

No. 854,987.

PATENTED MAY 28, 1907.

H. H. DUNNING.  
GRAIN AND SEED CLEANER.  
APPLICATION FILED OCT. 22, 1906.

2 SHEETS—SHEET 1.

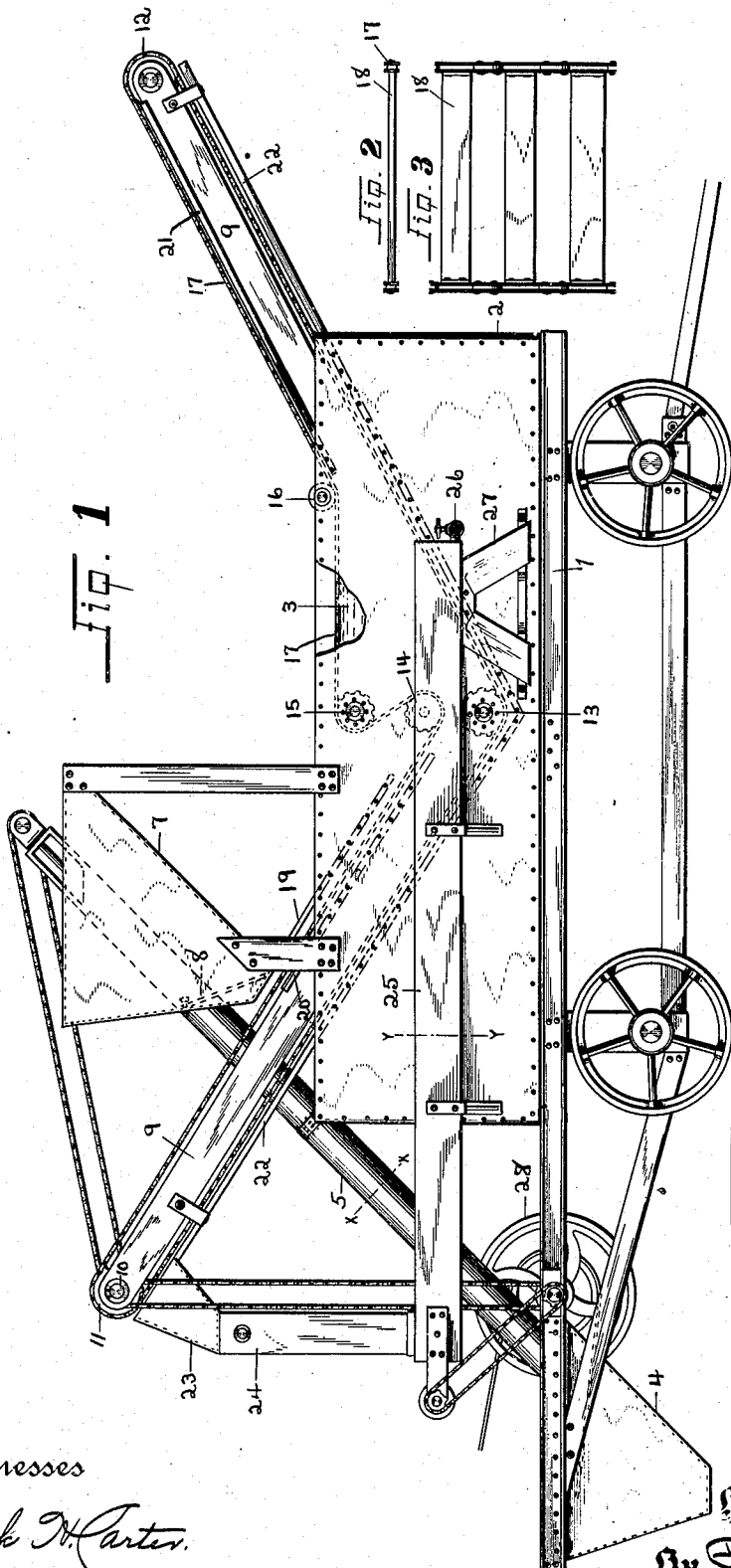


Fig. 5

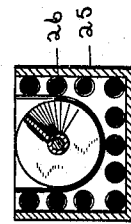
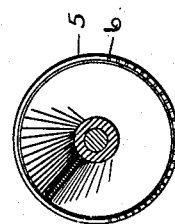


