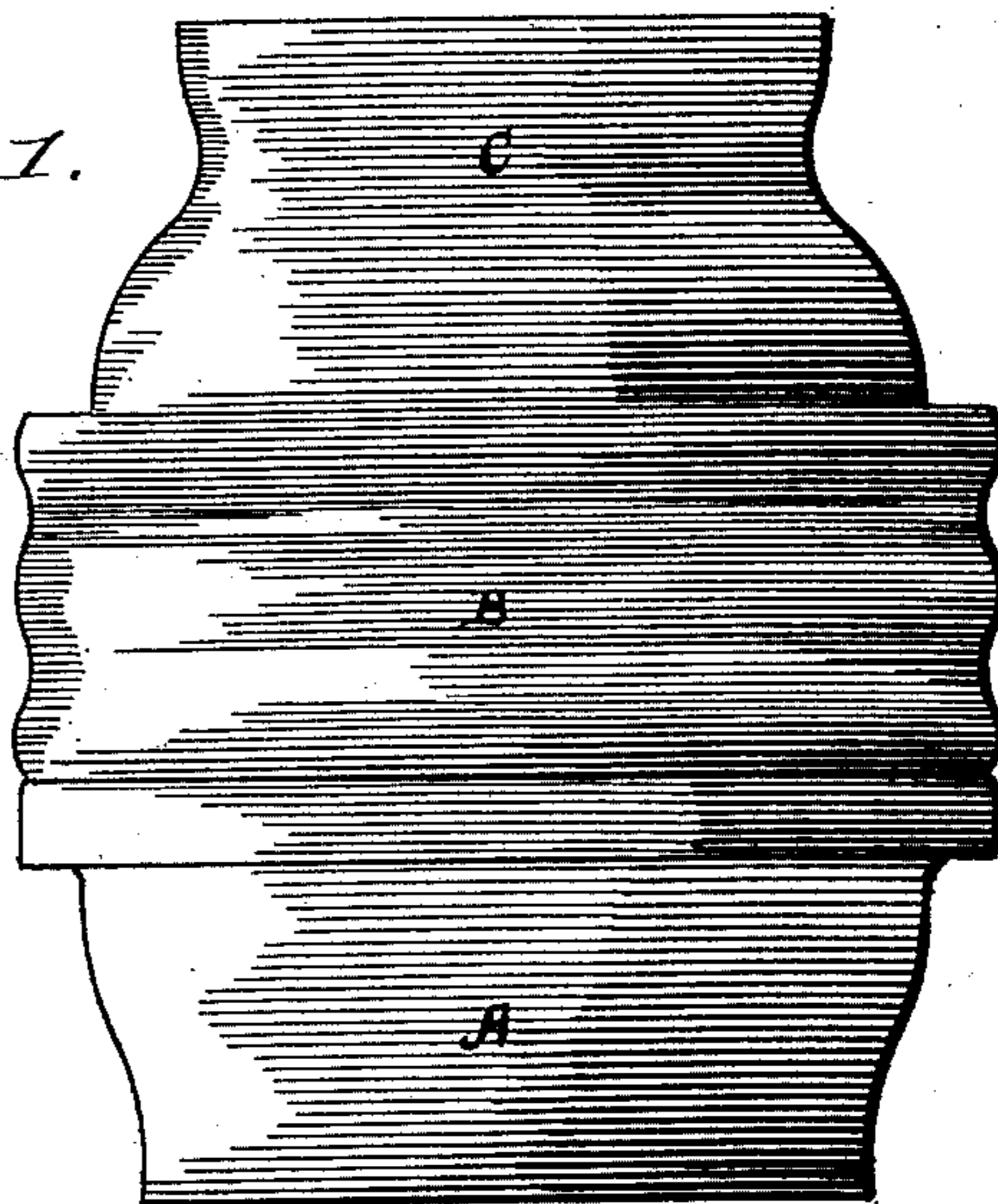


Fig. 3.

