

J. K. GRIFFITH.

MOLD FOR CASTING CAR WHEELS.

APPLICATION FILED JULY 6, 1908. RENEWED FEB. 26, 1910.

971.604.

Patented Oct. 4, 1910.

2 SHEETS-SHEET 1.

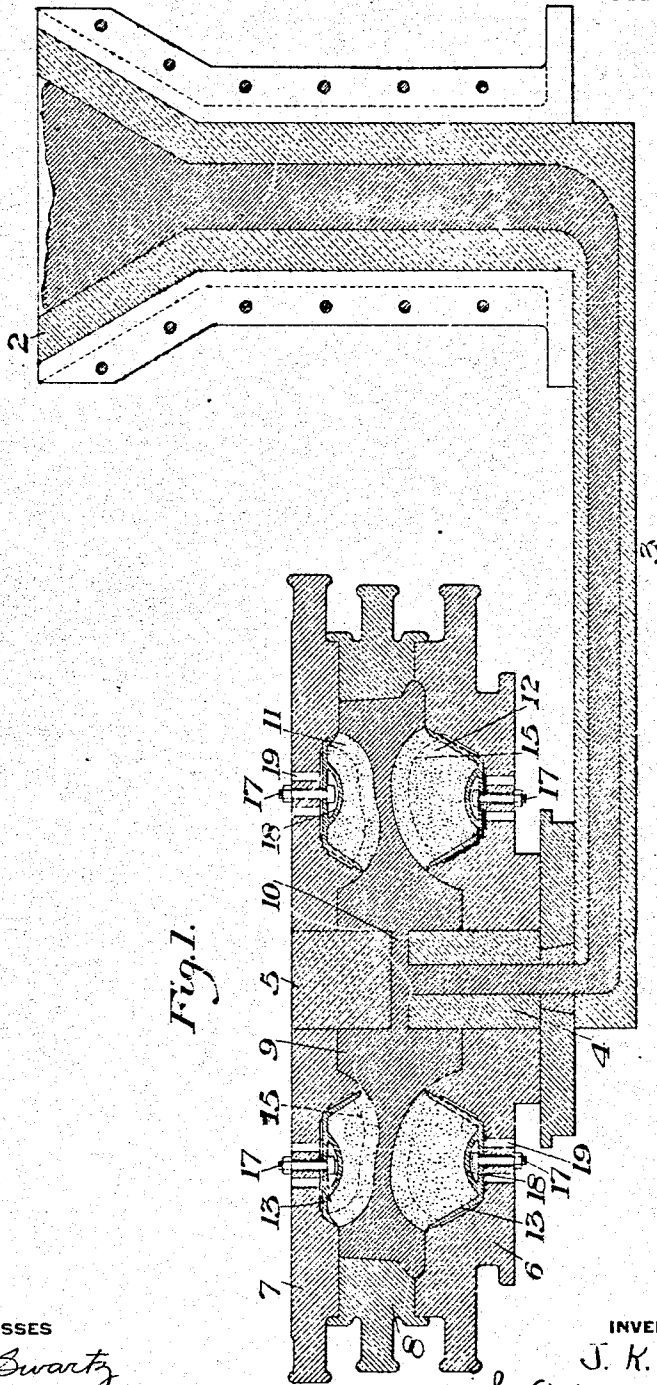


Fig. 1.

WITNESSES

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Fig. 2.

