J. WATSON.

CLAY-PRESS.

No. 169,871. Patented Nov. 9, 1875.

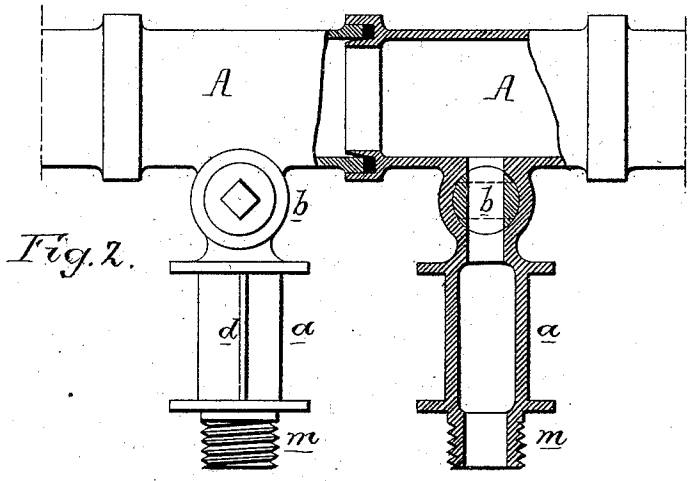


Fig. 2.

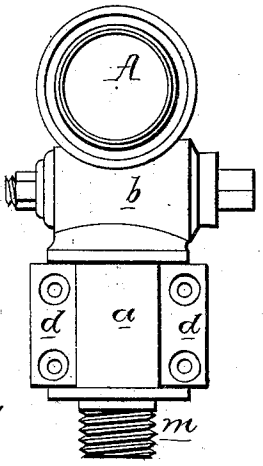
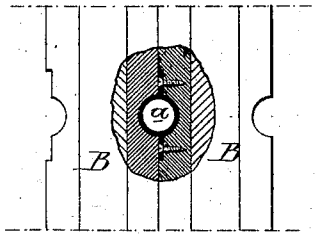
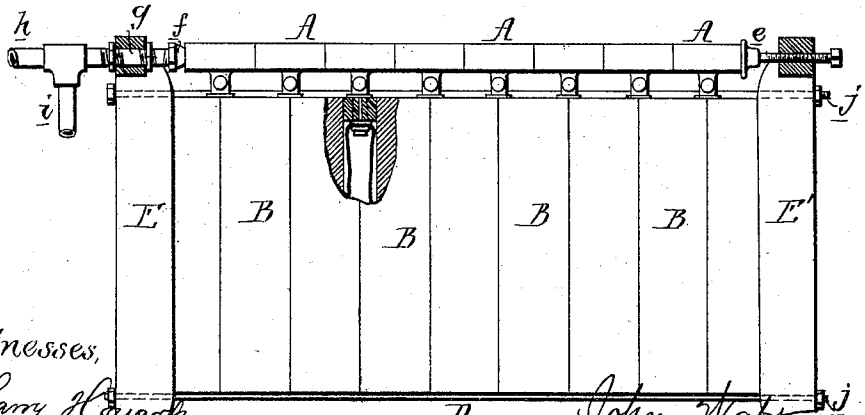


Fig. 3.

Fig. 1.

Fig. 4.





Witnesses,
Harry Hyatt
Harry Smith

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UNITED STATES PATENT OFFICE.

JOHN WATSON, OF TRENTON, NEW JERSEY.

IMPROVEMENT IN CLAY-PRESSES.

Specification forming part of Letters Patent No. **169,871**, dated November 9, 1875; application filed October 8, 1875.

To all whom it may concern:

Be it known that I, JOHN WATSON, of Trenton, New Jersey, have invented certain Improvements in Clay-Presses, of which the following is a specification:

My invention relates to improvements in apparatus for preparing clay for the manufacture of earthenware.

