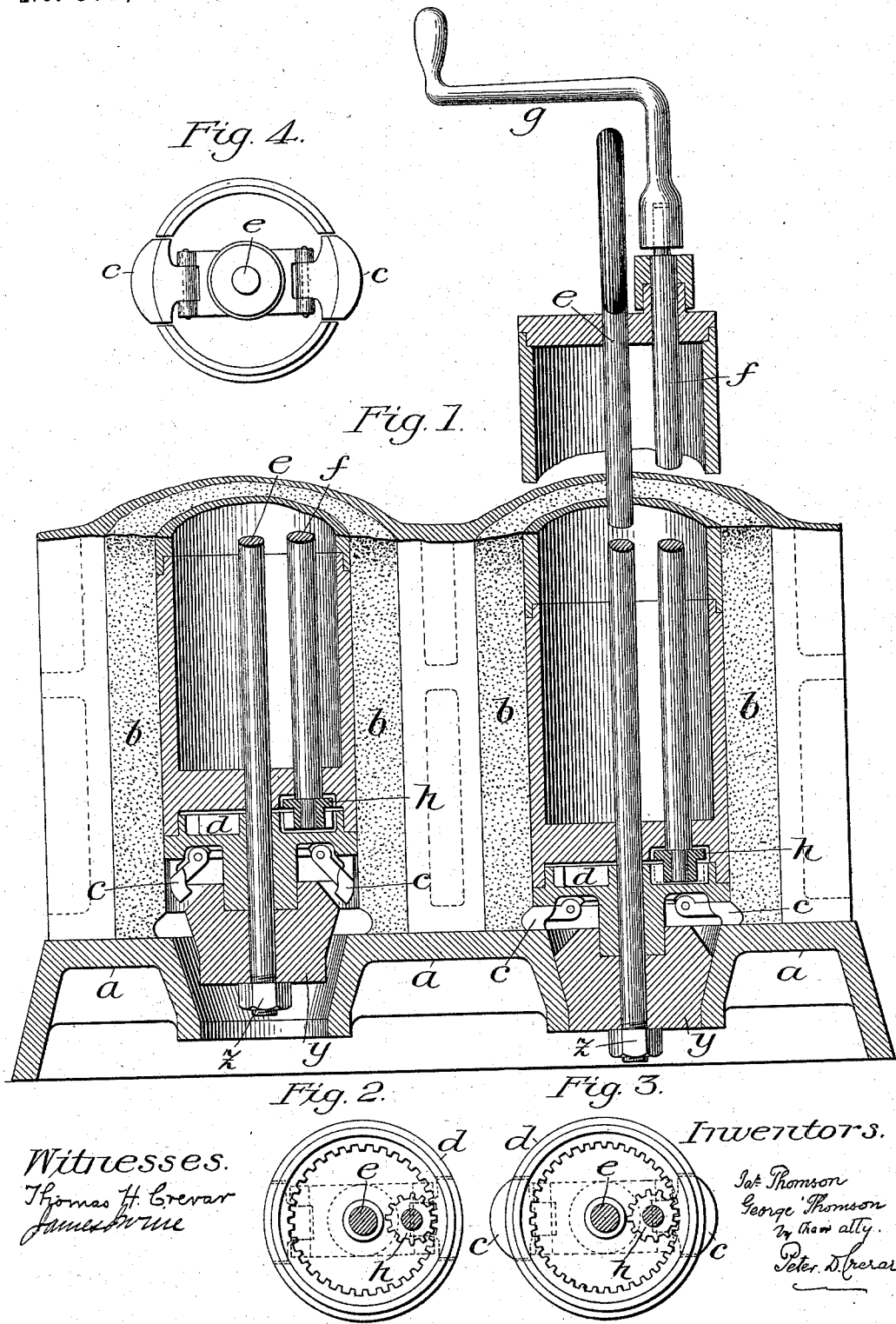


(No Model.)

J. & G. THOMSON.
IRON PIPE PATTERN.

No. 571,413.

Patented Nov. 17, 1896.



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UNITED STATES PATENT OFFICE.

JAMES THOMSON, OF HAMILTON, AND GEORGE THOMSON, OF DUNDAS,
CANADA.

IRON-PIPE PATTERN.

SPECIFICATION forming part of Letters Patent No. 571,413, dated November 17, 1896.

Application filed December 23, 1895. Serial No. 573,046. (No model.)

To all whom it may concern:

Be it known that we, JAMES THOMSON, pipe-founder, residing at the city of Hamilton, and GEORGE THOMSON, machinist, residing at the town of Dundas, in the county of Wentworth, in the Province of Ontario, Canada, both being British subjects, have invented certain new and useful Improvements in Iron-Pipe Patterns, being a device or apparatus to be attached to the ends of iron-pipe patterns for the purpose of insuring an absolutely true and concentric bead on iron pipes; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to use the same.

