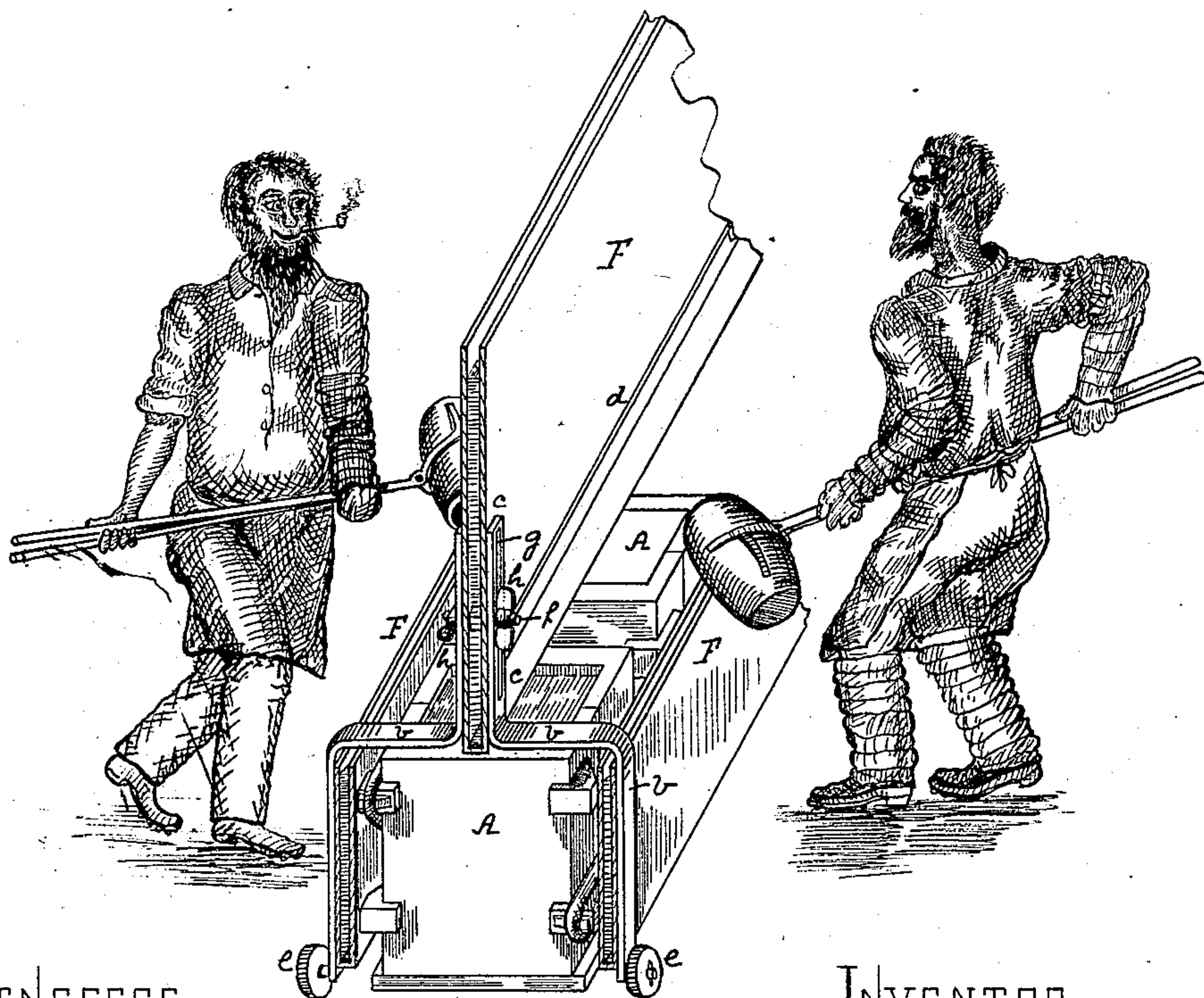
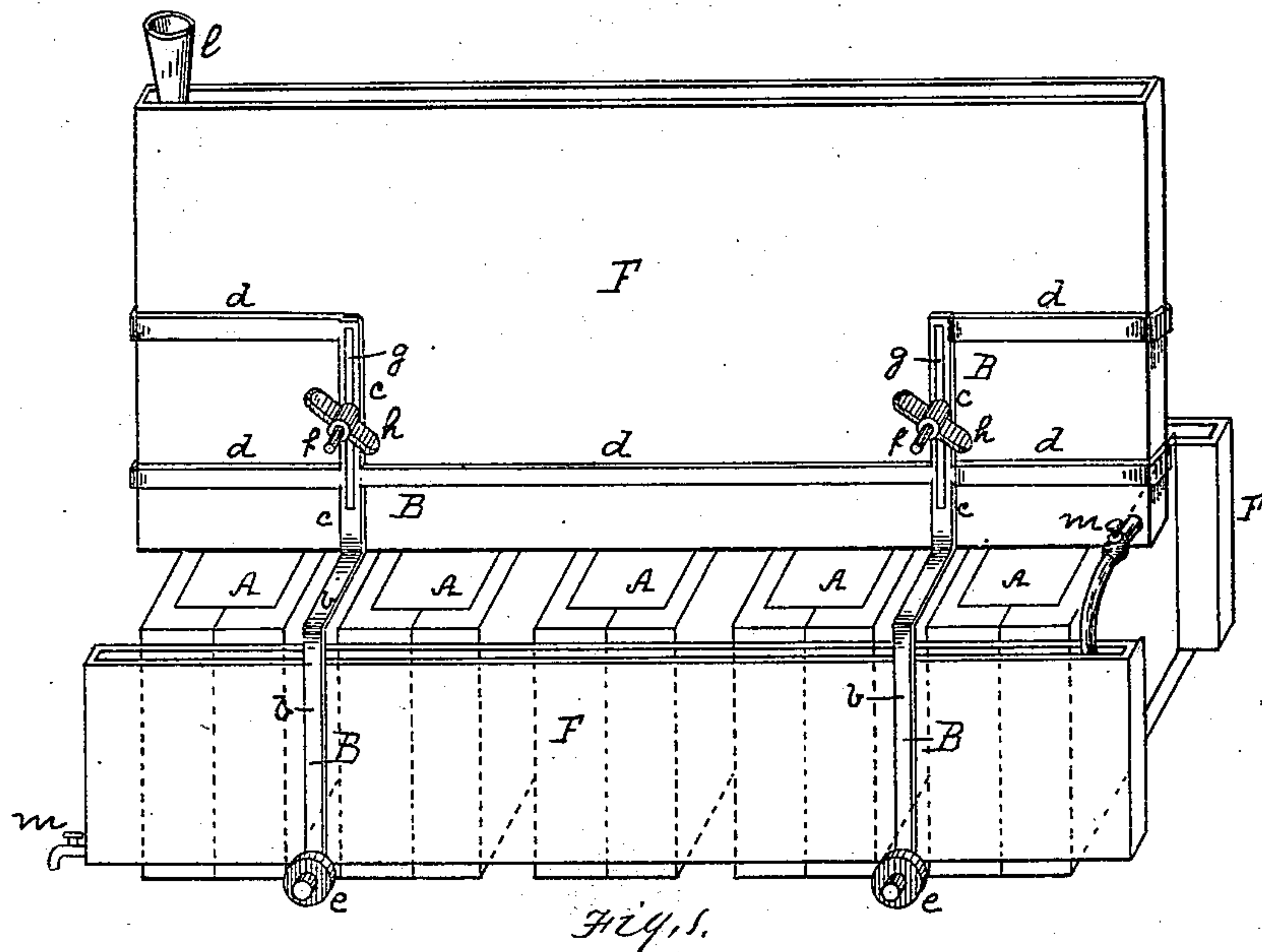