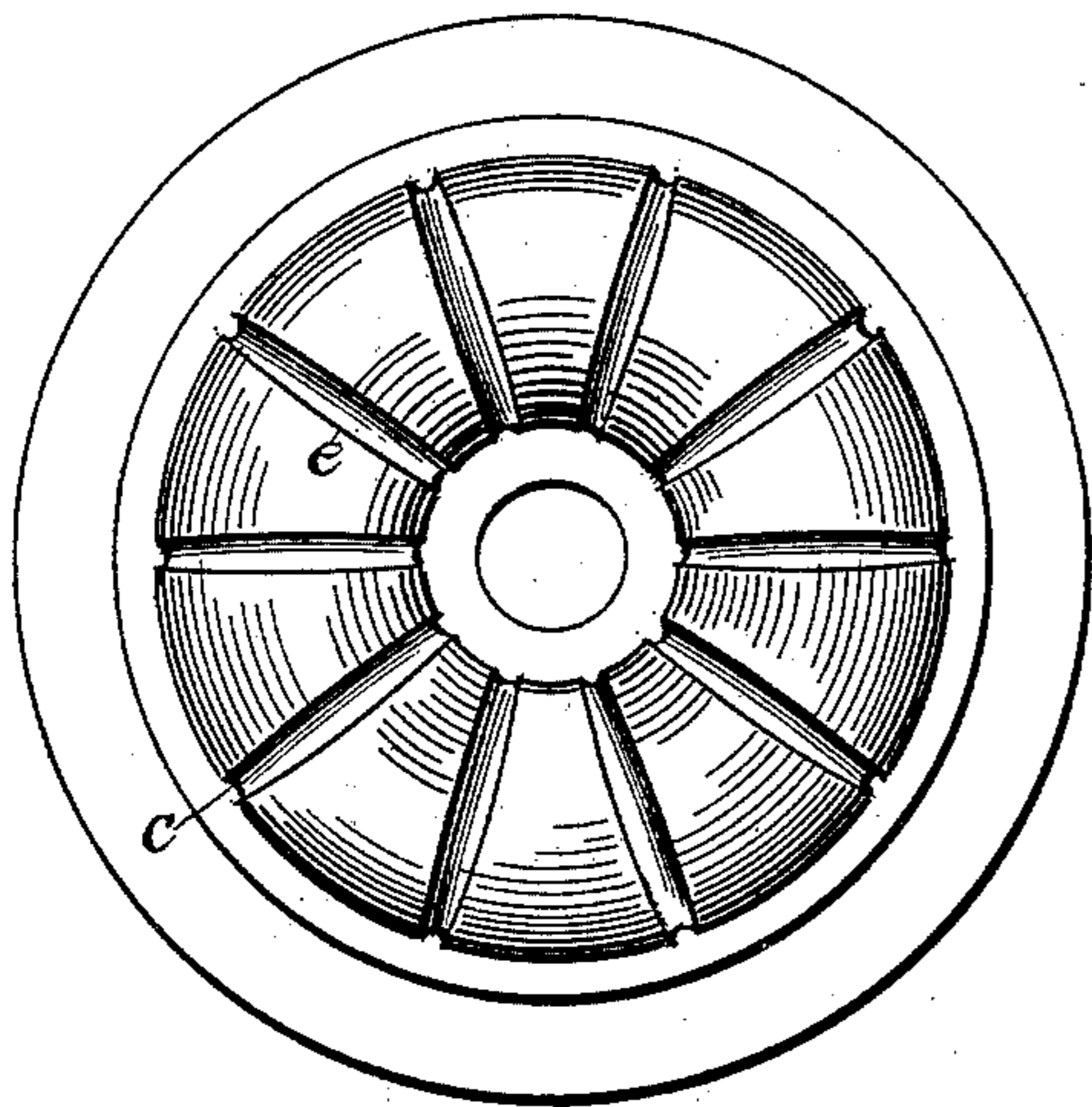
