

1,042,307.

2 SHEETS—SHEET 1.

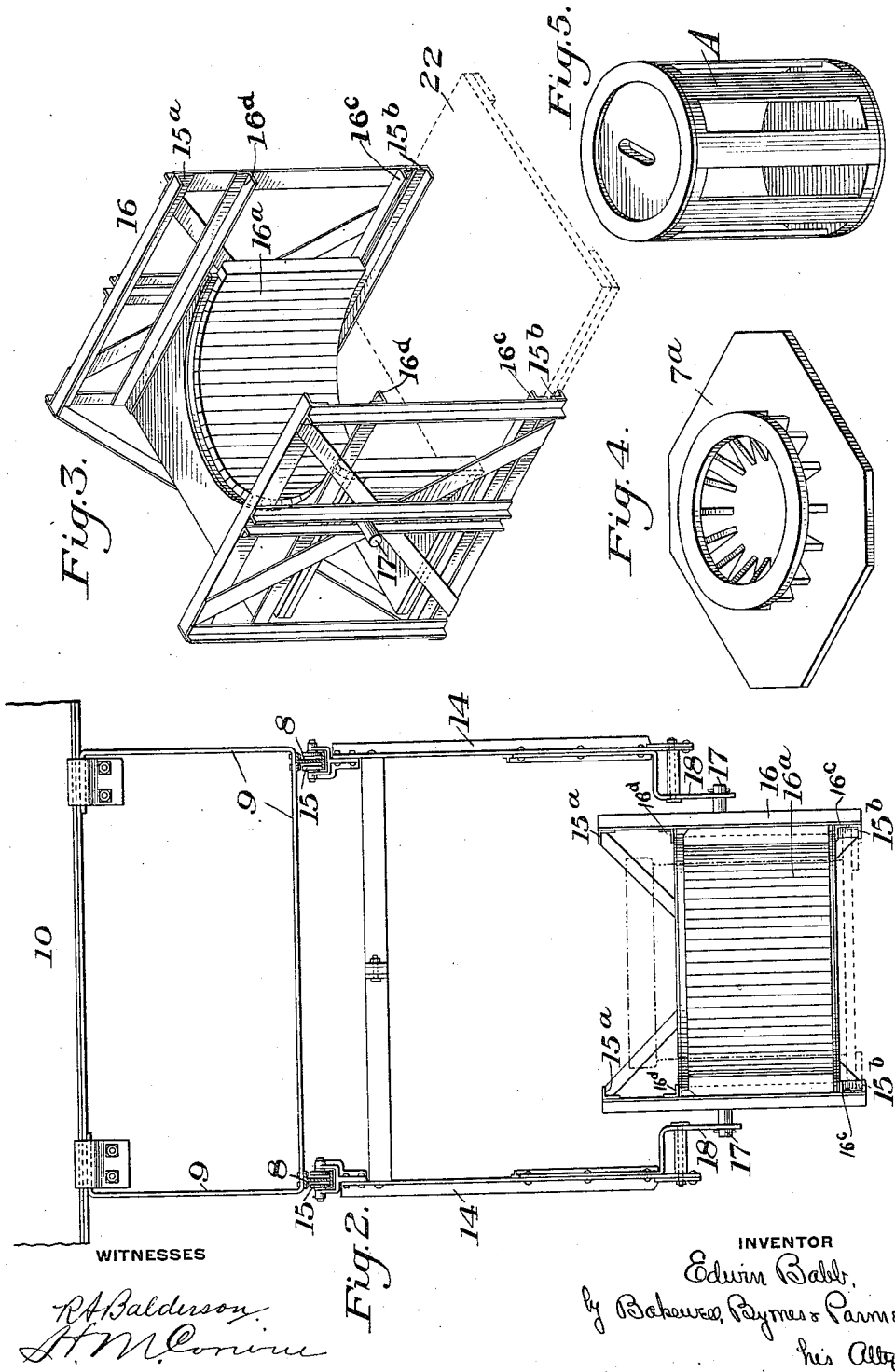


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 APPARATUS FOR HANDLING CLAY PIPES.
 APPLICATION FILED MAR. 13, 1908.

1,042,307.

Patented Oct. 22, 1912.

2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

EDWIN BABB, OF AKRON, OHIO.

APPARATUS FOR HANDLING CLAY PIPES.

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Specification of Letters Patent.

Patented Oct. 22, 1912.

Application filed March 13, 1908. Serial No. 420,884.

To all whom it may concern:

Be it known that I, EDWIN BABB, of Akron, in the county of Summit and State of Ohio, have invented a new and useful Improvement in Apparatus for Handling Clay Pipes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of apparatus embodying my invention; Fig. 2 is a front elevation of the cradle and its support and carrier; Fig. 3 is a perspective view of the cradle detached; Fig. 4 is a perspective view of the socket plate; and Fig. 5 is a perspective view of the drum for preventing the collapsing of the pipes. Fig. 6 is a sectional view through the cradle 16, showing a pipe in position in the cradle just before the pipe has been moved from its position under the press.

In the manufacture of clay or terra cotta pipes, such as sewer and water pipes, where the pipes are formed by forcing the clay downwardly through a press and forming die, with their bell ends downward, it is necessary to invert the pipes after they are taken from the press, so that they may be dried with their bell ends upward. This operation has heretofore been performed by manual labor.

The object of my invention is to provide apparatus of simple, convenient and effective character which is arranged to receive the pipes as they are delivered from the forming die and invert them in a position for drying, after which they may be delivered from the apparatus upon a suitable car, truck or other conveying device for transportation to the place of drying.

