

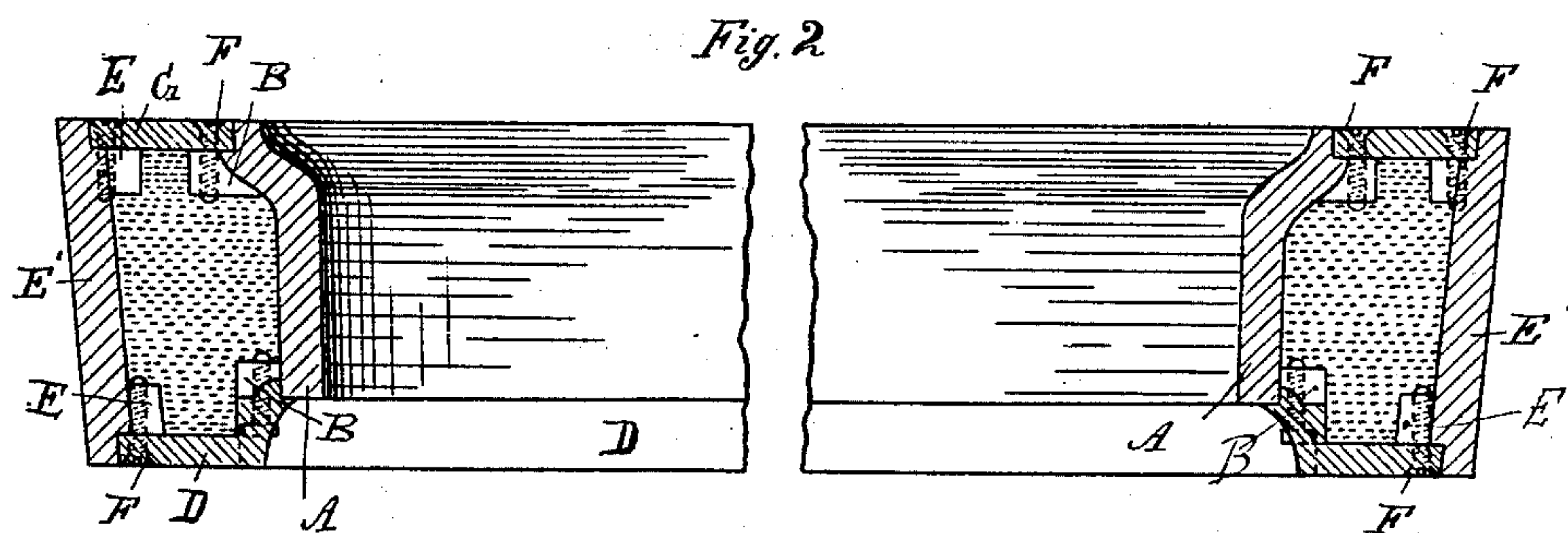
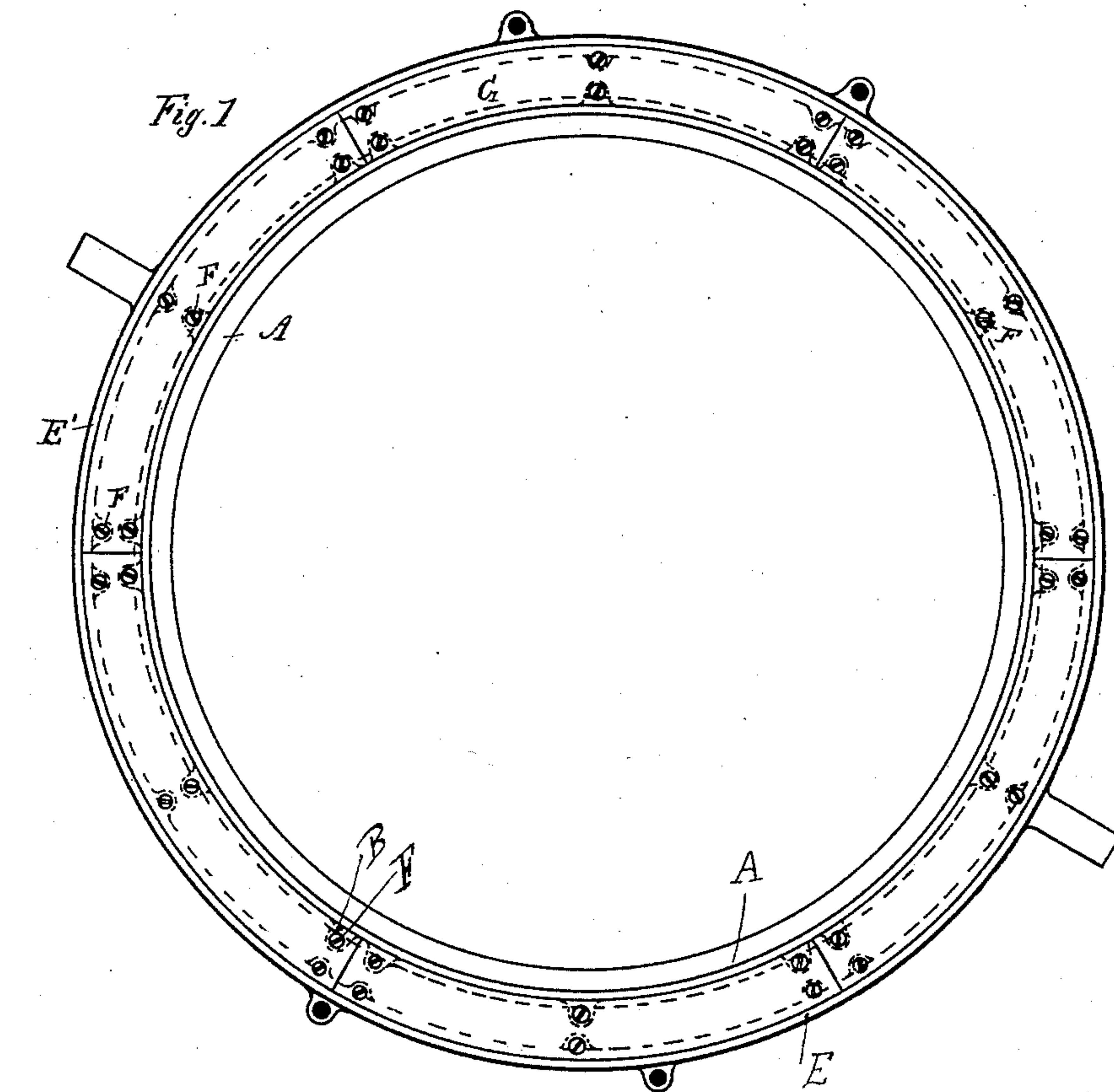
(No Model.)

