W. H. KLAUER.

WILD OATS SEPARATOR.

APPLICATION FILED APR. 30, 1913.

1,082,879.

Patented Dec. 30, 1913.

2 SHEETS—SHEET 1.

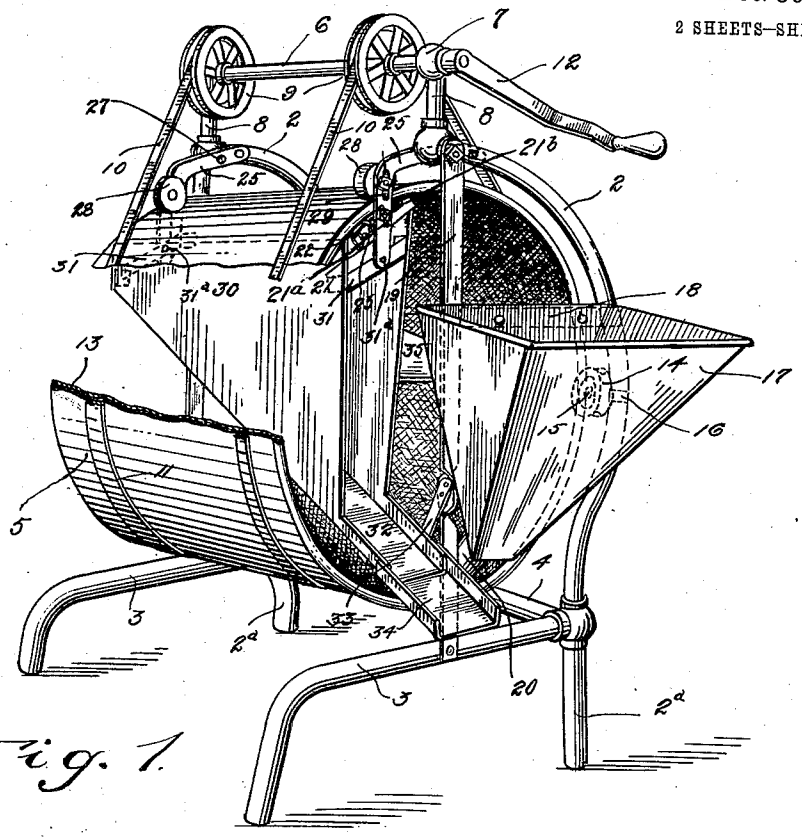

Fig. 1.

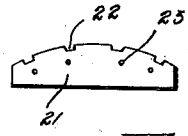

Fig. 5.

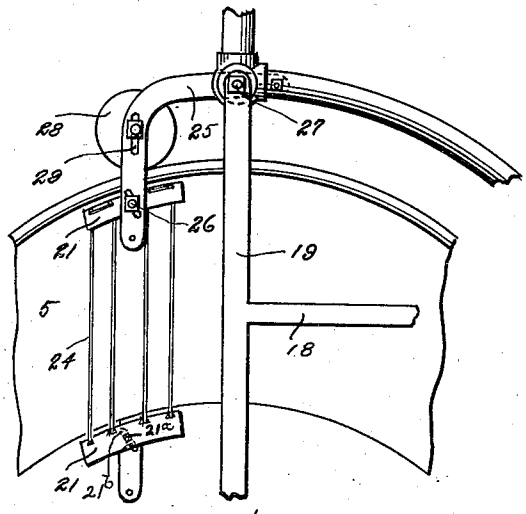

Fig. 4.