The precise nature of my invention will be best understood by reference to the accompanying drawings, in which I have shown one embodiment thereof and which will now be described, it being premised, however, that various changes in the details of construction and arrangement of the parts may be made by those skilled in the art, without departing from the spirit and scope of my invention as defined in the appended claims.

In these drawings, the numeral 2 designates a portion of a pipe-forming press, and 3 the usual die through which the clay or

forming material is forced to form the pipe, indicated at 4 in dotted lines in Fig. 1. 5 designates the usual socket-former or bell-forming die, which is carried by a rod 6, actuated by the usual power cylinder. In operation the rod 6 is raised to bring the die or former 5 into the lower portion of the forming die 3, where it is held by engagement with the lugs 7. The press is then operated and after the bell has been formed on the lower end of the pipe, the rod 6 is lowered and a socket-plate 7^a (see Fig. 4) is inserted within the bell and between the lower end of the pipe and the die or former 5. The pipe is run to the proper length and is severed from the die. The rod 6 is then further lowered to a point near the floor level, after which the severed pipe is ready to be inverted and removed. The parts thus far described, together with the operation thereof, are of the usual character, and do not form a part of my invention, which has relation solely to the means provided for removing and inverting the formed pipes.

8 designates two track rails which are suitably supported by the connections 9, 80 from the overhead beams 10. These track rails are extending in cantaliver fashion to a considerable distance to one side of the press, being unsupported at their free end portions except by the limiting stops 11. These limiting stops are shown as consisting of headed bars or rods which are slidably engaged with yokes 12, attached to an overhead beam or support 13. The purpose of these stops is to permit a limited downward movement of the track rails 8 under the weight of the load thereon, as hereinafter more fully described.

14 designates a carrier which is provided at its upper end with wheels 15, which are arranged to travel on the bottom flanges of the track rails 8, which are shown as being of I-section. Pivottally supported between the side arms of this carrier at the lower portion thereof is a cradle 16, which is pivoted at about its vertical and horizontal center, and consists of a frame of any suitable construction, such as shown in Fig. 3, and in which is secured a rest or support 16^a for the pipes, which is composed of a plurality of wooden strips. This rest or support forms a semicylindrical supporting surface for the pipes. This section rest or support

is preferably removably secured in the frame of the cradle between two angle irons 16^c and 16^d in order that rests or supports adapted to pipes of different diameters may be used interchangeably in the same frame.

17 indicates the lateral trunnions of the cradle frame which are pivotally engaged with the depending portions 18 of the carrier 14.

19 is a lever which is pivoted on the support 13, before referred to, and which has lifting connections 20 with the free ends of the track rails 8, the opposite arm of the lever having a depending operating cord or other connection 21.

The operation is as follows: After a pipe has been formed and is severed from the die, it is lowered to a point near the floor level. A drum, such as shown at A in Fig. 5, is placed within the pipe to keep it from collapsing and the cradle which has, during the forming operation, been hanging in the position shown in Fig. 1, is inverted and brought into the position shown in dotted lines in Fig. 1, and in full lines in Fig. 6. In this position, the angles 15^a of the cradle frame can be run underneath the socket plate 7^a, after which the die or former 6 is lowered leaving the finished pipe resting on the socket plate, as shown in Fig. 6. The cradle is then moved along the track away from the press a sufficient distance to allow the press to be operated. A bat-board or supporting plate 22 is placed in the ways or angles 15^b of the frame 15, to form a support for the lower end of the pipe when inverted. In this manner, the pipe is transferred into the cradle, which is then turned on its pivots or trunnions to invert the pipe end for end. The carrier 14 is then run along the track rails 8, to a point near the end of such rails. The weight of the carrier and its load will deflect these rails downwardly sufficient to permit the pipe, which is now resting on the bat-board 22, to be deposited on a suitable car, truck or other conveyer (not shown), the bat-board 22 and the socket-plate 7^a being slid out of the ways or angles 15^a and 15^b. During this operation, the pipe may be eased upon the truck or other conveyer by the operation of the lever 19. The socket-plate and drum are removed while the pipe is being removed from

the cradle to the truck. The pipe remains on the bat-board until it is dried.

The advantages of my invention will be apparent to those skilled in the art.

The apparatus described forms a simple, convenient and effective means for removing and inverting the formed pipes without injury thereto and without manual labor, except such as is required to manipulate the cradle and its carrier, which is very slight. The removing and inverting can be quickly effected, leaving the press free to commence the formation of another pipe.

It will be obvious that the invention is susceptible of various changes. Thus the construction of the cradle and of its support, together with the arrangement of the track rails, may all be varied widely, since

What I claim is:—

1. An apparatus for handling clay pipes, comprising an invertible cradle adapted to be moved to and from the pipe forming machine, fixed supports at one end of the cradle for the reception of a socket plate having a pipe thereon, said cradle and support being arranged to be moved in a lateral direction over the socket plate, and fixed guides at the other end of the cradle for receiving and holding a laterally sliding bat-board in position to support the pipe when the cradle is turned; substantially as described.

2. An apparatus for handling clay pipes, comprising an invertible cradle adapted to be moved to and from the pipe forming machine, fixed supports at one end of the cradle for the reception of a laterally slidable socket plate having a pipe thereon, fixed guides at the other end of the cradle for receiving and holding a laterally slidable bat-board in position to support the pipe when the cradle is turned, and a removable semi-cylindrical support mounted in the cradle between the guides and supports for supporting the pipe when the cradle is being turned; substantially as described.

In testimony whereof, I have hereunto set my hand.

EDWIN BABB.

Witnesses:

P. M. OTT,
C. S. CASSLER.