

J. N. McCARTY.  
GRADER.

APPLICATION FILED JAN. 14, 1918.

1,285,280.

Patented Nov. 19, 1918.

3 SHEETS—SHEET 1.

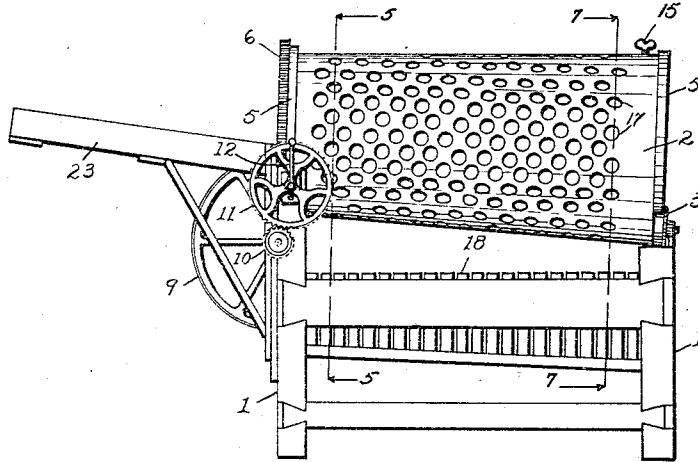


FIG. I

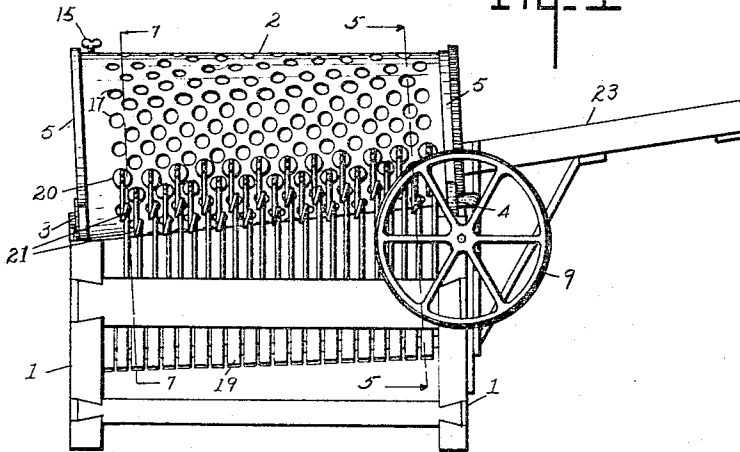


FIG. II

FIG. XII.



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3 SHEETS—SHEET 2.

