

A. HEBBARD.

Car Wheel.

No. 8,106.

Patented May 20, 1851.

Fig. 2

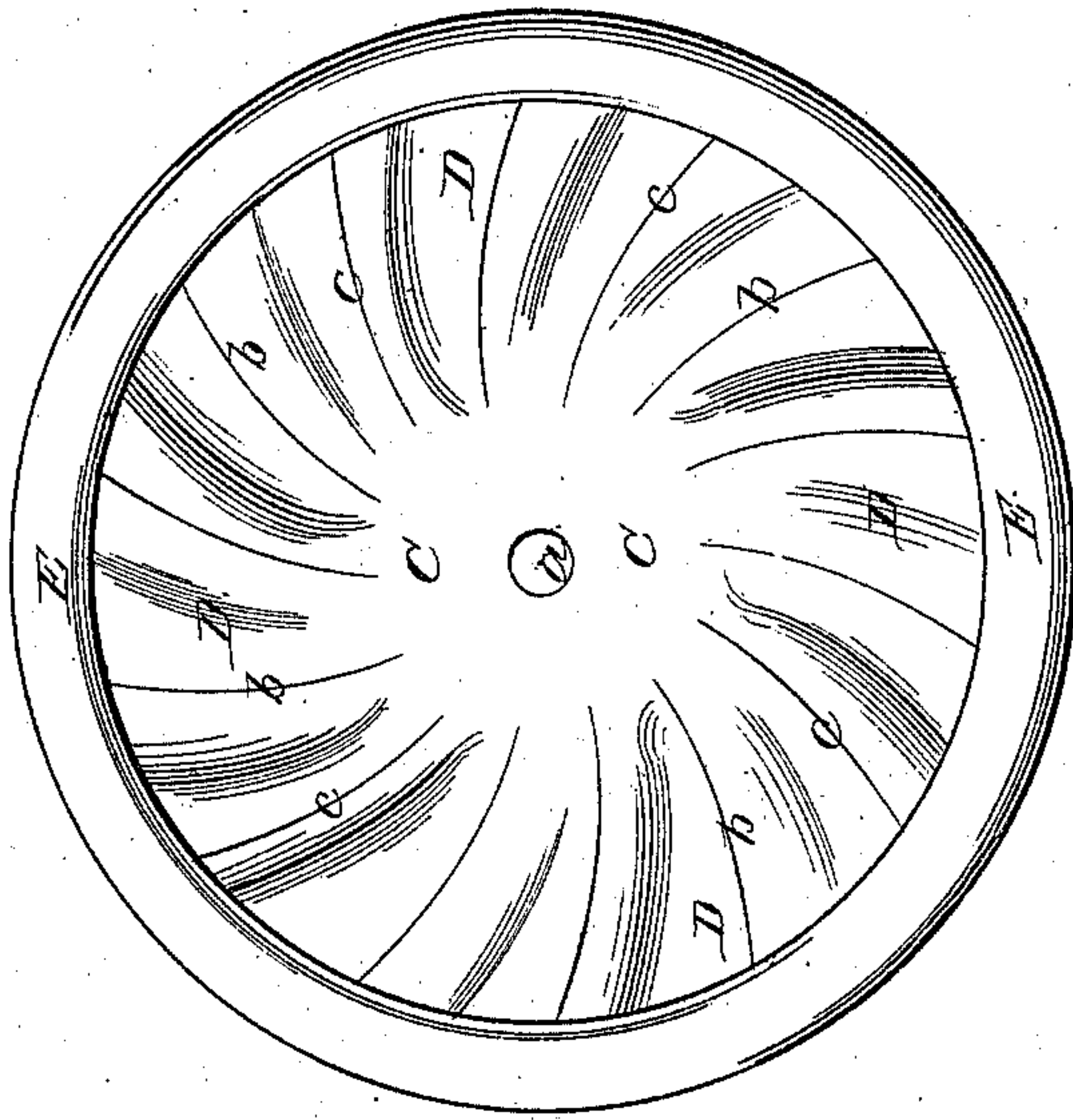


Fig. 3.

