J. B. & M. F. Poague,

Tile Machine.

No. 10,286. Patented Nov. 29, 1853.

Fig. 1.

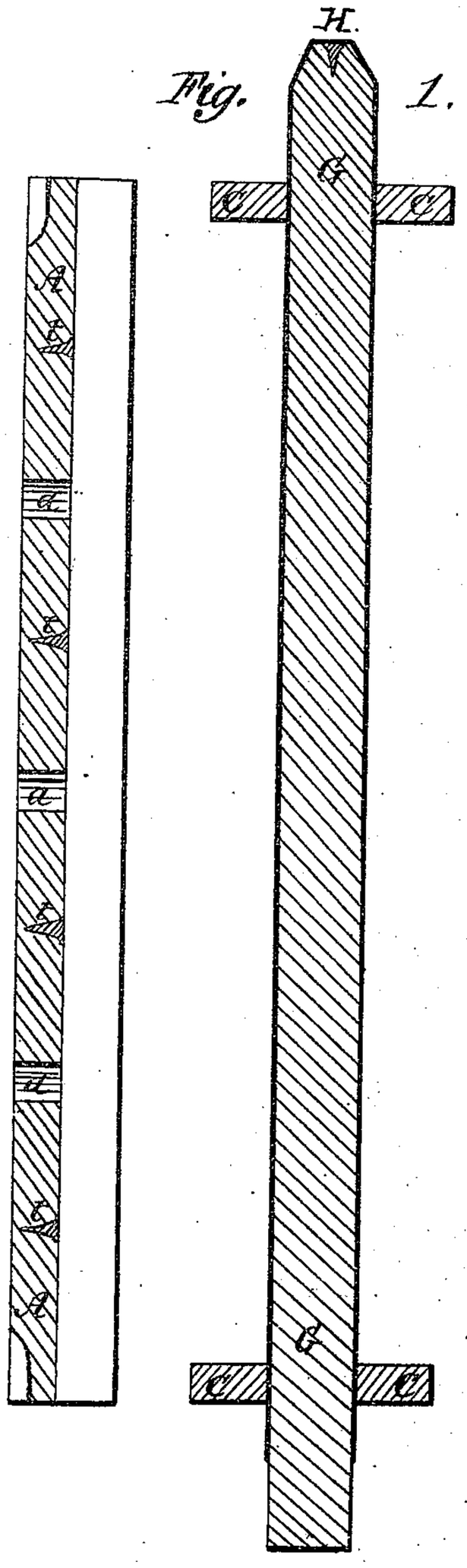


Fig. 3.

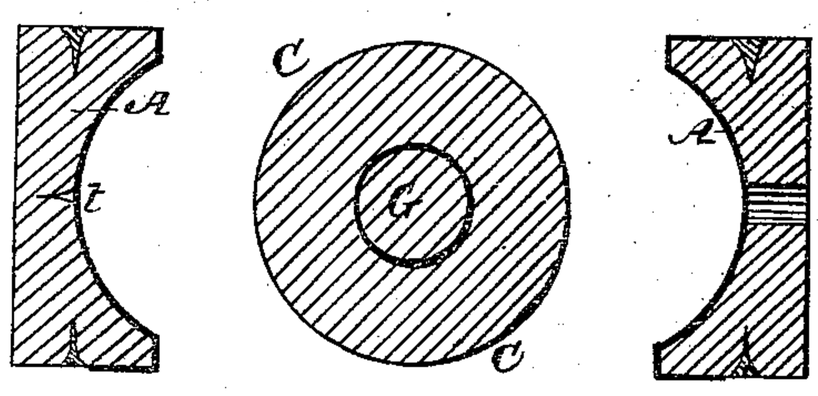


Fig. 4.

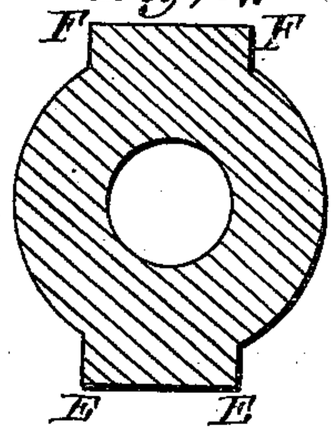
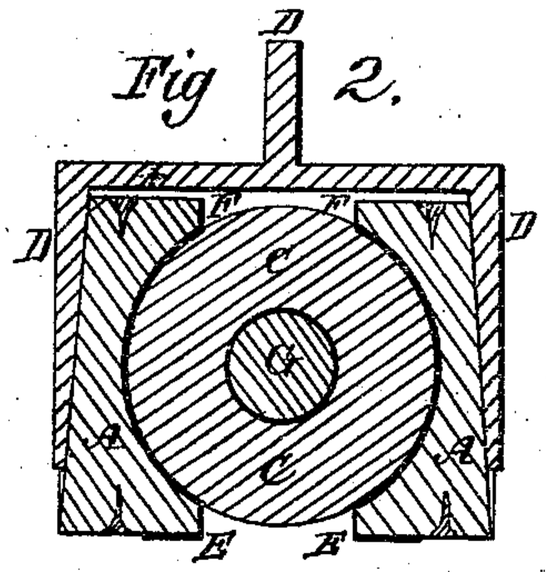


Fig 2.