Fig. 4



Witnesses  
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Inventor  
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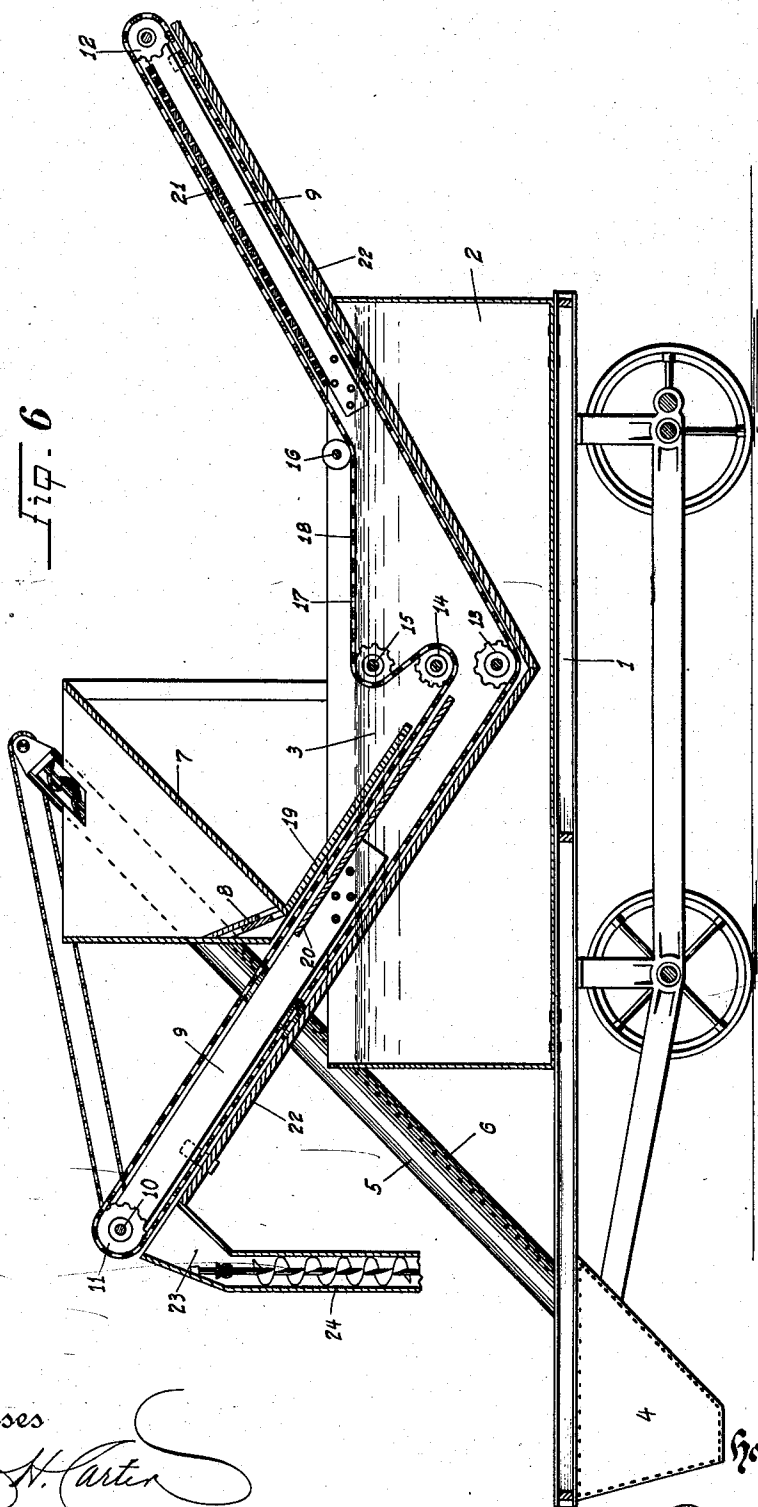
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# UNITED STATES PATENT OFFICE.

HALSEY H. DUNNING, OF MARYSVILLE, CALIFORNIA.

## GRAIN AND SEED CLEANER.

No. 854,987.

Specification of Letters Patent.

Patented May 28, 1907.

Application filed October 22, 1906. Serial No. 339,970.

