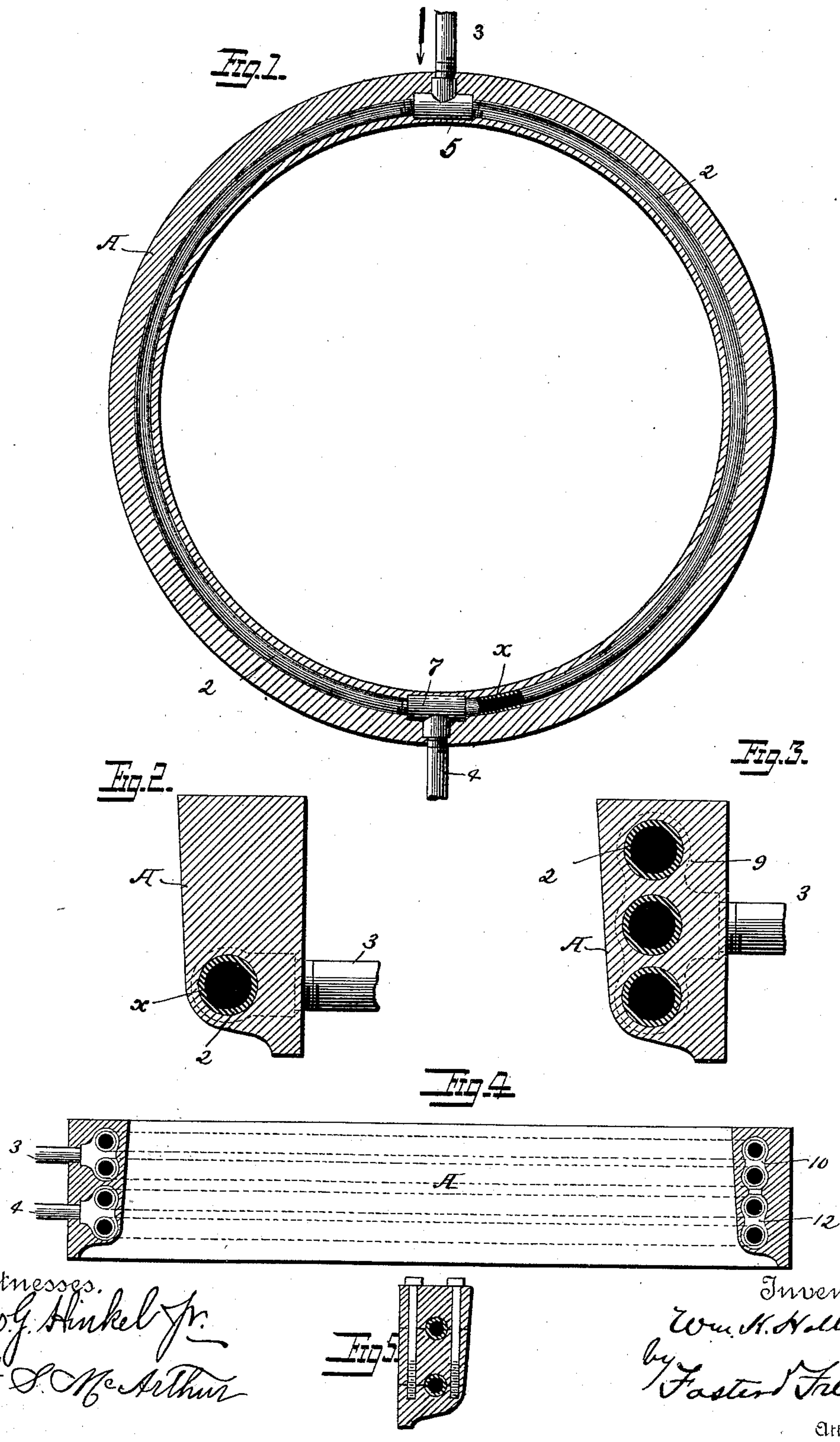


(No Model.)

W. H. HOLLISTER.
CAR WHEEL CHILL.

No. 405,355.

Patented June 18, 1889.



Witnesses.
Prof. Hinkel Jr.
Chas. S. McArthur

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UNITED STATES PATENT OFFICE.

