Apr. 3, 1923. 1,450,892

W. J. Mac NEILL

MOLDER'S PRESS

Filed Feb. 1, 1921 2 sheets-sheet 1

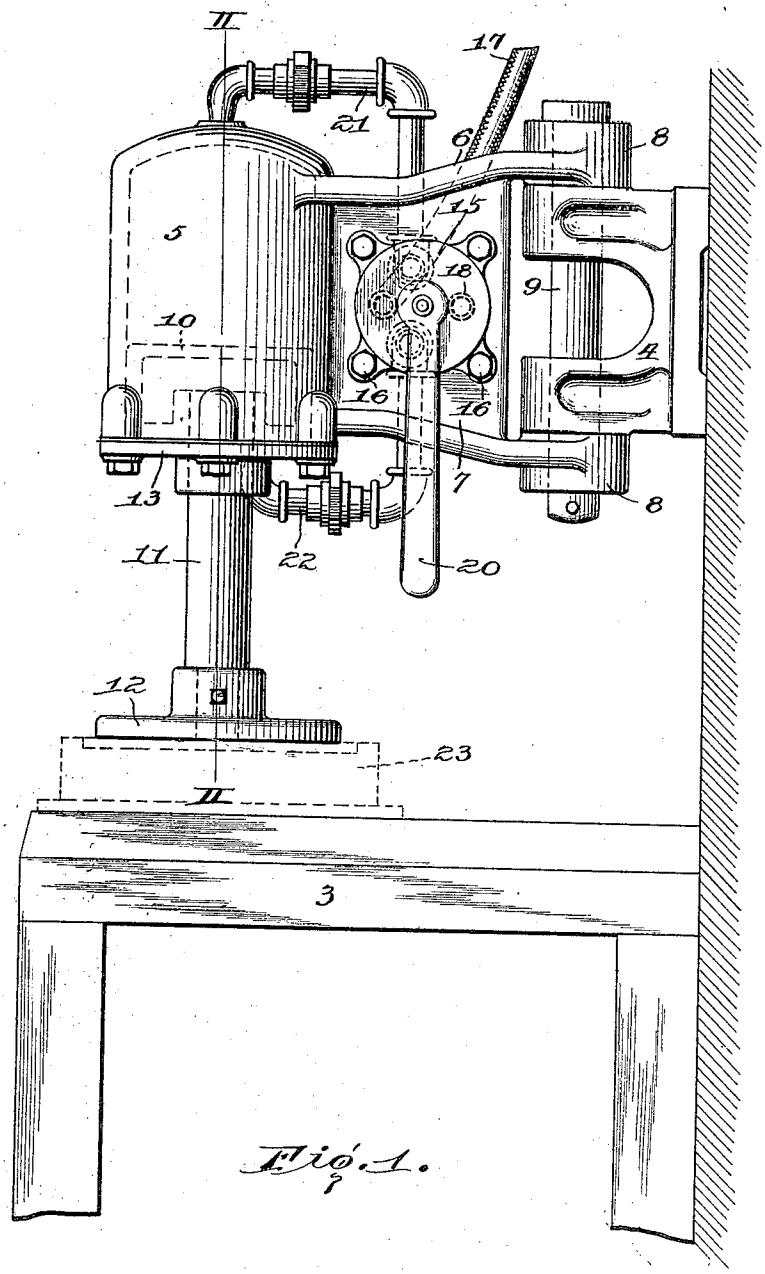


Fig. 1.

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William J. MacNeill.

