D. JONS, JR.

CONVEYER.

APPLICATION FILED JAN. 29, 1917.

1,274,556.

Patented Aug. 6, 1918.

2 SHEETS—SHEET 1.

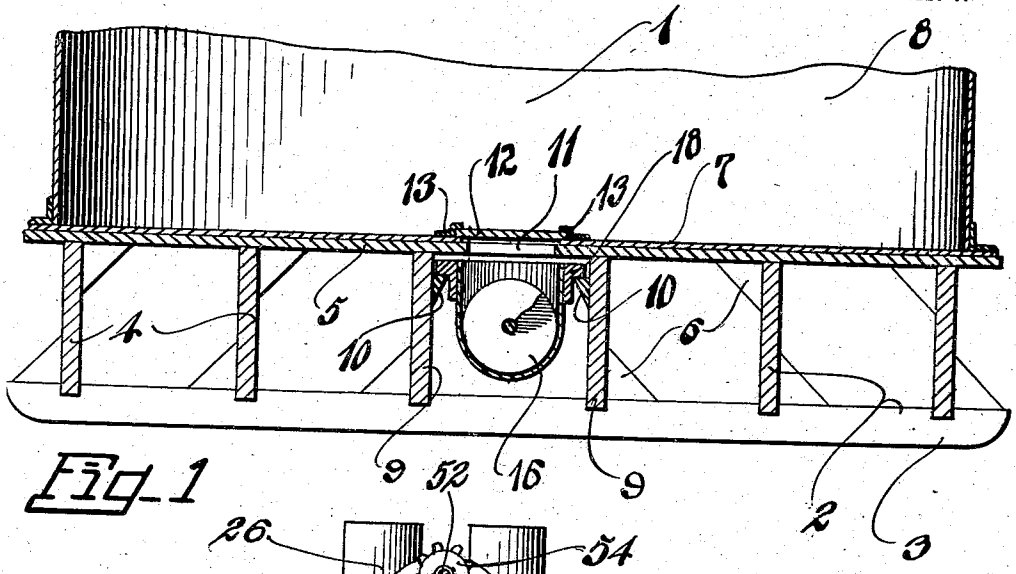


Fig. 1

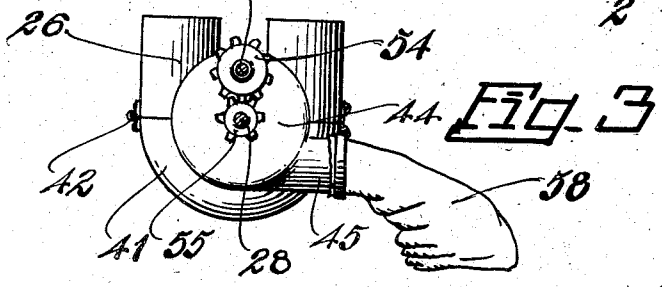


Fig. 3

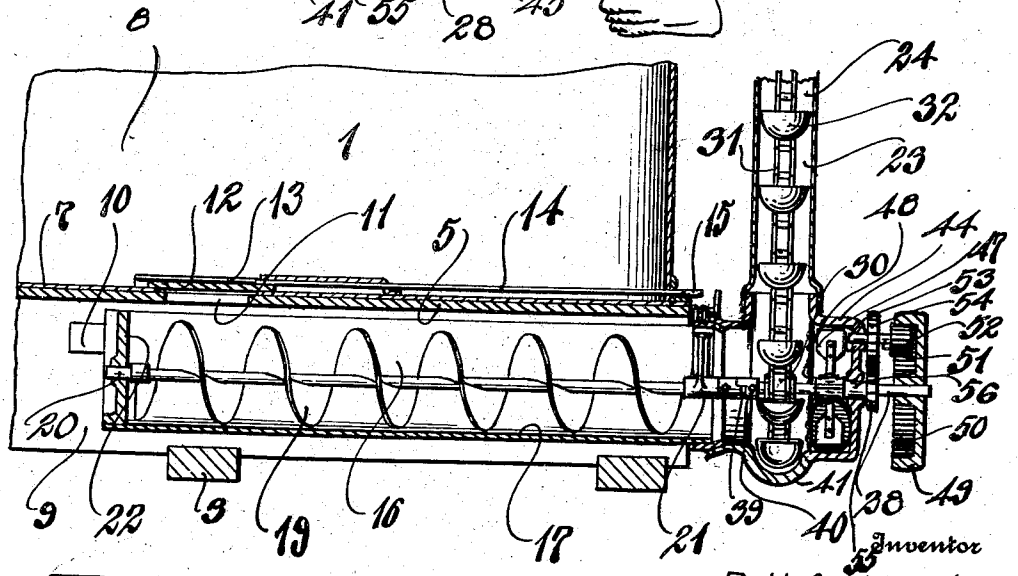


Fig. 2

Inventor

Detlef Jons Jr.

