

(No Model.)

4 Sheets—Sheet 1.

J. A. McANULTY.
CHOP GRADING MACHINE.

No. 526,017.

Patented Sept. 11, 1894.

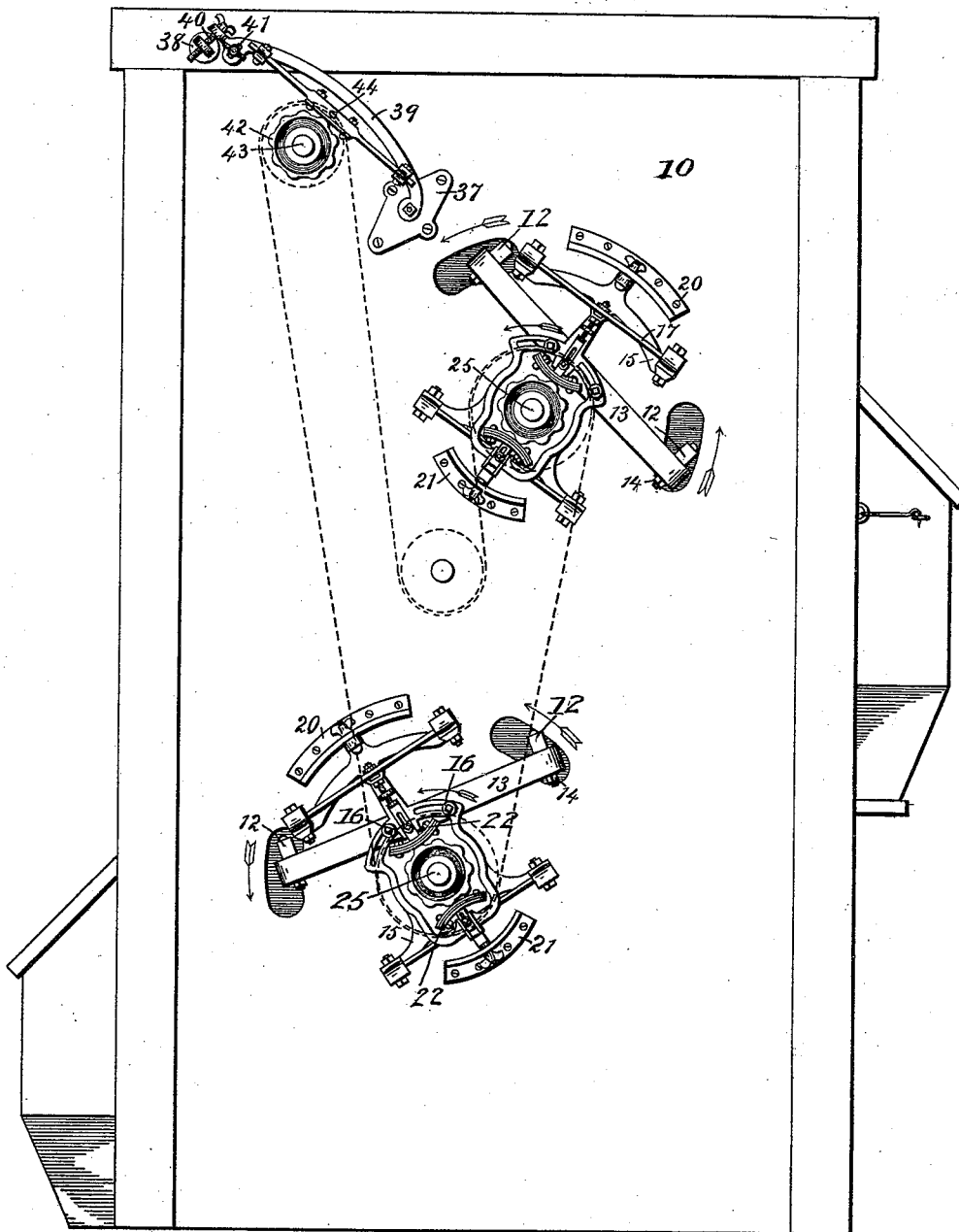


Fig. 1.

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Robert Mason.

INVENTOR—

John A. McNulty.
BY Robert Mason,
ATTORNEY.

