J. STACKPOLE.

MOLDING-SAND SIFTER.

No. 189,583. Patented April 17, 1877.

Fig. 3.

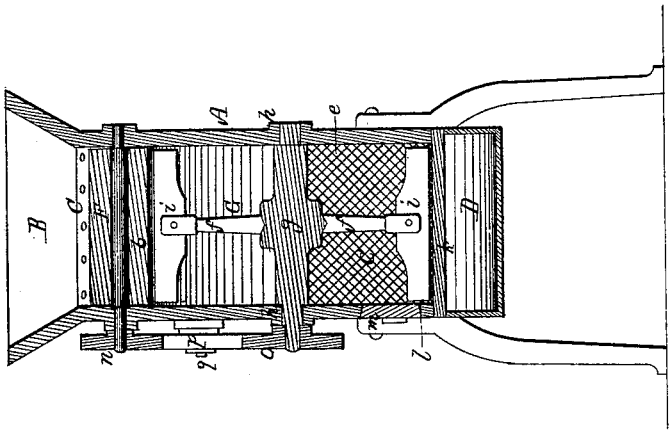


Fig. 2.

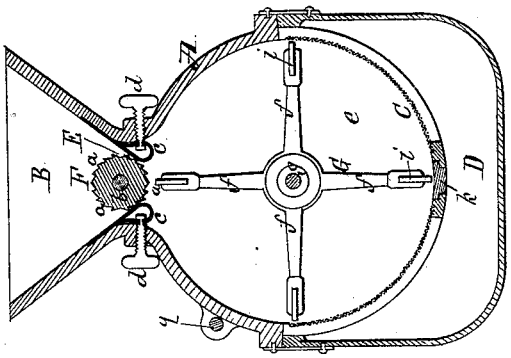


Fig. 4.
Reduced.

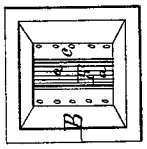
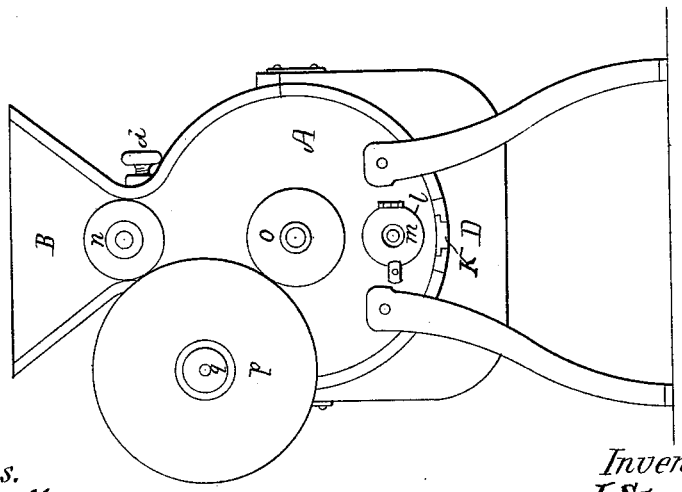


Fig. 1.



Witnesses.
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W. E. Boardman

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UNITED STATES PATENT OFFICE.

JOHN STACKPOLE, OF WOBURN, MASSACHUSETTS.

IMPROVEMENT IN MOLDING-SAND SIFTERS.

Specification forming part of Letters Patent No. **189,583**, dated April 17, 1877; application filed November 21, 1876.

To all whom it may concern:

Be it known that I, JOHN STACKPOLE, of Woburn, Middlesex county, Massachusetts, have invented certain Improvements in Machines for Sifting Molders' Sand, &c., of which the following is a specification:

The drawings accompanying this specification represent, in Figure 1, a side elevation, in Figs. 2 and 3 vertical sections, and in Fig. 4, a plan of a machine embodying my improvements.

In these drawings, A represents a cylindrical case or drum, having at top a mouth or hopper, B, for reception of the material to be sifted, and at bottom being open and covered with a screen or sieve, C, through which the screened material passes and is precipitated into a suitable receptacle placed below.

For certain uses it may be desirable to employ a removable hod or vessel, D, which is secured with a close joint to the under side of the case A and surrounding the screen C, and being secured to the case by hooks or other devices, which permit it to be readily applied or removed.

