N. Aylsworth,

Casting Car Wheels.

No. 16,868. Patented Mar. 24, 1857.

Fig 4.

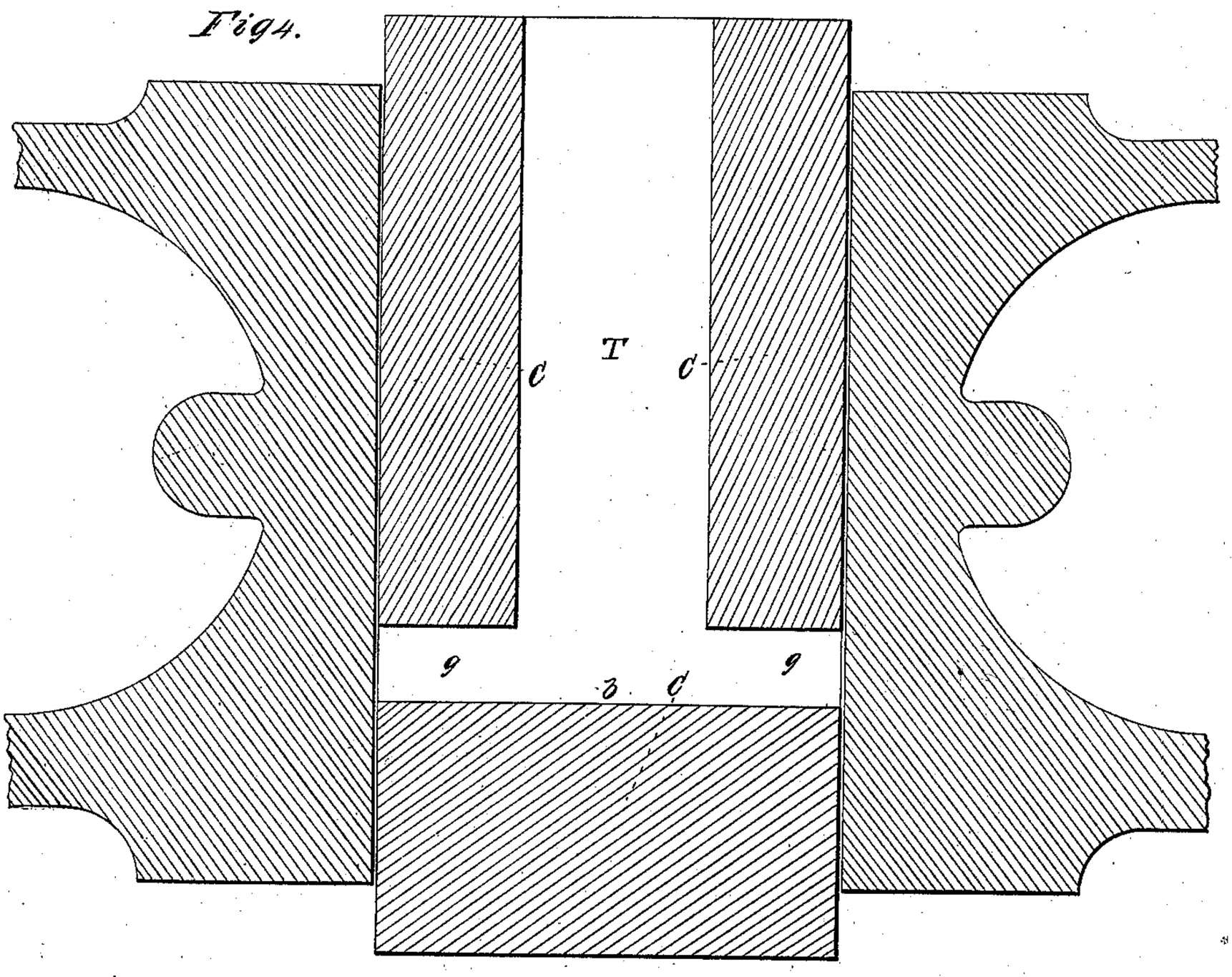


Fig 3.

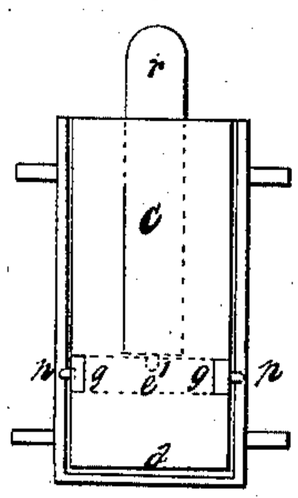


Fig 2.

