

W. WILMINGTON.
Car-Wheel Chill.

No. 222,765.

Patented Dec. 16, 1879.

Fig. 1.

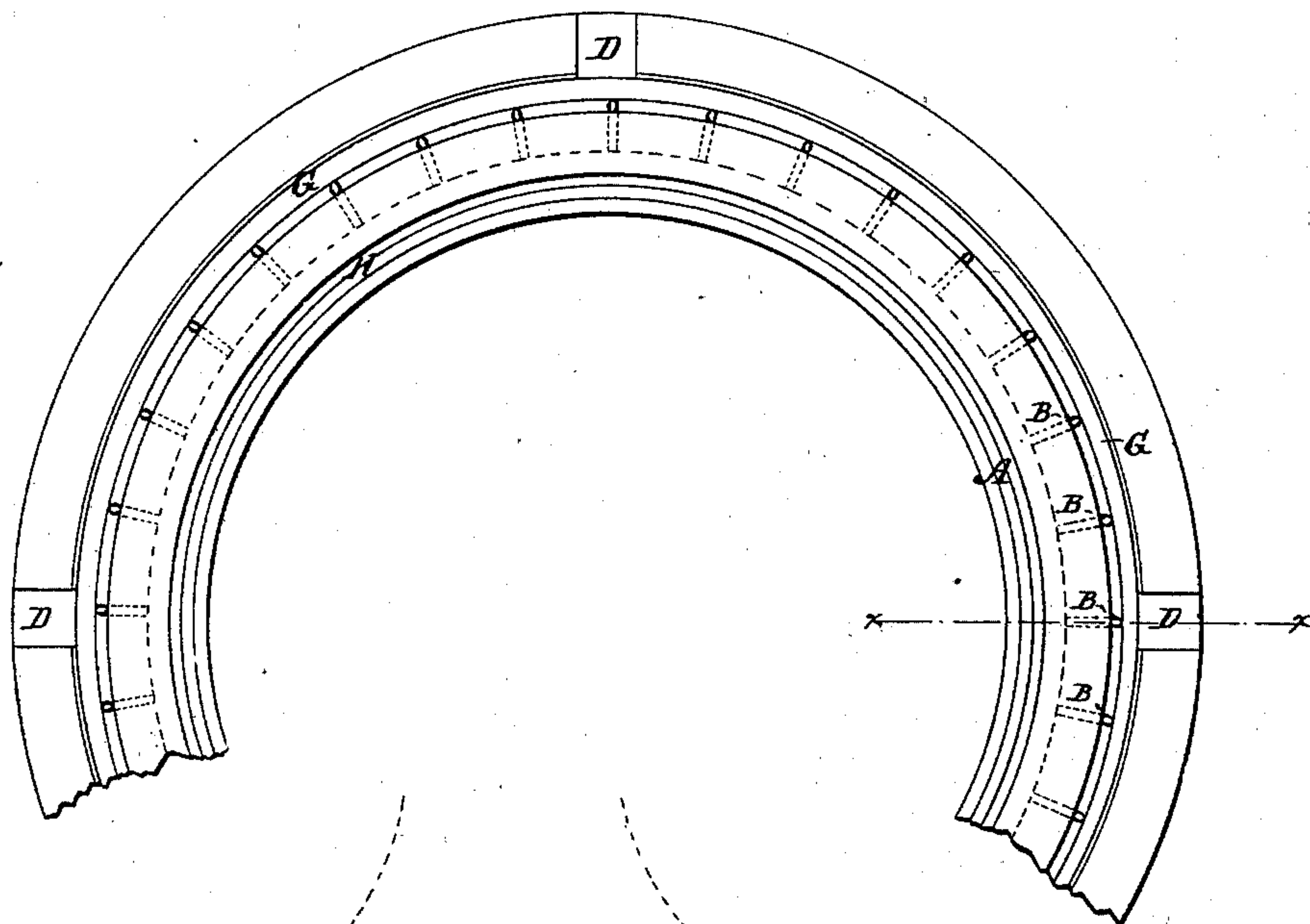
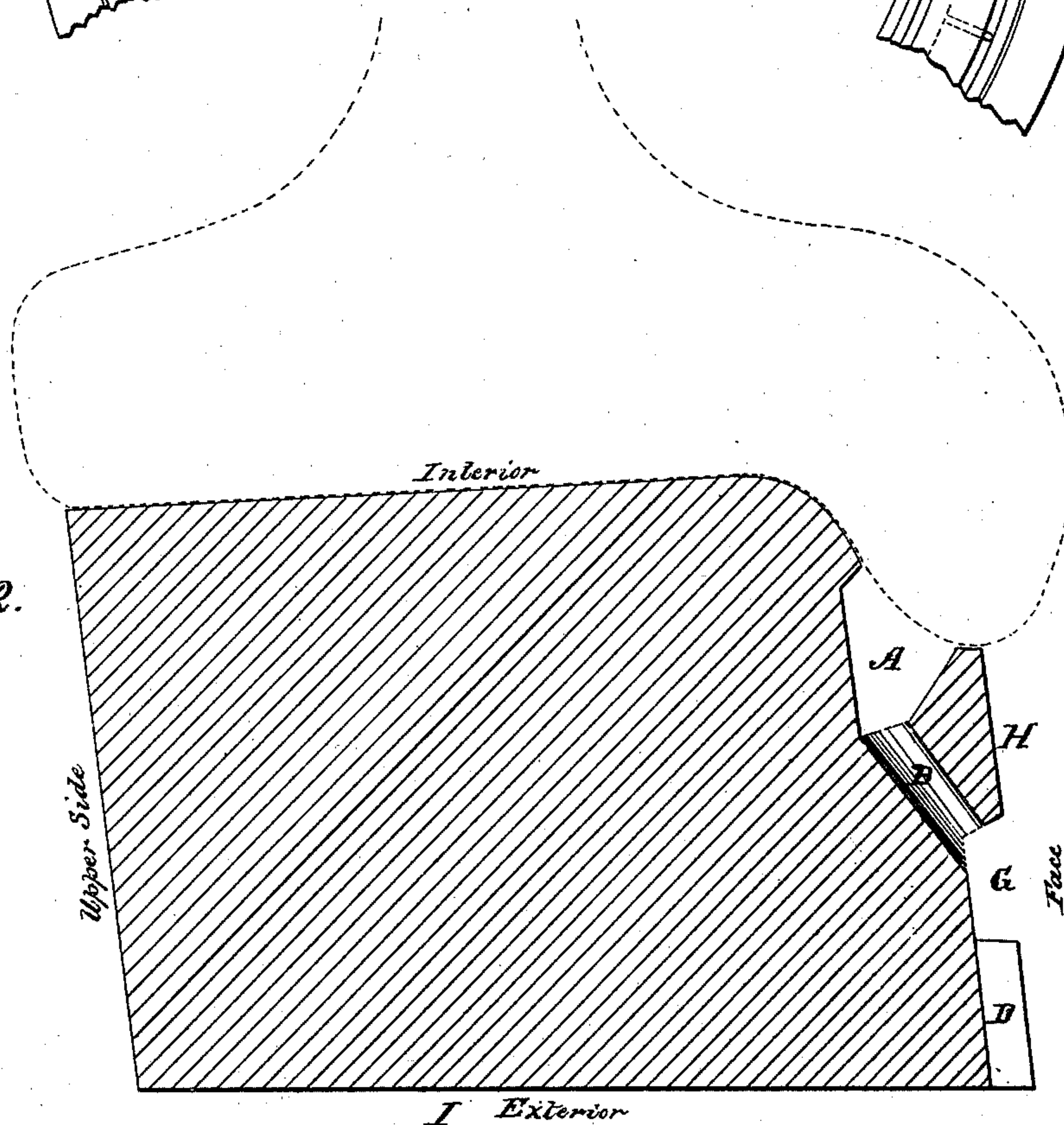


Fig. 2.



