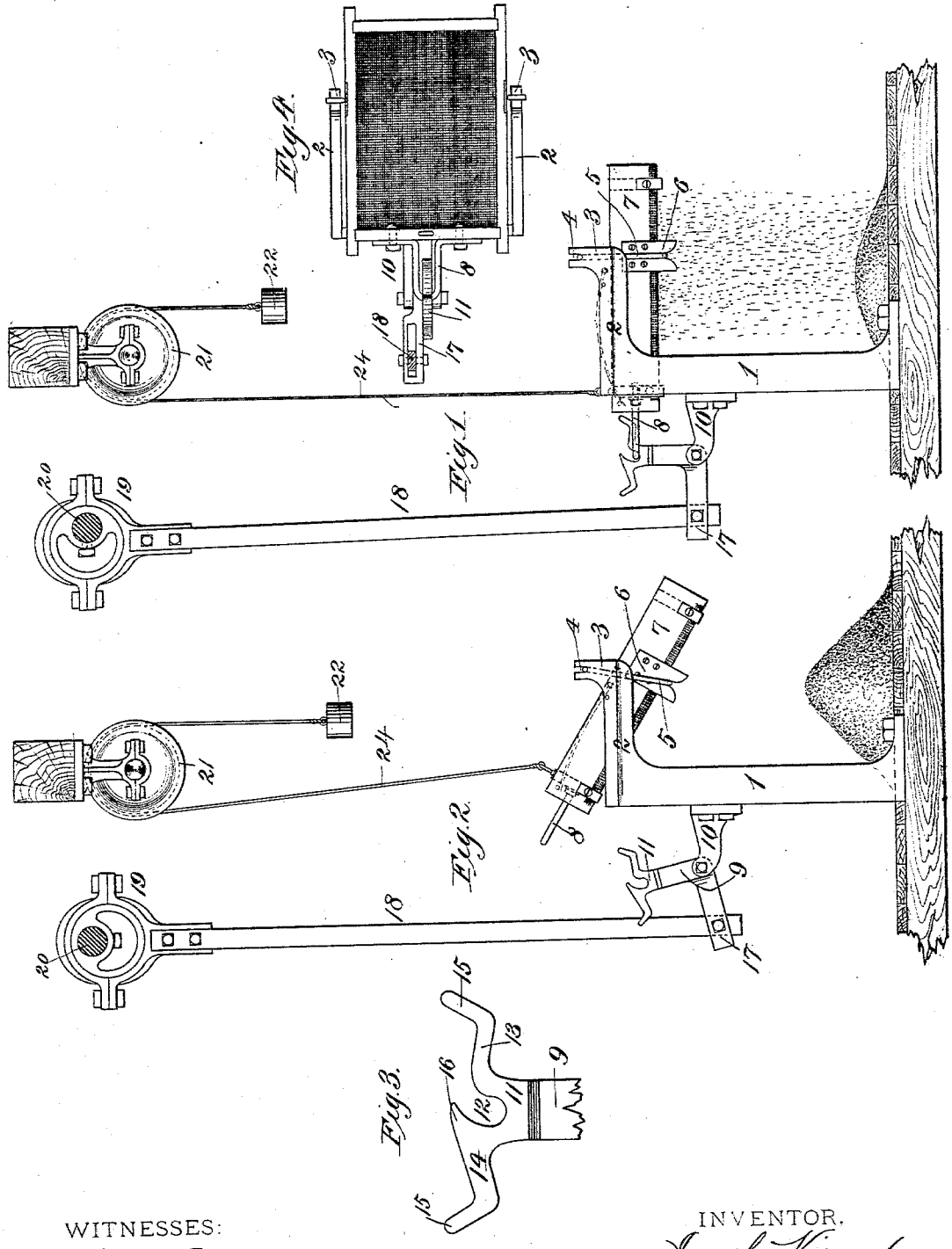
(No Model.)

J. KINZER.

SAND SIFTING MACHINE.

No. 300,481. Patented June 17, 1884.



WITNESSES:

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JACOB KINZER, OF PITTSBURG, PENNSYLVANIA.

SAND-SIFTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 300,481, dated June 17, 1884.

Application filed March 21, 1884. (No model.)

To all whom it may concern:

Be it known that I, JACOB KINZER, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Sand-Sifting Machines, of which improvement the following is a specification.

In the accompanying drawings, which make part of this specification, Figure 1 is a view in side elevation of my improved sifting-machine, the screen being shown in operative position. Fig. 2 is a similar view, the screen being disconnected from the oscillating mechanism. Fig. 3 is a detail view, on an enlarged scale, of the screen-oscillating end of the bell-crank lever. Fig. 4 is a top plan view of a portion of my machine.

My invention relates to that class of machines which are used in foundries for sifting or screening the sand to be subsequently used in forming molds; and the object of my invention is to so construct such a machine that it will be simple but effective, and may be easily put into and out of operation; and to this end my invention consists, in general terms, in the construction and combinations of parts, all as more fully hereinafter described and claimed.

On a suitable foundation on the floor of the foundry are secured two uprights or standards, 1, provided at their upper ends with horizontal arms 2, in the outer ends of which are formed the vertical notched projections 3.