WILLIAM H. HOLLISTER, OF RAMAPO, NEW YORK, ASSIGNOR OF ONE-HALF
TO WILLIAM W. SNOW, OF SAME PLACE.

CAR-WHEEL CHILL.

SPECIFICATION forming part of Letters Patent No. 405,355, dated June 18, 1889.

Application filed October 31, 1888. Serial No. 289,674. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. HOLLISTER, a citizen of the United States, residing at Ramapo, in the county of Rockland and State of New York, have invented certain new and useful Improvements in Car-Wheel Chills, of which the following is a full, clear, and exact specification.

It has been common in using water to equalize the temperature of chills to make cast-metal chills with passages for the flow of water with the purpose of maintaining the chills at a comparatively low temperature and preventing that expansion of the chill from the heat that would result in casting wheels of unequal sizes in the same chill, and generally the water-passages have been formed by the use of cores in casting the chills, so that the completed chill is of cast metal, with circulating-channels in the body thereof. Such chills are ineffectual from their liability to be readily fractured, from the porous character of the cast metal, and because of the necessity for the purpose of securing sufficient strength of leaving the inner or chill walls of such thickness as to reduce the cooling effect of the circulating liquid thereon. To obviate these objections, I construct the chill as I shall hereinafter describe, and as illustrated in the accompanying drawings, in which—

Figure 1 is a sectional plan of a car-wheel chill embodying my invention. Fig. 2 is a cross-section enlarged. Fig. 3 is a sectional view illustrating a modification. Fig. 4 is a section of a car-wheel chill, illustrating a different arrangement of circulating-pipes. Fig. 5 is a section illustrating a modification.

The chill A is externally of the usual form, adapted to the article to be cast; but, owing to the increased strength secured by my improvement, it need not be so thick and heavy as those of usual construction.

Instead of coring the chill to make the circulating-passages, I cast the chill around and upon wrought-metal pipes 2, arranged to conform to the outline of the chill and as near as possible to the inner or chilling surface thereof, and I provide such pipe or pipes with an inlet-pipe 3 and outlet-pipe 4, suitably arranged to receive and discharge the cooling-fluid. The pipes thus inserted in and practi-

cally forming part of the chill add greatly to the strength of the latter, and, owing to the greater strength of the wrought metal than cast metal, such pipes may, as shown, be placed very close to the chilling-surface of the chill, so as to maintain a low temperature at such surface and prevent that variation in temperature and the cracking or breaking of the chill which result when the inner wall is thick and becomes heated and expands while the outer wall is kept comparatively cool.

As shown in Fig. 1, the pipe 2 is in two curved sections, one end of each section being united to a T-coupling 5, from which extends an inlet branch 2, while the other ends are united by a T-coupling 7, from which extends a discharge-pipe 4.

Any suitable number of pipes may be inserted in the body of the chill when a large surface is to be kept cool. Thus in Fig. 3 the chill is shown as having three pipes 2 in a row, all united with and by a coupling 9, having a single inlet branch 3.

In Fig. 4 there are two sets of pipes. The two pipes constituting the upper set are united at one end with the inlet 3, and connect through couplings 10 12 with the opposite ends of the lower two pipes. The other ends of the lower pipes connect with the outlet 4 at the same side as the inlet.

I prefer to embed the wrought-metal pipes in the cast-metal body of the chill, as described; but, when the form of the chill will allow it, the body may be made in channeled sections bolted together, as shown in Fig. 5, or the body may be bored out to receive the circulating-pipes, which are then inserted.

I am aware that wrought-metal steam-pipes have been inserted in chills near the outer surface to heat the external portion of the chills; but this differs essentially from my invention, inasmuch as there is not in such chills that difference in expansion that results when water-chills have heretofore been used, and because there is not that necessity of preventing leakage, inasmuch as the steam will not pass through the minute orifices through which water will escape.

Without limiting myself to the precise construction and arrangement of parts shown, I claim—

A chill consisting of a body of cast metal with circulating-passages formed by wrought-metal pipes embedded in the cast-metal body in immediate proximity to the chilling-face, 5 and provided with inlet and outlet branches, substantially as set forth.

In testimony whereof I have signed my name

to this specification in the presence of two subscribing witnesses.

WILLIAM H. HOLLISTER.

Witnesses:

GARRETT BURGERT,
CHARLES B. CHURCH.