*To all whom it may concern:*

Be it known that I, HALSEY H. DUNNING, a citizen of the United States, residing at Marysville, in the county of Yuba, State of California, have invented certain new and useful Improvements in Grain and Seed Cleaners; and I do declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and the characters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in devices for cleaning grain, seeds and like material, my object being to produce a device whereby the material may be thoroughly cleaned by inexpensive means, and particularly to clean from grain bur clover seeds, which is well known to be a very deleterious material when found in grains. This object I accomplish by a means for cleaning the grain by carrying the same through water with a means for drying the cleaned grain as it is taken out of the water; and by such other and further adequate and effective construction as will appear by a perusal of the following specifications and claims.

In the drawings similar characters of reference indicate corresponding parts in the several views.

Figure 1 is a side elevation of my improved cleaner with a portion of the side frame broken away. Fig. 2 is a side view of one of the chain slatted belts employed in the improved device. Fig. 3 is a top plan view of the same. Fig. 4 is a sectional view enlarged taken on a line X X of Fig. 1. Fig. 5 is a sectional view enlarged taken on a line Y Y of Fig. 1. Fig. 6 is a longitudinal sectional elevation.

1 designates a wagon carrying a suitable water tank 2, filled with water indicated at 3. 4 is a feed hopper secured to said wagon and 5 is an auger conveyer box leading from said hopper 4 to a hopper 7 secured to the top of the tank 2, the lower half of said box 5 being provided with perforations 6 for the purpose as will appear. The hopper 7 is provided with a slide board 8 for the purpose of regulating the flow of grain.

9 is a V shaped conveyer frame having its lower point extending into the water 3 at a

point near the bottom of the tank 2. At one upper end of the conveyer frame 9 is journaled a shaft 10 carrying a sprocket wheel 11 and at the other upper end of said conveyer frame 9 is suitably journaled a sprocket wheel 12, and journaled at the lower end of said frame 9 is a sprocket wheel 13. Suitably journaled in the tank 2 just above the sprocket wheel 13 are sprocket wheels 14 and 15, and 16 is a roller journaled in said tank near the front thereof, all for the purpose as will appear. 17 is an endless chain slat conveyer extending over the sprocket wheel 12, under the sprocket wheel 13, over the sprocket wheel 11, under the sprocket wheel 14, over the sprocket wheel 15, thence along the top of the water 3 and under the roller 16. The slats 18 of said conveyer drag between an upper board 19 and a perforated under board 20 on which the hopper 7 empties, said top and bottom boards extending well into the water 3. Between the roller 16 and the sprocket wheel 12 said slats 18 drag over a perforated board and between the sprocket wheels 12 and 11 over a V shaped board 22. The upper end of said board 22 at the rear of the machine connects with a chute 23, which connects with a vertical auger conveyer 24 connecting with a horizontal auger conveyer 25 running along the side of said tank 2, the auger box of said last named conveyer being surrounded with steam pipes 26, for the purpose as will appear.

27 are bag filling chutes leading from the end of the conveyer 26.

28 is the main driving pulley of the machine to which may be applied any suitable power and all the mechanisms of the machine are in connection with said driving pulley by means of the usual gearings and chains as appear on the drawings.

In using the machine the grain to be cleaned is poured into the hopper 4 from whence the conveyer 5 carries it up to the hopper 7, all the cheat, and other seeds and dirt smaller than the grain falling through the perforations 6. From the hopper 7 the grain feeds through the slats of the belt upon the board 20 and the slats 18 drag it down into the water 3 between the said board 20 and the board 19. This thoroughly wets the material, and the grain becoming heavier than the bur clover and other deleterious matter, either passes through the perfora-

tions in the board 20, or off the end of said board upon the board 22, while the bur clover seed and other light seeds float to the top of the water, from which they are skimmed by the slats 18 and carried up the board 21 and thence out of the machine, any particles of grain which may be carried along falling through the perforations of said board 21 upon the board 22. The slats 18 dragging over the board 22 drag the good grain thereon up to the chute 23 from whence the conveyer 24 conveys it to the conveyer 25, by which it is carried to the bag filling chutes 27, the heat from the steam pipes 26 thoroughly drying the grain while it is passing through the conveyer 25. Thus it will be seen I have produced a machine for cleaning grain by conveying it through water, the lighter seeds floating and leaving the grain clean; also an advantageous means for drying the clean grain as it comes from the water. Another advantageous and valuable feature of my invention is the semi-perforated conveyer 5 which cleans out all the small dirt and cheat before the grain enters the water.

