(No Model.)

T. G. WOLF.

RUNNER FOR CASTING STEEL INGOTS.

No. 267,960. Patented Nov. 21, 1882.

Fig: 1.

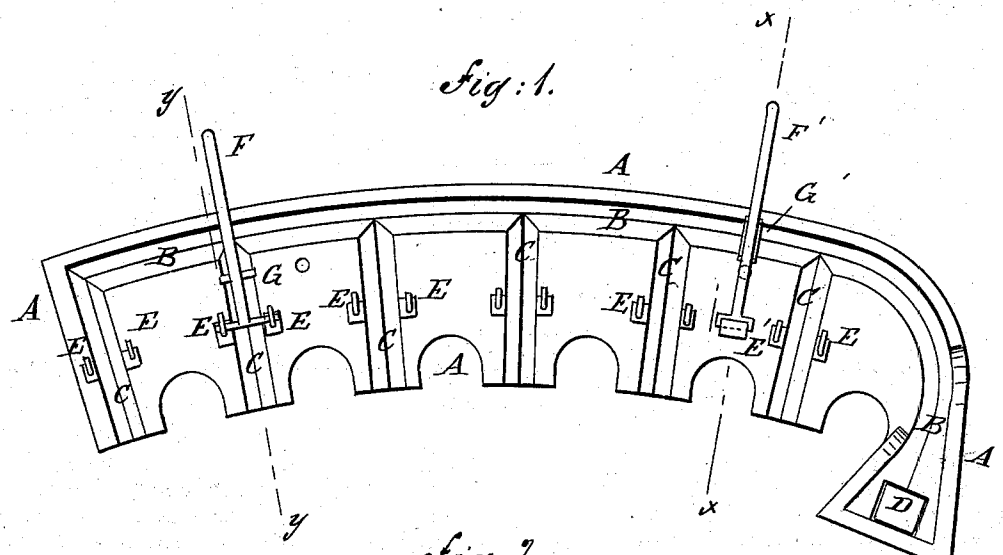


Fig: 2.

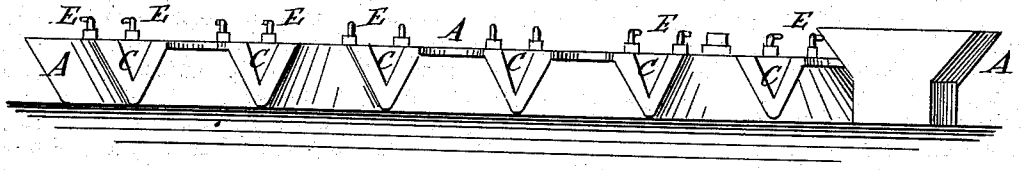


Fig: 3.

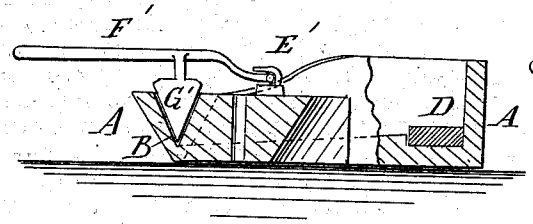
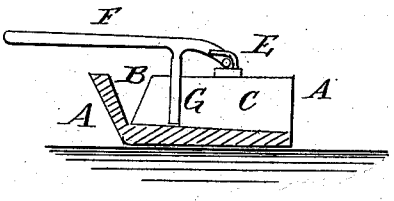


Fig: 4.



WITNESSES:

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THEODORE G. WOLF, OF SCRANTON, PENNSYLVANIA.

RUNNER FOR CASTING STEEL INGOTS.

SPECIFICATION forming part of Letters Patent No. 267,960, dated November 21, 1882.

Application filed August 22, 1882. (No model.)

To all whom it may concern:

Be it known that I, THEODORE G. WOLF, of Scranton, in the county of Lackawanna and State of Pennsylvania, have invented a new and useful Improvement in Runners for Casting Steel Ingots, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of my improvement. Fig. 2 is a rear elevation of the same. Fig. 3 is a sectional elevation of the same, taken through the line *x x*, Fig. 1, and part being broken away. Fig. 4 is a sectional elevation of the same, taken through the line *y y*, Fig. 1.

The object of this invention is to facilitate the casting of steel ingots, economize time and steel, and produce more solid ingots than has heretofore been practicable.

A represents the runner, one end of which is extended laterally, as shown in Fig. 1. Along the edge of the runner A, from its laterally-extended end to the other end, is formed a trough or channel, B, from which lateral channels C branch off at right angles or nearly at right angles, to conduct the molten steel to the molds. The receiving end of the channel B is widened, and has a block, D, of fire-brick, secured in its bottom to prevent the inflowing molten steel from cutting the runner. The channels B C can be made V-shaped in cross-section, as shown in Figs. 1, 2, 3, and 4, or U-shaped, as may be desired. Upon the opposite side of each lateral channel C are formed hooked lugs E to receive a cross-head formed upon the end of a lever, F, upon which is formed a gate, G, having the same shape as the channels B C, so that either of the channels C can be closed when desired.

To the body of the runner A, between the first and second lateral channels, C, is formed a wide hooked lug, E′, to receive the cross-head end of the lever F′, which is provided with a gate, G′, to fit into and close the channel B, so that at the last of the casting all the metal flowing into the channel B can be made to flow into the first mold.

The runner A may be provided with wheels for convenience in moving it to and from the pit; or the wheels can be omitted and the runner moved by a derrick.

By causing the molten steel to flow through a runner into the molds the ingots will have fewer air-holes, and will thus be more solid and better steel than when the metal is poured into the molds in the ordinary manner, and the casting will be done in less time and with less waste of steel.

Another advantage of this invention is that fewer molds will be injured than when the casting is done in the ordinary manner.

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

1. The combination, with the runner A, having lateral branches and hooked lugs E, of the lever F, having cross-head end, and provided with the gate G, substantially as herein shown and described, whereby the stream of molten steel can be readily directed, as set forth.

2. The combination, with a runner, A, having the channel B and branches C, of the hooked lug E′, arranged between the first and second branches, the lever F′ having cross-head working in said lug-hook, and the gate G′, attached to the under side of said lever, as and for the purpose set forth.

THEODORE G. WOLF.

Witnesses:

EDWD. BUCK,

A. J. MILLER.