2 Sheets--Sheet 1.

J. B. TARR.

Molds for Casting Car-Wheels.

No. 142,821. Patented September 16, 1873.

Fig. 1

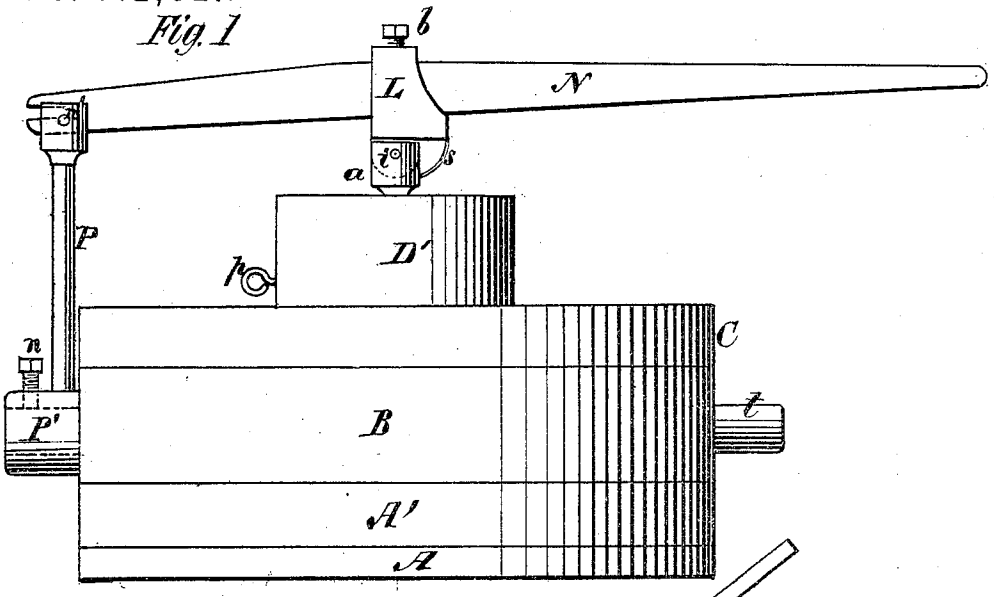
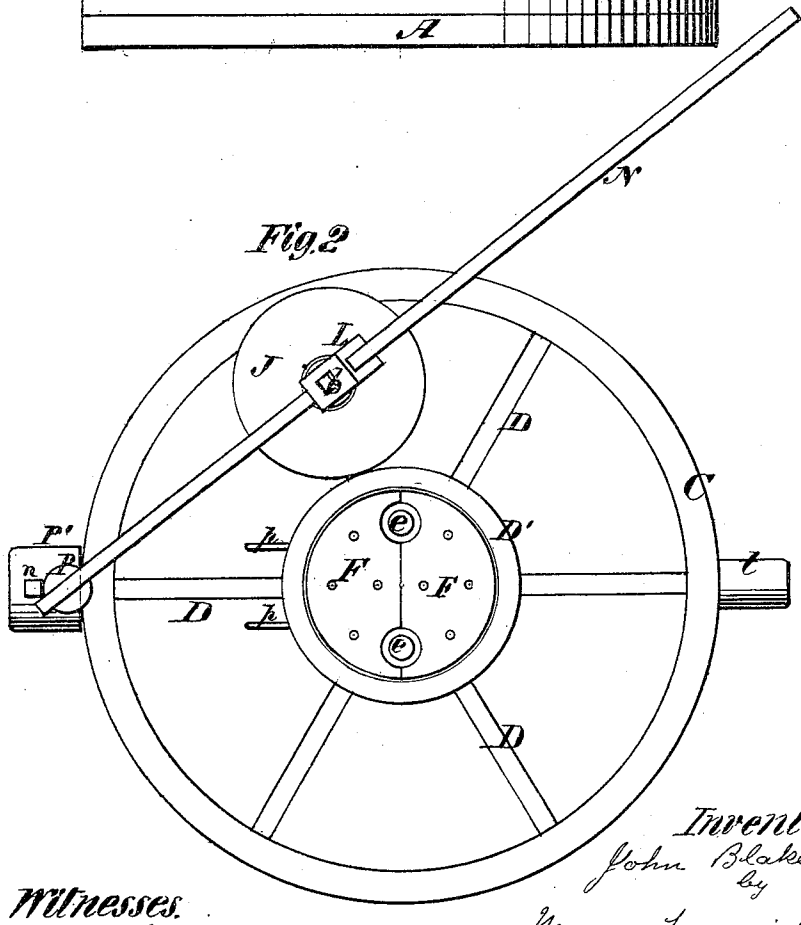


Fig. 2



Witnesses.
R. F. Campbell
J. N. Campbell

Inventor
John Blake Tarr
by
Mason Fenwick & Lawrence
Attys

2 Sheets--Sheet 2.

J. B. TARR.

Molds for Casting Car-Wheels.