Witnesses

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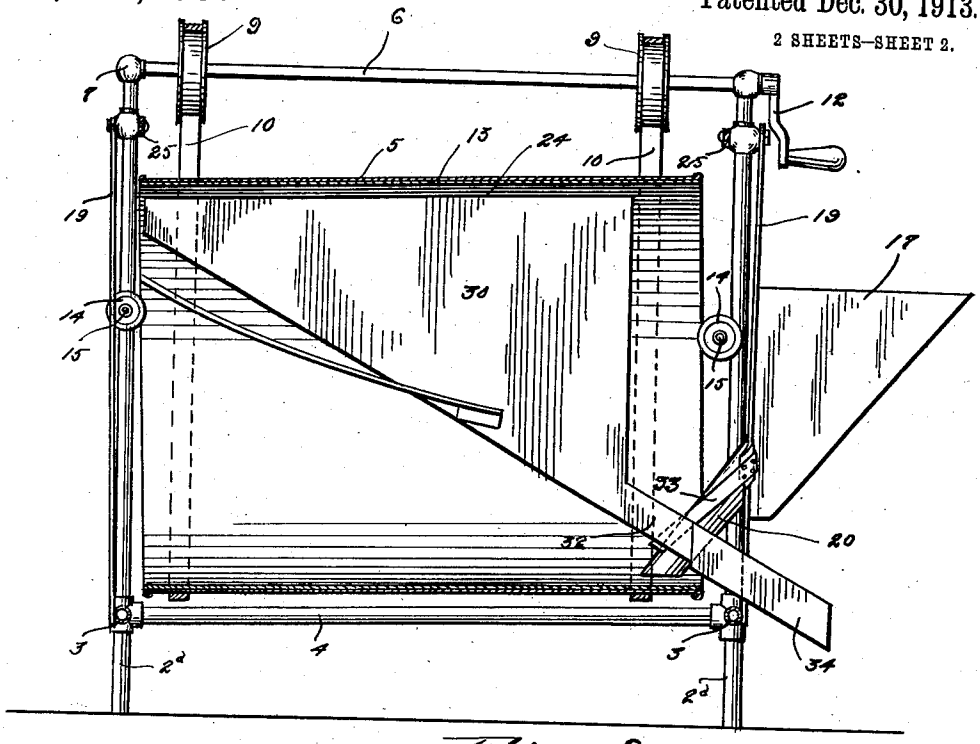

Fig. 2.

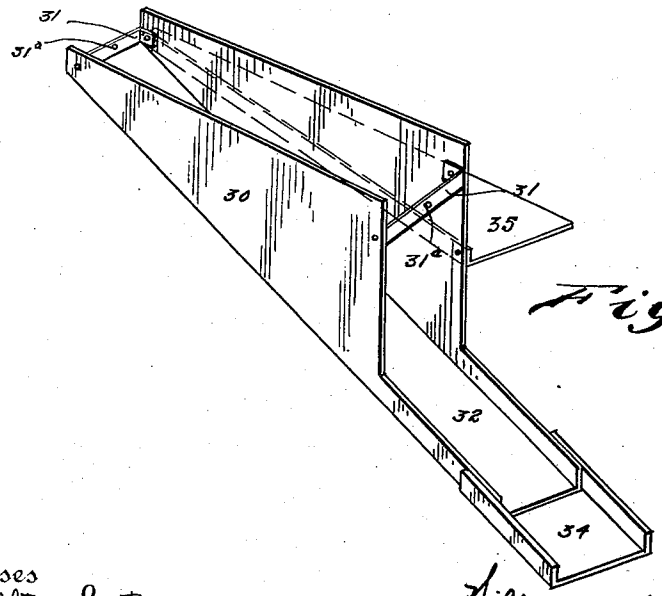

Fig. 3.

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WILD-OATS SEPARATOR.

1,082,879. Specification of Letters Patent. Patented Dec. 30, 1913.

Application filed April 30, 1913. Serial No. 764,623.

To all whom it may concern:

Be it known that I, WILLIAM H. KLAUER, citizen of the United States, residing at Dubuque, in the county of Dubuque and State of Iowa, have invented certain new and useful Improvements in Wild-Oats Separators, of which the following is a specification.

My invention relates to a machine adapted to separate wild oats and the like from native oats and other grain.

The object of my invention is to improve known structures designed for the same purpose, to the end of accomplishing an effective dislodgment of wild oats and the like from the carrying surface and to insure that the same are effectively caught when dislodged and discharged from the machine; to provide a tangle or scraping frame; adjustment relatively between the scraping frame and revolving body, and generally to effect an organization to promote efficiency in the working of the machine, to reduce cost, etc.

The detail structural parts and combinations to produce the several results are hereinafter more particularly specified.

In the drawings Figure 1 is a perspective view of a wild oats separator, showing my invention in association, there being a portion being broken away for disclosure of interior parts; Fig. 2 is a sectional view on varied vertical lines; Fig. 3 is a perspective view in detail of a spout or chute adapted to catch wild oats and discharge the same outside of the machine; Fig. 4 is an exaggerated front perspective view of a section taken from the machine and designed particularly to show the manner of support and relative adjustment of a rotatable cylinder and tangle wires or scrapers, also the general relative adjustability between said cylinder and the main supporting frame, and Fig. 5 is a detail view showing the form of plates adapted to support the tangle wires or scrapers.

