(No Model.)

J. W. SEIGH.

CHILL MOLD.

No. 362,545. Patented May 10, 1887.

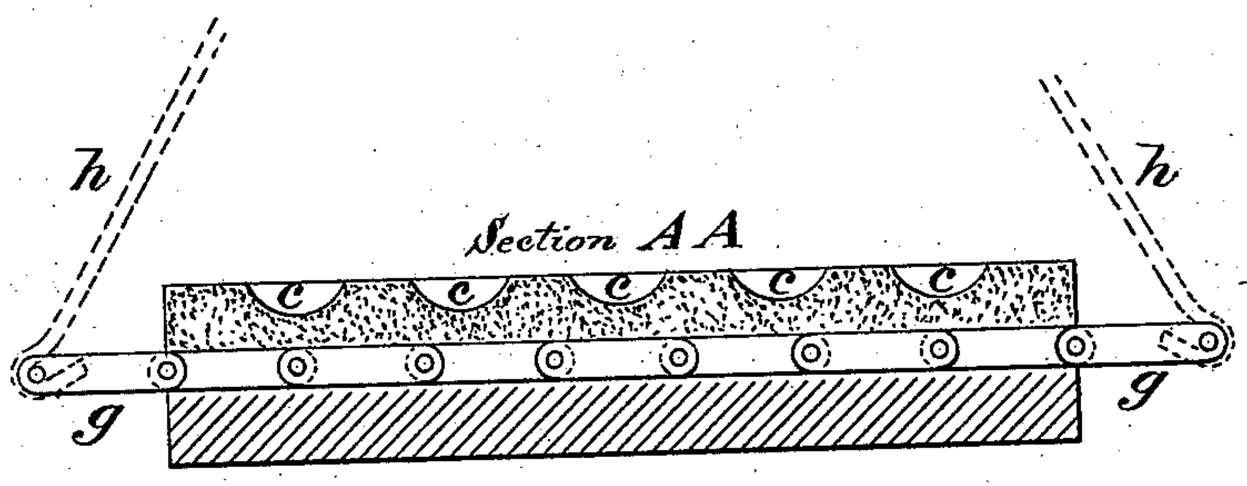

Fig. 1.

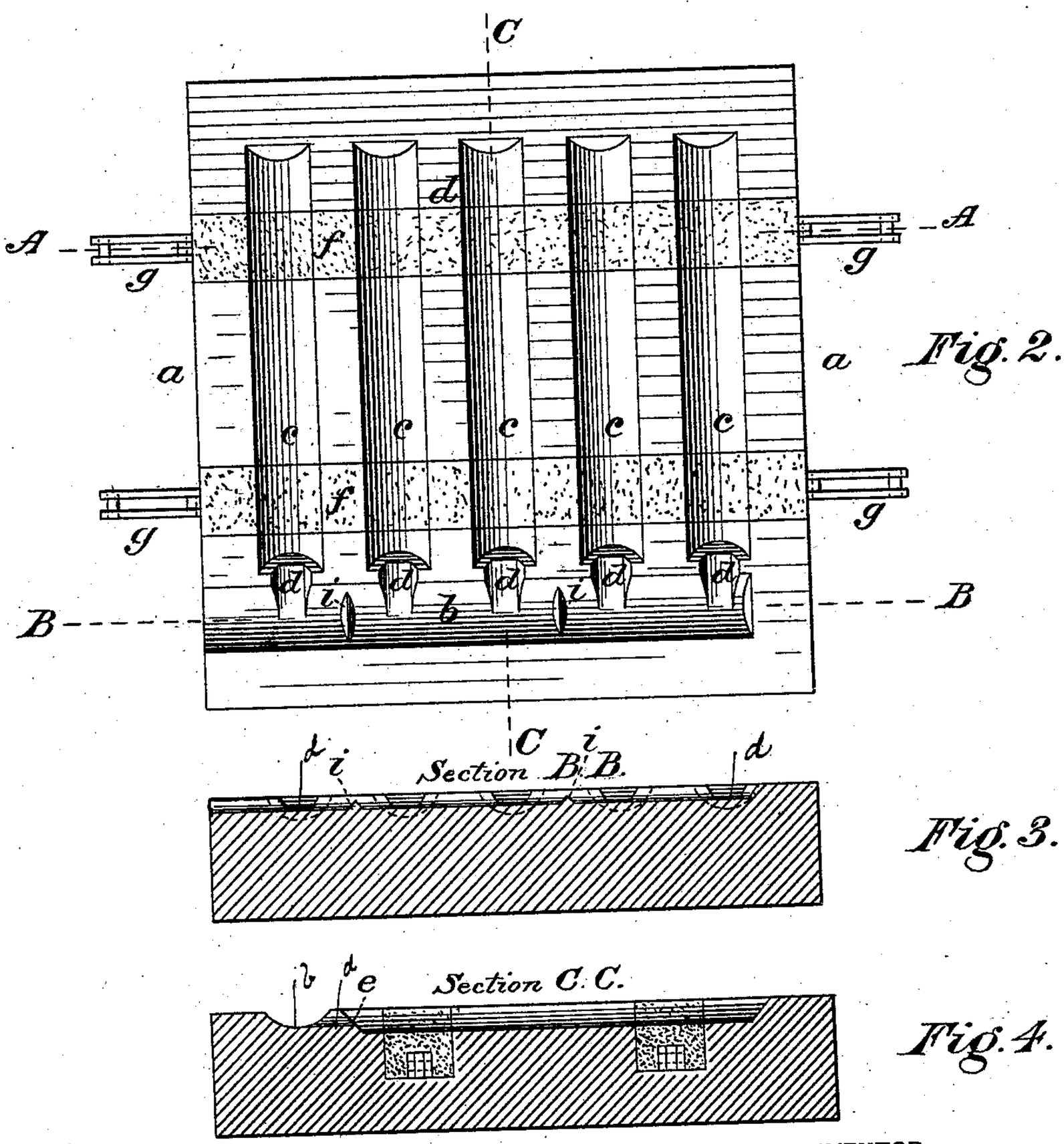

Fig. 2.