In the notches of the projections 3 are placed the bearing or pivotal ends 4 of the stirrup 5, provided with the horizontal depressed portion.

On the sides of screen 7, a short distance in front of their middle portions, are secured the plates 6, provided with notches at their lower ends, said notches being adapted to fit over the horizontal depressed portion of the stirrup 5.

To the rear end of the screen 7 is secured the loop 8, by which the screen is connected to the operative end of the bell-crank lever 9. This bell-crank lever is pivoted to the brackets 10, which are bolted to the rear edges of the standards 1 at such a height as to bring the operative end of the bell-crank lever in line with the loop 8 when the screen is in a horizontal position, as shown in Fig. 1. The operative end 11 of the lever 9 is provided with the curved notch 12, and the horizontal arms 13 and 14 are provided at their outer ends with the turned-up portions 15. The horizontal arm 14 is made somewhat higher than the arm 13, thereby forming the hook or prong 16 at one side of the notch 12. The other end, 17, of the bell-crank lever 9 is pivotally connected to the lower end of the connecting-rod 18, the upper end of the rod being attached to the strap 19 of the eccentric 20, secured to any suitable power-shaft.

To the rear end of the screen 7 is attached one end of the cord or rope 24, which passes up and over the pulley 21, secured to a beam above the screen, and the free end of the cord is attached to a weight, 22, of sufficient size to automatically raise the rear end of the screen when empty.

In place of the above-described device, I may secure a spring to the horizontal arms 2, the free end of the spring being arranged to bear against the under side of the rear end of the screen, or against a projection from the side of the screen, as shown by dotted lines in Figs. 1 and 2.

The operation of the above-described machine is as follows: When the screen is empty, it is held in the position shown in Fig. 2 by the weight 22; but when sand or other material is thrown into the rear portion of the screen the weight of the sand will cause the screen to take a horizontal position, as shown in Fig. 1. As the screen turns, the loop 8 will drop into one of the horizontal arms of the bell-crank lever, which is continuously oscillated by the eccentric 20. If the loop 8 should drop into the arm 13, it will on first movement of the operative end of the lever to the right strike against the hook 16 and be forced into the notch 12; but if the loop should drop on the arm 14 a movement of the operative end of the lever to the left and then to the right will be necessary before the loop will be caught in the notch 12. During the movement to the left the loop will slide from the arm 14 into the arm 13, and during the succeeding movement to the right the loop will be caught in the notch 12, as above described. As soon as the loop is caught in the notch 12, the screen will be swung back and forth by the bell-crank lever. As long as a sufficient quantity of sand

is kept in the screen to counterbalance the weight 22, the loop will be kept in the notch 12; but as soon as the sand is removed from the screen it will be automatically disengaged from its operating mechanism by the weight 22 or its equivalent, the spring above described lifting the rear end of the screen, and thereby disengaging the loop from the notch during the movement of the operative end of the lever to the left.

It will be noticed that the screen can be readily lifted and removed from its supports and oscillating mechanism if it is desirable to do so for any purpose.

Another characteristic feature of my machine is in having the bearings for the bell-crank lever secured to the standards which support the screen, thus preventing an oscillation of the standards when the machine is in operation, for when the operative end of the lever is pulling one way its bearings will be pushing in a contrary direction, and vice versa.

I claim herein as my invention—

1. In a sand-sifting machine, the swinging stirrup 5 and standards for supporting said stirrup, in combination with the screen 7, having notched plates secured to its sides forward of its center, and adapted to fit over and on said stirrup, and mechanism for imparting a reciprocating longitudinal movement to the screen, substantially as set forth.

2. In a sand-sifting machine, the swinging stirrup and standards for supporting the stirrup, in combination with the screen 7, resting on the stirrup, the bell-crank lever 9, having one of its arms connected to the screen, and mechanism attached to its opposite end for imparting motion to the lever, substantially as set forth.

3. In a sand-sifting machine, the screen 7, swung in suitable bearings and provided with the loop 8, in combination with the bell-crank lever 9, having the curved notch 12, and mechanism for operating said lever, substantially as set forth.

4. In a sand-sifting machine, the screen 7, swung in suitable bearings and provided with the loop 8, in combination with the bell-crank lever 9, having at one of its ends the horizontal arms 13 and 14, located in different horizontal planes, and the curved notch 12, and mechanism for operating said lever, substantially as set forth.

5. In a sand-sifting machine, the screen 7, pivotally swung in suitable bearings and provided with the loop 8, in combination with the oscillating bell-crank lever 9, having the curved notch 12, and mechanism for automatically disconnecting the loop and lever, substantially as set forth.

6. In a sand-sifting machine, the screen 7, pivotally swung in suitable bearings, in combination with the oscillating bell-crank lever, said lever and screen being detachably connected, and mechanism for automatically disconnecting the screen and lever, substantially as set forth.

7. In a sand-sifting machine, the screen 7, pivotally swung in suitable bearings and provided with the loop 8, in combination with the oscillating bell-crank lever 9, having the curved notch 12, the cord 20, pulley 21, and weight 22, substantially as set forth.

In testimony whereof I have hereunto set my hand.

JACOB KINZER.

Witnesses:
DARWIN S. WOLCOTT,
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