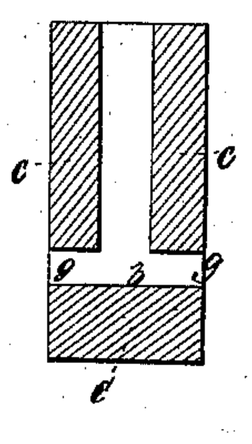
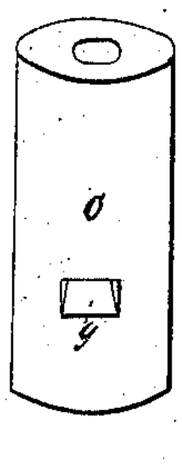


Fig 1.



UNITED STATES PATENT OFFICE.

NORMAN AYLSWORTH, OF ROCHESTER, NEW YORK.

IMPROVEMENT IN CASTING RAILWAY-CAR WHEELS.

Specification forming part of Letters Patent No. **16,868**, dated March 24, 1857.

To all whom it may concern:

Be it known that I, NORMAN AYLSWORTH, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in the Construction of Cores for Foundry Purposes; and I do hereby declare the following to be a full and accurate description of my invention, reference being had to the accompanying drawings, making part of this specification, and to the letters of reference marked thereon, same letters referring to like parts in all the drawings.

In said drawings, Figure 1 is a perspective view of my improved core ready for insertion in the mold. Fig. 2 is a vertical section of the same. Fig. 3 is a vertical section of the core and core-box, showing the manner of constructing the same; and Fig 4 is a section of the hub of a railroad-car wheel, showing the method of placing the core, and exhibiting its results and advantages.

The nature and objects of this invention consist in so constructing and inserting the core in the hub of the wheel that the sprue or ingate will pass through it to the wheel, and will consequently leave no sprue-mark on the outside, while at the same time, from its being kept hot by means of the metal in the hub surrounding it, it remains fluid to the last, and allows additional metal to flow in and make up for the shrinkage which occurs on the cooling of the other parts of the wheel.

It will be seen on inspecting the drawings that the core *c* is made tubular for a portion of its length—namely, to the line *b* in Fig. 4 and to the hole *g* in Fig. 1. The fluid metal passes through this core and reaches the wheel through the horizontal gates *g g*. It will thus be evident that several very important advantages are gained by this construction. Thus it will be seen that from the sprue's being surrounded on all sides by the hottest part of the wheel it will be the last to cool, and will consequently supply fluid metal as long as any is required to make up for shrinkage, and thus that honeycombed or porous state in which the metal is generally found at the junction of the gate or sprue is avoided. The core is of course dry, so that it does not unnecessarily cool the metal, and is constructed in the following manner:

The core-box, Fig. 3, is formed in two parts, divided at right angles to the line of section shown in the drawings, and has the bottom *d*, instead of which, however, the box might be sometimes placed upon any plane surface. Across this core-box is placed the bar *e*, which forms the gates *g g*, and is supported at each end by the pins *p p*. The rod *r* rests upon this bar, being kept central by means of the pin I, and forms the hole for the sprue. Sand is now filled in and rammed down in the usual manner of making cores; the rod *r* is removed; then one half of the core-box is taken away, and the bar *e* is easily withdrawn. The core is left in the other half of the box, and may be dried in any suitable oven. When the metal is poured in, the solid part at the bottom of the core receives it, and thus the core is prevented from rising or being lifted up, while any cutting action on the part of the metal does no harm.

By avoiding the junction of the sprue with the hub of the wheel on the outside, not only are many car-wheels saved, but a great deal of labor is also prevented from being thrown away, for it often happens that after a wheel has been bored and "faced," as it is called, the face of the hub proves to be so imperfect as to render the wheel useless.

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

The construction, substantially as herein described, of the partially tubular core *c* for the center of railroad-car wheels, the tube *t* being formed to within a short distance of the end of said core, and communicating with the lateral passages *g g*.

NORMAN AYLSWORTH. [L. S.]

Witnesses:

JOHN PLINE,

A. K. AMSDEN.