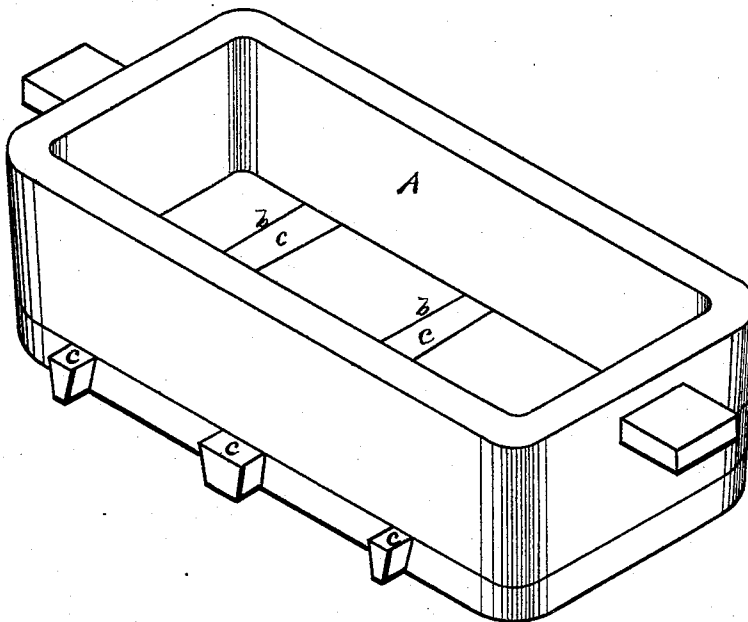


N. CHURCHMAN.  
Ingot Molds.

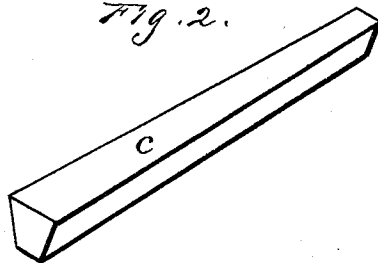
No. 145,278.

Patented Dec. 9, 1873.

*Fig. 1.*



*Fig. 2.*



Witnesses

*John L. Boone*  
*C. M. Richardson*

*Ney. Churchman*  
*by Dewey & Co*  
*Attys*

# UNITED STATES PATENT OFFICE.

NEY CHURCHMAN, OF PIOCHE, NEVADA.

## IMPROVEMENT IN INGOT-MOLDS.

Specification forming part of Letters Patent No. **145,278**, dated December 9, 1873; application filed August 16, 1873.

*To all whom it may concern:*

Be it known that I, NEY CHURCHMAN, of Pioche, Lincoln county, State of Nevada, have invented an Improved Ingot-Mold; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvement without further invention or experiment.

My invention relates to that class of molds that is used in the casting of unwrought metal into bricks, bars, or ingots; and its object is to so construct the bottom of the mold that the sudden expansion and contraction to which it is subjected by the pouring of the heated metal into the mold will not injure it.

In order to properly describe my invention, reference is had to the accompanying drawing forming a part of this specification, in which—

Figure 1 is a perspective view of my mold. Fig. 2 is a view of the key.

A represents a mold such as is used for casting gold and silver into bricks or ingots, and which is commonly called a "bullion-mold."

As usually constructed the bottoms of these molds are made in a single solid piece of metal, and when the hot metal is poured into the molds the sudden expansion causes them to bulge, and the contraction renders them liable to crack and break.

My invention consists in making one or more slots or openings, *b b*, in the bottom of the mold, and fitting into these slots or openings keys or corresponding pieces of metal *c*, so

that the keys or pieces of metal can be loosened when the metal is being poured, and thus give the bottom a chance to expand without injuring the mold.

I prefer to make the slots or openings *b* tapering, as shown, and in the manner of a dovetail joint. The key or inserted piece *c* will then be in the form of a wedge with tapering sides to fit the dovetail form of the slot, so that it can be slipped into the opening from the widest end. Thus it will be seen that the wedge will, by being slightly loosened, give sufficient space for the bottom to expand and contract, and thus prevent injury from sudden expansion and contraction.

I do not confine myself to any particular form of the slot and key; neither do I confine myself to any particular number or the arrangement of the slots, as they can be made longitudinally, transversely, or diagonally with equal results.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

An ingot-mold having its bottom provided with slots or openings *b b*, in combination with corresponding wedges or keys *c*, substantially as and for the purpose above described.

In witness whereof I hereunto set my hand and seal.

NEY CHURCHMAN. [L. S.]

Witnesses:

FRANK WHEELER,  
G. W. ARNOLD.