No. 793,354. PATENTED JUNE 27, 1905.

W. COX.

VIBRATOR.

APPLICATION FILED DEC. 24, 1903. RENEWED MAY 13, 1905.

Fig. 1.

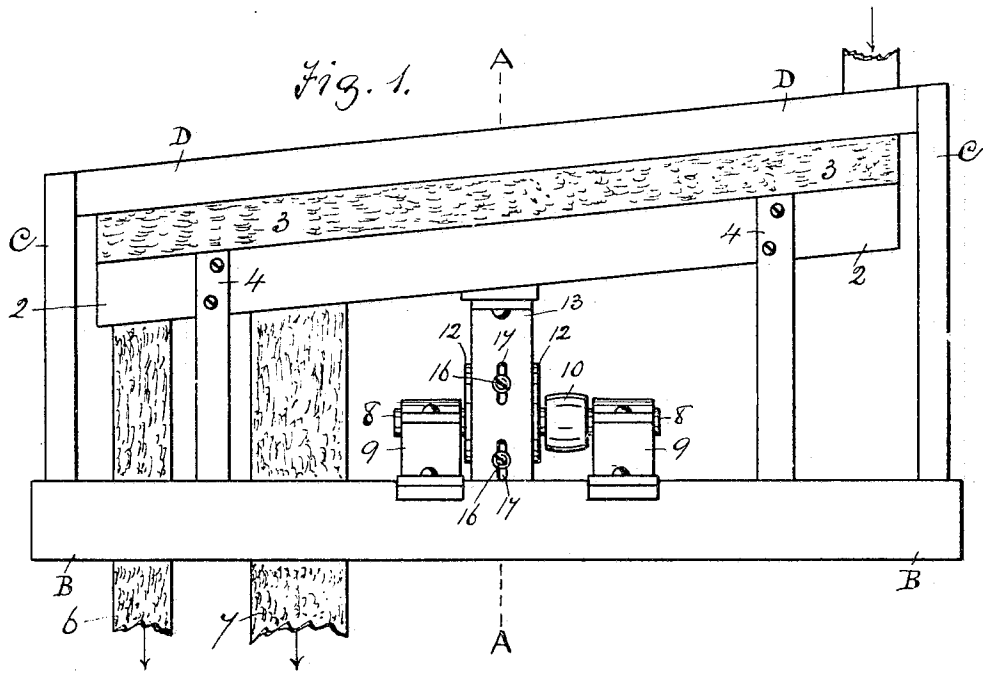
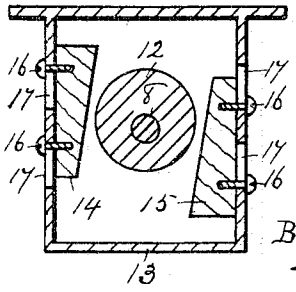


Fig. 3.



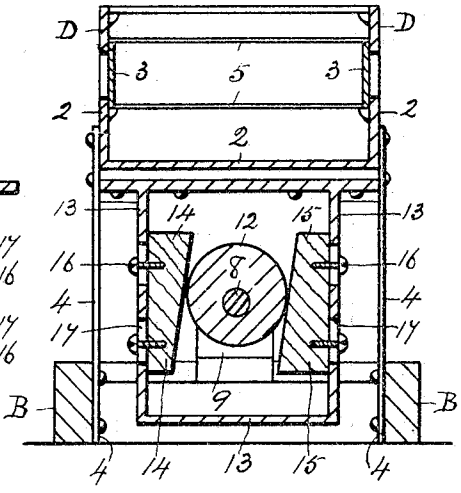


Fig. 2.

Witnesses.
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No. 793,354. Patented June 27, 1905.

UNITED STATES PATENT OFFICE.

WILLIAM COX, OF HAMILTON, CANADA.

VIBRATOR.

SPECIFICATION forming part of Letters Patent No. 793,354, dated June 27, 1905.

Application filed December 24, 1903. Renewed May 13, 1905. Serial No. 260,335.

To all whom it may concern:

Be it known that I, WILLIAM COX, a citizen of Canada, residing at Hamilton, in the county of Wentworth and Province of Ontario, Canada, have invented new and useful Improvements in Vibrators, of which the following is a specification.

My invention relates to improvements in vibrators in which a vibrator is loosely supported by a framework and adapted to vibrate by eccentric motion and capable of an even, smooth, and reciprocating vibration and of an arbitrary jarring and uneven reciprocating motion.