By Herbert E. Smith

Attorney

D. JONS, JR.

CONVEYER.

APPLICATION FILED JAN. 29, 1917.

1,274,556.

Patented Aug. 6, 1918.

2 SHEETS—SHEET 2.

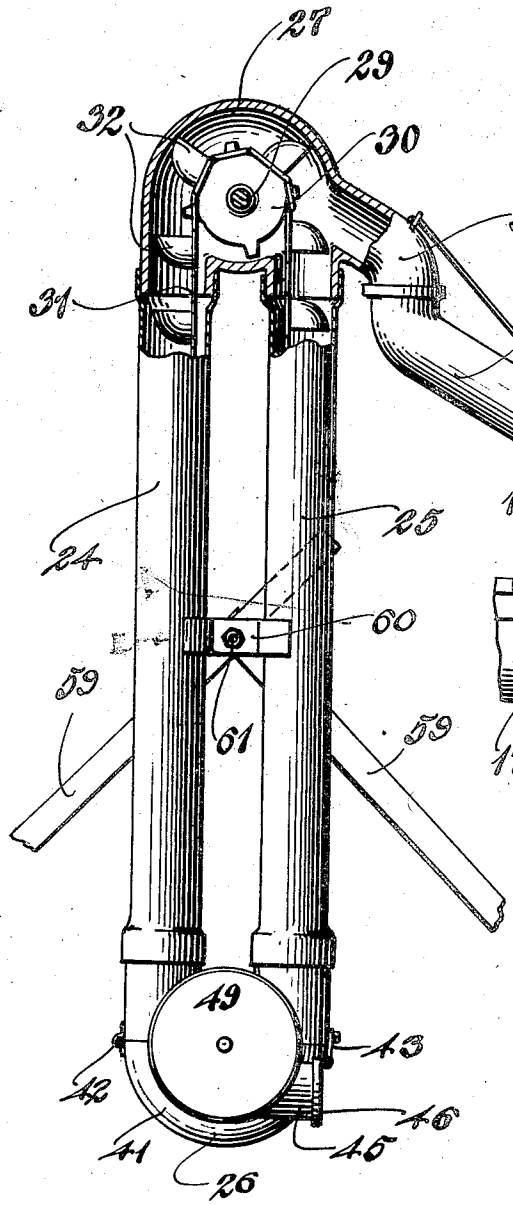


Fig. 4

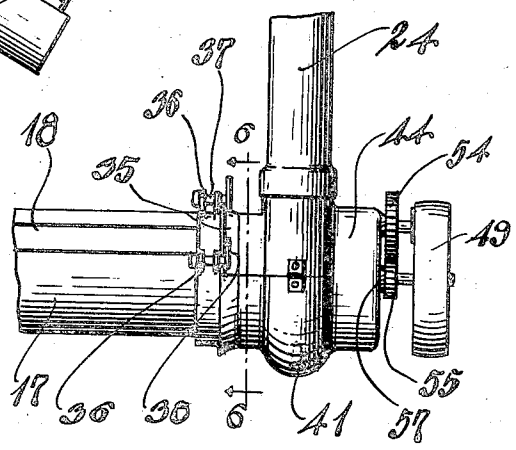


Fig. 5

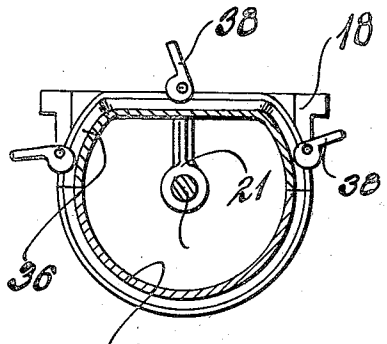


Fig. 6

Inventor

Detlef Jons Jr.

