(No Model.)

G. W. A. WIESING.

MOLD FOR THE MANUFACTURE OF CHILLED CAR WHEELS AND SIMILAR CASTINGS.

No. 303,773. Patented Aug. 19, 1884.

Fig. 1.

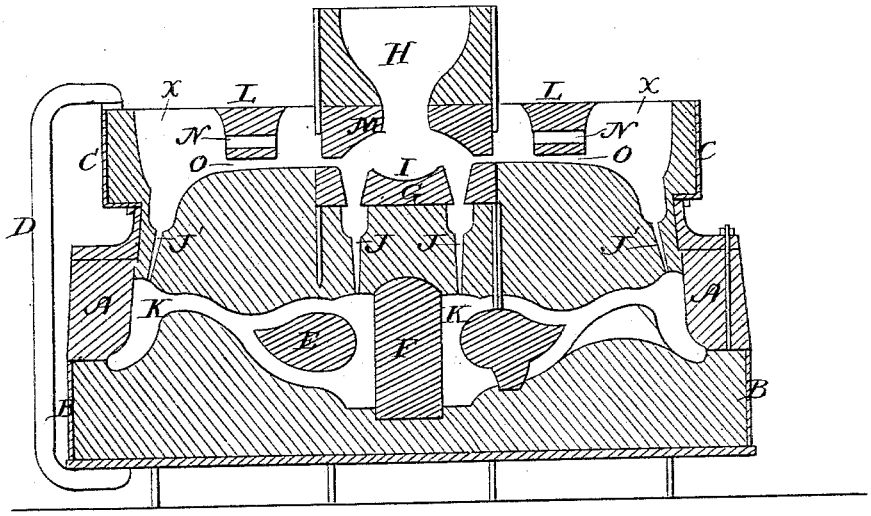
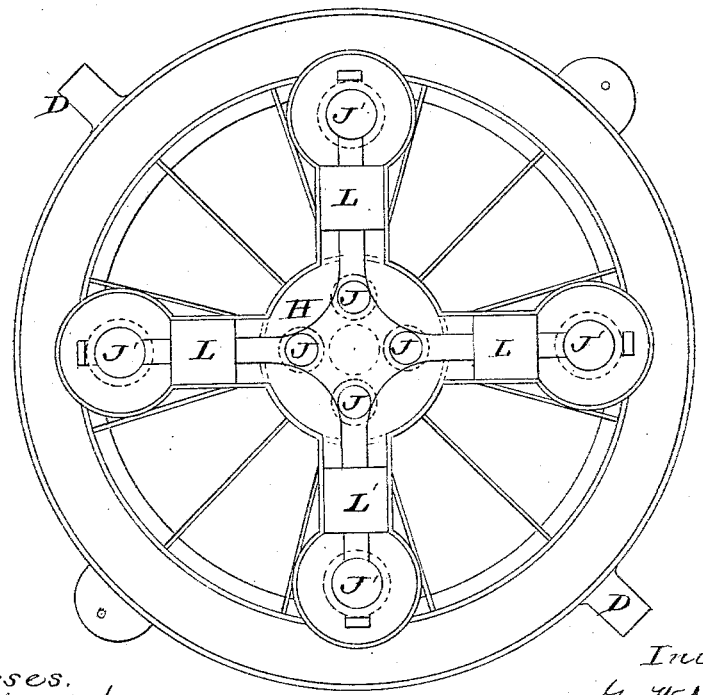


Fig. 2.



Witnesses.
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UNITED STATES PATENT OFFICE.

GEORGE WILHELM AUGUST WIESING, OF LIME ROCK, CONN., ASSIGNOR OF TWO-THIRDS TO PHINEAS E. MERRIHEW, OF FAIRHAVEN, MASS.

MOLD FOR THE MANUFACTURE OF CHILLED CAR-WHEELS AND SIMILAR CASTINGS.

SPECIFICATION forming part of Letters Patent No. 303,773, dated August 19, 1884.

Application filed November 12, 1883. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. A. WIESING, of Lime Rock, in the county of Litchfield and State of Connecticut, have invented certain Improvements in Molds for the Manufacture of Chilled Car-Wheels and Similar Castings, of which the following is a specification.