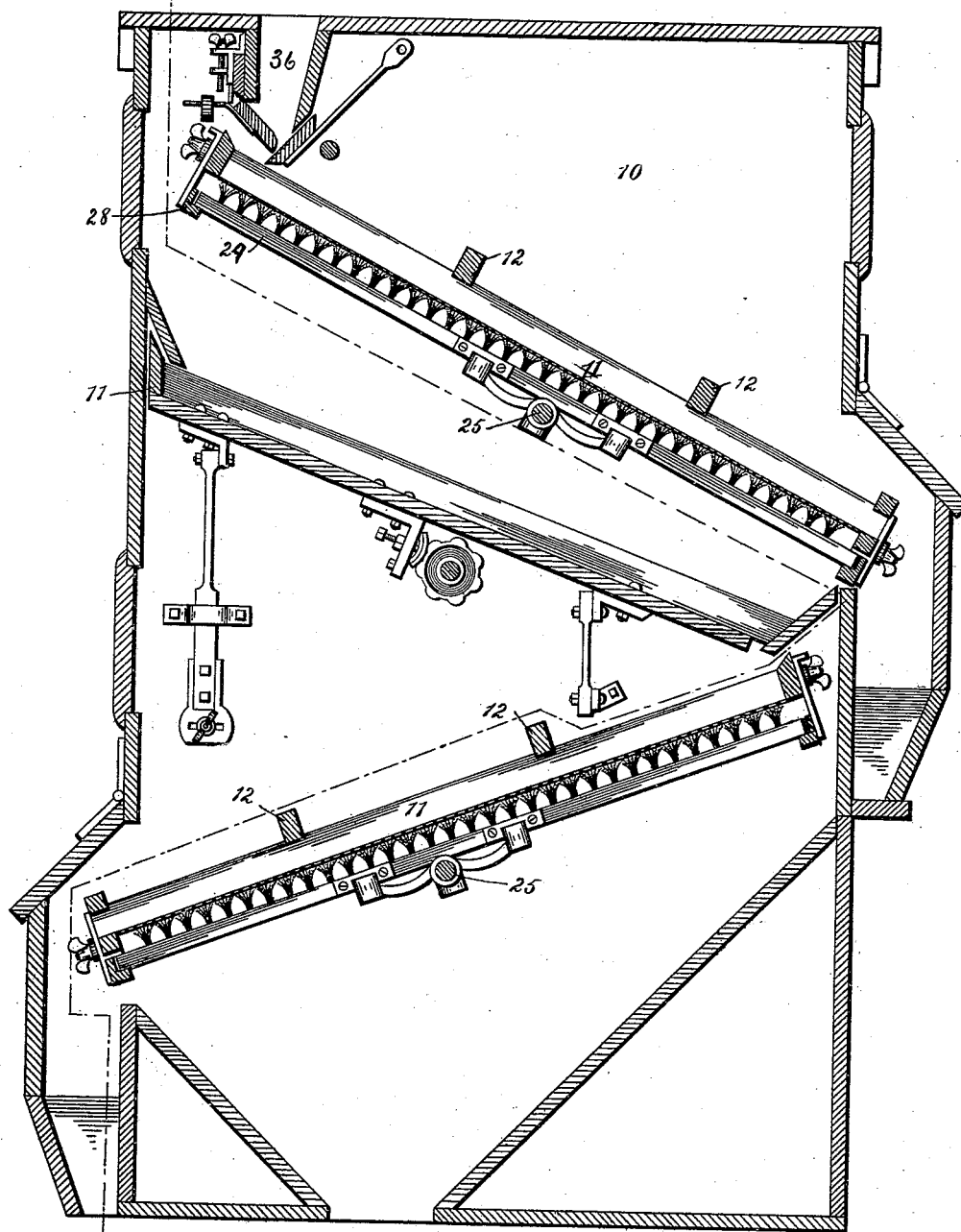
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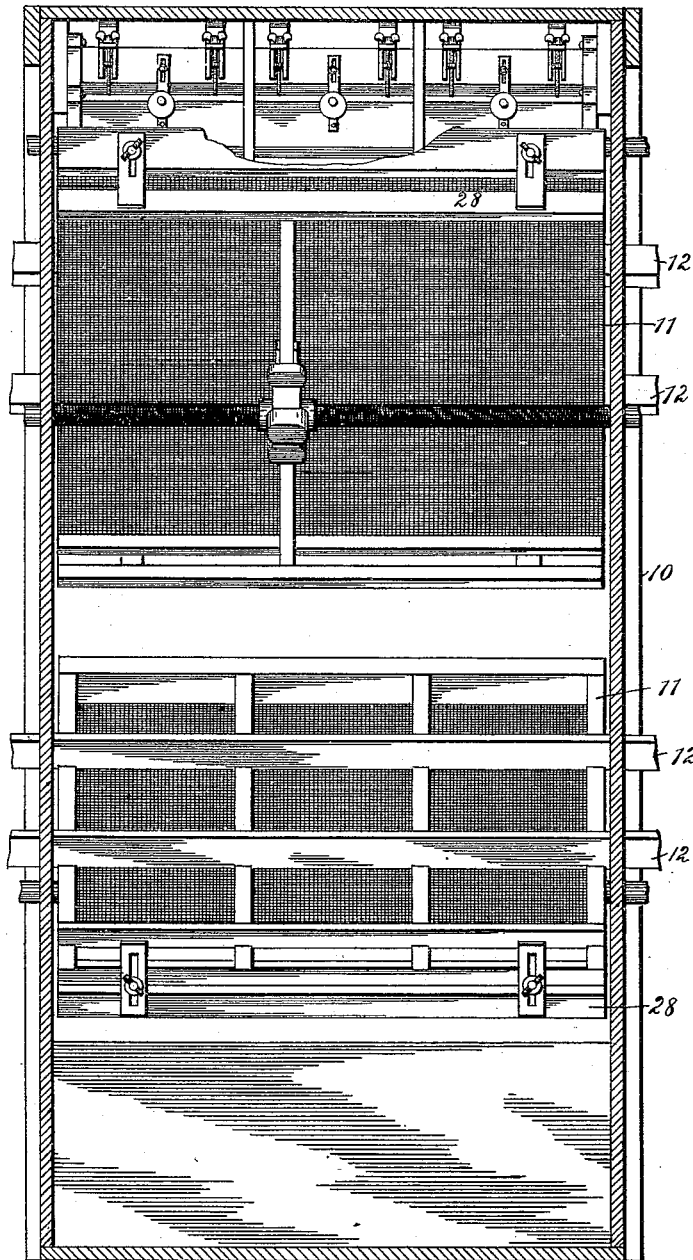
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Fig. 3.

