N. WASHBURN.

MOLDS FOR CASTING CAR-WHEELS.

No. 183,785. Patented Oct. 31, 1876.

Fig 1

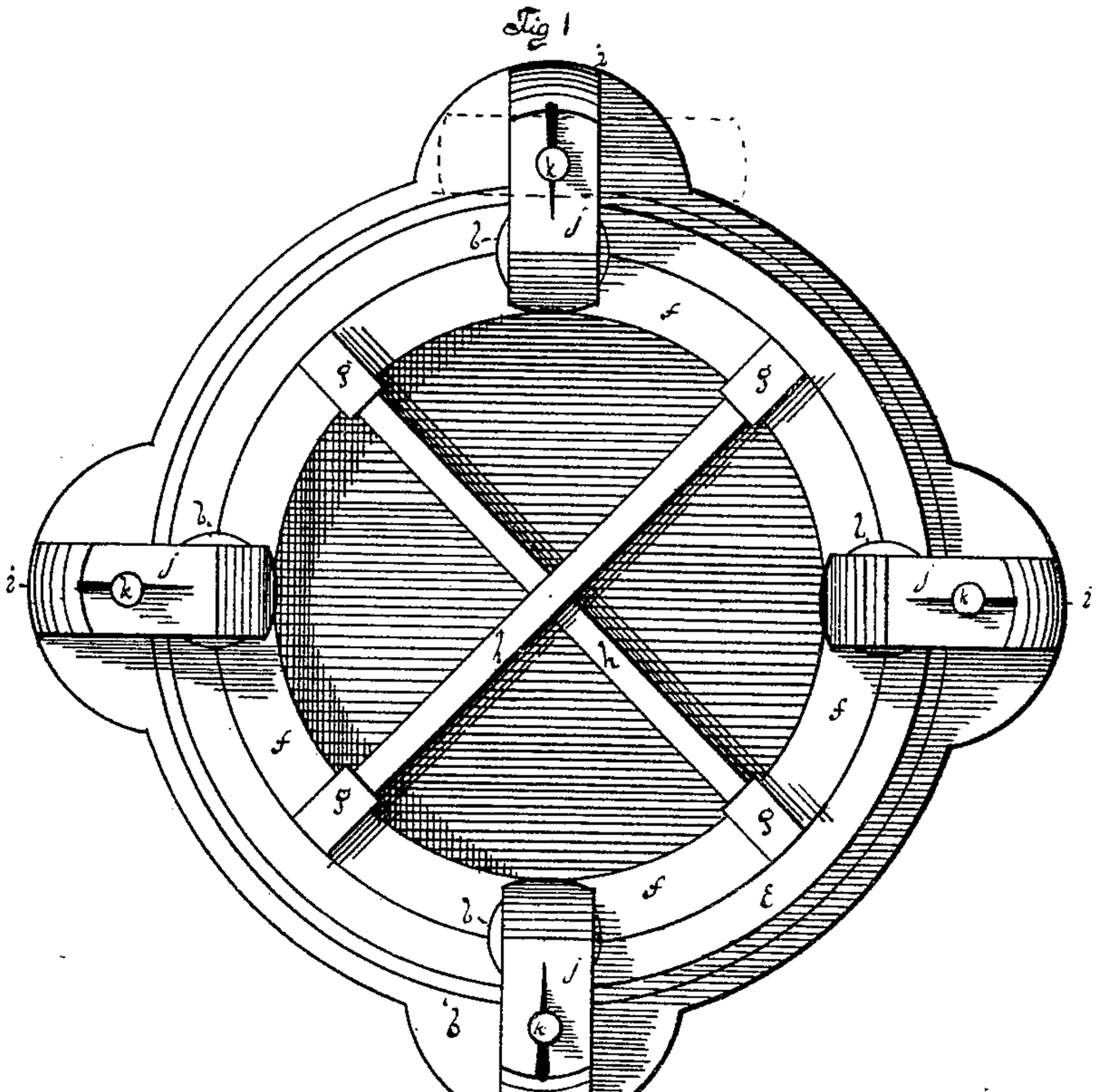


Fig 2

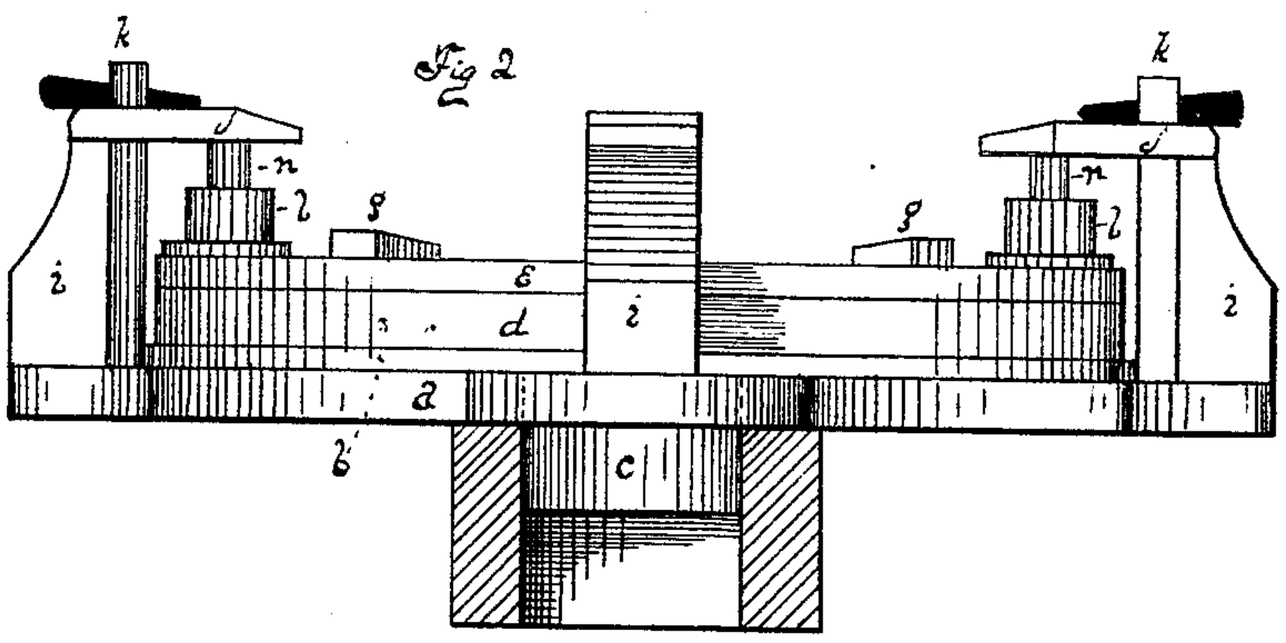
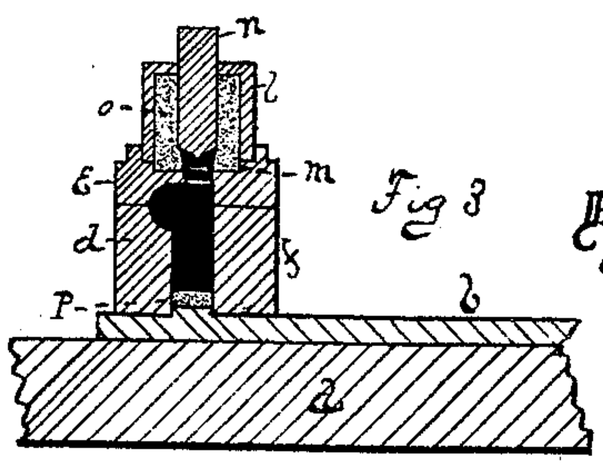


Fig 3



Witnesses
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UNITED STATES PATENT OFFICE.

NATHAN WASHBURN, OF HARTFORD, CONNECTICUT.

IMPROVEMENT IN MOLDS FOR CASTING CAR-WHEELS.

Specification forming part of Letters Patent No. **183,785**, dated October 31, 1876; application filed February 25, 1876.

To all whom it may concern:

Be it known that I, NATHAN WASHBURN, of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements pertaining to a Mold for Compressed Tires, of which the following is a specification, reference being had to the accompanying drawings, where—

Figure 1 is a top or plan view. Fig. 2 is a side view, with a part in section. Fig. 3 is a partial vertical section through the center of a pouring-conduit.

My invention is a mold and appurtenant apparatus for producing a compressed metal tire, more especially a car-wheel tire of steel, though tires and rings for other purposes and of other metal may be made in this mold.

The letter *a* denotes a platform or table; *b*, a plate borne upon the piston *c*, which is, by preference, the piston of a hydraulic jack, whereby plate *b* and its load may be moved upward with great power. *d* denotes a chill-ring for forming the exterior of the tire; *e*, a similar chill-ring, for forming a portion of the exterior of the flange. *f f f f* denote ring-sections for forming the interior of the tire. *g g g g* denote wedges for setting the ring-sections to place. *h h* denote bars for holding the wedges in place. *i i i i* denote standards for buttons *j j j j*, which rotate on pillars *k k k k*. The letters *l l l l* denote conduit-cylinders, resting in sockets *m* on rings *e f*. The plungers *n* fit to the mouths of these cylinders, which are cut back inside, to afford place for refractory lining *o*. These cylinders, thus lined, are the pouring-places, and are set over proper openings into the matrix of the mold. The matrix has refractory lining *p* at the bottom. These refractory linings are used, where practicable, to prevent the immediate setting and hardening of the molten metal.

