C. A. WILSON.

CHILLS.

No. 178,822. Patented June 13, 1876.

Fig. 1

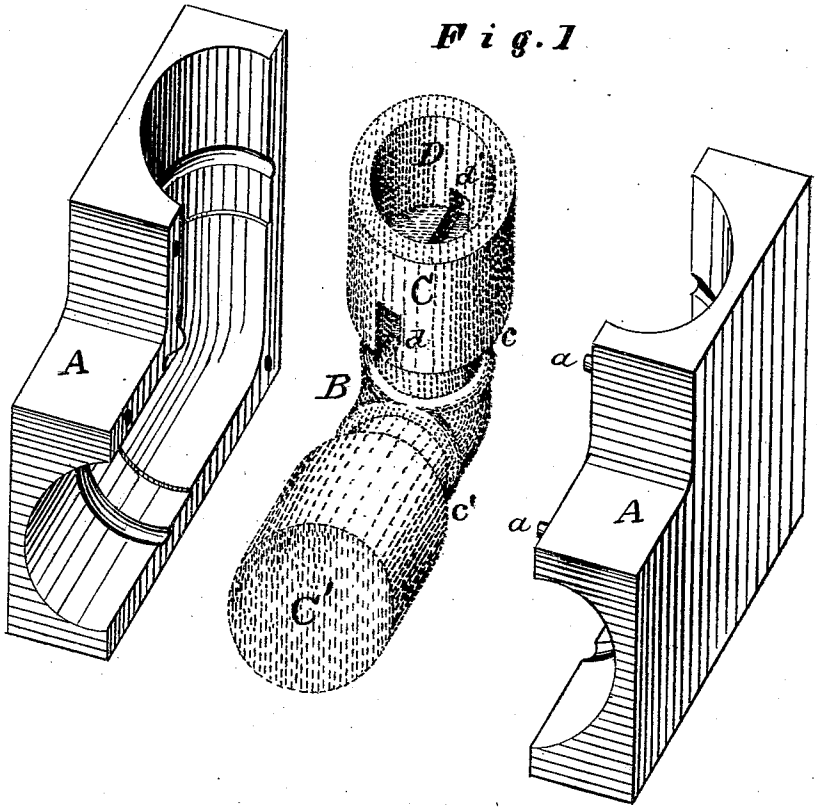


Fig. 2

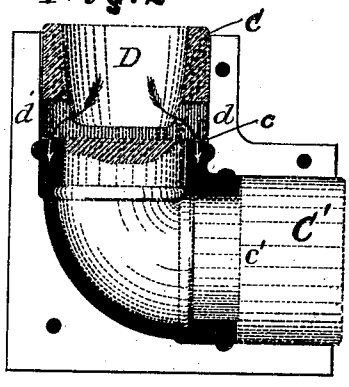


Fig 3

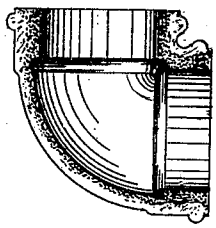
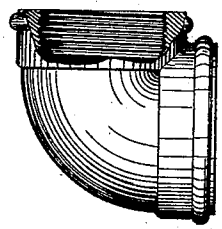


Fig. 4



Attest.
Herbert O. Knight
Walter Knight

Charles A. Wilson
By his Attorneys
Knight Bros.

UNITED STATES PATENT OFFICE.

CHARLES A. WILSON, OF CINCINNATI, OHIO.

IMPROVEMENT IN CHILLS.

Specification forming part of Letters Patent No. **178,822**, dated June 13, 1876; application filed January 8, 1876.

To whom it may concern:

Be it known that I, CHARLES A. WILSON, of Cincinnati, Hamilton county, Ohio, have invented a new and useful Manufacture of Cast-Iron Pipe-Couplings, of which the following is a specification:

My invention relates to a manufacture of cast-iron pipe couplings and fittings, which combines the advantage of "chill" casting of the exterior portions with "soft" casting of those parts which require to be screw-threaded.

For this purpose I provide for all the outside surfaces of the couplings or fittings, except the ends, a metallic mold, and for the inside and ends a core of any customary or suitable non-metallic material. By this means I enable the manufacture of such tubes in a small fraction of the usual time, and with unskilled labor, the use of the chill making the services of a molder unnecessary. In fact, the entire operation of core-making, molding, casting, and screw-cutting are easily performed by boys.

Coupled with cheap production is superiority of finish, the casting having the smooth and neat exterior and comparative exemption from rust consequent on the use of a chill-mold.

In its preferred form my invention further comprises a construction of the aforesaid core, which constitutes it the sole channel for the introduction of the molten metal; and, consequently, the exterior of the casting is free from defacement of sprue-scars.

In the accompanying drawing, Figure 1 shows the core and the two parts of the chill slightly separated from one another. Fig. 2 is an elevation of the core (partially sectioned) in position in the matrix. Fig. 3 is an axial section through a coupling, cast on my plan. Fig. 4 shows the same screw-threaded.

A A′ represent the parts of a metallic mold or chill. B is the core, composed of the customary non-metallic material used in the manufacture of hard cores. The "prints" C C′ are so much larger in diameter than the bore of the intended coupling as to present shoulders *c c′*, which become the mold-surfaces for the ends of the coupling, which are thus, as well as the bore, cast without chill, and are, consequently, easily penetrated by the chase in the operation of screw-cutting.

My core is constructed with one or more channels in its upper print to admit the molten metal, and its preferable form is as follows: D is a gate or funnel, which has two branches, *d d′*. A gate thus formed wholly in the core, and without contact with the chill, has the advantage of economy by maintaining that half of the metal which remains within the gate in a sufficiently fluid condition to be poured back into the ladle immediately after casting.

My chill has customary dowels *a*, and when in use its two parts are hinged together on one side in the customary manner of chill-molds, and are provided with the usual levers or handles.

I claim as new and of my invention—

1. An apparatus having a chill-mold, A A′, non-metallic core B, prints C C′, and gate D, adapted for the production of externally-chilled cast-iron pipe couplings and fittings.

2. As a new article of manufacture, the cast-iron pipe coupling or fitting, having the chilled exterior and soft screw-threaded portions, as explained.

In testimony of which invention I hereunto set my hand.

C. A. WILSON.

Attest:
GEO. H. KNIGHT,
WALTER KNIGHT.