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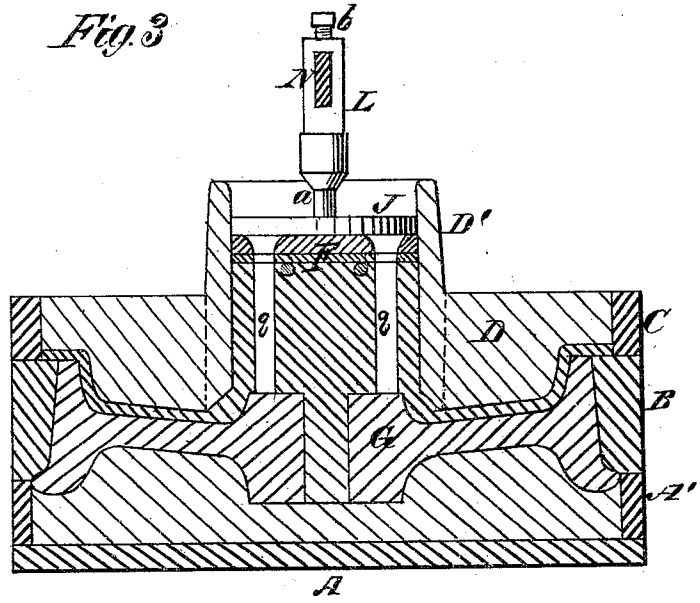
Fig. 3



Witnesses.
R. F. Campbell
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Inventor
John Blake Tarr
by
Mason Fenwick & Lawrence
Attys

UNITED STATES PATENT OFFICE.

JOHN BLAKE TARR, OF FAIRHAVEN, MASSACHUSETTS.

IMPROVEMENT IN MOLDS FOR CASTING CAR-WHEELS.

Specification forming part of Letters Patent No. **142,821**, dated September 16, 1873; application filed August 19, 1873.

To all whom it may concern:

Be it known that I, JOHN BLAKE TARR, of Fairhaven, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements on Molds for Casting Car-Wheels and other articles; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings making part of this specification, in which—

Figure 1, Plate 1, is a side view of my improvements applied to a mold for casting car-wheels. Fig. 2, Plate 1, is a top view of the same. Fig. 3, Plate 2, is a diametrical section through the mold.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to improved attachments to molds for casting car-wheels and other articles, for the purpose of forcibly condensing the metal while it is in a melted state, and thereby compelling the metal to fill every part of the mold, and at the same time making the castings more solid and homogeneous throughout, as will be hereinafter explained.

The following description of my invention will enable others skilled in the art to understand it.

In the accompanying drawings I have represented my improvements applied to a well-known form of mold for making railroad car wheels, of which A represents the bottom plate; A′, the nowel; B, the ring for chilling the treads of the wheels; C, the cope. The wheel G is molded in sand in the usual well-known manner, and the top part of the sand is supported by means of a spider, D, in the center of which rises a receiver, D′, into which the metal is poured on its way into the mold. On one of the trunnions, *t*, of the mold I apply a thimble, P′, which is rigidly fixed in place by means of a set-screw, *n*, from which thimble rises perpendicularly a rod, P, which is capable of swiveling about its axis. The upper end of this rod P is slotted, and across the slot passes a pin, *n′*, which receives the slotted end of a lever, N. On this lever N is applied head L, which is adjustable by means of a set-screw, *b*, for the purpose of adapting the device to molds of varying diameter. To the lower end of the adjustable head L I pivot at *i* the stem *a* of a pressure-head or plunger, J, which works tightly in the cylindrical receiver D′. The pressing-head stem J is acted on by a spring, *s*, which holds it in position for allowing the head to enter the receiver and to work squarely therein.

The lever N can be made of any convenient length, and, by reason of its supporting-rod P being allowed to swivel, this lever, with its pressing-head, can be swung around away from the receiver for allowing access thereto to fill the mold with metal.

Inside of the receiver, and on top of the sand therein, I apply two semicircular plates, F, which are thickly perforated, and which are covered with a layer of sand to protect them from the melted metal. These plates have two large holes through them, which correspond to the sprue-holes *q q* leading down through the sand into the mold-chamber, which holes are formed by pins *e e*. (Shown in Fig. 2.) The plates F F are supported by movable bars *p p*, which pass horizontally through the wall of the receiver D, and these plates and bars support the superfluity of metal in the receiver after the pouring operation, and prevent the sand from being forced down into the metal during the pressing operation.

After the mold-chamber is filled with melted metal the pressing-head is immediately introduced into the receiver D′ upon the surplusage of metal therein, and pressure applied to the lever N. This pressure upon the metal while in a melted state will force any air which may be in the mold out through the perforated supporting-plates F, and at the same time condense the metal so as to leave a perfect casting. The pressure should of course be kept up until the metal in the mold sets, which it will do in a very short time.

It will be seen from the above description that I have a pressure device which can be readily applied to any mold having trunnions, and that the pressing-head is adjustable on its lever for molds of different sizes; also, that the pressing-head can be readily moved out of the way of the pouring-pot while filling the mold, and quickly introduced therein when the mold is filled. It will also be seen that I employ supporting-plates, which will prevent the crushing in of the sand during the pressing operation.

I do not claim, under this application, the

pressing of metal, while it is in a melted state, in a mold, as this feature is described and claimed in a patent previously granted to me.

Having described my invention, what I claim is—

1. The movable pressing-head J, applied to a lever which is supported at one end upon a rod, P, made detachable from one of the trunnions of a mold, for the purpose described.

2. The swiveling detachable lever-rod P, combined with the thimble P′, the self-adjusting pressing-head J, and mold, substantially as described.

3. The plates F and supporting-rods *p*, combined with the receiver of a mold and a pressing-head, substantially as and for the purpose described.

4. The pressing-head J, operated substantially as described, made of a diameter to enter the hub-eye of a mold, for the purpose of pressing directly upon the hub part of the wheel.

JOHN BLAKE TARR.

Witnesses:
J. N. CAMPBELL,
JAMES MARTIN, Jr.