WITNESSES:

W. W. Hollingsworth
Edw. W. Byrnes

INVENTOR:

Wm. Wilmington

BY

Reverend L.

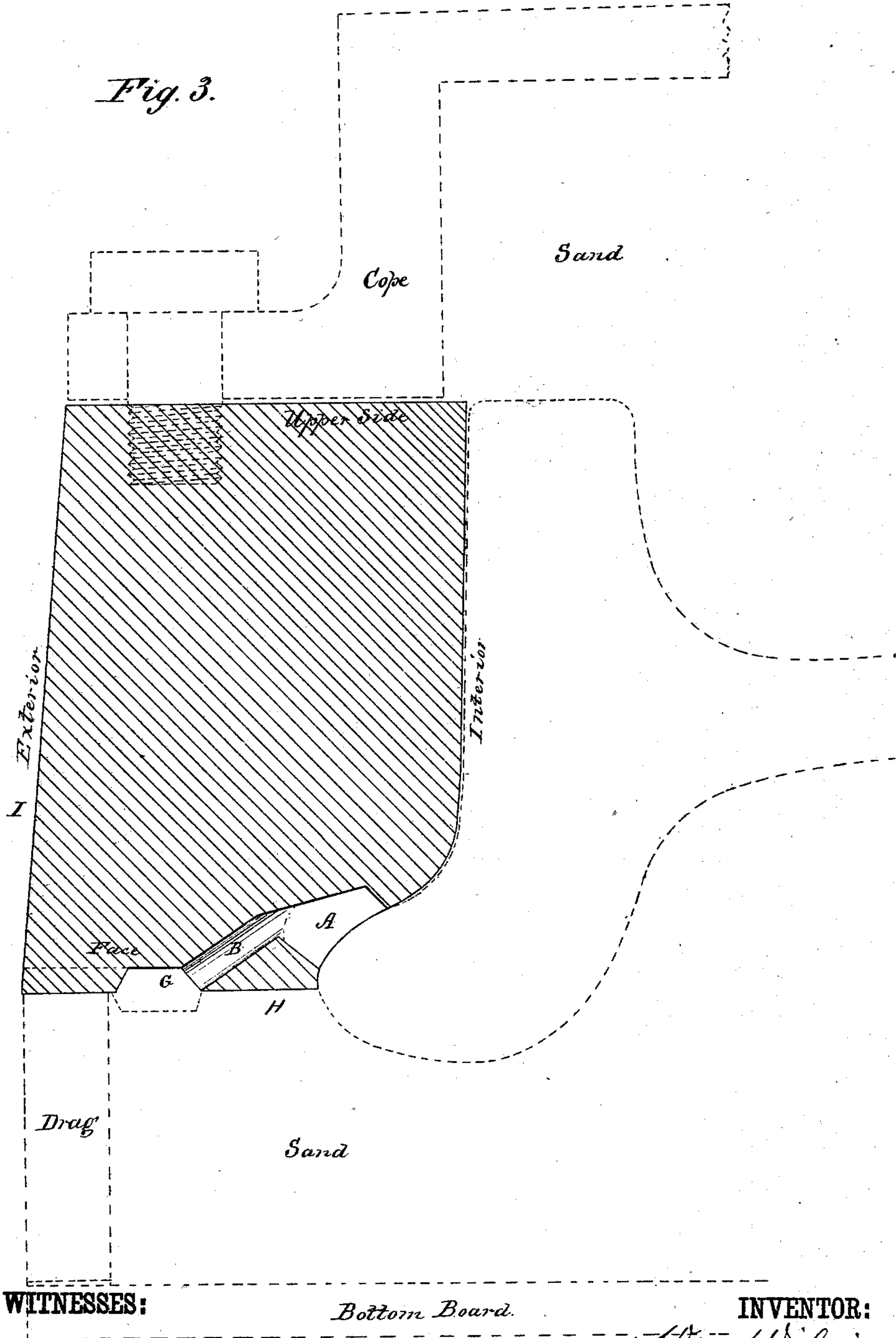
ATTORNEYS.

