

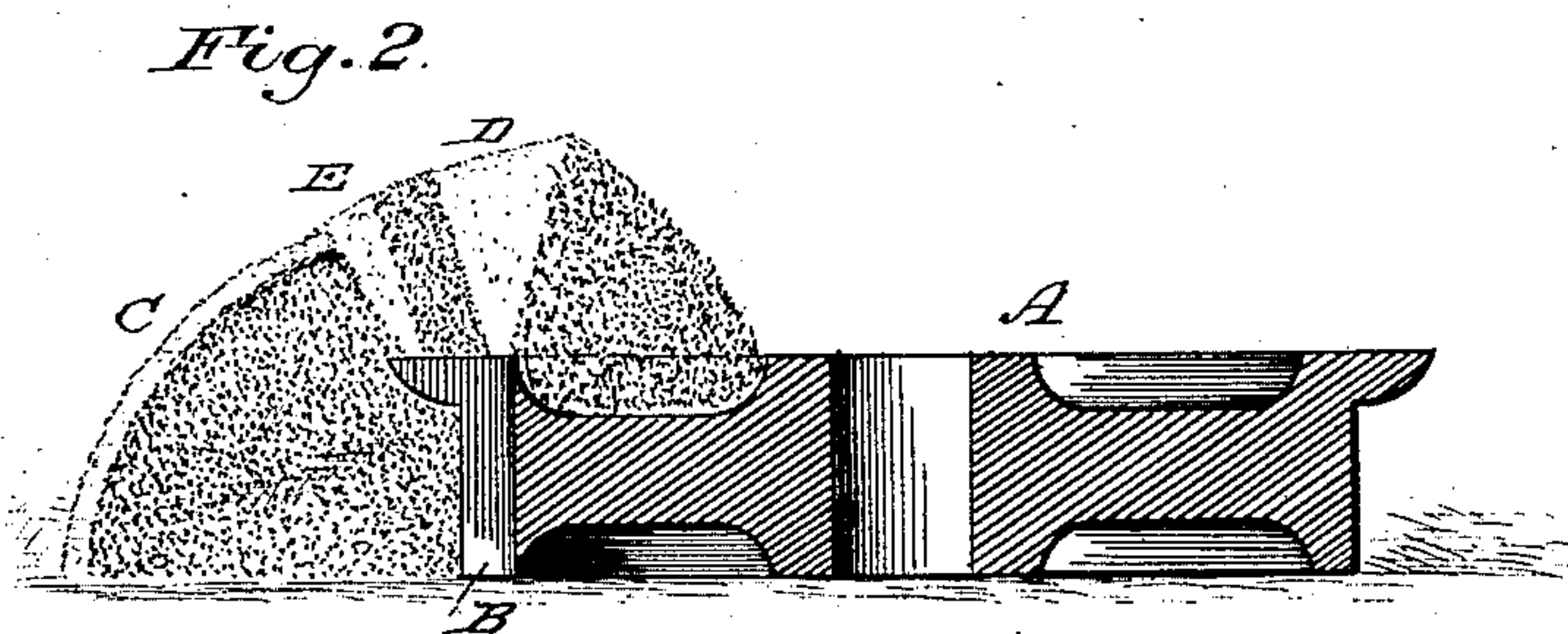
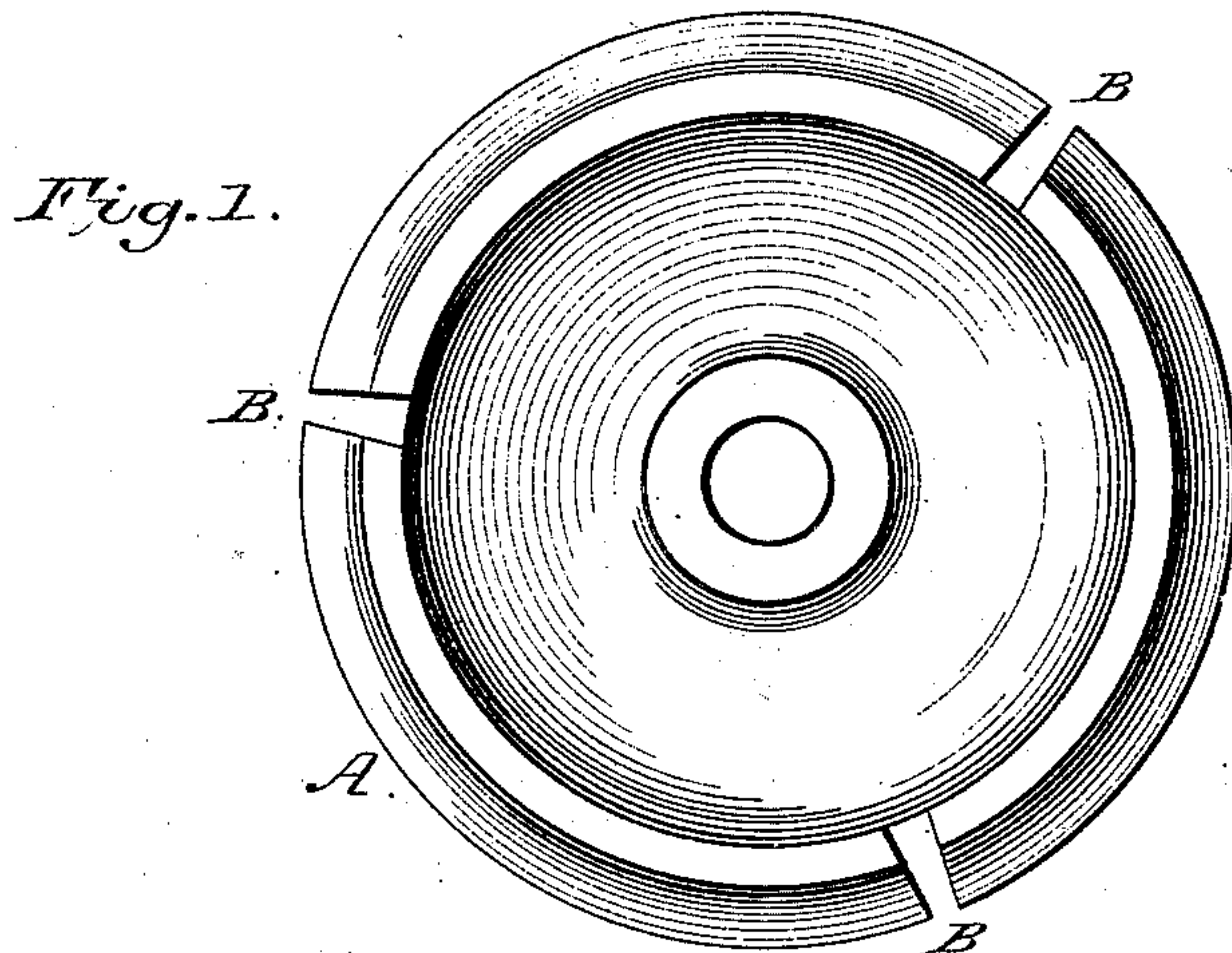
(No Model.)

