(No Model.)

A. MAUSER & G. G. RICHMOND.

CORE MACHINE.

No. 376,155. Patented Jan. 10, 1888.

Fig. 1.

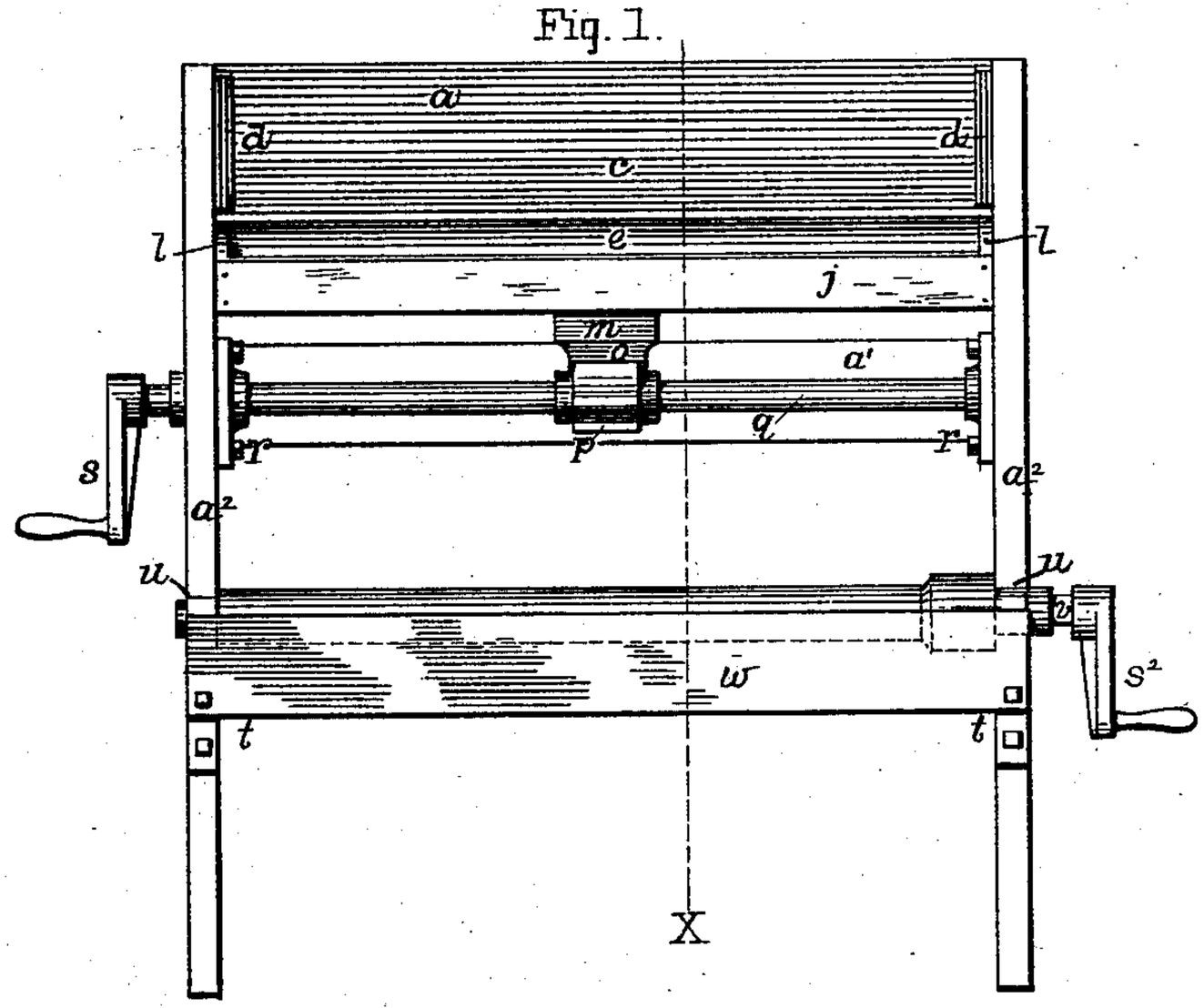


Fig. 2.