The manner of using this mold is as follows: The parts of the mold are properly put and clamped together. The buttons *j* are turned to one side, as shown, in one instance, in dotted lines, Fig. 1, with the pouring-conduits in place, but the plungers *n* not in them. The molten metal is then poured till the matrix is filled, and the pouring-conduits partially so. The plungers *n* are then inserted, the buttons *j* turned into position to hold them down, and the hydraulic jack set at work to raise the plate *b*, and with it the whole mold, thus forcing the plungers, comparatively speaking, down into the conduits, and forcing an extra amount of molten metal into the matrix, and so putting it under pressure as to render it refined and homogeneous.

It is not, at this writing, a new thing to make a compressed steel tire; but there is a marked novelty and utility in constructing a mold therefor which, in the main, is closed, with reservoirs for an excess of molten metal therein, into which reservoirs fit and work the compressing plungers.

The process of making tires involved in this application is claimed in another application for patent by me made of even date herewith, and for such reason the process, as such, is herein and hereby disclaimed.

I claim as my invention—

1. In combination with the matrix-case for a wheel-tire, the conduits or reservoirs *l* and the plungers *n*, all substantially as described, and for the purpose set forth.

2. In combination with the matrix-case for a wheel-tire, the conduits or reservoirs *l*, the plungers *n*, the turn-buttons *j*, standards *i*, platform *a*, and movable plate *b*, all substantially as described, and for the purpose set forth.

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Witnesses:

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