

T. J. MOZART.
Sifter.

No. 220,640.

Patented Oct. 14, 1879.

Fig. 1.

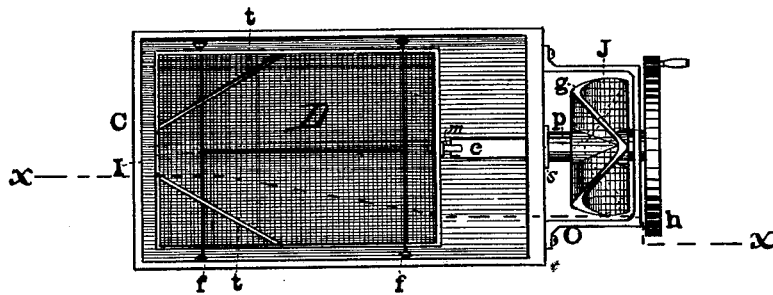


Fig. 2.

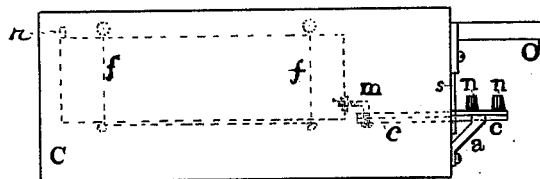


Fig. 3.

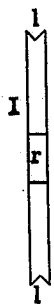


Fig. 4.

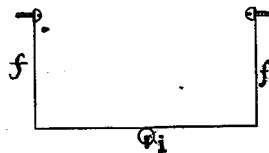


Fig. 5.

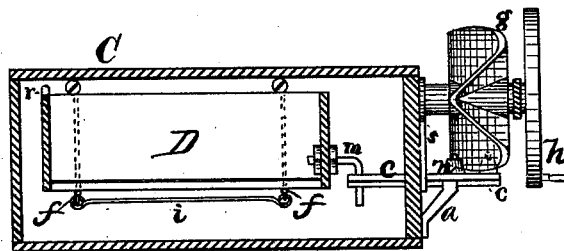
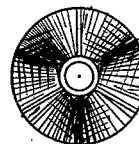


Fig. 6

Witnesses:

D. L. Boon
E. G. Kingsbury

Inventor

Thomas J. Mozart
By Allen Webster atty.

UNITED STATES PATENT OFFICE.

THOMAS J. MOZART, OF SPRINGFIELD, MASSACHUSETTS, ASSIGNOR OF
ONE-HALF OF HIS RIGHT TO B. F. TUCKER, OF SAME PLACE.

IMPROVEMENT IN SIFTERS.

Specification forming part of Letters Patent No. **220,640**, dated October 14, 1879; application filed
April 24, 1879.

To all whom it may concern:

Be it known that I, THOMAS J. MOZART, of Springfield, county of Hampden, and Commonwealth of Massachusetts, have invented certain new and useful improvements in devices for converting rotary into reciprocating motion, and in combining the same with other devices in the construction of sieves for sifting ashes, of which the following is a specification.

Prior to my invention the sieve of an ash-sifter had been hung by a link passing up, next to the gearing, through the casing in which the sieve is inclosed, and attaching its upper end to the interior of an inverted cap, to obtain a longer length of link without an enlargement of the sieve-casing, and the lower end of the sieve arranged on an incline plane suspended to the sieve-casing by means of screw-bolts or their equivalents, thereby making the sieve a fixture of the sieve casing or box, which is objectionable. Again, a common round sieve has been placed upon a triangular frame arranged in a barrel, and motion imparted to the frame by means of a handle passing through the barrel, whereby a perfect freedom in all directions is allowed the sieve. Also, the rotary motion has been converted into reciprocating motion by the use of a cam-wheel; but it has been done by causing a pin in the sliding bar or equivalent device to traverse a groove in the cam-wheel. This is objectionable on account of the friction.

I am well aware, also, that sieves have been shaken by cam-wheels and other devices, the sieve usually sliding on ways. This is objectionable for the same reason, the power required to overcome the friction being so great that many of the sieves cannot be used as a household utensil.

The object of my invention is to make a mechanical device to convert rotary into reciprocating motion without the loss of any appreciable amount of power by reason of the friction, and to construct a sieve which shall be of easy construction and convenient, and with which a rapid shaking motion may be had while the sieve is heavily loaded, the

wheel being turned slowly, and requiring the outlay of but a small amount of power.