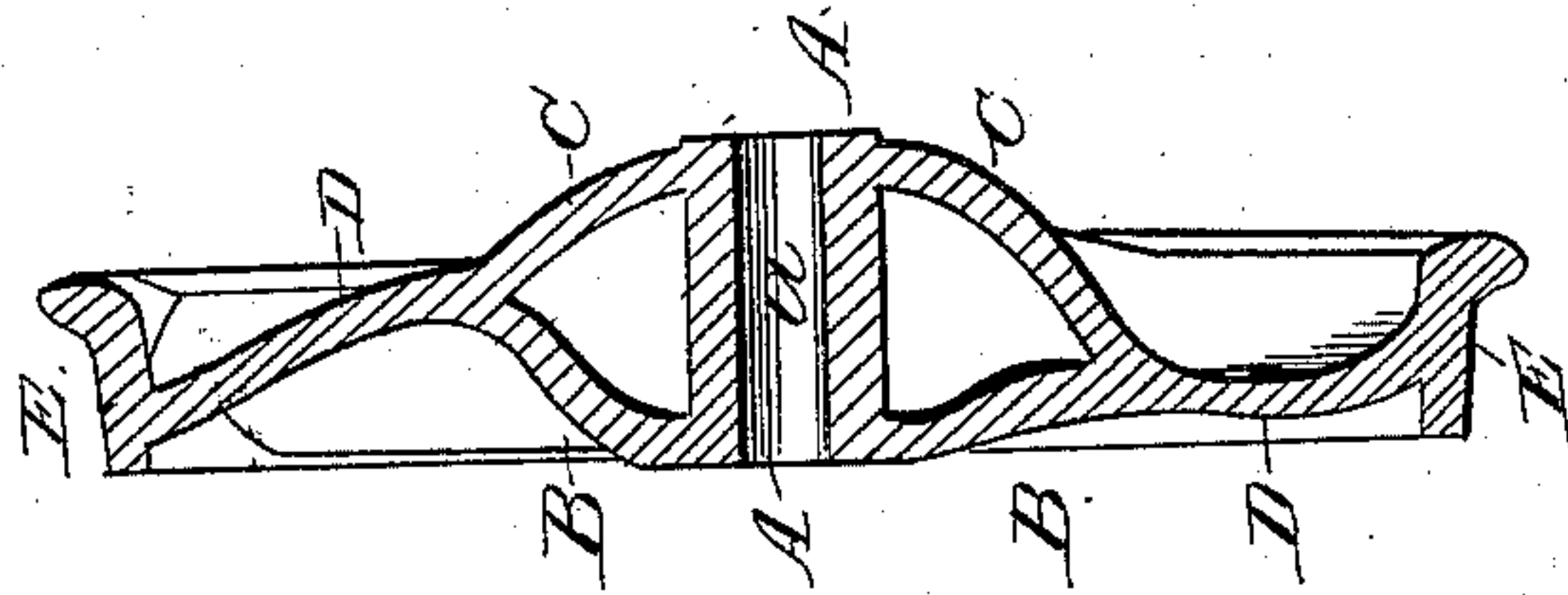
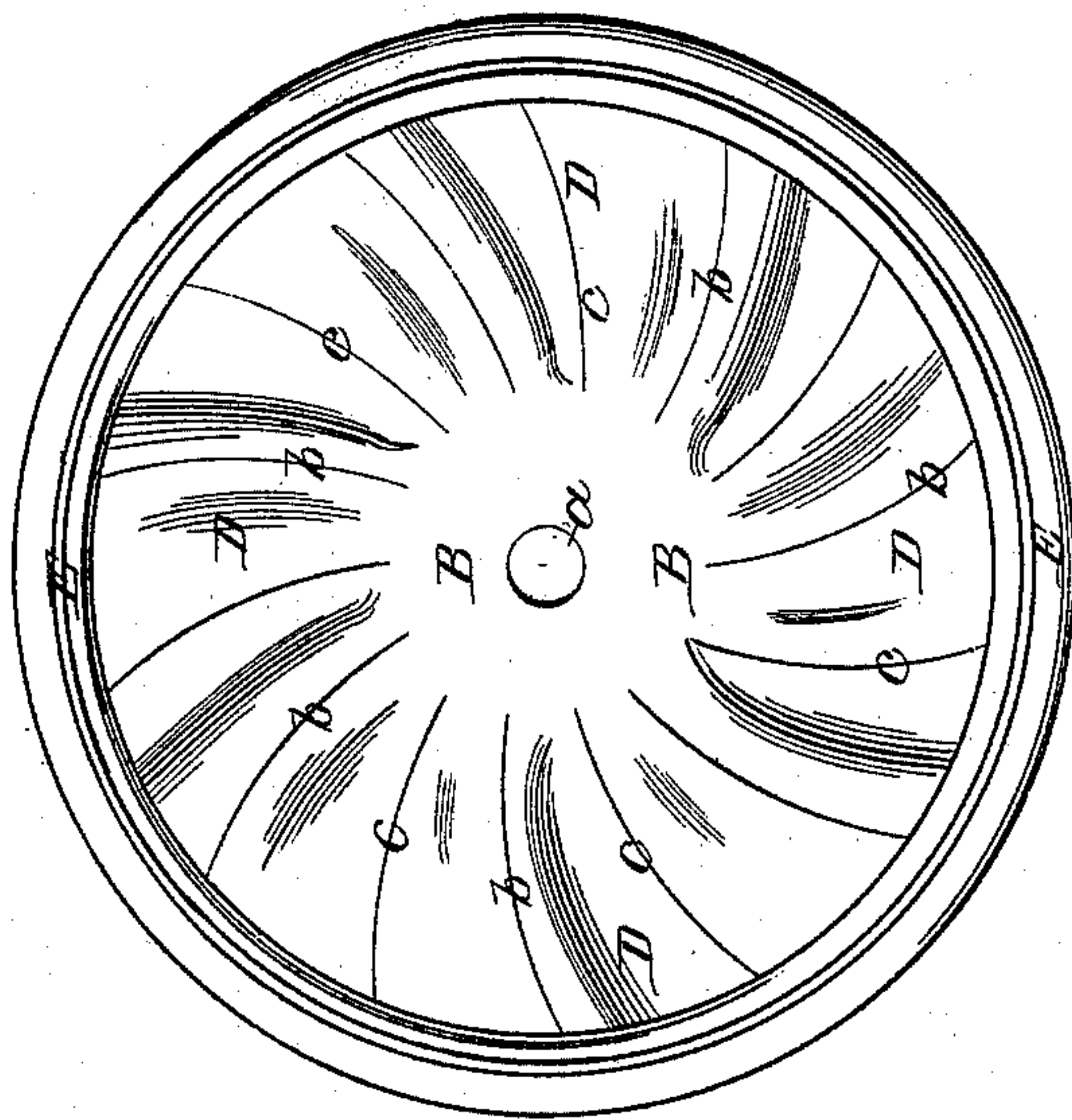