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Fig. 3.



WITNESSES:

Bottom Board.

INVENTOR:

W. W. Hollingsworth
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UNITED STATES PATENT OFFICE.

WILLIAM WILMINGTON, OF TOLEDO, OHIO.

IMPROVEMENT IN CAR-WHEEL CHILLS.

Specification forming part of Letters Patent No. **222,765**, dated December 16, 1879; application filed August 30, 1878.

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 a plan view of the chill partially broken away. Fig. 2 is an enlarged cross-section taken through the line *x x* of Fig. 1. Fig. 3 is a cross-section of the chill, showing in dotted lines the relation of the cope and drag when the mold is set up.

This invention relates to an improvement in chill-molds for casting car-wheels, the object being to facilitate the molding of car-wheels and provide a suitable arrangement for the gas to escape, at the least cost, and without materially impairing the strength and durability of that class of car-wheel chills that have in their construction an annular groove in the face of the flange portion of the chill to receive sand, or its equivalent, preparatory to casting the wheel.

The reason for filling the groove with sand is to prolong the cooling of the outer portion of the flange of the wheel cast therein, thereby preventing the fracturing of the flange of the wheel which is incident to its rapid cooling and contraction, and at the same time to increase the depth of the chilled metal in the concave part of the flange and tread of the wheel.

There have been Letters Patent of the United States granted me December 15, 1868, and reissued August 16, 1870, in which Letters Patent there is described a car-wheel chill-mold having an annular groove just outside of the curve in said chill and between its inner periphery and the outer right-angular face thereof. This form of chill has in many instances produced good results; but there is difficulty in some forms of car-wheel chills, owing to the want of space on the flange-face of the chill, to form the groove properly, while in the operation of molding the wheel the sand would fall from the groove. I have remedied this difficulty in this class of car-wheel chills by contracting the outside of the annular groove

A to the diameter of the periphery of the flange of the wheel cast therein, and constructing under the face H of the chill radiating openings B, about one-quarter of an inch in diameter, drilled about one inch apart, and at such an angle to the face H of the chill that the outer ends of the openings will reach the face of the chill about one inch from the outside of the groove A. This will shorten the length of the openings to reach the surface of the chill, thereby costing less to drill them, and the openings can be more readily cleared from sand, and being in that portion of the chill where the least amount of molten metal to form the wheel comes in contact with the chill, the material strength of the chill will not be impaired by the openings.

In some forms of chills it may be desirable to form the openings B nearly parallel to the face H of the chill.

To facilitate the drilling of the openings and permit a free discharge of the gas from the groove and openings, I form a circular recess, G, in the face H of the chill about one-half an inch wide and about one-quarter of an inch deep, that will form a connection to the outer ends of the openings, the depth of the recess, however, depending on the relative position of the outer ends of the openings to the face of the chill.

Connecting to the circular recess G and extending to the exterior I of the chill, I form four or more channels, D, in the face H of the chill, about one-half an inch wide and about one-fourth of an inch deep.

Prior to the molding of the wheel, I place in the circular recess G a strip of leather or other suitable material, projecting from the face of the chill about one-eighth of an inch. This will prevent the sand from filling the recess.

Before closing the mold for casting, the strip of leather must be removed from the recess, and will leave a depression in the sand of the drag, which, in connection with the recess G, will give ample space for the gas to escape from the groove and openings.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A car-wheel chill having a receptacle peripherally located in its flange-face and

supplied with a non-conducting material, and having a peripheral outlet for gases in its face and a series of openings connecting the receptacle and the peripheral outlet, as set forth.

2. A car-wheel chill having groove or receptacle A, radiating openings B, and circular recess G, the radiating openings B being formed under the face H of the chill, and ef-

fecting communication between the said groove or receptacle A and the recess G, substantially as shown and described.

WILLIAM WILMINGTON.

Witnesses:

HARRY HAYNES,
CHAS. E. PARSONS.