S. L. SINCLAIR.

METHOD OF FILLING THE RECESSES IN THE TREAD OF CAR WHEELS.

No. 315,080.

Patented Apr. 7, 1885.



WITNESSES:

*Wm. L. Dietrich,*  
*Jos. A. Ryan.*

INVENTOR.

*Susan L. Sinclair*

*By J. J. Johnston* ATTORNEYS.



# UNITED STATES PATENT OFFICE.

SUSAN L. SINCLAIR, OF ALLEGHENY, PENNSYLVANIA.

METHOD OF FILLING THE RECESSES IN THE TREAD OF CAR-WHEELS.

SPECIFICATION forming part of Letters Patent No. 315,080, dated April 7, 1885.

Application filed December 30, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, SUSAN L. SINCLAIR, of Allegheny, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Method of Filling the Recesses in the Tread of Car-Wheels; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to car-wheels, and is an improvement upon the invention of my father, Cornelius Kingsland, for which Letters Patent of the United States No. 72,405, dated December 17, 1867, were granted him; and it consists in constructing car-wheels in all respects as described in the schedule annexed to and forming part of said Letters Patent, and filling the "recesses marked O" in the manner and by the means hereinafter described and claimed.

In the casting of car-wheels, as described in the aforesaid Letters Patent, the tread of the wheel is hardened in the process of casting through the medium of a "chill." This hardening process of said tread changes the character of that portion of the metal to the depth that is chilled, and in all means heretofore employed for filling said recesses O the filled portion is liable to chip out or wear uneven with the balance of the tread of the wheel.

Figure 1 is a side elevation of the car-wheel representing recesses in the flange and tread thereof. Fig. 2 is a transverse vertical section of the wheel and mold employed in the operation of filling said recesses.

To obviate and overcome these disadvantages, I fill said recesses in the following manner: I take molten pig metal when at a very high white heat and in a very thin fluid condition and treat it with pulverized iron ore, salt, and lime, using about eighty parts of pulverized iron ore reduced to a fine powder, about ten parts of salt, and about ten parts of lime. These ingredients are thoroughly mixed together, so as to form as nearly as possible a homogeneous mass, which is subsequently heated to about 800° or 1,000° Fahrenheit. With every hundred weight of molten pig metal I mix ten pounds of said heated mass, taking care to thoroughly stir it in and through the molten metal.

After the wheel has been cast with the recesses B, the mold is prepared as indicated in

the accompanying drawings, which will be readily understood by the skillful molder; when it is stated that the mold is formed for the purpose of "knitting the iron" in said recesses.

In the drawings, (see Fig. 1,) A represents the car-wheel; B, the recesses in the car-wheel; C, the sand or mold, (see Fig. 2;) D, the pouring-sprue, and E the outflow sprue or gate.

The sand used in forming the mold is dampened with an alkali solution—such as water, with sal-soda dissolved therein. This will cause the molten metal poured into and knit in said recesses to harden, and will retain the hardened condition of the metal in the tread of the wheel adjoining said mass. After the metal poured into the recess has sufficiently cooled off the mold is removed from the wheel, and that portion of the tread made by a grinding or dressing process to correspond with the balance of the tread by any of the means known to the art.

Treating the molten metal as herein described, it will be purified and assume the same character and texture as that forming the chilled tread of the wheel, and will knit it in the tread of the wheel, as herein described. The sand of the mold being treated as set forth will prevent the metal poured into the said recesses from being changed in its character by the knitting process, it being a fact well understood by the skillful molder that from some unexplained and unexplainable fact in the operation of knitting the metal employed is materially changed in its character and texture.

Having thus described my improvement, what I claim is—

The method hereinbefore described for filling the recesses marked B, consisting of treating the molten metal with the compound herein specified, preparing the material of the mold with the solution, as specified, and filling and knitting the said purified metal in said recess, substantially as specified.

In testimony whereof I have hereunto set my hand this 3d day of July, A. D. 1884.

SUSAN L. SINCLAIR.

Witnesses:

A. C. JOHNSTON,  
C. S. JOHNSTON.