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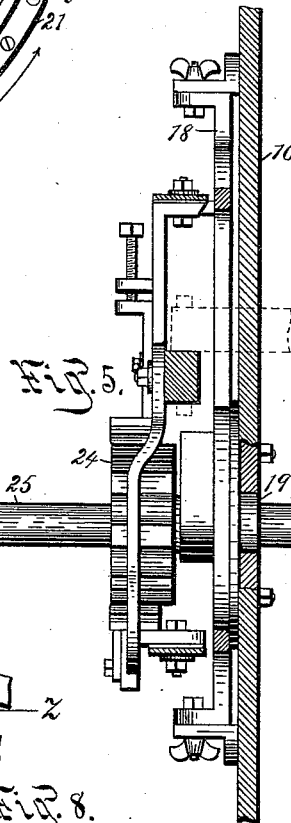
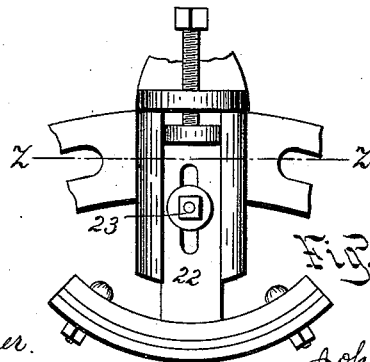
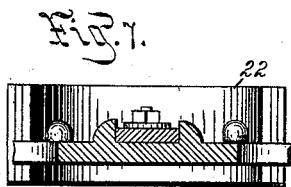
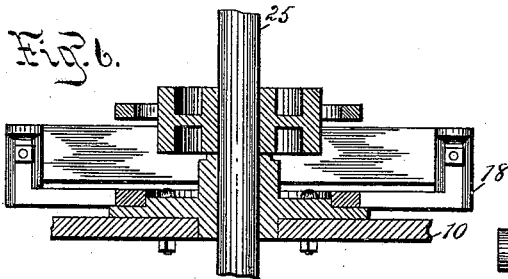
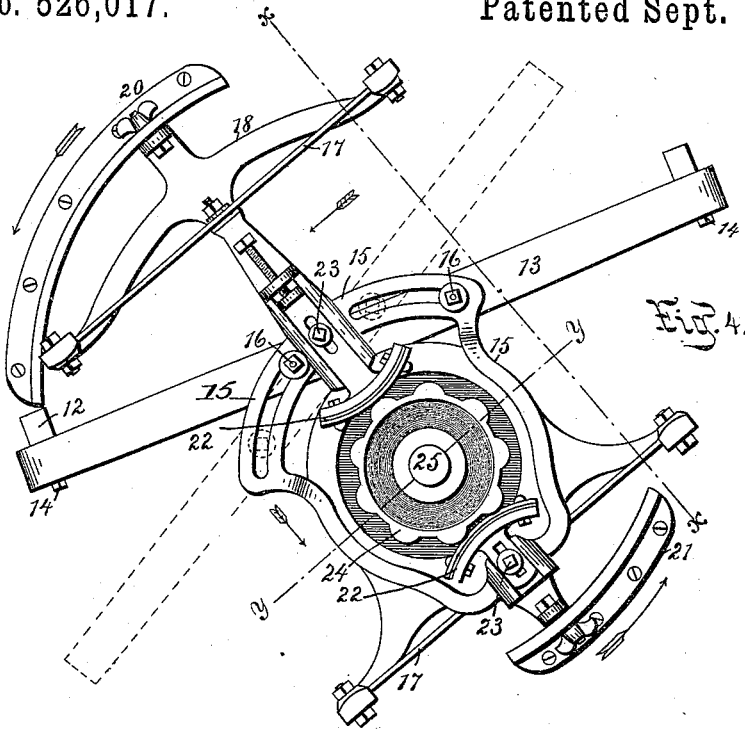
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WITNESSES:

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INVENTOR—

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UNITED STATES PATENT OFFICE.

JOHN ARMSTRONG McANULTY, OF MANHEIM, ASSIGNOR, BY MESNE ASSIGNMENTS, TO WILLIAM T. NELSON AND J. HAMILTON SMALL, OF YORK, PENNSYLVANIA.

CHOP-GRADING MACHINE.

SPECIFICATION forming part of Letters Patent No. 526,017, dated September 11, 1894.

Application filed October 16, 1893. Serial No. 488,345. (No model.)

To all whom it may concern:

Be it known that I, JOHN ARMSTRONG McANULTY, a citizen of the United States, residing at Manheim, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Chop-Grading Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in sieve separating machines in which sifting frames are flexibly and adjustably suspended and to which reciprocating motion is imparted, and the sieves prevented from clogging by means of traveling brushes, and the object of my improvements are: first, to provide means of communicating a double jarring motion to the sifting frames; second, to provide means of suspending sifting frames, whereby their pitch or inclination may be varied from one degree of pitch or inclination to any inclination desired; third, to provide means of applying vibratory motion to sifting frames in such a manner as to reciprocate the sieves at right angles or tangentially to the plane thereof; fourth, to provide means of imparting to the sieves a greater or less degree of jar or vibrating motion; fifth, to provide improved means for suspending and operating traveling brushes for cleaning the sieves; sixth, to provide means of distributing the material in a perfect manner on the sieves.

Similar figures refer to similar parts throughout the several views.

Figure 1 is a side elevation of my invention. Fig. 2 is a longitudinal sectional elevation. Fig. 3 is a transverse sectional view. Figs. 4 to 8 are enlarged views of various details.

Within the frame or casing 10 may be suspended one or more sifting frames 11 by means of transverse sieve bars 12 to which the sieves are bolted and which extend out through the end walls of the machine and are bolted to bars 13 by means of bolts 14. The bars 13 are attached to slotted segment stirrups 15 by means of bolts 16 which pass through the segment slots and bars by which they are clamped together in any position de-

sired. The upper and lower extremities of the stirrups 15 are bolted to flexible bars 17 the ends of which are bolted to projections forming part of yokes 18 which are movably mounted on the frame work 10 by being swiveled around boxes which are set in the casing 10 and are held in position at their outer ends by bolts and nuts connecting them with the slotted segments 20 and 21 which are attached to the walls of the machine.

To the stirrups 15 are adjustably attached friction blocks 22 which may be raised and lowered to any desired point and held in place by means of bolts and nuts 23.

