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BEET SEED CLEANER.
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BEET-SEED CLEANER.

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To all whom it may concern:

Be it known that I, JAMES FLOYD JARRELL, a citizen of the United States, and a resident of Longmont, in the county of Boulder and State of Colorado, have invented certain new and useful Improvements in Beet-Seed Cleaners, of which the following is a specification.

My invention relates to means for separating seeds, berries, and the like from dirt, leaves, twigs, or other matter, and among the main objects thereof are to provide a machine for this purpose having a relatively great capacity through the use of a plurality of cleaning units, which units are caused to travel while held in inclined planes and to be agitated at one point while held steadily at all other points during such travel, to provide means for adjusting the inclination of the said units at will, to provide controllable means for leading the material to be cleaned to the several units, to provide means for readily detaching said units when such detachment is desired, to provide means for conveying the cleaned material to a suitable receptacle, to provide means for conveying the refuse from the machine, and to provide means for repeating the cleansing operation upon material not thoroughly cleaned, and to provide such a machine in a compact form adapted either for installation in a building or for use in a field, in the latter use being readily moved as by the provision of suitable wheels or rollers.

My invention is fully described in the following specification, of which the accompanying drawings form a part, in which like characters refer to like parts in each of the views, and in which—

Figure 1 is an end view of one embodiment of my invention, partly broken away;

Fig. 2 is a rear view thereof, in the direction of the arrow in Fig. 1;

Fig. 3 is a top plan view of one of the cleaning units removed from the frame;

Fig. 4 is a section taken on the line 4—4 of Fig. 3;

Fig. 5 is a detached view of an agitator which I employ;

Fig. 6 is a fragmentary view of a detail for vertically adjusting one side of each of the cleaning units;

Fig. 7 is a section taken on the line 7—7 of Fig. 6;

Fig. 8 is a fragmentary detail view of the means provided for vertically adjusting the other side of each of said cleaning units; and

Fig. 9 is a section taken on the line 9—9 of Fig. 8.

Referring to the drawings, 10 represents a frame for supporting the operative parts of the device including a vertical casing 11 for an endless conveyor 12 of the bucket type in operative connection with upper and lower shafts 13 and 14 the former of which is in operative connection with a power shaft 15 from a suitable prime mover, not shown, and the lower end of the casing 11 is adapted to receive the seeds or other matter to be cleaned.

The seeds upon being elevated by the conveyor 12 are dropped into a hopper 16 at the top of the frame 10 and the bottom of which hopper has a plurality of chutes 17 leading downwardly therefrom to spaced vertical positions at one side of the frame, and said hopper contains a serrated roller 18 and an adjustable gate 19 the former of which is connected with the prime mover in any desired manner, a belt 20 being shown.

The frame 10 supports a plurality of cleaning units 21 horizontally arranged for the length of the frame and held at an inclination for the width of the frame, one side of each unit having ears 22 thereon in pivotal engagement with carriers 23 vertically adjustable in the frame by means of screws 24, and the other side of each unit having hooks 25 thereon for engagement with one or more vertical rack bars 26 whereby this side may be vertically adjusted, different materials to be cleaned often requiring different inclinations of the units,
and the several chutes 17 lead to the higher sides of the respective cleaning units, and at one end of said units, Figs. 1 and 2.

Each of the units 21 consists of a frame 5 formed of side bars 27 and end bars 28 the former of which carry bearings for shafts 29 and 30 adjacent opposite ends of said frame, the shaft 29 being immovable with respect to said side bars whereas the bearings of the shaft 30 are preferably adjustable toward the respective end bar, as by means of screw members 31 to adjust the tension of an endless blanket 32 carried by rollers on the two shafts, and said shafts are preferably connected by means of a belt 33 passed around pulleys or sprocket wheels 34 on said shafts.

The shaft 29 is provided with a bevel pinion 35 Norman meshed with a similar pinion 36 on a vertical shaft 37 held in the frame 10, the shaft 37 carrying a pinion 38 for each of the cleaning units and being connected with the prime mover, as by means of gears 38 and 39, pulleys 40 and 41, and a belt 42, or in any desired manner.

