

Z. Ellis,

Casting Tool.

No. 98676.

Patented Jan. 11. 1870.

Fig. 2

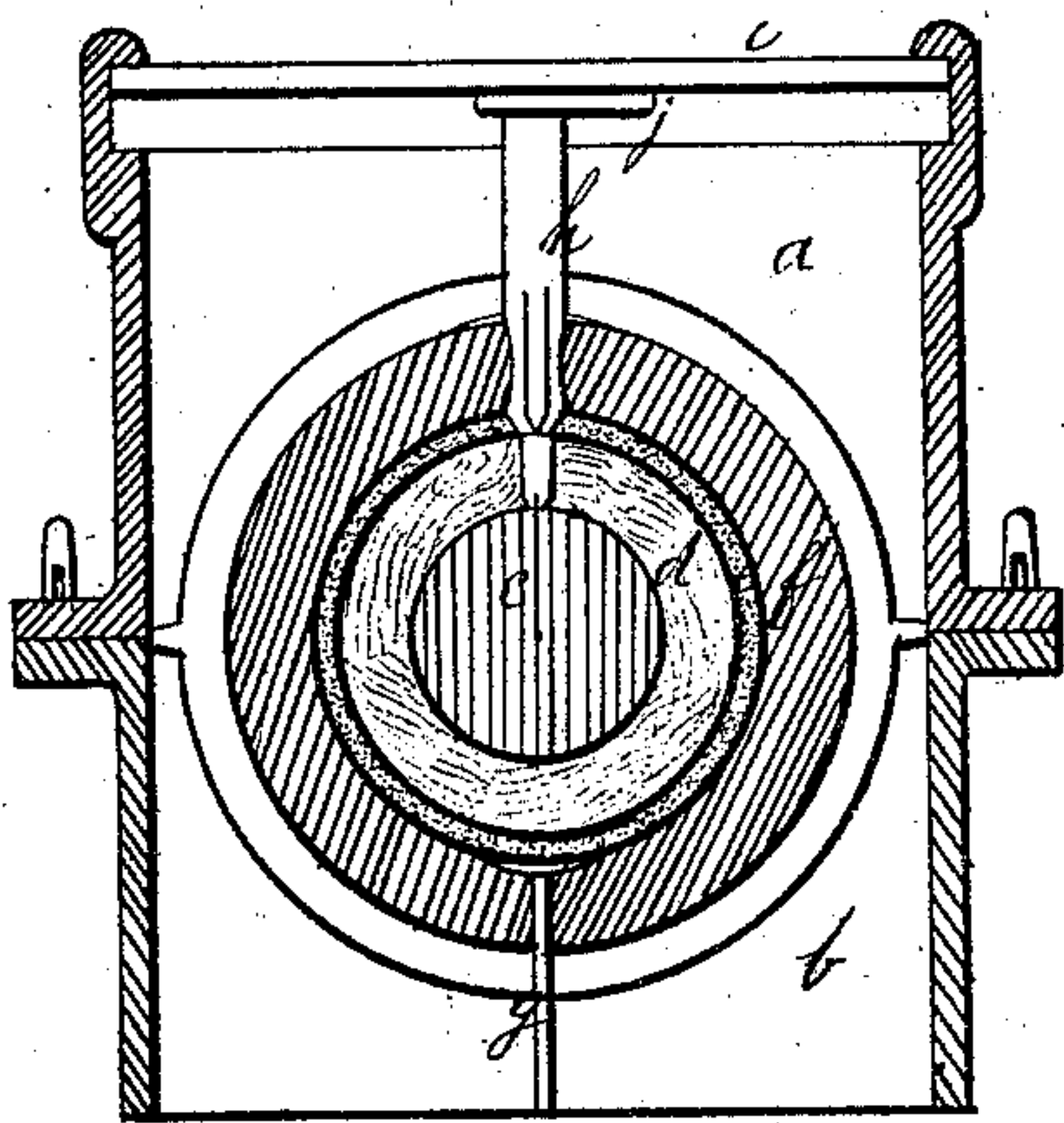


Fig. 1

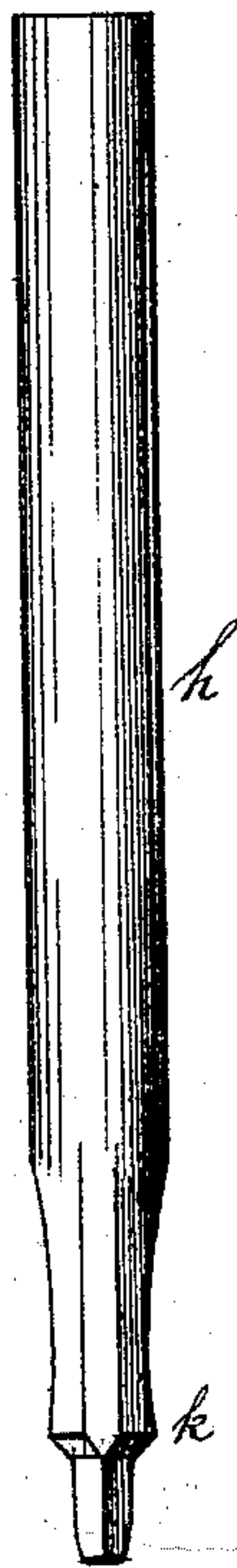
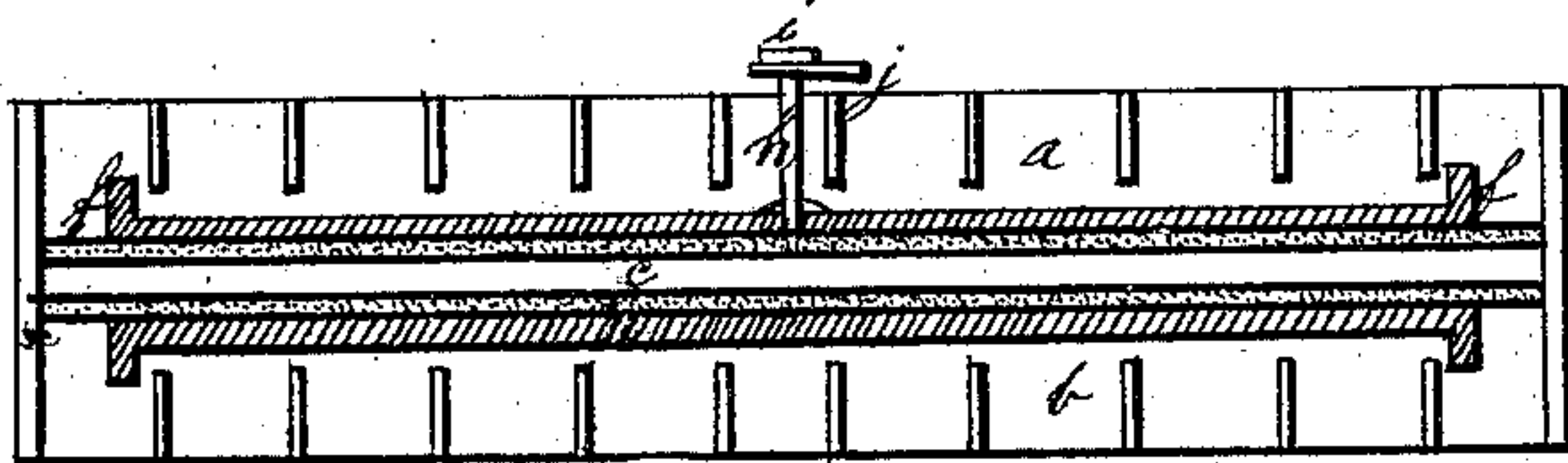


Fig. 3



Witnesses

W. A. McKimley
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Inventor:

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ZABINA ELLIS, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 98,676, dated January 11, 1870.

IMPROVEMENT IN ANCHOR FOR SECURING CORES IN MOULDS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, ZABINA ELLIS, of Philadelphia, Pennsylvania, have invented a new and useful Mode of Securing Cores in Moulds for pipe-castings; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and the several letters marked thereon.

In the drawings—

Figure 1 represents, in perspective, the full-sized cast-iron anchor or implement employed by me for securing cores.

Figure 2, a transverse section of an ordinary two-parted flask as prepared for the casting of a pipe, it being cored and rammed up in the usual manner, the core, however, being secured from the upper side, according to my improved mode.

Figure 3 is a longitudinal vertical section of a similar flask, similarly cored and rammed up, the core being also shown as secured by my improved mode.

In casting iron pipes, some plan of securing the core, to prevent its rising in the mould, when the molten metal is introduced, has to be employed.

The core is supported from below by the sand in the flask, or by metallic sockets in the sides of the flask, or by anchors, two or more, such as are shown at *g*, fig. 2, and to secure the core from above, an anchor, similar to the anchor *g*, has been, or several such anchors have been, hitherto employed.

In such case the curved head of each anchor abuts against the loam of the core, and the leg of the anchor being projected through a hole in the cope or top half of the flask, is held down by a clamp, one form of which is shown in fig. 2.