(No Model.)

J. PEDDER.
INGOT MOLD SHIELD.

No. 256,038.

Patented Apr. 4, 1882.



WITNESSES

J. J. May
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Fig. 2.

INVENTOR

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UNITED STATES PATENT OFFICE.

JOHN PEDDER, OF PITTSBURG, PENNSYLVANIA.

INGOT-MOLD SHIELD.

SPECIFICATION forming part of Letters Patent No. 256,038, dated April 4, 1882.

Application filed February 27, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN PEDDER, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Ingot-Mold Shields; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification, in which—
Figure 1 is a perspective view of a series of molds with my improved shield arranged thereon, and Fig. 2 is a cross-section in perspective, illustrating the manner in which the molds are teemed.

Like letters of reference indicate like parts in each.

My invention has for its object the protection of the melters in steel-works while pouring or teeming the melted steel from the crucibles into the ingot-molds in casting ingots. In teeming the steel into these ingot-molds the melters grasp the crucibles with tongs and gradually pour out the steel, and where large ingots containing the steel from two or more crucibles are cast the melters are compelled to teem from the opposite sides of the mold, and the intense heat and glare from the open mouth of the crucible held by one melter are reflected into the face and against the body of the other melter. The ingot-molds also often become red hot from the melted steel teemed into them, and the heat from these molds is reflected against the hands and lower extremities of the melters. The heat from these crucibles is so intense that the melters necessarily protect their limbs by aprons and carpets or like substances wrapped around the legs and over their feet, and heavy mittens covering their hands and extending up to their elbows, the wrappings and mittens being saturated in water, as illustrated by the right-hand figure in the drawings, and even then the heat often blisters their faces and bodies, making the labor of teeming so severe and laborious that they cannot properly teem the steel, and often spoil the ingots. By my invention the melters are in a great measure shielded from the heat of the crucibles and molds, and the strain and labor of teeming greatly reduced, even where their bodies are not so fully pro-

ected, so that they are enabled to teem carefully and do better work.

