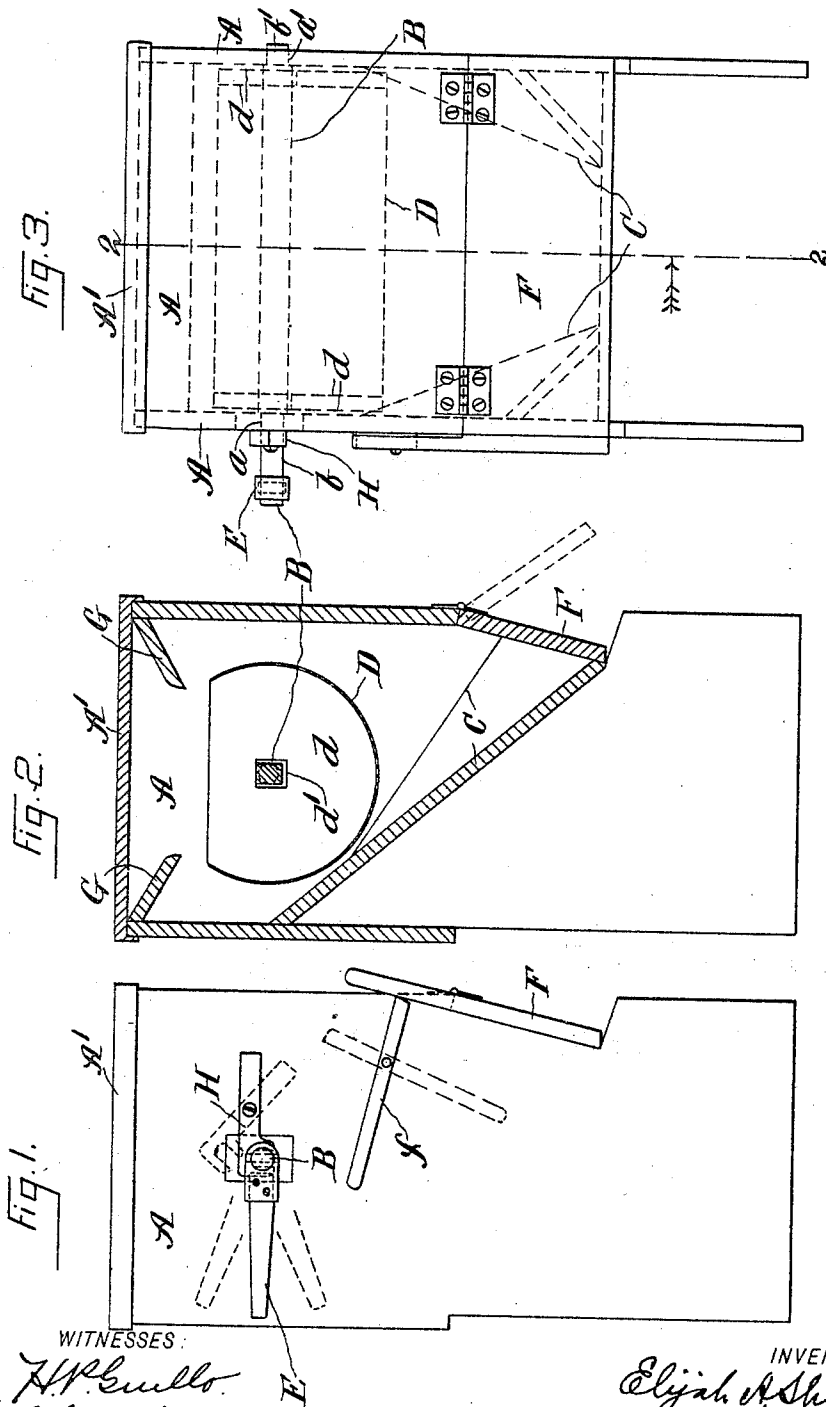


(No Model.)

E. A. SHAW.
SIFTER.

No. 581,872.