By Herbert E. Smith

Attorney

UNITED STATES PATENT OFFICE.

DETLEF JONS, JR., OF SPANGLE, WASHINGTON.

CONVEYER.

1,274,556. Specification of Letters Patent. Patented Aug. 6, 1918.

Application filed January 29, 1917. Serial No. 145,158.

To all whom it may concern:

Be it known that I, DETLEF JONS, Jr., a citizen of the United States, residing at Spangle, in the county of Spokane and State of Washington, have invented certain new and useful Improvements in Conveyers, of which the following is a specification.

This invention relates to new and useful improvements in conveyers and more especially to conveyers that may be used in removing or placing grain in tanks in the field for receiving grain or the like from the wagon and elevating it to the bins or granaries.

A further object of the invention resides in providing a device which is constructed to be adapted for use in a number of different positions and adapted for different settings, such as field locations, granary locations and the like.

Still another object in the invention resides in providing a horizontal conveyer and a substantially vertical elevator in combination, the several parts of which are readily detachable for handling and in which the elevator is provided with an operating mechanism to provide for the driving of both sections.

Another object resides in providing in connection with the elevator of a suction fan and screen by which means dust, smut and other loose matter that is with the grain may be removed from the grain and deposited in a receptacle for future disposal.

Another object resides in providing a device which is compact in construction, inexpensive to manufacture and one which will be efficient in use.

With these and other objects in view, my invention consists in the novel features of construction, combination and arrangement of parts as will be hereinafter referred to and more particularly pointed out in the specification and claims.

In the accompanying drawings, forming a part of this application,

Figure 1 is a cross section through a grain tank and a portion of my elevator construction shown in position to deliver from said tank.

Fig. 2 is a cross section through the center taken at right angles to Fig. 1.

Fig. 3 is a detail of the boot or lower end of my elevator.

Fig. 4 is an elevation of my elevator partly in section.

Fig. 5 is a fragmentary view of the same taken at right angles to Fig. 4 and showing the bottom thereof.

Fig. 6 is a section taken upon lines 6—6 of Fig. 5.

In describing the invention I shall refer to the drawings in which similar reference characters designate corresponding parts throughout the several views, and in which 1 designates a grain tank commonly used in the field for receiving grain from the separator or thresher. 2 is the base or skids upon which the tank is mounted and which consists of strips 3 for resting upon the ground and which provide skid means for moving the tank from one setting to another. Mounted upon 3 are joist members 4 upon which a floor or platform 5 is supported. Braces 6 are provided to maintain the construction rigid. 7 is the tank bottom and 8 the tank walls. Upon the central joist members 9 are secured drawer slides 10 and through the bottom of the tank and platform 5 and 7 is the opening 11, through which the grain contained in the tank may pass. Over this opening is provided a valve closure 12 operating in guides 13 and connected with the rod 14 terminating in the handle 15 outside the tank for manipulation to open or close the opening 11.

Upon the drawer slides 10 is supported the horizontal screw conveyer 16 of my construction, of which 17 represents the side wall and bottom construction U-shaped and provided with outstanding angle members 18 for resting upon the drawer slides 10. These members serve to support the conveyer close to the underside of the opening 11 to receive the grain that pours through from the tank above. Mounted within the casing 17 is a spiral flight 19 properly journaled at either end of the conveyer at 20 and 21. The inner end of the conveyer 16 is closed as shown at 22, the opposite end being open and provided for ready attachment to the upstanding elevator 23 which is a part of my construction. The elevator 23 consists of leg members 24 and 25 which are joined at the ends by connecting butts or casings 26 and 27 of which 26 represents the lowermost casing, and 27 the upper or top casing. The casings 26 and 27 are provided with journals for supporting shafts 28 and 29, respectively, which carry sprocket wheels 30 over which the conveyer chain or belt 31 is mounted. The belt 31 supports buckets 32

which may be of any usual type desired for elevating grain or other similar material. The casing 27 supports a spout 33 through which the grain elevated is poured and attached to this spout is a second spout formed with an elbow 34 at the termination of the spout 33. This spout is adjustable for movement about the end of 33 to direct the flow of grain or other matter being elevated.