It consists, first, in a shield arranged above the mold or series of molds, by which each melter is fully protected from the heat of the crucible teemed by the opposite melter; second, in combining with this top shield, above the mold or molds, one or more lower shields to protect the melter from the heat of the lower molds; and, third, in certain improvements in connection with the construction and arrangement of the shields.

To enable others skilled in the art to make and use my invention, I will describe its construction and operation.

In the drawings referred to, A represents a series of ordinary ingot-molds standing on the casting-floor of an ordinary steel-casting shop, ready for casting. The ingot-molds are formed of cast-iron, and are generally partible, the two halves being clamped together by links, or in other suitable manner.

My improved ingot-mold shield is illustrated in the form of a movable carriage, which can be drawn around the casting-floor and arranged around and over any molds ready for casting. It may, however, be arranged in many different ways in the casting-shop, being, for instance, either mounted, as shown, carried by the workmen and placed over the molds, or suspended from the roof or girders above the floor, this latter manner being found very convenient, and the one shield being adapted to be placed over different molds or series of molds by hanging it by means of chains and counterbalances from a frame traveling in a railway secured to the under surface of the girders.

Where a movable carriage, B, supporting the shield or shields, is employed, it is generally formed of an iron frame-work, the end supports, *b*, fitting around the ingot-molds and having wheels *e* resting on the casting-floor, and the uprights *c* supporting the top shield F above the molds, while the cross-bars *d* connect the uprights *c* or end supports, thus forming a substantial frame for carrying the shields.

The top shield F is supported centrally above the molds within the uprights *c* of the carriage, and screw-bolts *f* extend out from the shield

through vertical slots *g* in the uprights, nuts *h* screwing on these bolts and clamping the shield within the uprights. On loosening the nuts *h* the shield can be raised or lowered, being thus made adjustable to suit any desired height of ingot-mold, and again clamped within the carriage.

The lower shields *F* are generally secured rigidly to the end supports, *b*, and are made of an average height to suit all ingot-molds. The shields shown in the drawings are what are termed "water-shields," being long flat tanks of sheet or plate metal made water-tight and having a water-supply funnel or pipe, *l*, at the top and a water-discharge, *m*, at the other end closed or regulated by a stop-cock. Where the top and lower shields are both employed the water from the top shield may be discharged into the lower ones if desired, or they may be filled independently thereof. As the shields are movable, it is found better to fill them at intervals to keep them sufficiently cool, rather than have a constant stream flowing through them, though the latter arrangement may be adopted by closing the top of the tanks and forming water-tight connections between the top and bottom shields, as well as employing flexible water feed and discharge connections. The shields may either be formed of these flat water-tanks or of similar tanks containing plaster-of-paris, asbestos, fire-clay, or other suitable materials which are poor conductors of heat, technically termed "non-conductors;" or they may be simply single plates of metal with or without such non-conducting materials secured thereto, my invention including any ingot-mold shields mounted, as described, so as to protect the melters while teeming.

When my improved ingot-mold shield is employed it is arranged so that the top shield fits along over the center, and the lower shields fit on either side of the mold or series of molds, and the melters teem the steel in the usual

manner. The top shield entirely protects each melter from the heat and glare from the open mouth of the crucible teemed by the other melter, and the lower shields fully protect the lower part of their bodies, so that each melter need only guard himself from the heat of the crucible teemed by him. All that is necessary for this purpose is the heavy mitten over the hand nearest the crucible, as shown in the figure to the left of the drawings, and with this slight protection the melter can teem with comparative comfort, suffering but slightly from the heat, and is therefore enabled to teem more carefully, so that few ingots need be spoiled on account of imperfect teeming.

The top shields can be used separately, if desired, as they afford the greatest protection in teeming large ingots, where the melters stand opposite each other.

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

1. In combination with an ingot-mold or series of molds, a shield adapted to fit over the mold or molds and protect each melter from the heat of the crucible teemed by the opposite melter, substantially as set forth.

2. A shield for ingot-molds, formed of a top shield adapted to fit over the top of the mold or molds, and one or more lower shields adapted to fit along the sides of the molds, substantially as and for the purposes set forth.

3. In ingot-mold shields, the combination of the frame-work or carriage with the top shield fitting over the mold or series of molds and vertically adjustable in the carriage, substantially as and for the purposes set forth.

In testimony whereof I, the said JOHN PEDDER, have hereunto set my hand.

JOHN PEDDER.

Witnesses:

F. G. KAY,
JAMES I. KAY.