Heretofore the pattern for the portion of an iron pipe which is called the "bead" has been separate and detached from the pattern for the body of the pipe, and in order to obtain a mold for a pipe with its bead the pipe-pattern has been placed on top of the pattern for the bead and fastened there while the molding sand was rammed around the pattern. The pattern for the body of the pipe was then withdrawn from the mold and the mold lifted off the bead-pattern (which was on the ramming-stool) and transferred to the pouring-seat. If the pipe-pattern, which is cylindrical in shape, had a projecting end corresponding to the bead on the pipe, it would be impossible to withdraw the pattern from the mold without destroying the mold, as the diameter of the bead is greater than the diameter of the pipe immediately next to it. As a consequence of this method of molding pipes it frequently happens that the bead is not exactly concentric with the pipe, and the pipe has to be rejected on that account.

The object of our invention is to make the pattern for the bead an integral part of the pattern for the pipe and to secure a bead that must necessarily be exactly concentric with the pipe. We attain that object by the mechanism illustrated in the accompanying drawings, in which—

Figures I and II are longitudinal sections of a pipe-pattern with the apparatus in question attached to the foot or lower end thereof. Fig. I at the right represents the pipe-pattern in position on the pouring-seat with the sand

rammed about it, and at the left represents the pattern in the act of being withdrawn from the mold. *a a* represent the pouring-seat, and *b b* the sand rammed around the pattern. Figs. II and III represent cross-sectional views of a pipe-pattern with the device in question attached. Fig. IV is a plan view of the device in question viewed from below.

Similar letters refer to similar parts throughout the several views.

The essential feature of the invention consists of one or more metal "slicks" or "slickers" *c c*, hinged to a gearing *d*, which gearing revolves around an axis formed by the rod *e*, running through the center of the pattern, the revolution of the gearing being produced by a rod and crank *f* and *g*, ending in a pinion *h*. When the pattern rests on the pouring-seat, the slicks from the upward pressure of the pouring-seat take the position indicated at the right of Fig. I, and the outer ends of the slicks, which project beyond the line of the pattern, correspond in outline to the outline of the bead to be formed on the end of the pipe. When the pattern is in this position, the sand is rammed in the ordinary way. The gearing, to which the slicks are attached is then made to revolve by turning the crank controlling the rod *f*, and thus the mold or matrix for the bead is formed in the sand. When the pattern is withdrawn from the mold in the ordinary way and as it is raised from the pouring-seat, the outer ends of the slicks fall downward and inward by their own weight, as shown at the left of Fig. I, and thus make no interference with the mold for the pipe.

In Fig. I the rod *e*, running longitudinally through the center of the pattern, is an ordinary rod of a pipe-pattern fastened to the head of the pattern by a block *y* and nut *z*, and said rod, nut, and block are no part of our invention, but are common to all pipe-patterns in ordinary use.

Fig. II shows the pinion at the end of the rod *f*, controlling the movement of the gearing *d*, to the under side of which the slicks are hinged.

In Fig. II the slicks are supposed to be in the position indicated at the left of Fig. I.

Fig. III is a similar view to Fig. II, except

that the pattern is supposed to be resting on the pouring-seat, and the slicks *c c* are in position to form the mold for the bead, as represented at the right of Fig. I.

- 5 Fig. IV is a view of the under side of the gearing *d*, showing the form of the slicks adopted by us and the method in which they are hinged to the gearing.

10 It is manifest that it is immaterial how many slicks there may be, and that one slick would do the work as well as two or more. If only one slick is used, the beader will have to make one complete revolution to form the mold. If there were several slicks, a partial
15 revolution of the beader would be sufficient.

What we claim as our invention, and desire to secure by Letters Patent, is—

- 20 A mechanical device to be attached to the foot or lower end of iron-pipe patterns to form a mold or matrix for the bead consisting of one, two or more slicks or slickers *c c*, each

so connected by a hinge to the under side of a plate or gearing *d d*, revolving around the axis of a pipe-pattern, that when the pattern is suspended perpendicularly, the slicks of 25 their own weight fall to such a position, that their outermost point is within the lines of the external surface of the pattern, but which when the pattern is resting on its end, project beyond the line of the pattern, and can be 30 made to revolve in that position by means of a crank *g*, rod *f*, and pinion *h* acting on the plate or gearing to which the slicks are hinged, such slicks being so shaped at their projecting-ends, as to excavate in the sand a mold or 35 matrix for a pipe-beading; all substantially as above set forth.

JAS. THOMSON.

GEORGE THOMSON.

Witnesses:

THOS. H. CRERAR,

JOHN I. STUART.