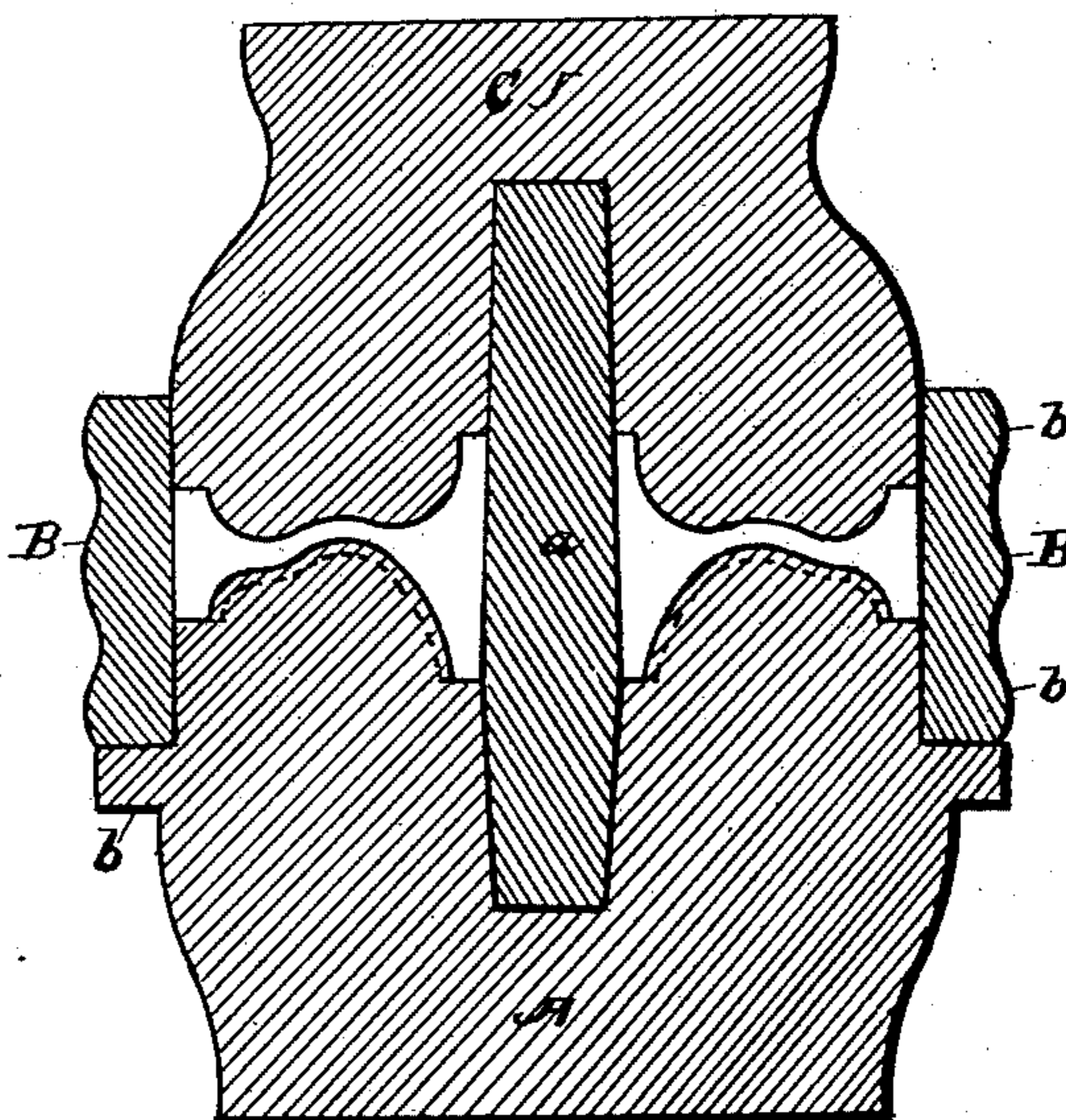


