H. B. CAMP.

Machine for Forming Sockets on Curved Earthenware Pipes.

No. 165,710. Patented July 20, 1875.

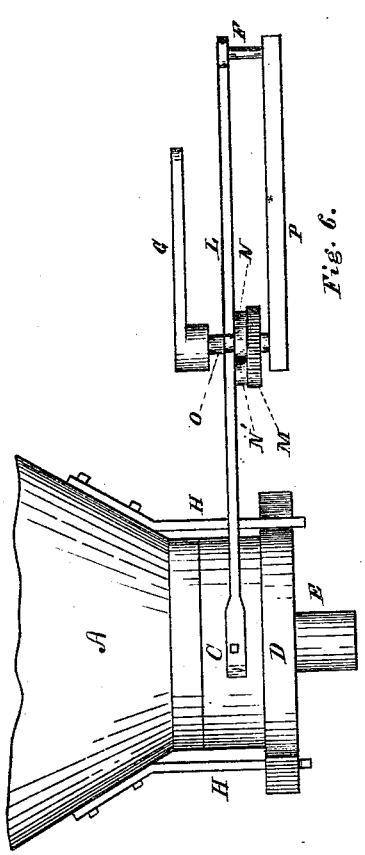

Fig. 6.

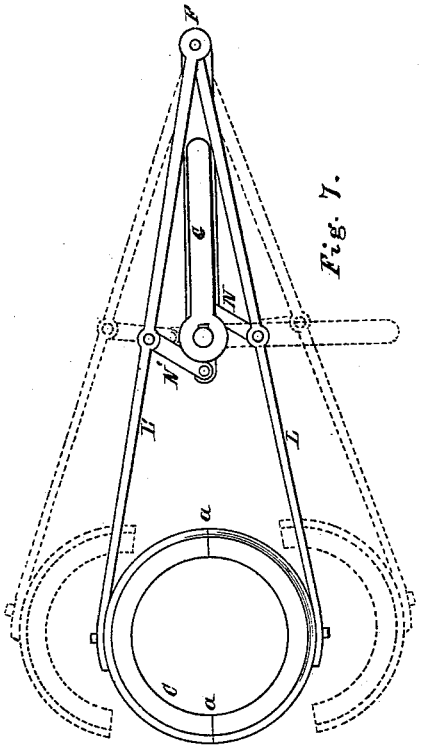

Fig. 7.

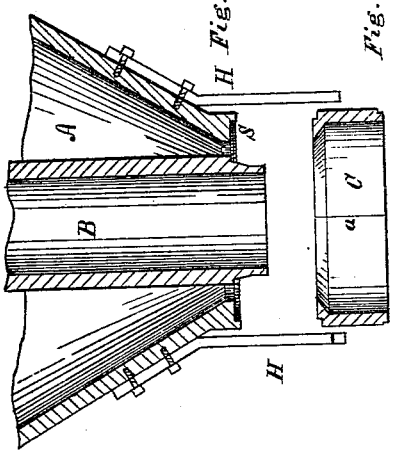

Fig. 1.

Fig. 2.

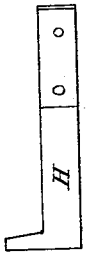

Fig. 3.

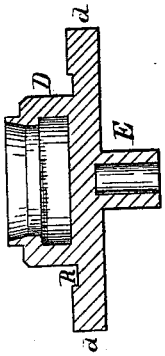

Fig. 4.

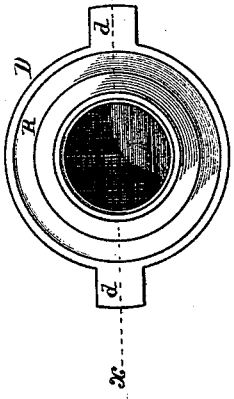

Fig. 5.

Witnesses:
Geo. S. May.
John H. Campbell

Inventor:
Horace B. Camp.
by Humphrey & Wright his Attys.

UNITED STATES PATENT OFFICE.

HORACE B. CAMP, OF CUYAHOGA FALLS, OHIO.

IMPROVEMENT IN MACHINES FOR FORMING SOCKETS ON CURVED EARTHENWARE PIPES.