Segment cams 24 having an uneven number of rounded projections are mounted between the upper and lower friction blocks 22 on both sides of the machine on through shafts 25 which have their bearings in the boxes 19. These segment cams when put in motion by means of power applied to the through shafts impart to the stirrups 15 a vibrating motion owing to the segments or cams acting alternately against the upper and lower friction blocks and by means of the stirrup connections with the sieves 11 a positive up and down jar is imparted to the sieves. The upward jar serves to keep the material passing over the sieve agitated, while the downward jar tends to dislodge any particles having a tendency to stick in the meshes of the cloth.

The inclination of the sieves may be varied or changed from one line of pitch or inclination to another by changing the position of the yokes 18 which are swiveled between the segment supports 20 and 21.

A further adjustment of the inclination of the sieves is made by changing the position of the bars 13 relatively to the stirrups 15 by means of the adjustable bolt connections 16. It will also be observed that the line of vibration imparted to the sieve by means of the adjustable connections of the bars 13 with the stirrups 15 may be changed from that of the line of right angle to the plane of sieve, to an angle declining toward the discharge end of the sieve, which facilitates the passage over the sieve of the material being sifted or may be changed to incline the line of vibration or movement of sieves toward

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the head of sieve which serves to retard the passage of the material over the sieves and subject it to a longer and more severe treatment.

5 The force of the jar given the sieves is regulated by setting the upper friction blocks into contact with the revolving segment cams. When in light contact the jar is mild, but when set down hard upon the segment cams
10 a much harder jar is given the sieves.

The changes in the pitch or inclination of the sieves, as well as the direction of the movement imparted to the sieve, and the limit and force of the stroke, may all be effected when
15 the machines are in motion without in the least interfering with the workings of the several devices.

Guide ways 28 are movably and adjustably attached to the heads and tails of the sieve
20 frames as shown in Fig. 2 in which travel the two ends of brush bars 29 in which brushes are affixed for cleaning the cloth and which are held in constant contact with the cloth and said brushes are moved transversely back
25 and forth under the sieves by means of a brush moving device mounted upon the reverse threaded through shafts 25 to which it is coupled by means of a movable toggle which travels in the threads in the shaft.

30 The material to be treated is fed on to the head of the sieve from the hopper as shown in Fig. 2 which is provided with a yielding and adjustable gate; and as it passes over the vibrating sieve the fiber particles are
35 sifted through the sieve and are conveyed from the machine by any of the well known devices for conveying material.

I am aware of the invention and use of sieving machines having various means of
40 adjustments, of sieves, and brushes. Such I do not claim broadly.

What I do claim, and desire to secure by Letters Patent, is—

1. In chop grading machines, the combination
45 with the shaft 25 having cams 24 affixed thereto, the stirrups 15, the friction blocks 22, spring bars 17, the yokes 18, the segments 20 and 21, all as and for the purpose set forth.

2. The combination with the yokes 18, piv-

otally mounted on the frame and having out- 50
ward extending arms affixed thereto the stirrups 15 having inwardly extending arms, the friction blocks 22 and the connecting springs 17, as described.

3. The combination in a chop grading machine with the yokes 18 pivotally mounted
55 on the casing and having the stirrups 15 flexibly connected therewith, the friction blocks 22, the side bars 13 and connecting bolts 16, all as and for the purpose specified. 60

4. In a sieve separating machine the combination with the casing 10, the bearing 19,
65 the yoke 18, the segments 20 and 21, the bars 17 the stirrups 15 and the bars 13 all as and for the purpose described. 65

5. In a sieve separating machine the combination with the sieve frame having transverse bars attached thereto extending outward through the walls of the machine, the
70 cross bar 13, the stirrups 15 having their upper and lower ends attached to the flexible supporting bars 17 and the adjustably supported yokes 18 all as and for the purpose described.

6. The combination with the yokes 18 the
75 supporting bars 17, the stirrups 15, the adjustable friction blocks 22, all as and for the purpose described.

7. The combination with the side bars 13, the flexibly supported stirrups and the movable
80 friction blocks 22, all as and for the purpose described.

8. The combination of the sieve frame having movable brush supporting ways attached
85 thereto as described, the transverse supporting bars 12, the bars 13, the stirrups 15 and the yokes 18 all as and for the purposes set forth.

9. The combination with the sieve frame 11, the adjustable ways 28, and the brush bar
90 29, the brush moving device and through shaft 25, all acting together as described and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN ARMSTRONG McANULTY.

Witnesses:

FRANK E. KEIFFER,
AMOS G. HAMAKER.