Referring to said drawings, 2, 2 are standards, arc shaped in their main portions to adapt them to overlie a cylindrical body, to support the same from a point above said body, the portion 2^a of said standards being substantially vertically placed to form legs.

3 are leg portions extending laterally some distance at a gradual incline, then downwardly to form the contact support.

4 is a cross bar adapted to connect frame parts formed of standards 2 and leg portions 3 at the ends of the device and adapted to be supported therebetween.

5 is a cylindrical body or drum rotatably supported in a position inclined from a horizontal plane and within the frame structure defined. The means for rotatably supporting the drum comprises a shaft 6 journaled in bearings as 7 in uprights 8, the latter being secured at the upper portion of standards 2; band or belt wheels 9 fixed to shaft 5; belts or bands 10 supported and driven from said band wheels and encircling the said drum in a relation to support the latter in a suspended position from said bands.

11 are flanged rings about drum 5 adapted to form a bearing and guide for the bands.

12 is a crank arm applied to the end of shaft 6 to turn the same to accomplish the rotation of drum 5.

13 is a lining for the entire inner surface of drum 5 and may be of some fabric having a heavy nap, as for instance, cotton flannel.

14 are rollers journaled upon stud extensions 15 from brackets as 16, the latter being fixed in a suitable manner to standard 2. Rollers 14 are positioned for bearing relation with the terminal edges of drum 5 to fix the plane of its travel.

17 is a hopper supported upon bar 18, the latter being connected at its ends respectively with vertical bar 19 which connects frame parts and with one of the standards 2.

20 is a spout extension from hopper 17 extending some distance interiorly of the drum and adapted to discharge grain thereinto.

In so far as I have progressed with this description, I have defined parts heretofore known in the art, and particularly in the patent to Hoiland, No. 1,054,549, except as to the form of frame support. I have reference specially to standards 2 which, it will be observed, accomplish a support with the framing wholly at one side, thereby leaving complete clearance on the other side, which is of service and advantage in placement and adjustment of the drum.

Referring again to the drawings, 21 are frames adapted to be positioned and supported at the ends of the drum 5 and in proximity to the surface of the fabric therein, said frame parts being formed with arc shaped upper edges, as shown in Fig. 5.

Frames 21 may be formed in any suitable manner for the association and connection of a plurality of cross strand formations relative to the drum, but in the form I have shown, the arc shaped edge which conforms to the arc of the drum, is recessed as at 22, and pins 23 are positioned upon the outer faces of the frames, whereby a wire strand fixed at one of its ends to one of the frames may be passed from one frame to the other, engaging recesses 22 and pins 23 successively, traversing back and forth longitudinally of the drum to form the entangling or dislodgment frame.

The entangling frame, comprising frames 21 and crosswires 24, is a material and essential part of my invention, and in its structure and application the wires are so spaced apart relatively that the distance between each will be less than that of the normal length of a wild oat body, and the frame is so placed with relation to the surface of the fabric lining the interior of the drum, that no grain can pass without contact with wires of the entangling frame. The wild oats or outlaw grain designed to be eliminated, is designed to contact with the first, and then the other wires of the frame successively until disengaged, and in arrangement the first wire of the tangle frame with which the wild oat body is brought into contact, will generally cause its dislodgment from the fabric lining; however, if not released, the passing of the body under the wire which traverses its inclined portion, will tilt the forward portion of the body upwardly, to be caught by the next wire before the bearing relation of the first wire thereupon has ceased, and thus in succession of passage relative to said body, if it should fail to be dislodged by the first wire, it will be caught by the second, and so on relative to the series until disengaged.