Fig. 3.

Fig. 4.

WITNESSES:

C. M. Clarke.

W. B. Corwin

INVENTOR,

John W. Seigh

by his attys

Bakewell & Kerr.

UNITED STATES PATENT OFFICE.

JOHN W. SEIGH, OF JOHNSTOWN, PENNSYLVANIA.

CHILL-MOLD.

SPECIFICATION forming part of Letters Patent No. 362,545, dated May 10, 1887.

Application filed January 15, 1887. Serial No. 224,410. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. SEIGH, of Johnstown, in the county of Cambria and State of Pennsylvania, have invented a new and useful Improvement in Chill-Molds; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to iron or chill molds for casting pig-iron. In the ordinary practice of casting pig-iron the molten metal is tapped from the blast-furnace and is caused to flow through a drain or gutter in the floor of the foundry or casting-house, from which lateral grooves or molds extend, in which the individual pigs are formed. The distributing drain or gutter is known in furnace parlance as the "sow-mold," and the lateral grooves as the "pig-molds." When the metal is cast, the sow which is formed in the sow-mold is connected by sprues with the pigs which are formed in the pig-molds. The more common practice is to form these molds directly in the sand floor of the casting-house or foundry; but it is customary in some cases to use cast-iron or chill molds for the purpose.

My improvement is mainly directed to the construction of the latter, and is designed to fit them for use with a method of breaking off and removing the pigs, described in Letters Patent No. 352,631, granted to me on November 16, 1886, by means of chains embedded beneath the molds and raised by a suitable elevating device, so as to break off and convey away any desired number of pigs, instead of the former slow and laborious practice of breaking the pigs off one by one and conveying them away by manual labor.

To enable others skilled in the art to make and use my invention, I will now describe it by reference to the accompanying drawings, in which—

Figure 1 is a cross-sectional view of a chill-mold embodying my invention on the line A A of Fig. 2. Fig. 2 is a plan view of the mold fitted for use according to my aforementioned patent. Figs. 3 and 4 are sections on the lines B B and C C of Fig. 2, respectively.

Like letters of reference indicate like parts in each.

The mold *a* is formed of cast-iron, with a sow or distributing groove, *b*, extending along one edge, and lateral grooves, *c*, for forming the pigs, connected to the groove *b* by gates or sprues *d*. As shown in the section B B, Fig. 3, the grooves *c* are deeper than the groove *b*, the point where they merge into each other having a shoulder, *e*. Extending parallel to the groove *b* and transversely to the grooves *c*, near the ends of the latter, are grooves *f*, of a depth much greater than the grooves *c*. The purpose of these grooves is to receive the elevating chains or cables *g* below the level of the grooves *c*. These lifting chains or cables are first placed in the grooves *f*, and are then covered over with sand or clay, as indicated in Figs. 1 and 2, and the top surface of the sand or clay is imprinted so as to form a continuance across the groove *f* of the pig-molds *c*.

The mold *a* is placed on the floor of the casting-house or foundry, in connection with a suitable number of similar molds to constitute a pig-bed of the required size. After the chains *g* have been placed in the grooves *f*, and covered with sand or loam, as described and illustrated, the pigs are cast in the usual way, and when the casting is completed and the metal cools they lie upon the pig-bed connected with the sow in the ordinary way. When they are sufficiently cooled, hooks *h*, or the other suspension devices of the elevating mechanism, are connected to the ends of the chains which project beyond the sides of the mold or molds. Then the chains are raised, and, coming first in contact with the outer pigs, break them off from the sow, the shoulder *e* of the mold, as well as the weight of the sow and the unbroken pigs, insuring this breaking, which continues from pig to pig, from the ends toward the center, until all the pigs are broken from the sow and elevated by the chains to the required height, when they are conveyed by the elevating devices to be discharged at the desired point.

So much of this description as relates to the elevating and conveying devices is not illustrated, as it has nothing to do with the subject-matter of this case.

In order to facilitate the breaking of the sow into suitable lengths, I have formed lateral ridges *i* across the mold *b*, so that when the

pigs have been removed the sow can be raised out of its mold and easily broken apart by the blow of a sledge or heavy bar.

By my invention I am enabled to obtain the advantage of the hereinbefore-mentioned method of breaking and removing the pigs by means of elevating-chains with chill-molds, whereas the use of such method has heretofore been limited to use with ordinary sand molds. In addition to this, the construction of the mold *a* is such as facilitates the breaking of the pigs and sow, and is of advantage even when made without the grooves *f*.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A chill-mold for casting pig-iron, having grooves extending transversely under the pig-molding cavities, substantially as and for the purposes described.

2. A chill-mold for casting pig-iron, having a longitudinal groove or channel with transverse pig-molds, and deep grooves extending transversely to the pig-molds, whereby chains or cables may be embedded in earth or sand in such grooves below the level of the pig-molds, substantially as and for the purposes described.

In testimony whereof I have hereunto set my hand this 12th day of January, A. D. 1887.

JOHN W. SEIGH.

Witnesses:

ALVAR AKERS,

NATHANIEL BUTLER.