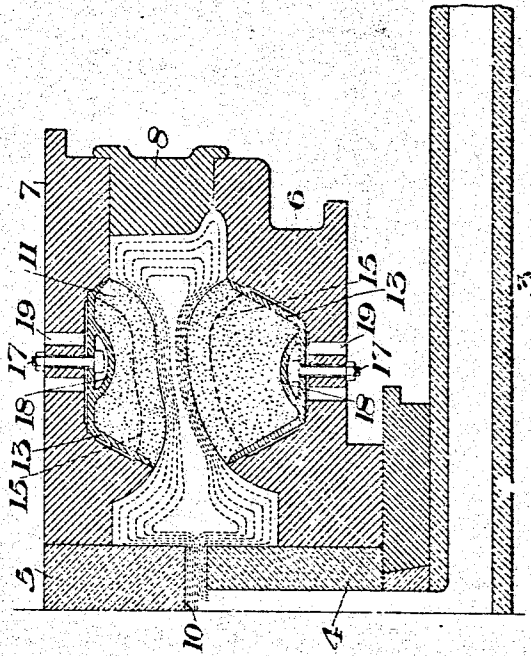
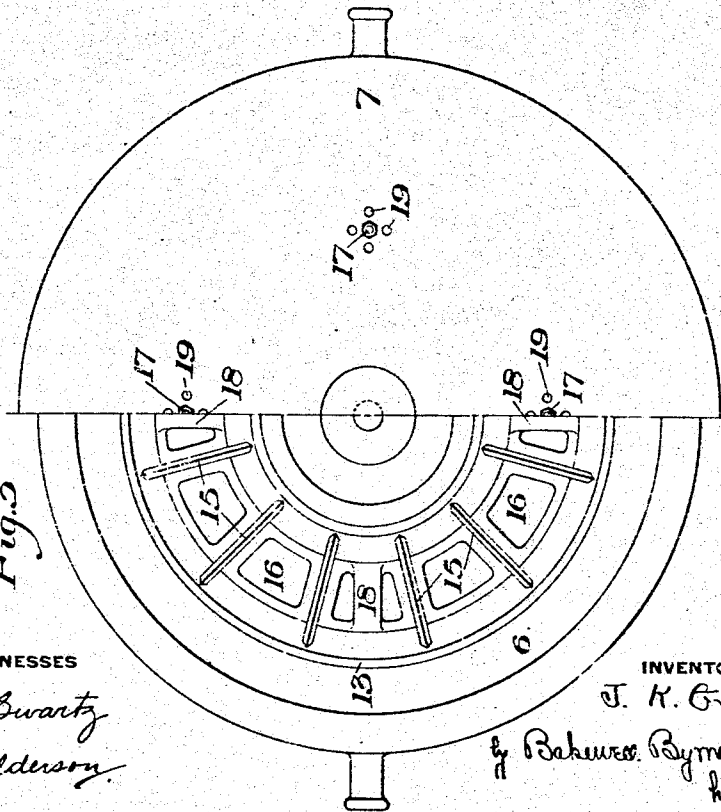


Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

JACOB K. GRIFFITH, OF LATROBE, PENNSYLVANIA.

MOLD FOR CASTING CAR WHEELS.

971,604.

Specification of Letters Patent.

Patented Oct. 4, 1910.

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To all whom it may concern:

Be it known that I, JACOB K. GRIFFITH, of Latrobe, Westmoreland county, Pennsylvania, have invented a new and useful Improvement in Molds for Casting Car Wheels, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a central vertical section of one form of mold embodying my invention; Fig. 2 is a sectional view of a portion of the mold on a larger scale; and Fig. 3 is a view partly in plan and partly with the cope and cheek removed.

My invention relates to molds for the manufacture of car wheels and like articles having a rim hub and intermediate web or spokes, and is more especially designed for carrying out the method of casting set forth in my Patent, Number 790,202, dated May 16, 1905, and the improvement in said method described and claimed in my pending application, Serial Number 267,749, filed June 30, 1905. As described in my said application, I have found it of great advantage to provide the mold with a complete annular opening or gate at the center, through which the metal can flow evenly and equally in a radial direction toward all parts of the circumference, and whereby there is no rapid stream flowing through a fixed channel, and consequently, no liability of welding to the rim or of washing the sand.

My invention also provides a mold having seats in which the removable sand or core portions of the mold, which form the web portion of the casting can be seated and secured. In this manner, I am enabled to mold these sand portions or cores and bake them, and afterward place them in a mold without the necessity of transporting the entire mold to and from the drying ovens, that is to say, the iron portions of the drag and cope and cheek piece of the mold may be at all times left on the casting floor and the sand portions may be separately formed and dried and placed therein for each casting operation.