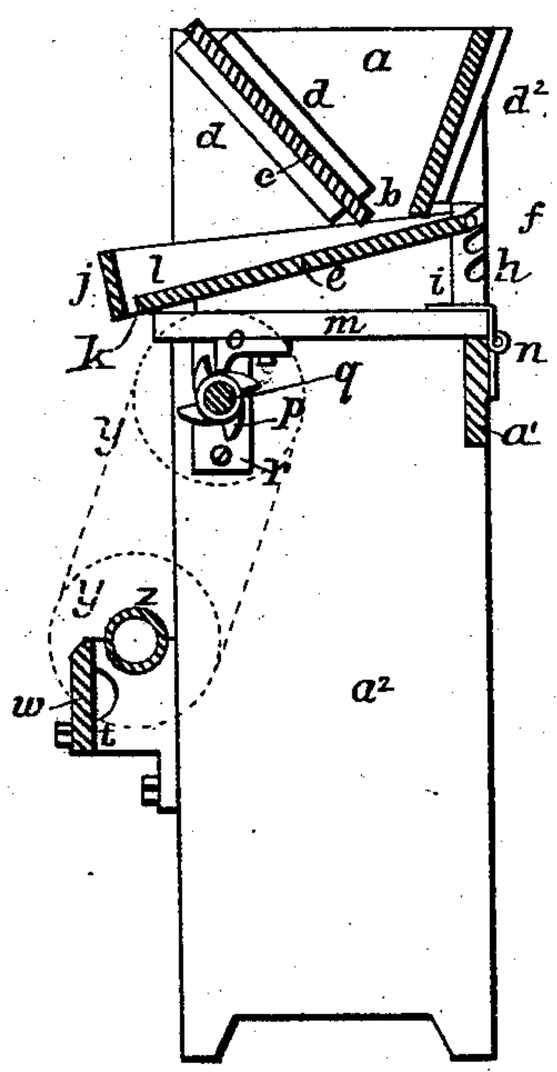


Fig. 3.

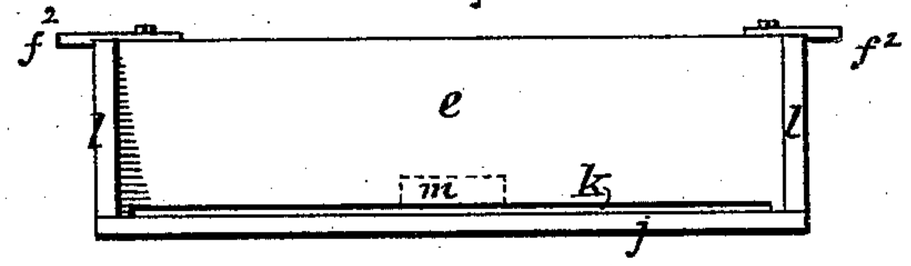
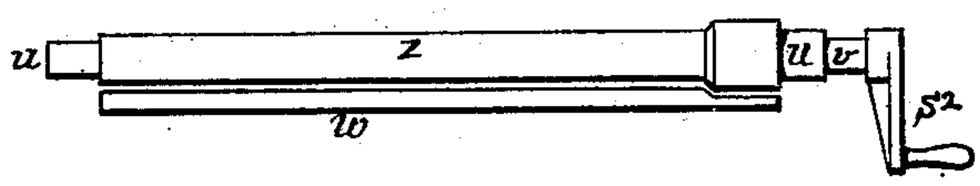


Fig. 4.



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UNITED STATES PATENT OFFICE.

ALFRED MAUSER, OF SING SING, AND GEORGE G. RICHMOND, OF PEEKSKILL, NEW YORK.

CORE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 376,155, dated January 10, 1888.

Application filed April 30, 1887. Serial No. 236,739. (No model.)

To all whom it may concern:

Be it known that we, ALFRED MAUSER and GEORGE G. RICHMOND, citizens of the United States, residing, respectively, at Sing Sing and Peekskill, in the county of Westchester and State of New York, have invented a new and useful Core-Machine, of which the following is a specification.

Our invention relates to the making of green-sand cores used in casting pipes, and has for its object the making of them expeditiously, with a uniform thickness and density of the sand. We attain these objects by the means illustrated in the accompanying drawings, in which similar letters refer to like parts throughout the several views.

Figure 1 represents a front elevation of our machine; Fig. 2, a vertical section of the left-hand part of Fig. 1 through the line *x*. Fig. 3 is a top view of the shaker, and Fig. 4 represents a core barrel and scraper.