The objects of my invention are, first, to provide a reciprocating vibrator which shall be capable of a smooth and even reciprocating motion; second, to provide means to allow an arbitrary jarring vibration motion to the vibrator as desired in order to suit different kinds of material placed therein, and, third, to afford facilities for the easy and perfect adjustment of mechanism to accomplish the purposes set forth. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a reciprocating vibrator supported in position on a framework and adapted to vibrate. Fig. 2 is a sectional end elevation through the broken vertical line A A as viewed from the right-hand side of the machine. Fig. 3 is a detail sectional end elevation of the frame with the tapered blocks adjusted to a jarring vibration position with the eccentric wheel.

Similar characters refer to similar parts throughout the several views.

In the drawings the stationary framework of the machine is indicated by B, with end standards C secured thereto.

D is an inclined hopper secured to the end standards C to receive various kinds of material, such as spices and the like, for sifting purposes.

The inclined vibrator or vibrating sifter 2 is supported by the frame B by means of steel spring side straps 4, which are secured to the vibrator 2 and to the stationary frame B. The flexible fabric 3 is suitably connected to the sides of the vibrator 2 and the hopper D. The fabric sides 3 allow the vibrator 2 to vibrate more or less sidewise independently of the hopper D. Steel spring-straps 4 are provided to support the vibrator 2 and allow the vibrator to operate. The straps 4 are secured to the outer part of the vibrator 2 and to the inner part of the stationary frame B. Suitable sieves 5 are intended to be placed inside of the vibrator 2 and also in the hopper D and of suitable material and mesh and at suitable places and distances apart in said vibrator and hopper. The fabric pipes or tubes 6 and 7 are outlets from the vibrator 2 for sifted material and may connect to any desired material-receptacle.

To operate the vibrator 2 by means of power, a shaft 8 is provided in bearings 9, which are secured to the frame B. The shaft 2 is revolved by means of the pulley 10 on said shaft. An eccentric wheel 12 is secured on the shaft 8 and revolves with the shaft. Immediately opposite the smooth periphery of the eccentric wheel 12 is a frame 13, which is secured to the under part of the vibrator 2. On the inner sides of the frame 13 are opposite-tapered blocks 14 and 15 of wood or other suitable material and adjustably secured to the frame 13 and in proximity to the periphery of the eccentric wheel 12 by means of screws 16 in vertical slots 17 in the sides of the frame 13. The slots 17 are in position to allow the adjustment of the blocks 14 and 15, as the case may be, to suit the necessary or required vibration of the vibrator 2. It will be obvious that the face or periphery of the eccentric wheel 12 engages with the face of said blocks, and when the eccentric wheel 12 is revolved consequently the vibrator 2 is operated.

The taper of the blocks 14 and 15 are opposite in direction, one said block tapering downward and the opposite block tapering upward, and, as shown, the tapered side of each block is in close proximity with the periphery of the eccentric wheel. The position of the blocks 14 and 15, as shown, allows a smooth and even vibration to the vibrator 2. To counteract the wear and tear of the blocks 14 and 15, the block 14 may be adjusted to a lower position and the block 15 may be adjusted

to a higher position. To allow the vibrator 2 to have an arbitrary and severe reciprocating jarring motion, it is necessary to raise the block 14 and to lower the block 15 much or little or only one of the blocks, as the case may require, in order to allow much or less vibration. The two motions referred to of the vibrator 2—that is, a smooth even motion and a more or less jarring motion, according to the adjustment of the blocks 14 and 15—is important in order to produce various kinds of work in sifting material.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a vibrating sifter, the combination with a rigid support, of an inclined screening device secured to said support, a box-like frame secured to said screen and provided with slots, oppositely-disposed wedge-shaped blocks engaged by said slots, a cam adapted to operate on said blocks, and means for actuating said cam whereby the screening device is laterally vibrated.

2. In a vibrating sifter, the combination with a hopper, and a screen flexibly secured to said hopper, of a box-like frame secured to said sifter and provided with slots, oppositely-inclined wedge-shaped blocks adjustably engaging said slots, a cam adapted to engage said blocks, and means for operating said cam whereby said screen is laterally vibrated.

3. In a vibrating sifter, the combination with a hopper, and an inclined screen flexibly secured to said hopper, of a rectangular frame secured to said screen and provided with slots, oppositely-inclined wedge-shaped blocks adjustably engaging said slots, a cam operating between said blocks to reciprocate said sifter, and means for operating the cam whereby said screen is vibrated laterally of its inclination.

4. In a device of the class described, the combination with a rigid support, of an inclined hopper rigidly secured to said support, a screen within said hopper, a vibrating screen flexibly connected to said hopper, and spring members for supporting said vibrating screen, a rectangular frame secured to said screen and provided with slots, oppositely-inclined wedge-shaped blocks adjustably engaging said slots, a cam working between said blocks to reciprocate the sifter, and means for operating the cam whereby said screen is vibrated laterally of its inclination.

WILLIAM COX.

Witnesses:
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LUCIUS R. KEOGH.