This invention has for its object to provide improved molds for the production of chilled car-wheels and similar castings, whereby chill-cracks, side checks, shrinkage in the throat, spotting or shelling, honey-combing, and other defects which occur on the chilled surfaces and at other portions of chilled castings are prevented.

The invention consists in a mold for a car-wheel or analogous casting, substantially as hereinafter described and claimed.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a transverse vertical central section of a mold embodying my invention. Fig. 2 represents a top view of the same.

The same letters of reference indicate the same parts in all the figures.

In the drawings, A represents the chill for the tread of the wheel.

C represents the cope for the upper sand mold, which is secured to the chill in the usual manner.

B represents the nowel on which the chill rests.

D D represent the clamps which secure the above-named parts together.

H represents the head or reservoir which first receives the molten iron. Under the head H is the sprue-core G, having its upper surface hollowed to form a bowl, I, into which the molten metal flows from the head H. Over the bowl I is a dome or core, M.

E and F represent the cores used in casting a car-wheel of the form shown, and K K represent the mold for the wheel.

J J′ represent the sprues, which are arranged in two series—viz., the inner series, J, which conduct the metal to the central portion, and the series J′, which conduct the metal to the rim or outer portion of the wheel. The provision of these outer sprues, J′, constitutes an important part of my invention. Said sprues conduct the metal directly to the chill, and thus cause a more uniform chill on the wheel than in molds in which the metal is conducted first to the central portion and flows outwardly therefrom. The reason of the increased uniformity is found in the fact that the melted iron is kept closer to the chill, so that the pressure is made equal in all parts, and a casting is produced which is free from all the defects above named. The sprues J′ are inclined outwardly to give the inflowing metal the proper direction and cause it to properly fill the spokes and rim of the wheel. The upward extension of these sprues at *x x* is above the upper end of sprues J, and these upward extensions supply, in a measure, a "head" to produce a pressure on the casting at the rim. The lower portions of the sprues are round and tapering, or decrease in diameter gradually from their upper to their lower ends. The upper portions of the sprues are enlarged and cup-shaped. The enlarged portions of the sprues retain the cinder or slag, which is prevented by the contracted portions from entering the mold, so that the casting will be free from such matter.

L L represent cores arranged between the head H and the outer sprues, J′. The metal flowing outwardly to said sprues passes through the gates O in the lower portions of said cores.

N N represent gates formed in the cores L above the gates O, to permit the passage of the metal to the outer sprues, J′, in case the gates O become filled with cinder or slag, the metal rising inside the cores L in this event to the gates N.

It is obvious that my improved arrangement of sprues may be employed in molds for casting other articles besides car-wheels, particularly such articles as require a considerable quantity of metal to form marginal parts at a considerable distance from the center.

I claim—

1. In a mold for wheels, the combination of the nowel, the cope having sprues near its center leading to the hub and sprues near its periphery leading to the rim outside the spokes of the wheel, and a central reservoir or head arranged, as described, to supply molten metal to all the sprues, substantially as set forth.

2. The central reservoir or head, the core ar-

ranged under said reservoir, and having its upper surface hollowed to form a bowl, the sprues leading from the rim of the bowl to the hub, and the gates leading from the rim of the bowl to the sprues, (as indicated at J',) which lead to the rim of the wheel, all combined in a wheel-mold, substantially as stated.

3. In a wheel-mold, the combination, with the cope, of a dome or core (as represented at M) over said cope, a central reservoir or head, and a core, as represented at L L, having upper and lower passages or gates leading to sprues which connect with the wheel-rim.

4. The combination, in a wheel-mold, of the central reservoir, the bowl under said reservoir, and the cope having sprues leading from said bowl to the wheel-hub, and passages leading to external sprues, which communicate with the wheel-rim, said last-mentioned sprues being enlarged at their upper ends, and extending above the central sprues, all substantially as shown and set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 6th day of November, A. D. 1883.

GEORGE WILHELM AUGUST WIESING.

Witnesses:

ALMON C. RANDALL,

GEORGE F. WIESING.