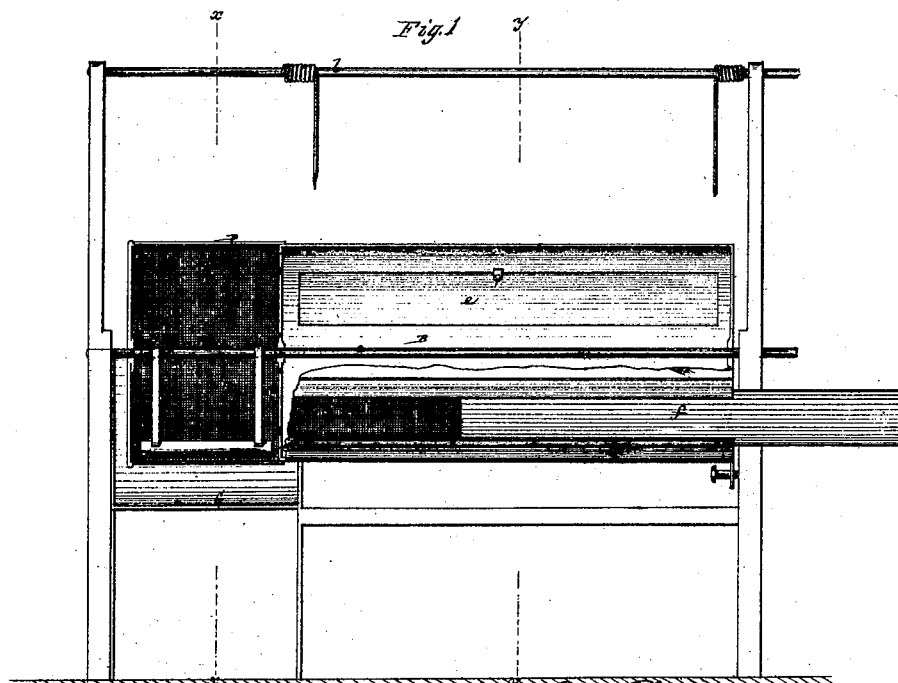
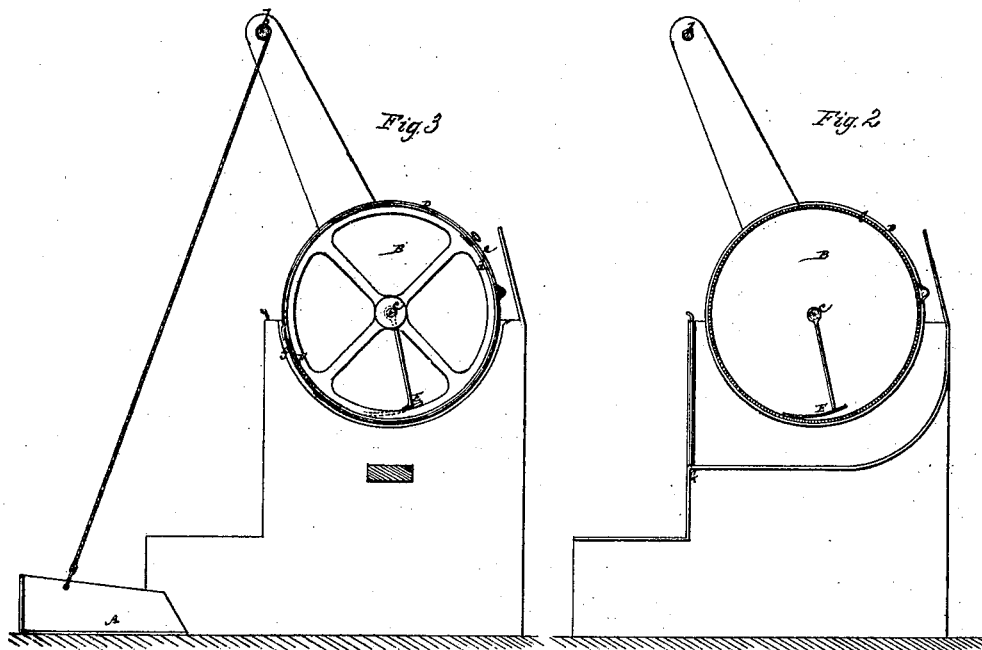


*J. P. Broadmeadow,*  
*Tempering Sand.*  
*No. 112,896.      Patented Mar. 21. 1871.*



*Witnesses*  
*And Hume*  
*W. H. R.*

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# UNITED STATES PATENT OFFICE.