A stout frame, about six feet high and of a length to accommodate the longest core barrels to be used, is made to carry all the parts entering into the construction of our machine. The top of the frame supports a hopper, *a*, into which the sand for making the cores is thrown. This hopper has a narrow opening at the bottom, as shown at *b*, Fig. 2, and means may be employed for graduating said opening. In the illustration, Fig. 2, one of the sides of the hopper, as *c*, is made to slide between the cleats *d d*, and by raising the side *c* the throat *b* is enlarged, or is lessened by pushing the side *c* downward. Just below the hopper a rocking shelf or shaker, *e*, is hinged to the back side of the frame. The shaker may be a plain board provided at the ends with trunnions f^2, as shown in Fig. 3, which trunnions are supported in the notches *h* in the plates *i*, which are secured to the frame, as shown in Fig. 2. Across the front of the shaker (see Fig. 3) a narrow piece, *j*, is attached in such a manner as to leave a longitudinal opening, *k*, the full length of the opening in the bottom of the hopper. Sides, as at *l l*, are provided on the shaker to prevent sand working off at the ends. Beneath the shaker a rocking-arm, *m*, is centrally located, as shown in Fig. 1, and is hinged to the frame at *n*, as shown in Fig. 2. The outer end of this arm supports the shaker *e*, and on its under side is provided with a tooth, *o*, which rests upon the cam *p*. Said cam is revolved by a shaft, *q*, which has bearings *r r* in the sides of the main frame, as represented in Fig. 1. The shaft may be operated by a crank, as at *s*, or a pulley for the application of power may be attached in the place of the crank. It is also plain that gearing may be applied to give such speed as may be requisite.

Below the shaft, at a distance which may vary in practice, brackets, as at *t*, are supported by the main frame. The brackets are provided with journal-bearings, which receive the core-barrel on which the core is to be made. A core-barrel is represented in Fig. 4 which has the general contour of the core to be made, and is provided with extensions *u u*, which lie in the journal-bearings in the brackets *t*. *v* represents a wooden plug thrust into the end of the barrel, and to this plug a crank, s^2, is fastened. By means of the crank the barrel is revolved while the sand is being applied to it. *w*, Figs. 1, 2, and 4, represents a scraper, which is also supported on the brackets *t*, and its object is to remove superfluous sand and give to the core a round and uniform surface. The space between the scraper *w* and the barrel *z* (shown in Fig. 4) represents the thickness of the sand forming the core.

In place of the crank s^2, for revolving the core-barrel, a pulley may be substituted, and may be driven from a pulley on the shaft *q* by an ordinary or a chain belt, as shown by dotted lines *y y*, Fig. 2.

The operation of the machine is as follows: The core-barrel is dampened upon the surface. The core-sand is thrown into the hopper, and falls through the throat *b* onto the shaker *e*. As the crank *s* is rotated the cam *p* causes a gradual rising and sudden falling or dropping of the shaker, which causes a gravitation of the sand toward the opening *k*. Through the opening it falls with considerable force, given it by the sudden drop of the shaker, and in falling it strikes upon the dampened core-barrel. The sand readily packs upon the barrel, and as the barrel is revolved the sand is received upon all its sides until a sufficient depth

has been impacted upon it. The scraper *w* insures a uniform thickness and a smooth surface of sand.

The arm *m* may be dispensed with and the tooth *o* be attached directly to the under side of the shaker *e;* but we obtain a more satisfactory movement of the shaker by the use of the said arm.

The machine may be used without the hopper by throwing the sand directly upon the shaker; but such use would not be advantageous.

Having described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a machine for making green-sand cores, the combination, in a supporting-frame, of a sand-hopper, *a*, a shaker, *e*, beneath the hopper, provided with an aperture, *k*, and vibrated by an arm, *m*, and cam *p*, with a core-barrel supported under the aperture in the shaker at a vertical distance below said aperture to cause the impacting of the sand on the core-barrel by gravity and the impulse given to the sand by the throwing operation of the shaker, substantially as set forth.

2. The combination, in a core-machine, of the frame a^2, hopper *a*, shaker *e*, provided with an aperture, *k*, and supported by trunnions *f*, vibrating arm *m*, and cam *p*, shaft *q*, and core-barrel support *t*, substantially as herein described.

3. The combination, in a core-machine, of the frame a' a^2 a^2, shaker *e*, having the aperture *k* and supported by trunnions f^2, notched plates *i*, arm *m*, hinged at *n*, tooth *o*, cam *p*, shaft *q*, pulleys and belt *y y*, core-barrel *z*, scraper *w*, and bracket *t*, substantially as shown and described.

4. The combination, in a core-machine, of a shaker, *e*, provided with an aperture, *k*, and suspended by trunnions f^2, an arm, *m*, hinged at *n*, tooth *o*, and cam *p*, operated by shaft *q*, substantially as shown.

Signed at Sing Sing, in the county of Westchester and State of New York.

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