This mode of anchoring cores I have found to be defective, in this, that the pipes so cast are of uneven and uncertain thickness, being thicker in those parts formed in the lower part of the mould, and thinner in opposite parts. This defect is due to the imperfect mode of anchoring from the cope. The cope-anchor not being in contact with the solid spindle of the core, permits the core to rise from the yielding of its hay

rope and loam as the molten metal is poured into the mould.

I obviate these defects, and secure the casting of pipes with even thickness, by employing an anchor, which can be inserted through a hole in the cope, and driven through the loam and hay rope of the core directly against the metallic spindle of the core, as represented in figs. 2 and 3.

Referring to the drawings—

a represents the cope, and *b*, the drag, or upper and lower halves, respectively, of the flask.

c, the metallic spindle of the core.

d, the hay rope, wound about the spindle.

e, the loam, which coats the hay rope.

f, the space for the metal.

g, the anchor, having a curved head for supporting the core, from the drag, in its place in the mould.

h, an anchor, such as I employ for securing the core from the upper side.

i, a clamp, and

j, a wedge, for holding the anchor *h* in place.

The driving-end of the anchor *h*, it will be seen, has increased thickness, forming a shoulder at *k*, fig. 1. I prefer to give it this form, with the view of increasing its power of resistance against the action of the hot metal. This form I employ in casting pipes of twelve inches diameter, and other heavy pipes; but for light pipes, or pipes of less diameter, the anchor *h* may be of a continuous taper from the driving-end, or it may, in either case, be in the form of a bar of small diameter, cylindrical from end to end; but in this form it cannot be so readily driven through the loam and hay rope.

Having thus described my invention,

I claim, and desire to secure by Letters Patent—

The anchor *h*, constructed in the manner and for the purpose substantially as set forth.

ZABINA ELLIS.

Witnesses:

W. A. A. MCKINLEY,
W. B. SPOONER.