UNITED STATES PATENT OFFICE.

JOHN B. POAGUE AND WM. F. POAGUE, OF FANCY HILL, VIRGINIA.

FORMING HYDRAULIC-CEMENT PIPES.

Specification of Letters Patent No. 10,286, dated November 29, 1853.

To all whom it may concern:

Be it known that we, JOHN B. POAGUE and WILLIAM F. POAGUE, of Fancy Hill, in the county of Rockbridge and State of Virginia, have invented certain new and useful Improvements in the Method of Constructing Molds for the Formation of Hydraulic-Cement Pipes; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part thereof, in which—

Figure 1, represents a horizontal section taken through the mold, mandrel and its supporting blocks. Fig. 2, represents an end view of the mold, mandrel and supporting blocks in place, and clamped. Fig. 3 represents an end view of the same removed from each other as in Fig. 1, and Fig. 4, represents the shape of the pipe when cast or formed.

Similar letters in the several figures denote like parts.

In the forming of cement pipes in the trenches in which they are designed to remain, great difficulty is encountered in the removing of the molds and mandrel by which they are formed. For it is well known that the material will "set" almost instantly after it is poured into the molds, and they must be removed so as not to break, jar, or injure the pipe, it being designed to lay or remain in the precise spot where it is molded.

The nature of our invention consists in forming the molds of two side pieces, which are permanently lined with cloth or similar porous flexible material, on their insides, and provided with air openings, between which openings the cloth is tacked or otherwise fastened to the molds, so that when the molds are opened at one end, the cloth will strip or part from the pipe, the air tubes or openings allowing the air to pass in between the cloth and pipe to facilitate the operation, and thus leave the pipe in its green or undried state in the precise spot where it was molded.

Secondly, in covering the mandrel with a bag, made to fit it, of cloth or other suitable material, which bag is fastened to that end of the mandrel which is within the pipe, so that in withdrawing the mandrel the bag or covering will turn inside out, and strip from the caliber of the pipe, without in the least adhering, or jarring, or straining of the pipe. This also enables us to allow the mandrel to remain longer in the pipe, and, for it (the pipe) to become more hardened, anl also, to use a straight instead of a conical or tapering mandrel.

Thirdly, in leaving the molds open at the botttom and top, one or both, but more especially at the bottom, for forming a base to the pipe, at the time it is molded, on which the pipe rests upon the ground after the molds are removed, which prevents the pipe from rolling or moving after it is formed, and materially strengthens it.

To enable others skilled in the art to make and use our invention, we will proceed to describe the same, with reference to the drawings.

The sides A, A, of the mold are made substantially of wood or metal, and dressed out on their insides to suit the outer perimeter of the pipe to be formed. The inner surfaces of these pieces A, A, are lined with cloth *c*, *c*, (represented in blue colors in the drawings) which is permanently attached to the molds at various points by tacks *t*, *t*, &c., or otherwise, so as always to form an inside lining to the molds. At intermediate points between the fastenings *t*, *t*, are air passages *a*, *a*, through which as the molds are stripped from the pipe the air may pass in to prevent an unnecessary adhesion of the cloth to the pipe, the cloth yielding at and around the air passages, but permanently fixed, as before described where it is tacked to the mold. The molds do not meet at top and bottom, and when filled with the cement, form a pipe of the shape represented at Fig. 4, having a base E, E, which is formed with the pipe, and which is not removed from the spot where it is molded, thus strengthening the pipe, preventing it from turning, and keeping the pipe sufficiently far above the bottom of the trench to facilitate the easy molding and fitting of the next section. The rib F, F, on top of the pipe may or may not be used, as strength of pipe is required or not. A clamp D, Fig. 2, is used at various points in the length of the mold to hold the whole firmly together, and the rests C, C, for the mandrels are used in the well-known manner of using such devices, both being necessary in molding the first section, and after the first section is molded it becomes the guide and support of one end of the mandrel, and so on.

The mandrel G may be made straight, instead of tapering as heretofore done, which makes the opening in the pipe of uniform size, and which allows anything which will go in to it to pass through it, and leaves no reaction of the water therein to accumulate deposit. The mandrel is covered with a neatly fitting bag *b*, (represented in blue colors) which is securely fastened to the end of the mandrel which is within the pipe, so that in withdrawing the mandrel, the bag which encircles it will be turned inside out, and be stripped from the pipe as it follows the mandrel. This not only admits of the mandrel being perfectly straight, and yet easily withdrawn, but it enables us to let the mandrel remain longer in the pipe and until it becomes sufficiently hard, not to be damaged by the withdrawing of the mandrel.

Having thus fully described the nature of our invention, what we claim therein as new, and desire to secure by Letters Patent, is—

1. In combination with the molds permanently lined with cloth or other porous flexible material, the air spaces intermediately placed between the fastenings of the cloth, so that it may give to the pipe or mold as it is stripped from the pipe, substantially as described.

2. We also claim the manner of withdrawing or stripping the cloth from the inside of the freshly formed pile, by attaching it to the end of the mandrel, so that in withdrawing the mandrel, the cloth will turn inside out, and strip from the pipe, substantially as described.

JNO. B. POAGUE.
WM. F. POAGUE.

Witnesses:
JOHN J. MOORMAN,
JOHN J. KIDD.