Patented May 4, 1897.



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ELIJAH A. SHAW, OF LEXINGTON, MASSACHUSETTS.

SIFTER.

SPECIFICATION forming part of Letters Patent No. 581,872, dated May 4, 1897.

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To all whom it may concern:

Be it known that I, ELIJAH A. SHAW, of Lexington, Middlesex county, Massachusetts, have invented an Improved Sifter, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of my sifter. Fig. 2 is a section on line 2 2 of Fig. 3. Fig. 3 is a front elevation of my sifter.

My sifter is one of that type of sifters in which the material to be sifted is placed upon a sieve, the sieve being then rapidly moved to and fro, its direction of movement being changed as suddenly and frequently as possible, with the result that the material to be sifted is moved across the wires of the sieve and the finer particles dropped through.

The object of my invention is to change the direction of motion of the sieve as suddenly and as frequently as possible.

In the drawings, A is a box having a suitable cover A'. In the sides of the box A are two holes *a a'* to receive the ends of a shaft B. The shaft B is non-circular in cross-section for the greater part of its length, but at its ends is round, the round end *b'* entering the hole *a'* in the side of box A and the round end *b* entering the hole *a* in the other side of box A. It is obvious that the shaft B may be rocked or rotated upon these round ends.

Mounted upon shaft B is a semicircular sieve D, having solid ends *d*, in which are non-circular holes *d'*, which are larger than the non-circular portion of shaft B, which passes through these holes *d'*, but not large enough to permit the sieve D to turn upon the shaft B. A handle E is secured to one end of shaft B. Beneath the sieve D is a chute C, the lower end of which is closed by a door F, normally closed and held by a pivoted lever *f*. Two guide-boards G serve to guide the material to be sifted into the sieve when it is poured in.

In order to assemble the parts of my improved ash-sifter, I find it desirable to remove from the handle side of the box a square piece. Through the opening thus made the shaft B is inserted and the sieve D is mounted

and the round end *b'* of shaft B inserted in hole *a'*. A square piece of wood having a central round hole a little larger than the round end *b* of shaft B is then put upon the end of shaft B and fills the square hole in the handle side of box A. The square piece is secured in place and the handle E is secured to the shaft B.

The operation is as follows: The cover is removed from the box and the shaft B is secured against turning by throwing down the yoke H. The material is then poured into the sieve. The cover is then put on. The yoke H being raised and the door F being closed and held by lever *f*, the handle E is moved rapidly up and down. It is apparent that the difference in the size of the non-circular part of shaft B and the non-circular hole in the ends of sieve D will give some lost motion. When the handle is reversed at the end of a downstroke, the sieve keeps on until it meets the shaft B moving in the opposite direction with a sudden blow. The contents of the sieve are thereupon violently scattered in the direction of motion of the sieve. This operation is repeated at the end of every stroke of the handle, the change of direction of the handle being easily and instantly made, because only the momentum of the handle E and shaft B is to be overcome. This is the advantage of the introduction of lost motion. The change of direction of handle and shaft can be instantly effected and results in a blow which utilizes all the power in the moving sieve. In all prior sifters of this type the change of direction has been effected by slowing down, stopping, and starting up at the end of each stroke.

It is obvious that if the sieve be made fast to the shaft and the handle be loosely connected to the shaft the same result may be accomplished; but I have found that the mechanism I have above described is most durable and efficient.

What I claim is—

1. The sifter above described made up of a non-circular shaft; a sieve having non-circular holes in its ends slightly larger than the non-circular shaft, the sieve being mounted

upon the shaft; and means to support and rock the shaft, substantially as described.

2. The sifter above described, comprising a box A; carrying a non-circular shaft B having round ends; a semicircular sieve D having non-circular holes in its ends slightly larger than non-circular portions of shaft B,

the sieve D being mounted upon shaft B, and means to rock shaft B, all organized and operating substantially as described.

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Witnesses:

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