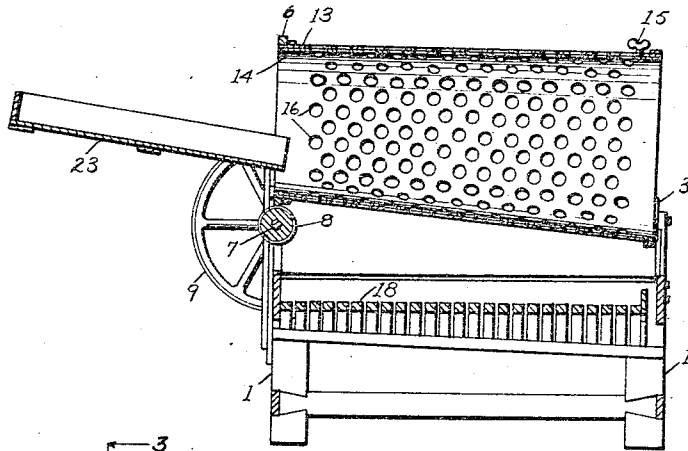


FIG. III

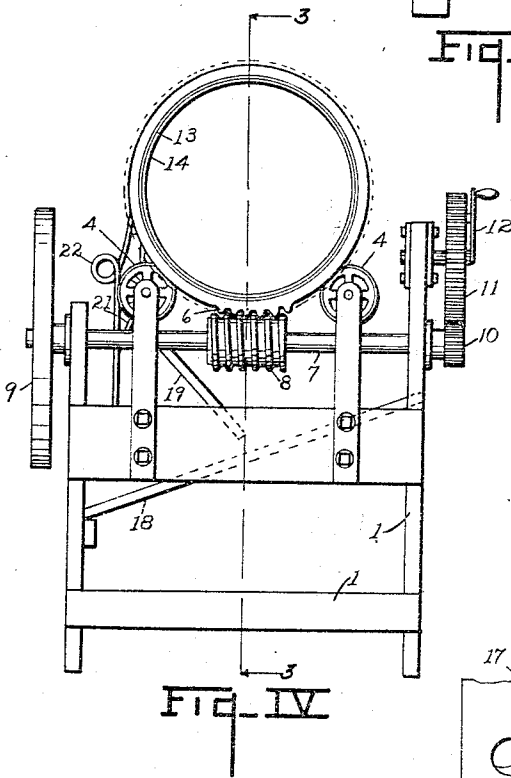


FIG. IV

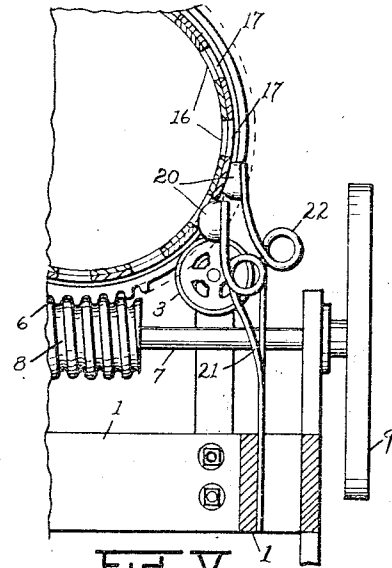


FIG. V

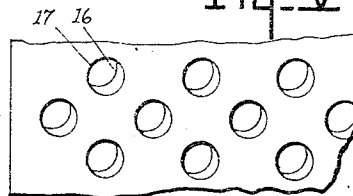


FIG. X

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3 SHEETS—SHEET 3.

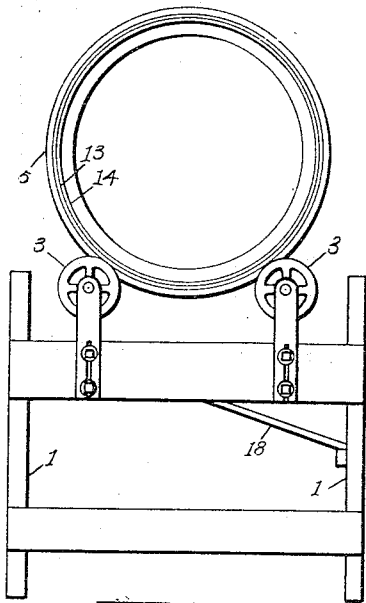


FIG. VI

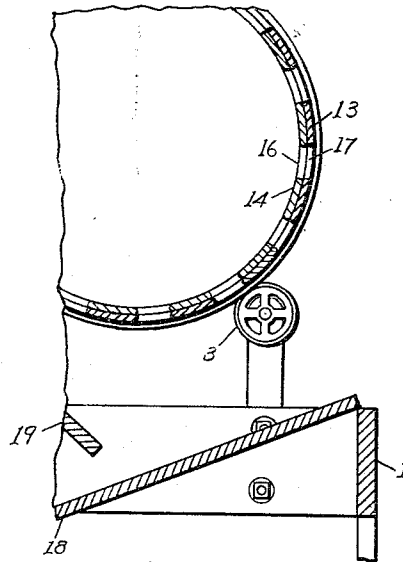


FIG. VII

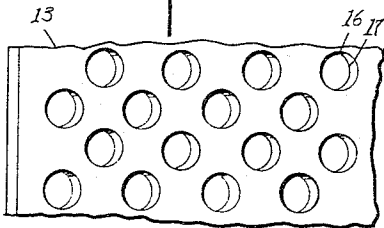


FIG. VIII

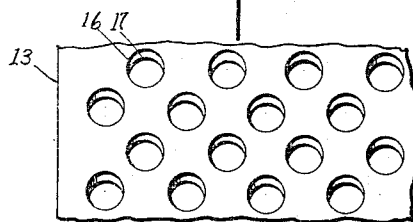


FIG. IX

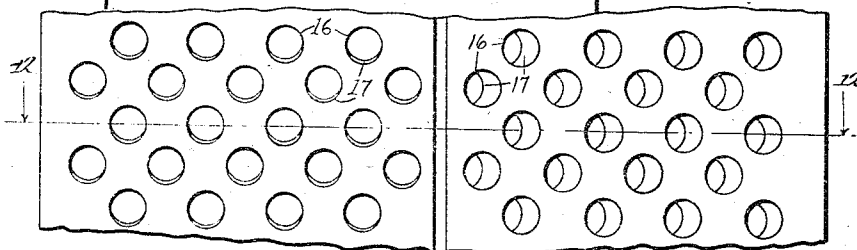


FIG. X

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# UNITED STATES PATENT OFFICE.

JAMES N. McCARTY, OF PAW PAW, MICHIGAN.

## GRADER.

1,285,280.

Specification of Letters Patent.

Patented Nov. 19, 1918.

Application filed January 14, 1918. Serial No. 211,807.

*To all whom it may concern:*

Be it known that I, JAMES N. McCARTY, a citizen of the United States, residing at Paw Paw, in the county of Van Buren and State of Michigan, have invented certain new and useful Improvements in Graders, of which the following is a specification.

This invention relates to improvements in graders.

My improved grader is especially designed by me for grading potatoes although it is advantageous for use in grading fruit.

The main objects of this invention are:

First, to provide an improved grader in which the size of the grading openings may be varied.

Second, to provide an improved grader which is of large capacity.

Third, to provide an improved grader which does not become clogged.

Further objects, and objects relating to structural details, will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification. The invention is clearly defined and pointed out in the claims.