The lower portion or throat E of the hopper B is occupied by a revolving gate or guard, F, of such construction as to permit of passage of the material destined to be screened, but to intercept and retain stones or other hard foreign particles. In the present instance, this guard F is a fluted roller, the longitudinal ribs *a a*, &c., of which are of saw-teeth form, and depart tangentially from the body *b* in opposite directions, in order that if a stone or other foreign substance, which may accidentally or unavoidably find its way to the hopper, should become wedged between the guard and one side of the throat E, a reverse movement of such guard shall have the effect of dislodging such stone and bringing it to the top of the guard, from whence it may be easily removed.

I do not confine myself to the precise form of the guard F, as herein shown, as its construction may be varied considerably without losing sight of what I consider to be an original feature in this portion of my machine. For instance, it may be well in practice to create a series of peripheral channels in the body of the guard, and apply to opposite sides of the throat projecting teeth, to enter these channels.

The sides of the throat E are variable or adjustable, in order to increase or diminish the space between such sides and the periphery of the guard, to adapt the machine to the screening of divers materials; and, in the present instance, the sides of the throat are wings *c c*, composed of elastic metal, and advanced or retracted by adjusting-screws *d d*, as shown in Fig. 2 of the accompanying drawings.

The screening or sifting chamber *e* of the machine contains a revolving dash, G, composed of a series of arms, *f f*, radiating from a horizontal shaft, *g*, mounted in bearings *h h* of the case A, vanes or blades *i* being secured to the outer ends of the arms, and the whole constituting a means of disturbing the material within the chamber *e*, and accelerating the escape of such material through the meshes of the screen C.

The screen C may be in two parts, as shown in the present instance, with an interposed removable trap-door, *k*, to permit of removal of such particles as may have passed through the hopper to the sifting-chamber, which are too large to pass the meshes of the screen; or the screen may be of one piece, and in either event is preferably attached, removably, to the case A, by means of hooks or other devices, in order to be renewed or repaired, to enable access to be readily had to the interior of the sifting-chamber.

l, in the accompanying drawing, represents an opening into the sifting-chamber, and is closed by a suitable door, *m*, the purpose of this opening being to permit of the insertion of the operator's arm into the chamber, for the purpose of remedying any trifling disturbance or accident therein, or removing an impediment; and if the screen is composed of one piece, and the trap *k*, consequently, done away with, the opening *l* should extend to the bottom of the screening-chamber.

To rotate the guard F and dash G, I affix to the adjacent outer end of the shaft of each a friction or gear wheel, *n* or *o*, which engage a driving-wheel, *p*, mounted upon a horizontal driving-shaft, *q*, supported in bearings affixed to the outside of the case A, the front end of

this latter shaft being provided with a crank, if the machine is to be driven by hand, or by a pulley connected with a reversing apparatus, if the machine is power-driven.

The operation of this machine is briefly as follows: Sand, flour, or other finely comminuted substance, is dumped into the hopper B, from whence it finds its way through the throat E to the sifting-chamber *e* below, and is disturbed therein by the dash G, and finely precipitated through the screen C into the hod or receptacle placed below the screen to receive it, the guard F serving, as before stated, to intercept and permit of the removal of any foreign or injurious particles, and the trap-door *l*, or its equivalent, permitting of the removal of such foreign particles as will not pass the screen.

I claim as my invention, and desire to secure by Letters Patent of the United States, the following:

1. A machine for sifting or screening molders' sand, flour, or other finely comminuted substances, constructed as herein described—that is to say, as composed of the case A, rotary guard F, variable and adjustable wings or sides *c*, dash G, screen C, and the trap *k* or its equivalent, the whole being substantially as and for the purposes stated.

2. In combination with the case A, dash G, and screen C the rotary guard F, constructed substantially as shown and described, so that a reversal of its movement shall detach and bring up substances too large to pass the throat E, substantially as and for the purposes stated.

3. In combination with the hopper B and guard F, the adjustable wings *c c*, for varying the extent of the passage between the sides of the throat E and the periphery of the guard, substantially as and for purposes stated.

JOHN STACKPOLE.

Witnesses:
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