

W. WILMINGTON,  
CAR WHEEL CHILL.

Patented Jan. 16, 1883.



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# UNITED STATES PATENT OFFICE.

WILLIAM WILMINGTON, OF TOLEDO, OHIO.

## CAR-WHEEL CHILL.

SPECIFICATION forming part of Letters Patent No. 270,869, dated January 16, 1883.

Application filed April 1, 1881. (Model.)

*To all whom it may concern:*

Be it known that I, WILLIAM WILMINGTON, of Toledo, in the county of Lucas and State of Ohio, have invented a new and Improved Car-Wheel Chill; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an enlarged cross-section of the chill, showing in dotted lines its relation to the cope and drag, the section being taken through one of the openings E of Fig. 2. Fig. 2 is a plan view of the drag-face of the chill.

This invention relates to improvements in the construction of the class of car-wheel chills which have in the outer portion of the flange-face of the chill a peripheral receptacle to receive sand or its equivalent, also having connected with its outer periphery an annular opening which communicates with the receptacle for the purpose of conveying the gas generated in the same outwardly. The object of retaining sand in the receptacle is to retard the cooling of the molten iron forming the outer portion of the flange of the wheel, the desirability of the same having long been known. This form of a car-wheel chill has at times produced beneficial results; but it is costly in its construction, and in the use of some qualities of sand there are difficulties caused by the sand containing more or less "facing," as it is termed, it being of a combustible and gaseous nature, and the whole containing moisture. The moisture and facing are, by the heat from the molten iron, converted into gases in the receptacle, the greater portion of the same passing outward through the circular opening and through the sand the same may contain, the gases causing more or less of the sand and the rust of the iron to adhere to the sides of the annular opening and gradually contracting its area, and this opening being of considerable length from the inner sand-receptacle to the outer periphery the escapement of gases from the receptacle is impeded, causing more or less of the same to be forced inward in contact with iron forming the tread of the wheel, which is objectionable.

To lessen the cost of the chill, facilitate the removal of the accumulations in the annular opening, and relieve the pressure of gases quickly in the receptacle, and thus prevent the gases from being forced inward, is the object

of my improvement, which I will now proceed to describe.

In the body of the flange portion of the chill A a circular and annular reservoir, D, is formed of sufficient capacity to receive the gases generated in the sand-receptacle B, which latter has its outer periphery contracted at c to prevent, as far as possible, the sand from being forced outward into the reservoir D when filling the receptacle B, which is accomplished from the interior of the chill. In locating the reservoir it is desirable to place the same as near the receptacle as the annular opening c will permit. This will facilitate the escape of the gases from the receptacle. The outer portion of the reservoir D is made deeper or of greater capacity than the inner portion, and communicates with the radial channels E, formed in the outer portion of the drag-face of the chill, or through oblong openings in the periphery of the same. The loose sand that may be forced through the annular opening into reservoir will fall out the same when the chill is being turned over when molding the wheel.

The receptacle B, annular opening c, reservoir D, and the radial channels E, or the oblong openings, are formed by suitable cores when casting the chill, in which case the chill is one solid casting, as shown; but I do not confine myself to this particular method of constructing the reservoir. Thus, for instance, in some forms of chills having narrow drag-faces, I may make the portion E<sup>2</sup> of the chill in the nature of a separate ring, and bolt it to the upper portion by means of bolts and lugs, as shown at a a in dotted lines, still preserving, however, the annular reservoir D and opening c between the part E<sup>2</sup> of the chill and the upper or main portion.

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

A car-wheel chill having in its flange-face a peripheral receptacle for sand or other non-conducting material, an annular opening, c, communicating therewith, and an annular reservoir of greater capacity than the opening c with radial outlets therefrom, as described.

WILLIAM WILMINGTON.

Witnesses:

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