JOHN P. BROADMEADOW, OF BRIDGEPORT, CONNECTICUT.

## IMPROVEMENT IN APPARATUS FOR TEMPERING SAND.

Specification forming part of Letters Patent No. 112,896, dated March 21, 1871.

*To all whom it may concern:*

Be it known that I, JOHN P. BROADMEADOW, of Bridgeport, in the county of Fairfield and State of Connecticut, have invented a new and useful Apparatus for Tempering Sand; 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, forming part of this specification, and in which—

Figure 1 represents a longitudinal vertical section of the machine or machinery which constitutes my invention; Fig. 2, a transverse vertical section of the same through the line *xx* in Fig. 1, and Fig. 3 a similar view through the line *yy*.

Similar letters of reference indicate corresponding parts.

My invention consists in a certain apparatus or combination of devices for tempering and riddling or preparing and conveying the sand used in making molds for castings or foundry purposes.

It heretofore has been customary, as in making castings from snap-molds, to carry the molds with the castings in them to a bench or trough, and there to dump them in a heap, and after removing the castings to dampen the sand with water and mix or temper it with shovels to prepare it for use over again. The operator has then to elevate the sand from the floor by shoveling into the riddle over the flask and patterns, and then to riddle the sand onto the latter. All this labor and moving about, with weights often of no small amount, is both tedious or otherwise objectionable and expensive, and is avoided or materially reduced by my improvement, which combines an open box of an elevating device for lifting the dumped sand as the molds are delivered onto it from a movable mold table or bed, or otherwise, a rotating cylinder for mixing or breaking up the sand as it is dumped from the elevator-box, a screen provided with a sheath formed at the one end of said cylinder over a table or bench, on which the sand-box is placed in front of the operator, and a ventilator in the cylinder for drying or to aid in tempering the sand when necessary.

Referring to the accompanying drawings, A

represents the open box of the elevator, into which the molds are dumped, and which serves, on rotating by steam or other power a shaft, *b*, to raise the loosened sand caused by the breaking of the molds, and after removal of the castings to a height suitable for tilting said sand into a cylinder, B, set to occupy a horizontal or nearly horizontal position, and which, when tempering the sand, is revolved by steam or other power applied to its shaft *c*. The sand is tilted into said cylinder by running it through a longitudinal opening, *d*, closed by a lid, *e*, when revolving the cylinder. This may be done by continuing to hoist on the box A, while its front edge is held stationary in front of the opening *d*.

The cylinder B is formed or made to connect at its one end with a cylindrical screen, C, that is closed by a sheath, D, when the cylinder is being rotated to break or mix up the sand, and that may be provided with a pendent scraper, E, from its shaft. Said cylinder is also preferably fitted with a ventilating-screen, F, on the side of it opposite to the lid *e*. This ventilating-screen is closed by a slide or lid, *f*, when revolving the cylinder, and is only used when it is necessary to air or dry the sand by allowing the latter, which was previously dampened as usual, to remain stationary in the cylinder with the lids *e* and *f* removed or thrown open to induce a current of air through the sand. The lids *e* and *f* being closed and the sheath D drawn over the cylindrical rotating screen C, the cylinder B is revolved until the sand is thoroughly broken and mixed, when the sheath D is drawn back, and, by continuing to rotate the cylinder, the sand riddled or sifted through the revolving screen C into the sand-box on the table G, in front of the operator. In this way or by these means is a great saving of time and labor effected, and the use of shovels or independent riddles dispensed with.

What is here claimed, and desired to be secured by Letters Patent, is—

1. The combination of the open tilting box A of the elevator with the rotating sand-cylinder B, substantially as specified.

2. The rotating sand-cylinder B, constructed with a revolving cylindrical screen, C, at or

near its one end, and with a sheath, D, arranged to close said screen, essentially as shown and described.

3. The combination of the ventilating-screen F and opening *d* with the cylinder B, substantially as specified.

4. The combination and arrangement of the elevator-box A, the revolving sand-cylinder

B, the rotating screen C, covered by a sheath, D, and the sand-box table or stand G, essentially as herein set forth.

JOHN P. BROADMEADOW.

Witnesses:

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