The lower casing 26 has means for attachment to the horizontal conveyer 16 consisting of a flange 35. Upon the adjacent end of the conveyer 16 on lugs 36 are mounted fastening members 37 securely attached thereto and upon the ends 38 are provided cam-shaped levers which engage with the edge of the flange 35 to maintain the horizontal and vertical members of my construction in adjusted position. Upon the end of the shaft supporting the conveyer flights 19 is a clutch member 39 and upon the end of the shaft 28 supporting the lower sprocket of the elevator is a clutch member 40 which engages with 39 to provide means for driving the flights when power is applied to the shaft 28 and which is readily detachable when the elevator is removed from its attachment with the conveyer member.

The casing 26 is provided with a bottom 41 hinged at 42 and provided with fastening means 43 to maintain it in a closed position. In case of choking or the like, this bottom may be turned downward and the congested condition overcome by removing contents thereof. Upon the outer edge of the casing 26 I prefer to provide a fan housing 44 provided with an outlet 45 and this outlet is provided with a bead 46 over which a bag may be secured for receiving such matter as may be delivered through the opening provided. Within the fan housing is mounted a fan 47 loosely upon the shaft 28 and at 48 is provided a gauze or screen to prevent grain or material of normal size being sucked through by the fan and taken away from the elevator. It is intended that this fan revolve at a high speed to remove dust particles, smut and other impurities that may be found in the grain, and the screen mesh is regulated in size to allow only such matter as is intended to pass through the meshes thereof.

Mounted upon the shaft 28 is a pulley 49 which is revolved by means of a belt or the like from the source of power that is used to operate the mechanism of my design. The pulley 49 has on its inner face an internal gear 50 meshing with the pinion 51 mounted upon the shaft 52. The shaft 52 is supported in the bearing 53 in the housing 44. A pinion 54 mounted upon the shaft 52 and gear 55 is provided with the bushing 56 passing through the journal 57 and connecting with the fan 47 to drive the same. Thus it will be readily noted that when power is applied to pulley 49 the fan will be revolved at the same time and under a greatly increased speed, by reason of the ratio of the gears. This will cause the fan to have considerable suction and will serve to raise the lighter contents being removed from the tank and deliver them to the sack 58 attached to the outlet 45 of the fan housing.

It will be seen from the above description that this invention is especially adapted for removing grain from the internal portions of a grain tank, granary or the like, but that it is further adapted for a considerable number of other uses which would make it especially handy about a farm, warehouses or the like.

Brace members 59 are provided to be secured to the upstanding legs 24 and 25 by fastening means or blocks 60 to which legs 59 are secured by bolts 61. This serves to maintain the elevator in an upright position and at the same time maintain the horizontal conveyer on the ground in position to receive such material as it is desired to deposit therein. It will be found especially useful in unloading the wagons and elevating the contents to granaries or bins by placing the horizontal conveyer at the tail end of the wagon on the ground or elevate it as desired and allow the contents of the wagon to flow into the hopper 16 and be transferred to the elevator and conveyed where desired. It is further maintained to be used as a loader for wagons or bins where it will be placed along side of the separator to receive the threshed grain and elevate it to the wagon or like container that will be placed in proximity with the spout 24 where it further may deliver into another series of conveyers for elevating to other points desired.

It will be seen that this is not adapted only for use in handling grain and like material but may be used in handling earth, sand, gravel and many other kindred materials.

From the foregoing it will be seen that I have provided a simple, inexpensive and efficient means for carrying out the objects of the invention, and while I have particularly described the arrangements best adapted to perform the function set forth it is obvious that various changes in the form, proportion and in the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the principles of the invention.

I claim:—

The combination in a grain conveyer and cleaner, of an elevator, an operating shaft therefor and a spiral conveyer on said shaft located at an agle to the elevator, inclosing casings for the conveyer and elevator, a fan housing supported on the elevator casing

and detachably connected with the conveyer casing, a screen dividing the elevator receiving chamber from the housing, a fan mounted on the shaft in the housing, said fan being mounted upon the shaft carrying the conveyer and actuating the elevator, the elevator being between the conveyer and the suction fan whereby the air current is drawn through both the conveyer casing and the elevator casing to the eye of the suction fan, means for operating the shaft, and means for operating the fan at a greater speed than the shaft.

In testimony whereof I affix my signature.

DETLEF JONS, JR.