While this specification embodies the present and preferred details of the construction of my device, still in practice many small modifications in such details may be resorted to at will without departing from the spirit of my invention.

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

1. In an apparatus of the class described, a tank for liquid, a conveyer frame having elevated ends and an intermediate depressed portion within the liquid in the tank, an endless slatted belt with the lower side running in close proximity to said frame, an inclined feed plate beneath the upper side of said belt and with the lower end within the liquid in the tank, a guard plate above the upper side of the belt opposite the feed plate, means for feeding the material upon the upper end of said feed plate, and means for operating said belt.

2. In an apparatus of the class described, a tank for liquid, an imperforate conveyer frame having elevated ends and an intermediate depressed portion within the liquid in the tank, an endless slatted belt arranged for operation with the lower side in close proximity to the frame and with a portion of the upper side in horizontal position and at the surface of the liquid, an imperforate feed plate within the belt at one side of the horizontal portion, a perforated plate within the belt at the other side of the horizontal portion, means for feeding the material to be cleansed from the upper end of said plate, and means for operating said belt, whereby the material will be first drawn into the water and the heavier particles then elevated therefrom at one point and the lighter float-

ing particles removed from the tank at another point and carried over said perforated plate.

3. In an apparatus of the class described, a tank for liquid, a conveyer frame having elevated ends and with an intermediate depressed portion within the liquid in the tank, a slatted belt operating within said conveyer frame and within the liquid in the tank, an inclined feed plate with one end within the liquid, a receiver for grain to be cleaned, a feed receptacle arranged to discharge upon the upper end of said feed plate, a perforated inclined spout between said receiver and feed receptacle, a conveyer device operating in said spout, and means for operating said belt.

4. In an apparatus of the class described, a tank for liquid, an imperforate conveyer frame having elevated ends and an intermediate depressed portion within the liquid in the tank, an endless slatted belt arranged for operation with the lower side in close proximity to the frame and with a portion of the upper side in horizontal position and at the surface of the liquid, an imperforate feed plate within the belt at one side of the horizontal portion, a perforated plate within the belt at the other side of the horizontal portion, a guard plate disposed over the belt opposite the feed plate, a receiver for the material to be cleansed, a receptacle from which the material is fed to the feed plate, a perforated spout between the receiver and the receptacle, a conveyer within the feed spout, and means for simultaneously operating said belt and conveyer.

5. In an apparatus of the class described, a tank for liquid, an imperforate conveyer frame having elevated ends and an intermediate depressed portion within the liquid in the tank, an endless slatted belt arranged for operation with the lower side in close proximity to the frame and with a portion of the upper side in horizontal position and at the surface of the liquid, an imperforate feed plate within the belt at one side of the horizontal portion, a perforated plate within the belt at the other side of the horizontal portion, a guard plate opposite the feed plate and spaced therefrom, means for feeding the material to be cleaned between the feed plate and guard plate, and means for actuating said belt.

6. In an apparatus of the class described, a tank for liquid, a conveyer frame having elevated ends and an intermediate depressed portion within the liquid in the tank, a slatted belt operating within the said conveyer frame and within the liquid in the tank, an inclined feed plate with one end within the liquid, means for feeding the material to be cleaned upon the upper end of said feed plate, means for operating said belt to cause said material to be first drawn into the water therein and then elevated therefrom, a con-

veyer trough adapted to receive the material discharged from said conveyer frame, a conveyer disposed in said conveyer trough, and means for heating the material while passing through the conveyer trough.

7. In an apparatus of the class described, a tank for liquid, an imperforate conveyer having elevated ends and a depressed portion within the liquid in the tank, an endless slatted belt arranged for operation with the lower side in close proximity to the frame and with a portion of the upper side in horizontal position and at the surface of the liquid an imperforate feed plate within the belt at one side of the horizontal portion, a perforated plate within the belt at the other side of the horizontal portion, a guard plate opposite said feed plate and spaced therefrom, a

receiver for the material to be cleaned, a receptacle for the material disposed in position to discharge upon the upper end of the feed plate, a perforated spout between the receiver and receptacle, a conveyer within the perforated spout, a conveyer trough adapted to receive the material discharged from the conveyer frame, a conveyer operating in said conveyer trough, and means for supplying heat to the material in the conveyer trough.

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

HAISEY H. DUNNING.

Witnesses:

PERCY S. WEBSTER,  
JOSHUA B. WEBSTER.