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

JAMES RIGBY, OF MINNEAPOLIS, ASSIGNOR TO THE RIGBY CAR WHEEL COMPANY, OF ST. PAUL, MINNESOTA.

PROCESS OF MAKING CAR-WHEELS.

SPECIFICATION forming part of Letters Patent No. 362,113, dated May 3, 1887.

Application filed March 3, 1886. Serial No. 193,886. (No model.)

To all whom it may concern:

Be it known that I, JAMES RIGBY, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented a new and useful Improvement in the Process of Manufacturing Car-Wheels, of which the following is so full, clear, and exact a description as will enable one skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of a pair of dies and a band or encircling-belt used in connection therewith. Fig. 2 is a vertical cross-section of the same, showing the body of the car-wheel as it appears when pressed between the dies. Fig. 3 is a bottom plan view of the upper die.

The object of my invention is to produce a car-wheel in sections without boring or perforating any of the sections and without the use of bolts to connect the sections together. In other words, I design to make car-wheels which shall be virtually free from projections and depressions and which shall be formed without disturbing the material in working it up into car-wheels.

To this end invention consists, first, in making the body of the wheel imperforate, except at the hub, and in making the tire imperforate throughout.

It further consists in melting wrought or scrap iron or steel and running it into a mold, which, when filled, contains a mass of molten iron the desired size and shape of a car-wheel, and having a projection in the center which forms a hole through the molten metal, which forms the hole for the axle. When this iron is partially cooled, it is taken from the mold and is placed in position upon the lower die, A. (Shown in Fig. 2.) Its central opening registers with the pin *a* in the mold A, and it is held in place on this lower die, A, by the ring B, the latter having the ribs *b* on its outer rim. In this condition it is hammered by the upper die, C, until it is formed into the shape, thickness, and degree of hardness or compactness desired.

The upper die, C, is provided with radial

ribs or depressions *e*, having recesses in their outer ends at *c*, as shown in Fig. 3. These depressions form radial ribs on the car-wheel, the height of which corresponds to the depth of these grooves, and the recesses *c* form shoulders on the outer ends of these radial ribs. The shoulders strengthen and brace the wheel at this point. In other words, the upper die has radial ribs on its face in intaglio, and by impressing the metal with this die corresponding ribs are formed on the wheel in cameo. These give additional strength and symmetry to the wheel.

It will be observed by reference to Fig. 2 that the ring B is slightly inclined, so that when it is desired to remove the wheel from the mold or dies, it is simply necessary to raise the upper die, C, and invert the ring B, when the wheel-body will drop out. This wheel-body may then be finished in the usual manner.

A wheel-body formed as described above contains all the virtues of first-class wrought-iron, is much more uniform in strength, weight, and compactness than can be produced by rolling, is less liable to break, and is practically indestructible.

Having now described the process of producing this wheel, I wish to state here that I do not wish to be understood as limiting myself to the manufacture of car-wheels, as I desire to use this process for other purposes than producing car-wheels, and it is obvious that the advantages obtainable from the use of this process in car-wheels is equally valuable elsewhere and would serve the same general valuable purposes in the manufacture of other wrought-iron articles.

I am aware that it is not broadly new to forge wheels in a single piece from ingots, and I therefore disclaim such process of manufacture, broadly.

What I desire to secure by Letters Patent is—

1. The process of making car-wheel bodies herein described, consisting in first casting the body in a single solid piece of a form approximating that of the finished wheel-body and having a central hole for the axle, then placing the casting in a die-box having a central pin

or post of a size and shape corresponding with the axle-aperture, and finally hammering said body, while still in a heated condition from the casting process, into final form, without re-
5 moving it from the die, substantially as set forth.

2. The process of making car-wheel bodies herein described, consisting in first casting the body in approximately completed form with a
10 series of radial ribs, then placing said casting in a die-box, and finally hammering said casting into completed form without letting it cool from the casting process, one of said dies be-

ing provided with a series of radial grooves to complete the radial ribs on the wheel-body, 15 the said finishing or hammering operation being performed without rotating the hammering or presser die, substantially as set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing 20 witnesses:

JAMES RIGBY.

Witnesses.

N. D. ADAMS,

CHAS. E. BARBER.