Frames 21 are supported from arms 25 which are fixed to the machine frame by means of bolts as 27, said arms extending outwardly from their supports and downwardly at each side of the drum and to a position somewhat below the same. Frames 21 are supported in an adjustable relation with said arms by means of bolts as 21^a in slots as 21^b, said slots being disposed in said arms to extend in a line through the central axis of said drum, and the bolts 21^a are squared as shown in Fig. 4, or that portion at least of said bolts which pass through said slots and a squared opening in said frames 21 is provided so that in any adjustment of said frames 21, said frames will be directed and guided to a position of said frame relative to the drum in the exact and proper spaced relation. The rollers 28, supported in connection with arms 25, are intended to engage the exterior of the drum to hold the latter in impinging relation with the belts or bands 10 so as to insure rotation of said drum. To meet the emergency of stretching, these bands or belts are usually made of leather or other material, that is liable to stretch or that may be shortened through the influence of weather conditions, and to meet this emergency, the rollers 28 are adjustable upon said arms 25 by means of slots 29 in said arms, whereby I am able to meet the emergency of the change in length of said belts or bands. Whenever rollers 28 are adjusted it becomes necessary to make an adjustment of frames 21 of the tangle frame for the purpose of maintaining the proper relation of the wires of said frame with the surface of the interior lining fabric. Adjustment of frames 21 also is necessary for the reason that by use the nap of the fabric may be pressed down and therefore said arms must be moved to maintain the proper spaced relation between said fabric and said wires comprising the tangle frame.

In carrying out my invention, I provide the gravity trough 30, the same being formed in an integral body, its upper edges adapted to bear in close relation to the surface of the interior fabric lining for the drum, and to embrace the tangle frame in a relation to deflect dislodged bodies to the inclined bottom portion of the trough below. The trough is supported from the cross bar portions thereon, as 31, in a pivotal relation as at 31^a, the lower end of arm 25 thereby accommodating substantially freedom of movement relatively between frames 21 and said trough. The forward end 32 of gravity trough 30 is designed, for convenience in shipment, to terminate at the edge of the drum so as to obviate any projecting parts. The forward portion 32 of said trough is supported from the hooked arm 33 in the manner shown in Fig. 1.

34 is an extension adapted to be connected with spout portion 32 in a detachable relation and affords a means of carrying the wild oat discharge from gravity trough 30—32 to a convenient portion for deposit.

35 is a supplemental chute attached to one of the vertical side walls of gravity chute 30 and extends laterally therefrom and into fairly close relation with the fabric lining of the interior of the drum, extending longitudinally of the drum from its rear end and throughout the greater portion of length thereof, and at a forward incline, as shown in the drawings, to induce a gravity discharge therefrom, and said supplemental chute is designed to catch all grain carried by the moving drum to a point above said supplemental chute that may drop before reaching gravity spout 30, and to deliver the same to a position in the

drum to be further acted upon and to catch up any wild oats that may have thus been redelivered thereto.

I have shown herein the form of embodiment of my invention that I prefer. However, I do not desire to limit myself to the specific form disclosed, but claim all forms of embodiment thereof that fall legitimately within the spirit thereof.

What I claim is:

1. In a wild oats separator, a suitable supporting frame, a shaft journaled therein, a rotatable inclined drum, means for supporting and turning said drum from said shaft, arms permanently connected with said supporting frame provided with slots therein, a roller member adjustably supported in the slots in each of said arms in an adjustable relation, adapted to bear upon the outer surface of the drum, a tangle frame comprising end sections and cross wires, the plural series arranged in arc shape, the latter spaced apart distances less than the normal length of the grains adapted to be elevated and adapted to engage the latter for dislodgment, means for supporting the tangle frame in an adjustable relation, with the slots of the aforesaid arms, an inclined delivery chute formed in a single piece, its upper edges lying in close proximity to the interior surface of said drum, and embracing said tangle frame, and an auxiliary chute secured to first named chute, at one side thereof and extending on an incline parallel to a position short of the upper end of said drum.

2. In a device of the class described, in combination, a supporting frame, an inclined rotatable drum, means on the interior of the drum for engaging projecting portions of certain of the grains for elevating the latter, adjustable rollers supported in said frame, means for adjusting said rollers in a bearing relation upon said drum, an adjustable tangle frame adapted to be disposed in close relation with the interior of the said drum comprising frame parts at both ends of said drum and cross strands, the series arranged in arc shape and disposed in spaced relation less than the normal length of grain adapted to be elevated, a chute disposed beneath said tangle frame formed of a single piece, its upper edges adapted to embrace said frame, and an auxiliary chute on one side thereof extending laterally into close proximity to the interior surface of the drum and forwardly at an incline and terminating short of the upper edge of the drum.

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

WILLIAM H. KLAUER.

Witnesses:
M. E. LANDER,
W. B. TEFFT.

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