By John S. Barker
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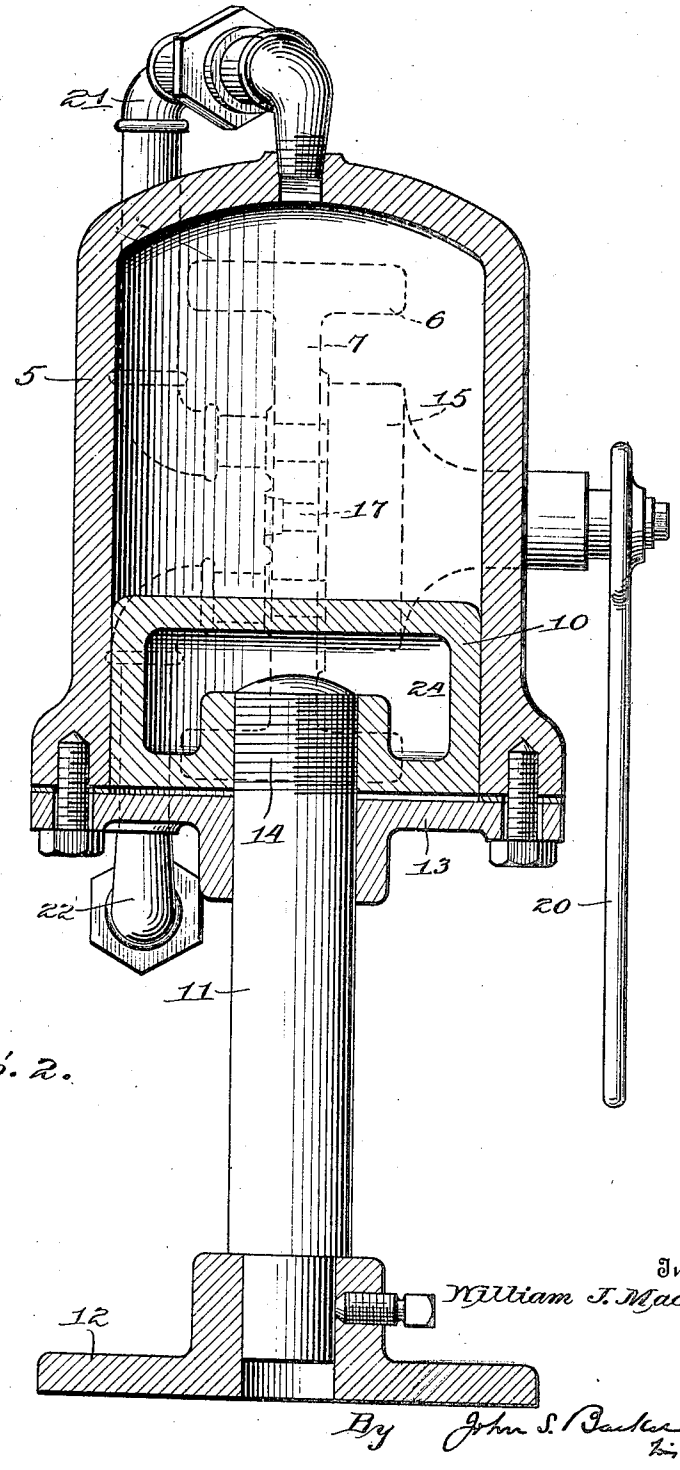


Fig. 2.

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Patented Apr. 3, 1923. 1,450,892

UNITED STATES PATENT OFFICE.

WILLIAM J. MacNEILL, OF WAUWATOSA, WISCONSIN, ASSIGNOR TO FEDERAL MALLEABLE COMPANY, OF WEST ALLIS, WISCONSIN, A CORPORATION OF WISCONSIN.

MOLDER'S PRESS.

Application filed February 1, 1921. Serial No. 441,655.

To all whom it may concern:

Be it known that I, WILLIAM J. MacNEILL, a citizen of the United States, residing at Wauwatosa, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Molders' Presses, of which the following is a specification.

My invention relates to molding apparatus, and more particularly to a press for compacting the sand or loam within a molder's flask.

In the accompanying drawings—

Figure 1 is an elevation of apparatus embodying my invention.

Fig. 2 is a vertical sectional view taken on the line II—II of Fig. 1.

Referring to the drawings, 2 indicates a support, such as a wall or post, to which is secured a bracket 4 and from which, below the bracket, projects a molder's bench 3.

5 designates a cylinder from which extends, to one side, a bracket 6 that is preferably integral therewith and comprises a web 7, and perforated bearings 8, 8, adapted to register with like perforated bearings of the supporting bracket 4. A pivot pin 9 unites the two brackets. This method of supporting the cylinder 5 permits it to be swung either directly over the molder's bench 3, or to the side and against the face of the wall 2, out of the way of the workman who may be using the bench.