G. J. McCURLEY.

CAR WHEEL CHILL.

No. 327,293.

Patented Sept. 29, 1885.



Attest:

John Schuman.
[Signature]

Inventor:

Geo. J. McCurley.

by his atty

[Signature]

UNITED STATES PATENT OFFICE.

GEORGE J. McCURLEY, OF DETROIT, MICHIGAN.

CAR-WHEEL CHILL.

SPECIFICATION forming part of Letters Patent No. 327,293, dated September 29, 1885.

Application filed July 23, 1885. (No model.)

To all whom it may concern:

Be it known that I, GEORGE J. McCURLEY, of Detroit, in the county of Wayne and State of Michigan, have invented new and useful
5 Improvements in Car-Wheel Chills; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

10 This invention relates to certain new and useful improvements in chills, such as are employed in the casting of railway-car wheels.

It is known that the loss of car-wheel castings is from five to twelve per cent. of the number
15 cast. These losses almost entirely result from defects which are known as "chill-cracks" and "tread-spots," and which render the wheels unfit for service. The chill-cracks arise from using the ordinary solid iron chill,
20 which absorbs the heat from the tread and cools the same, causing thereby the sudden contraction of the iron in the tread, while the mass of iron in the plate is still hot and limpid, thus creating an unequal strain in the casting, and causing it to crack open. The
25 tread-spots result from pouring cool iron in order to prevent chill-cracking. With the exception of the value of the defective wheels for remelting all the expense put into the casting is thus a total loss. In order to prevent
30 these defects, and also improve the quality of wheel-castings by pouring hot and consequently purer iron, it is proposed to make a chill which will retain the heat next to the tread, and thus prevent the sudden contraction
35 of the parts, leaving the tread to gradually cool with the balance of the casting.

While I show one construction of a device for the purpose, it is apparent that many other
40 ways of accomplishing a like result may be mechanically used; but all these wherein an annular recess or box is formed in the body of the chill filled with heat-non-conducting material would come within the spirit of my invention, which is, broadly, to make a chill
45 carrying between the chill-face and the outer rim of such chill a recess or annular cavity filled with non-conducting material, such as asbestos, plaster-of-paris, or other material
50 suitable for the purpose.

I describe the construction of a chill for this purpose such as I believe will be found to be the most economical in construction, although other means of securing the parts together may be employed.

Figure 1 is a plan view of my improved chill, and Fig. 2 is a diametrical cross-section
55 of the same.

In the accompanying drawings, which form a part of this specification, A represents the
60 chilling face, made of iron, copper, or other serviceable material, and cast with lugs B at intervals around the whole ring and at top and bottom.

D is the bottom plate, which is secured by
65 set-screws F to the lugs B and to the lugs E, which are cast at top and bottom and at intervals around the outside rim E'.

G is the top plate secured by other set-screws F to the lugs B and E, respectively, of
70 the chill-ring and the outside ring.

The entire space between the chill-face A and outside rim E', bottom plate, D, and top plate, G, is filled with asbestos, plaster-of-paris, or other suitable non-conducting material.
75 The filling acts as a solid backing for the chilling face and comes in contact with the greatest part of the same, which prevents the heat from being absorbed by the balance of the metal and retains it next to the tread,
80 thus preventing the sudden contraction of this part and the evils which ordinarily result therefrom.

What I claim as my invention is—

1. A car-wheel chill having an annular recess in rear of the chilling face, such recess
85 being filled with non-conducting material, substantially as and for the purposes described.

2. A car-wheel chill consisting of a chilling face in the form of a ring, an outside rim-
90 plate, top and bottom plate secured to such chill-face and outside rim, whereby an annular recess or chamber is formed, substantially as and for the purposes specified.

GEORGE J. McCURLEY.

Witnesses:

WILLIAM J. SOUDANT,
JOSEPH F. DISNEY.