Specification forming part of Letters Patent No. **165,710**, dated July 20, 1875; application filed March 24, 1875.

CASE B.

To all whom it may concern:

Be it known that I, HORACE B. CAMP, of Cuyahoga Falls, Summit county, Ohio, have invented an Improvement in the Manufacture of Sockets on Curved Earthenware Pipe, of which the following is a specification:

My invention has relation to that class of machinery for making pipes of clay or other plastic material by pressing it through an annular orifice between an outside die and an inside core, and its object is to form sockets on the end of sections of such pipe when said pipe is caused to curve as it issues from the orifice.

In order to present the distinctive features of my invention it is proper to state that ordinarily to form such sockets on sections of straight pipe, the outer die is prolonged beyond the point of discharge of such length and inside shape as to form the outside of the desired socket. When, however, the pipe curves as it issues from the orifice this device is impossible, as the issuing pipe encounters the edge of this socket-die and is destroyed. To obviate this difficulty I construct the socket-die separate from the other parts of the machine, in the form of a ring, divided into two parts, so as to permit of its being removed; and the first part of my invention relates to the method of holding this severed ring firmly in place until the socket is formed, which consists in fitting its upper edge into a groove in the lower face of the outside die, and its lower edge into a groove in a flange projecting from the base of the die, which forms the inside of the socket; and the second part of my invention relates to a combination of arms and links for manipulating the parts of the ring.

For the purposes of this specification I adopt the following nomenclature:

That part of the pipe-press which forms the outside of the annular orifice through which the pipe issues—the outside die. The piece suspended centrally within this, and which forms the bore of the pipe—the core. The die which forms the inside of the socket—the lower die—and the severed ring which is interposed between the outside die and the flange of the lower die, and forms the outside of the socket—the ring.

Referring to the drawing accompanying, Figure 1 is a sectional view of a portion of the lower part of a pipe-press, wherein A is the outside die, and B the core; the outside die A having a groove, S, in its lower face to receive the upper edge of the ring.

Fig. 2 is a central section of the ring C, divided in half at the line *a*, (a plan of which is shown in Fig. 7,) and having its upper edge turned to accurately fit in the groove S, in the outside die A, and its lower edge fitted in the same manner for the groove R of the flange of the lower die D.

Fig. 5 is a plan and Fig. 4 a section at the line *x x* of the lower die D. Upon alternate sides of the flange of this die are two lugs, *d d*, which lock into hooks H H attached to the outside die A, and hold the several parts together while the socket is formed.

Fig. 3 is a side view of one of the hooks H.

In operation the lower die D, by means of the collar E projecting from its base, rests upon a following rod, (not shown,) which moves in the line of the axis of the press. The ring C is then placed thereon, with its lower edge fitting into the groove R. The whole is then raised to the press, the upper part of the lower die D joining, and forming a continuation of the core B, and the ring C entering into the groove S. The lower die D is then revolved until the lugs *d d* lock into the hooks H H, as shown in Fig. 6, the whole forming a complete mold for the socket. When the socket is formed the lower die D is withdrawn and the ring C separated and removed.

To facilitate the manipulation of the ring C I attach to the segments thereof the arms L L′, (see Figs. 6 and 7,) hinged upon the wrist F attached to the bar P. Upon the wrist O, journaled in the bar P, are fastened the lever G and link M, and opposite ends of the link M are connected with the arms L L′ by the links N N′, the whole so arranged that by revolving the lever G the arms L L′ may be caused to diverge or approach each other, carrying the segments of the ring C.

The simple divided ring C, for the purpose

of making sockets on sections of straight pipe, is not new, but the method of holding it by means of the grooves in the dies A and D, and manipulating it by means of the arms L L′ and attachments I believe to be original with myself.

What I claim, therefore, is—

1. The divided ring C, when arranged to fit into grooves in the dies A and D, respectively, in combination with said dies, substantially as and for the purpose hereinbefore set forth.

2. The herein-described manipulating device, consisting of the arms L L′, hinged on the wrist F, carrying the segments of the ring C, and moved by the lever G and links M, N, N′, substantially as and for the purpose hereinbefore set forth.

HORACE B. CAMP.

Witnesses:

DAVID FOSDICK,

I. L'HOMMEDIEU.