H. A. Goodrich,

Making Clay Pipe,

No. 66,320, Fig 1. Patented July 2, 1867.

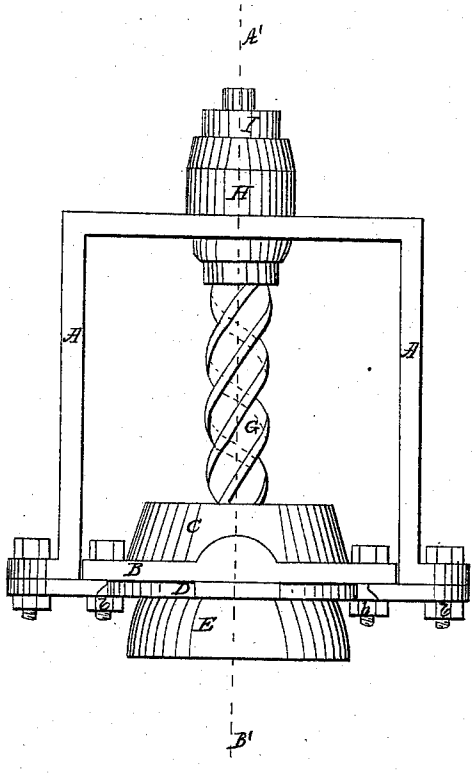


Fig 2.

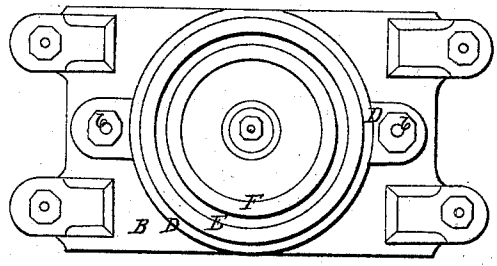
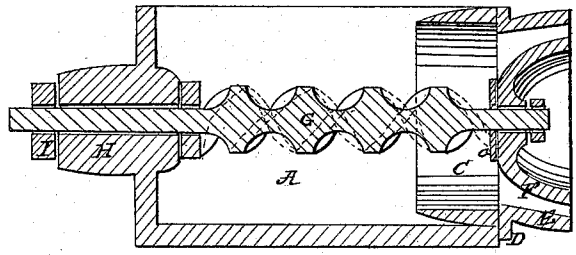


Fig 3.



Witnesses;

F. W. King
G. M. Sleeper

Inventor;

H. A. Goodrich

AM. PHOTO-LITHO. CO. N.Y. (OSBORNE'S PROCESS)

United States Patent Office.

HORACE A. GOODRICH, OF JOLIET, ILLINOIS.

Letters Patent No. 66,320, *dated July* 2, 1867.

IMPROVEMENT IN THE MANUFACTURE OF CLAY PIPES.

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, HORACE A. GOODRICH, of Joliet, in the State of Illinois, have invented certain new and useful improvements in Machinery for the Manufacture of Clay Pipes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a top or plan view,

Figure 2 a front view, and

Figure 3 a vertical section.

Like letters refer to the same parts in all of the figures.

The nature and objects of my invention consist in improving the moulds or dies and plates of the box or machine usually placed below a pug-mill for the purpose of forcing clay pipes out horizontally, by attaching the inner flange or gatherer to one plate, and the outer ring or portion of the mould to another which is adjustable, and in supporting the front end of the screw or beater by a bridge so located as not to interfere with the action or operation of the screw or injure the pipe. In the machines heretofore in use a large hole has been made in the front plate, and the internal flange or gatherer attached to the outer ring of the mould and inserted through the hole, while the outer or front end of the screw was not supported at all, by which arrangement it was and is exceedingly difficult to keep the central part of the mould or die in the centre of the pipe, and almost impossible to centre it after the clay was in the box, as the clay filled the space between the flange and the plate, and could only be overcome by prying out the mould at the side and wedging it. By my improvements these difficulties are all overcome, and the operation of the box and mould very much improved.

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

The box A is made of iron, or other suitable material, and of the usual dimensions. The front plate B is made to fit the end of the box, and is fastened by bolts and flanches, substantially as shown. To this plate I cast or otherwise attach a flange, C, which is suited to the size of the pipe in diameter, and projects about four inches, and is brought nearly to a sharp edge by bevelling the outer side. This flange need not necessarily go entirely around the screw, as in some of the places the box can be made to perform its office. The outer face of the plate B is smooth, and against this I place a smooth-faced plate, D, which is attached by the bolts *b* which pass through the plate B, fitting it closely, and through the plate D through holes which are about twice the size of the bolts, leaving a space for the plate D to be adjusted upon the bolts, so as to be equidistant from the central part F of the mould at all points. When it is adjusted the nuts are screwed down so that it will remain as placed. The central part of the mould or die F is attached to the end of the screw or beater-shaft G, and may revolve with it. The screw or beater-shaft is supported in the main by the elongated bearing H, so that the bridge *a* will not require to be made of great strength. The bridge *a* is placed across the opening in the plate B, and supports the screw G. It is placed between the revolving die and the screw or beater, and the flaring space between the ring E and the revolving centre or core F being so arranged that while it increases in size it diminishes in the distance between the two. The pipe is actually formed after passing the bridge, so that it does not injure the pipe, and adds greatly to the steadiness of the machine, and facilitates keeping the mould in proper position. And by this arrangement of the plates and mould or dies I am enabled to change them in size with facility, and without disturbing the clay in the box. The screw is operated by the wheel I, and an ordinary pug-mill placed over or at the side of the box A, as it is immaterial whether the clay pipe is forced out in a vertical or horizontal position. Its operation will be understood from its construction.

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

1. The bridge *a*, when located between the screw or feeding portion of the shaft G and the revolving core F of the mould in a clay-pipe machine, substantially as and for the purposes specified.

2. The plate B, when provided with a gathering flange, C, projecting inwards and permanently attached, substantially as set forth.

3. The plate D, when provided with the outer portion E of the mould, and made adjustable by means of the holes and bolts *b*, substantially as described.

H. A. GOODRICH.

Witnesses:

S. W. KING,

GEO. M. STERN.