My invention, therefore, consists in the combination of a cam-wheel of a peculiar construction, a sliding bar with friction-pulleys engaging with the said cam-wheel, and an ash-sifter resting loosely upon a wire frame, as will be hereinafter more fully set forth, and pointed out in the claims.

In the drawings, in which similar letters of reference indicate like parts, Figure 1 is a top view of my device. Fig. 2 is a side view of the same, with the balance and cam wheels removed, showing the parts within the box in dotted lines. Fig. 3 is a top view of the slide at the outlet end of the sieve. Fig. 4 is a view of the wires on which the sieve rests, as seen from the direction of the end of the box; and Fig. 5 is a side view of the cam-wheel. Fig. 6 is a vertical sectional view taken through the line *x x* of Fig. 1.

In the annexed drawings, forming a part of this specification, the letter *J* represents the cam, made of any size desired.

I find a diameter of from three to five inches sufficient for all ordinary uses in sieves for sifting ashes.

In the construction of the cam-wheel, care should be taken that the outer edge of the flange or worm does not make such sharp turns as to produce a jarring motion, this being found in most cams of similar construction now in use, the difficulty being found at the point where the direction of the motion is changed. I overcome this by filling the inner side, so that the friction-pulley will traverse the arc of a circle, or nearly so. This, while quickly changing the direction of the motion, prevents the jar and backlash, which would result were the cam-wheel not so constructed.

The bar *c* slides in the support *a*, and, passing through the plate *s* and box, is connected with the sieve by the hook *m*.

The cam-wheel *J* is secured to the shaft *F*, one end of which rests in the plate *s*, and the other end rests in the frame *O*. On the end of this shaft is the crank and balance wheel *h*, as shown.

The sieve is suspended in or rests upon the

rods *f*, which pass up at each side, and are held in place by screws or other convenient device, which allows them to swing in either direction. The rods *f* are connected by the rod *i*, as shown, thus preventing their swinging out of place.

My sieve *D*, with its surrounding walls, is placed loosely upon the frame composed of the wire rods *f f* and *i*, but, connected to the reciprocating bar *c* of the mechanism by means of the hook *m*, is substantially devoid of friction, as the labor of sifting is almost expended in the work, and the suspended wire frame has a tendency to increase the speed of the sieve, so desirable in clearing the coal of the ashes. This sieve is not encumbered with a locking device, but is easily removed from its resting-place for the obvious advantage of picking out the clinkers and final emptying to the saving box or receptacle for such sifted coals.

The friction-pulleys *n n* are made tapering, to overcome the tendency to rise. These pulleys should not bear against the cam for more than an eighth of an inch.

The hook *m* is secured to the sieve, and hooks through the end of bar *c*, as shown.

As a square sieve is not convenient to empty, I make the opening at the end, as shown, and make the slide *I*, with the *V*-grooves *l l* and handle or projection *r*. Although I deem these grooves the cheapest and best way to fasten the slide in place, I do not confine myself to them, as many other devices may be substituted to hold the slide in place. The projection *r* is designed as a handle.

Across the corners, at the outlet end, I place the pieces *t t*, for guides, and they also serve as braces, and thus strengthen the sieve.

The frame *O* is made as shown in the drawings, and secured to the box by screws. It will be seen that this arrangement may be easily attached to a box of any shape by simply bending the supporting-wires to the length required, cutting a hole for the sliding bar, and screwing the frame, plate, and support in place. It will be seen that with these friction-pulleys *n n* and cam-wheel *J*, and the sieve resting on these swinging wires *f t*, a sieve is constructed in which the friction is reduced to a minimum. Any convenient form of door or corner may be attached to the box.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, substantially as hereinbefore described, of the cam-wheel *J*, of the construction set forth, the sliding bar *c*, having at its outer end friction-rollers *n n* and at its inner end a perforation, and the removable horizontal sifter *D*, loosely connected to the sliding bar, whereby the friction-rollers traverse the arc of a circle and jarring is avoided.

2. The combination, in an ash-sifter, of the cam-wheel, suitably supported, a sliding bar with friction-pulleys engaging with the said cam-wheel, and the other end attached to a sieve for holding ashes, and a swinging frame passing around and under the sieve, substantially as described, and for the purpose set forth.

In testimony whereof I have hereunto set my hand, in the presence of two witnesses, this 11th day of April, A. D. 1879.

THOMAS J. MOZART.

Witnesses:

L. H. BINGHAM,
ALLEN WEBSTER.