Fig. 1



UNITED STATES PATENT OFFICE.

ALBERT HEBBARD, OF WORCESTER, MASSACHUSETTS.

CAST-IRON CAR-WHEEL.

Specification of Letters Patent No. 8,106, dated May 20, 1851.

To all whom it may concern:

Be it known that I, ALBERT HEBBARD, of Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in the Manufacture of Cast-Iron Chilled Wheels for Railway-Carriages; and I do hereby declare that the same is fully described and represented in the following specification and accompanying drawings, letters, figures, and references thereof.

Of the said drawings, Figure 1 denotes a front elevation; Fig. 2 a rear view, and Fig. 3, a central and transverse section of my improved wheel.

It is well known that much difficulty has been experienced in producing by the operation of founding, an entire cast iron railroad wheels, or those in which the rim and hub or patterns having been devised for such purpose. It has been found that most of what are termed the plate or double plate wheels, or those in which the rim and hub are connected together by one or more curved plates or disks, are liable to fracture at the rim or tread, when under very high velocities, and running upon a railway. I would remark that in order to overcome the disastrous effects liable to be produced by contraction of the metal of the plates during the process of casting, they have been made with concentric undulations, extending between the hub and rim, such undulations producing a serpentine curve in the section of the plate, provided such section be taken in a radial plane from the hub to the rim. Undulations or curves so arranged, have a tendency to greatly weaken the plate in radial directions. A wheel constructed with straight spokes, is generally considered as better adapted to withstand shocks, than one having curved spokes. It has been considered exceedingly difficult if not impossible to cast a straight spoke wheel, with a chilled rim, and a solid or undivided hub. In order to produce such it became necessary to split or divide the hub into sections, thereby not only greatly weakening it, but requiring much labor and expense to prepare it for the axle.

There are some disadvantages also attending the "double plate" wheel, one of which is that in order to insure the required strength to the plates, it becomes necessary to put into both of the plates much more

metal than would be required in a solid form in one plate.

My improved wheel has a combination of the single plate and double plates, between the hub and the rim. Besides it has the advantage of not only a solid, but what is usually termed an undivided hub.

In the drawings, A represents the hub, which is a solid cylindric tube of metal, extending through the wheel. It may however be separated into two parts transversely of its axis if desirable, but as this weakens the hub, I prefer to cast it solid or in one entire piece excepting the hole *a*, through it for the reception of the axle. From the two ends of this hub two plates or disks B, C, extend and unite together in a serpentine line, or joining, and with a single plate D, to which a corresponding serpentine form is given entirely around or concentric with the hub, the curved sinuosities of said plate increasing in size from the joining of it with the plates B, C, to the rim E, as seen in the drawings. I would remark also, that the convexities and concavities of the serpentine plate D, are curved from the center toward the rim of the wheel in radial directions, as denoted by the red lines *b, b, c, c*, in Figs. 1, and 2. The serpentine plate D, at its connection with the rim, has a waved or serpentine joining, such as insures strength to resist both vertical and lateral shocks. The tread of the rim is founded against a chill in the usual way, and the wheel cast at once in one entire piece.

What I claim as my invention is—

The above described improvement or wheel made with a chilled rim, either a solid hub, or one divided crosswise of its axis, two plates or disks B, C, united in a serpentine curve at their outer peripheries, a third plate D, not only made serpentine concentrically with the hub but curved in radial directions as described, all cast or founded and combined together in one piece substantially in the manner as herein before specified.

In testimony whereof I have hereto set my signature, this fourteenth day of April A. D. 1851.

ALBERT HEBBARD.

Witnesses:

HENRY CHAPIN,
THOMAS EARLE.