Referring to the drawings, in which I have shown one embodiment of my invention, 2 designates the head box and 3 the runner which communicates with the central core 4 of the mold. While, however, I have

shown them all provided with a bottom core, I may use a top core, in which case the metal will be introduced through the top core 5. 6 designates the drag of the mold, 7 the cope, and 8 the cheek piece, which constitutes a chilling ring for the peripheral portion of the casting 9.

In accordance with my invention, the gate 10 between the top and bottom center cores 4 and 5 is a complete circular gate, so that the metal may flow outwardly there-through in all directions in an equal and even manner, as more fully described in my said application.

11 designates the upper sand core, and 12 the lower sand core between which the web portion of the casting 9 is formed. These sand cores are supported in suitable carriers 13, in which they are molded and dried and which are removably seated and secured in the drag and the cope. In the particular form of my invention which I have illustrated, these carriers each consist of a cup or trough shaped annular casting having the radial ribs 15 at intervals beneath and retaining the sand, and preferably formed between such ribs with openings 16. These cup shaped castings are shown as detachably secured in correspondingly shaped seats in the drag and cope sections by means of bolts 17, whose headed inner ends are protected by bridges 18. The cope and drag sections are provided with vent openings 19, which communicate with the openings 16, and provide for the free venting of the mold.

The advantages of my invention will be readily apparent to those skilled in the art, since not only does it provide for the proper flow of metal into the mold, so that the metal will come into contact with the entire circumference of the chills at substantially the same time, avoiding the flow of metal into different confined streams, but I avoid the liability of the metal to weld to the cheek pieces at the points where it first comes into contact therewith. I also reduce the washing action of the metal upon the sand, and furthermore produce a more homogeneous casting which is free from blow holes. By providing the cope and drag sections of the mold with seats for the sand portions or sand cores, these portions or cores may be separately formed and baked, as before described, thereby avoiding the necessity for

moving the mold sections from the casting floor with the consequent time and labor involved.

It will be obvious that my invention may be modified in various ways. Thus the form of the sand cores may be varied according to the particular cross section of the article to be molded, the carriers for said sand portions may be constructed in various ways and may be secured to the cope and drag sections in any desired manner. In some cases, especially for the drag section, the carrier for the sand portion or core may be omitted and the core itself seated directly in the drag.

I claim:

1. In the art of steel casting a mold for wheels or similar articles, having a central inlet runner provided with an annular gate, which opens into the mold at all points to allow the metal to spread freely toward all points of the circumference of the mold, substantially as described.

2. A mold for casting wheels and the like, consisting of a drag section, a cope section, and an intermediate cheek or chill section, said cope and drag sections having each therein an annular trough-like seat to receive removable sand portions or cores which form the web of the wheel, said cope and drag sections having annular projections at the inner sides of the said seats which form the mold surfaces to shape the junction of the wheel web with the hub, said projections being separated from each other at their points of closest approach by a distance materially greater than the thickness of the web proper of the wheel, substantially as described.

3. A mold for casting wheels or similar articles having a central gate opening radially in all directions into the mold cavity at substantially the central horizontal plane thereof, and having its cope and drag sections provided with annular seats or depressions adapted to receive sand or core-forming rings; substantially as described.

4. A mold for casting wheels and the like having its cope and drag sections provided with oppositely located annular seats, and carriers arranged to be secured in said seats and to support sand cores, said mold having a central core provided with an annular gate, substantially as described.

5. A mold for casting wheels and the like having its cope and drag sections provided with oppositely located annular seats, and carriers arranged to be secured in said seats and to support sand cores, said carriers consisting of annular frames or castings in which the cores are molded, substantially as described.

6. A mold for casting wheels and the like, having its cope and drag sections provided with oppositely located annular seats, and carriers arranged to be secured in said seats and to support sand cores, said carriers consisting of annular frames or castings in which the cores are molded, and having means for retaining the sand therein, substantially as described.

In testimony whereof, I have hereunto set my hand.

JACOB K. GRIFFITH.

Witnesses:

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P. C. TONER.