The side bars 27 carry a platform 43 for approximately the distance between the shafts 29 and 30 interrupted at 44 and serving to support the upper portion of the blanket 32 against sagging or flapping, a tapered angular beater 45 being carried by the side bars 27 in the space where the platform is interrupted, a pulley 46 on said beater being connected with a pulley 47 on the shaft 30 by means of a belt 48 or its equivalent, said beater bearing directly against the under surface of the upper portion of the blanket and serving, in its rotation, to agitate said blanket at this point only, the platform 43 holding the blanket steady except at this point.

Arranged adjacent the lower sides of all of the units 21 is a chute 49 for leading the seeds to a receptacle 50 whence they may be removed, as by a conveyer 51, to any suitable point, and I provide a receptacle 52 beneath the ends of said units toward which their blankets move, for the culls which may be led to a desired point by means of a chute 53.

As shown in Fig. 2, the chute 49 is terminated at its lower end in a hopper 54 extending about three-fourths across the length of the machine, and cleaned seed will drop thereto for approximately three-fourths of the distance of travel of the several blankets, at their lower edges, and I provide a supplemental hopper 55 leading to a receptacle 56 for the remaining one-fourth of blanket travel, also at the lower edges thereof, this being for the reception of only partially cleaned seeds which are carried upwardly to a hopper 57 by means of a conveyer 58 and deposited upon the lowermost unit adjacent the agitator or beater 45 thereof, these seeds being re-cleaned and being deposited in the receptacle 50, the culls being carried to the receptacle 52.

The seeds having hard and smooth surfaces, usually round, will roll down the inclines of the respective blankets and the culls will adhere to said blankets until they are removed by scrapers 59 at the far end of blanket travel, Fig. 4, and the several beaters assist in separating the seed from the culls though only at one point of blanket travel.

It will thus be seen that the seeds to be cleaned are deposited upon a plurality of cleaning units having traveling blankets arranged at an incline down which the seeds roll to a suitable receptacle, agitation of the seeds occurring at a predetermined point and the blankets being held steadily for the greater part of their travel by the platforms thereunder, the degree of feed to said units being under control by the gate 10, and partially cleaned seed are submitted to a re-cleaning operation.

The units are readily removable from the frame when such removal is desired, and the inclination thereof is variable to adapt the machine to different products, and the blankets may be readily removed from the respective units for substitution, cleansing, or repair.

While I have shown a practical embodiment of the invention, it will be apparent that structural changes may be made thereover without departing from the spirit of the invention or sacrificing its advantages, provided that such changes come within the scope of the appended claims, and I reserve the right to construct the machine in a stationary or transportable form, and to provide any desired number of the cleaning units and of any desired size.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is:

1. A seed cleaner, comprising a frame, a cleaning unit held at an angle therein, and means for leading the cleaned seeds and the culls to different points, said unit consisting of a roller carrying frame, an endless blanket movable therein, a fixed platform supporting the upper portion of said blanket to prevent upward and downward movement thereof, said platform being interrupted at one point adjacent its end, and means at said interruption for agitating said blanket at said interruption only.

2. A seed cleaner, comprising a frame, a cleaning unit held at an angle therein, means for leading the cleaned seeds and the culls to different points, a supplemental
cleaning unit, and means for returning partially cleaned seeds to said last named unit, each of said units consisting of a frame, an endless blanket movably mounted thereon, and means for actuating said blanket.

3. A seed cleaner, comprising a frame, a cleaning unit held at an angle therein, means for leading the cleaned seeds and the culls to different points, said unit consisting of a frame, an endless blanket movably mounted thereon, means for actuating said blanket, a platform for supporting said blanket interrupted adjacent one end, and a tapered angular beater rotatable at said platform interruption for agitating said blanket at said interruption only.

JAMES FLOYD JARRELL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."