The ordinary process and appliances for this purpose may be briefly described as follows: A solution of the clay of about the consistency of cream—or, as it is technically termed, the "slip"—is first prepared, and this solution is forced through bags, of canvas, contained in narrow spaces between the boards or leaves of a press, as it has been termed, although no such pressure is applied to the leaves as will force the water from the bags, the slip being forced into the bags under pressure, and the bags being contained in receptacles between the leaves. The result of this is the escape of the main portion of the water through each bag, and the deposit therein of a cake of pure plastic clay, ready for use in the manufacture of earthenware.

The so-called bags are, in reality, sheets or strips of canvas, to an opening in the middle of which is attached the tube for the passage of the solution of clay, the sheet being folded in the form of a bag prior to being placed between the leaves of the press, and being subsequently unfolded, in order to remove the cake of clay which has been lodged in it.

Heretofore the solution of clay or slip has been conveyed through a stationary pipe, arranged over the top of the press, and extending the entire length of the same. This pipe communicated at one end with a force-pump, and was provided at intervals with branches, each of which had a suitable stop-valve, and was connected to a tube attached to one of the bags, the connections between the branches and tubes being such that the latter could be detached.

The objections to this plan are, the waste of time and labor involved in disconnecting the branch pipes from the main pipe and manipulating the stop-valves, a further objection being the liability of the solution to freeze in the main pipe.

These objections I overcome by constructing the apparatus in the manner shown in the drawing, in which—

Figure 1 is a side view, partly in section, of a clay-press with my improvements; Fig. 2, a side view, partly in section, of a portion of the pipes; Fig. 3, an end view of Fig. 2; and Fig. 4, a detached view of part of the press.

The main pipe, through which the clay solution under pressure is forced, consists of a number of sections, A, fitted together as shown in Fig. 2, each pipe having a branch, *a*, in which is an ordinary taper plug, *b*, or, in place of the latter, any suitable valve for cutting off the communication between the branch and the main pipe. The branch *a* of each section terminates in a threaded projection, *m*, to which the canvas bag is secured by a nut, and is also provided with two flanges, *d d*, by which it is secured to one of the boards or leaves B of the press, as shown in Fig. 4.

In building up the press, a number of leaves or boards, B, each with its branch *a* and a section of the main pipe A, are first arranged side by side on the base D, the ends of the said sections fitting loosely into each other in the first instance. The end frames E E′ of the press, which are fitted to the base, are then turned up, so as to bear lightly against the end leaves B of the series; and a screw-cap, *e*, carried by the frame E′, closes one end of the main pipe A, the opposite end being closed by a hollow plug, *f*, attached to a pipe, *g*, carried by the frame E, this pipe *g* being in communication with a pipe, *h*, leading to the force-pump, and with a discharge-pipe, *i*, both being furnished with suitable cocks. When the parts are all in proper position the end frames E E′ are drawn together by tightening the nuts on a number of stay-bolts, *j*, the effect of this being to force the leaves B together, and at the same time to tighten the joints between the sections of the main pipe A.

The clay solution is now forced through this main pipe and into the bags contained in the chambers between the leaves, and as soon as the bags are filled with clay the cock of the pipe *h* is closed and that of the pipe *i* opened, so that the solution may escape from the pipes A into a receptacle where it is free from the influences of frost, after which the nuts on the stay-bolts are removed, the end frames turned

down, and the leaves B of the press separated, in order to permit the removal of the clay from the bags.

It will be seen that, by forming the main pipe in sections, and providing each section with means of attachment to one of the leaves of the press, as described, the junction of the sections is effected simultaneously with the fitting together of the press, and the necessity of resorting to tedious manipulation thereby obviated.

It should be understood that the description of the press has been introduced solely with the view of more clearly explaining the character of my invention, the press itself being an old device heretofore used in the preparation of clay.

It is not essential that the sections of the main pipe A should be fitted together in the precise manner illustrated in the drawing, as different styles of joints may be employed.

I claim as my invention—

1. The combination, with a clay-press, of a main pipe, A, made in detachable sections, each section having a branch, *a*, and being constructed for attachment to one of the leaves of the press, all substantially as set forth.

2. The combination of the main pipe A of the press with an escape-pipe, *i*, as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN WATSON.

Witnesses:

HARRY HOWSON,

HARRY SMITH.