A structure which is a preferred embodiment of my invention is clearly illustrated in the accompanying drawing, forming a part of this specification, in which:

Figure I is a side elevation of a structure embodying the features of my invention.

Fig. II is an elevation of the opposite side from that shown in Fig. I.

Fig. III is a vertical longitudinal section on a line corresponding to line 3—3 of Fig. IV.

Fig. IV is a front view with the feed chute omitted.

Fig. V is a detail transverse section on a line corresponding to line 5—5 of Fig. I.

Fig. VI is a rear view.

Fig. VII is a detail transverse section on a line corresponding to line 7—7 of Fig. I.

Fig. VIII is an enlarged detail view of the grader showing one adjustment of the grading openings.

Fig. IX is an enlarged detail view showing another adjustment of the grader.

Fig. X is an enlarged detail view showing still another adjustment of the grading openings.

Fig. XI is a detail view of a modified construction showing means for providing

grading openings of different shape and size in the same grading drum.

Fig. XII is an enlarged detail section on a line corresponding to line 12—12 of Fig. II.

In the drawing, similar reference characters refer to similar parts throughout the several views, and the sectional views are taken looking in the direction of the little arrows at the ends of the section lines.

Referring to the drawing, the frame 1 is of suitable structure to support the grading drum 2 in an elevated position. The grading drum 2 is carried by pairs of rollers 3, 3 and 4, 4 positioned so that the drum is supported in a rearwardly inclined position. The drum is provided with rings or collars 5 resting on the rollers and at its front end with a worm gear 6. The driving shaft 7 is disposed transversely below the drum and provided with a worm 8 meshing with the gear 6. At one end the driving shaft is provided with a balance wheel 9 and at the other with a pinion 10 meshing with the gear 11 of the gearing 12.

The grading drum 2 consists of an outer member 13 and an inner member 14, the inner member being arranged within the outer for rotative and longitudinal adjustment, being secured in its adjusted position by the set screw 15. The inner and outer drum members have rows of holes 16 and 17 therein preferably arranged with the holes of adjacent rows alternated. The holes of the members are of the same size and adapted to be brought into register or adjusted to bring the holes of the inner member partially out of register with those of the outer, thereby decreasing the size of the grading openings. By arranging the inner member so that it may be adjusted both longitudinally and rotatively, and the shape as well as the size of the openings may be considerably varied.

In Fig. VII the inner member is shown adjusted longitudinally so that the oval holes are provided, the diameter being circumferential of the drum. In Fig. IX the inner member is adjusted rotatively so that the greatest diameter of the holes is longitudinally of the drum. In Fig. X the inner drum is adjusted both rotatively and longitudinally so that the greatest diameter of the holes is diagonally of the cylinder.

In the modification shown in Fig. XI

the inner member is formed in sections capable of independent adjustment so that one section may be adjusted longitudinally and the other rotatively, or one section adjusted to provide smaller openings at one end of the cylinder than at the other. The cylinder members are of such relative size that the adjustment can be readily effected manually, the parts being secured in their adjusted position by means of the set screws 15.

I preferably provide a screen adapted to separate the dirt from the smaller potatoes, the screen in the structure illustrated consisting of a series of bars 18 arranged in an inclined position below the drum, a deflector 19 being positioned above the screen to guide the potatoes discharged at one side toward the screen so that they will travel over the same and afford an opportunity for separation from the dirt.

To free the grading openings from potatoes which become wedged therein I provide a plurality of tappets consisting of heads 20 and spring supports 21 mounted on the frame so that the heads ride on the drum and pass into and out of the grading holes as the drum rotates. The heads 20 are preferably formed of rubber, the spring supports 21 being rod springs having coils 22 formed therein.

A feed chute 23 is arranged at the front so as to discharge into the front end of the drum. The potatoes to be graded are poured or shoveled into the feed chute from which they roll into the drum and as the drum is rotated the smaller potatoes drop through the grading openings, the larger ones being discharged at the rear end of the drum.

My improved grader is of large capacity

and the potatoes are not bruised or injured in passing therethrough.

I have illustrated and described my improvements as I have embodied the same. I have not attempted to illustrate or describe certain adaptations or modifications of which my invention is capable as I believe the disclosure made will enable those skilled in the art to which my invention relates to embody or adapt the same as may be required.

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

1. In a potato grader, the combination with a frame, of a foraminated drum comprising inner and outer members having registering holes therein, the inner member being rotatively and longitudinally adjustable within the outer member to regulate the size of the grading openings, and means for rotatively supporting said drum.

2. In a potato grader, the combination with a frame, of a foraminated drum comprising an outer member and a plurality of inner members, said members having registering holes, the inner members being supported for independent rotative longitudinal adjustment within the outer member to facilitate the regulating of the size of the grading openings, and means for rotatively supporting said drum.

In witness whereof I have hereunto set my hand and seal in the presence of two witnesses.

JAMES N. McCARTY. [L. S.]

Witnesses:

J. B. WARNER,

ESTHER STEVENSON.

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