A piston 10 fits within the cylinder 5 and is movable therein. Secured to the piston is a rod 11 passing through the cover plate 13 that closes the lower end of the cylinder 5, and carrying at its lower end a presser plate 12. The upper end of the piston rod is screw-threaded, as at 14, to afford an adjustable connection with the piston 10. This rod may be screwed more or less into the piston, which is preferably hollow, as indicated at 24, thus providing for the vertical adjustment of the presser plate 12, as may be required to suit the size of the molds being used at the time.

A valve casing 15 is secured by bolts 16 to the web 7 of the bracket 6, between the cylinder 5 and the pivot pin 9. An inlet pipe 17 connects with the valve casing, conducting thereto the motor fluid, as for instance air under pressure, that is employed to operate the piston 10 within the cylinder.

A suitable tubular connection 21 leads from the valve casing 15 to the top of the motor cylinder, and a similar connection 22 leads to the bottom of the cylinder. 18 indicates the exhaust opening in the valve casing. Within the casing is mounted a movable valve provided with an operating handle 20. The valve may be of any desired construction and is provided with suitable ports and channels adapted to put the inlet port of the casing into communication either with the conduit 21 or 22, accordingly as the valve is adjusted, and to simultaneously put the opposite connection into communication with the exhaust port 18.

By supporting the valve casing 15 upon the web of the bracket 6 it is feasible to mount the connections for the conduits 17, 21 and 22 on one side of the said web and the valve casing on the other side as shown in Fig. 2, an arrangement that makes easy the assembly of the said parts and insures their being always accessible, while the cylinder 5 serves as a guard to reduce danger of the parts being struck by moving objects in the foundry or otherwise injured.

The apparatus that I have described is operated as follows:

The molder places upon the table or bench 3 a mold flask 23. When this has been filled with sand the cylinder 5 is moved so as to be directly over the flask, and the motor fluid is admitted to the upper side of the piston 10, forcing it downward and causing the presser plate to act to compress the sand in the mold. The plate 12 may bear either directly upon the surface of the sand or upon an intermediate plate laid upon the sand, the latter course being followed whenever the size and shape of the plate 12 does not closely correspond with the open top of the mold 23. A single operation of the piston is all that is ordinarily required to effect the desired compression and consolidation of the sand, after which the valve is adjusted to admit the motor fluid to the lower portion of the cylinder and to put the upper portion into communication with the exhaust 18, which results in raising the piston and presser plate, so that the flask 23 may be removed and another substituted in its place. If the mold is filled and the sand therein tamped about the pattern while the mold is supported upon the bench 3 it will be found

desirable to swing the cylinder 5 to one side so as to be out of the way of the molder. On the other hand, if the molds are filled elsewhere the cylinder need not be moved after each pressing operation, because the piston 10 has sufficient throw to lift the presser plate 12 far enough above the mold to permit its being set in place and adjusted to position under the cylinder.

An apparatus such as described has its several parts compactly and conveniently arranged, may be cheaply manufactured, is strong, is not liable to get out of order, and is convenient to operate.

What I claim is:—

1. In a molder's press the combination, with a support for the mold, of a swinging bracket above the mold, a cylinder carried thereby, a presser plate carried by a piston operating in the cylinder and adapted to act upon and compress the sand in a mold resting upon the support, and means for controlling the movements of motor fluid to and from the cylinder to operate the piston the said controlling means being carried by the swinging cylinder bracket.

2. In a molder's press, the combination of a supporting bracket, a molder's bench below the bracket, a cylinder, a bracket carried by the cylinder and extending to one side thereof and hinged to the supporting bracket, a piston operating in the cylinder and carrying a plate for pressing the sand in a mold supported upon the bench, a valve device located between the cylinder and the pivot or hinge by which it is united with the supporting bracket, and connections for conducting the motor fluid between the valve device and the opposite ends of the cylinder.

3. In a molder's press, the combination of a supporting bracket, a molder's bench below the bracket, a cylinder, a bracket carried by the cylinder and extending to one side thereof, and integral with the cylinder, comprising a web and perforated pivot bearings, a pivot pin passing through the said bearings and uniting the cylinder bracket with the supporting bracket, a valve casing secured to one side of the web of the cylinder bracket, connections for motor fluid uniting the valve casing respectively with the upper and lower ends of the cylinder, secured to the other side of the bracket and communicating, through the web, with the interior of the valve casing and a movable valve element in the casing for directing the course of the motor fluid through the valve casing and the said connections.

WILLIAM J. MacNEILL.