L. A. IVERSON.

GRAIN TREATING MACHINE.

APPLICATION FILED JULY 8, 1919.

1,382,981. Patented June 28, 1921.

2 SHEETS—SHEET 1.

Fig. 1.

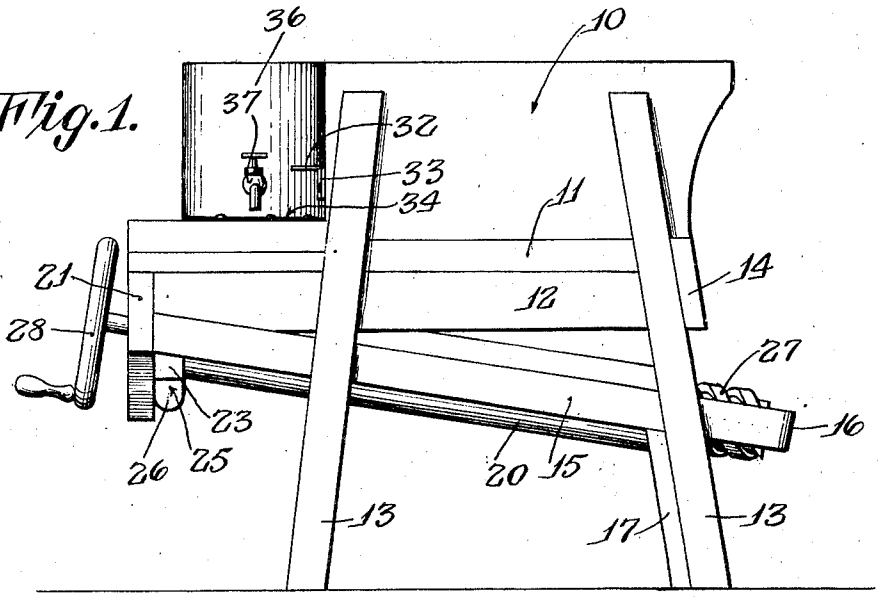


Fig. 2.

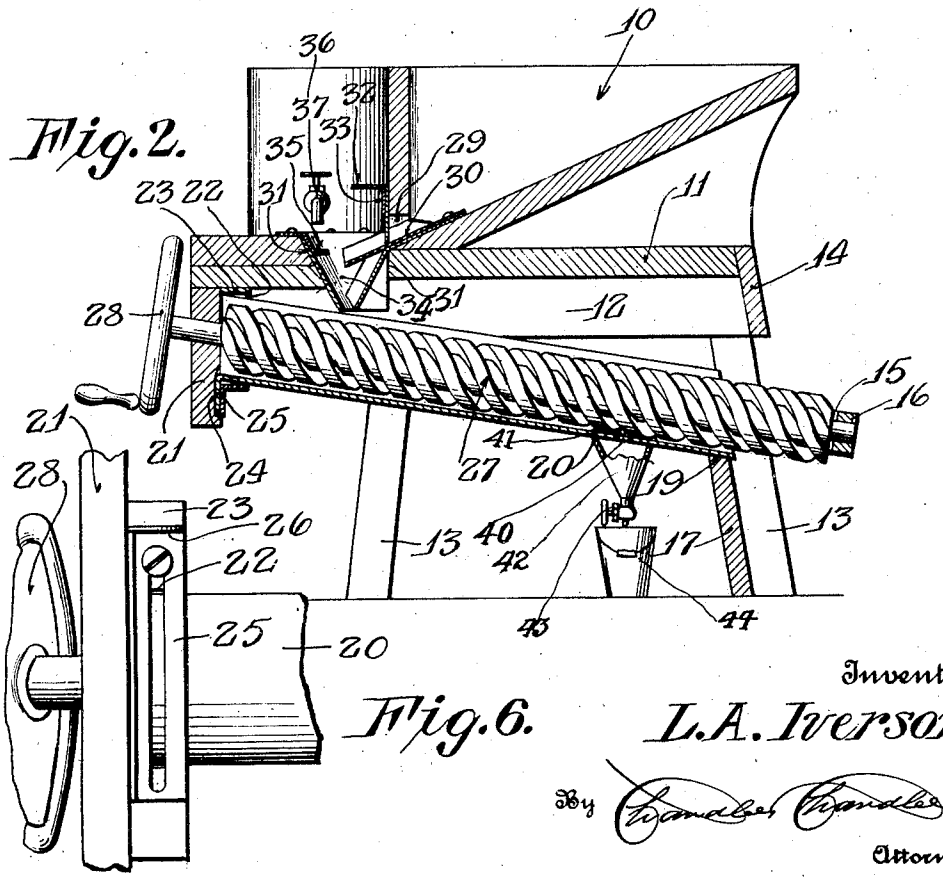


Fig. 6.

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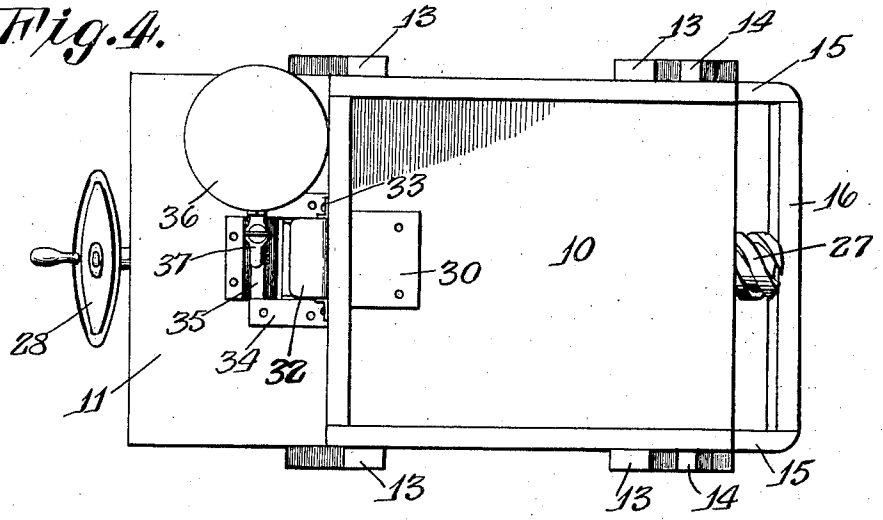
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2 SHEETS—SHEET 2.

Fig. 4.



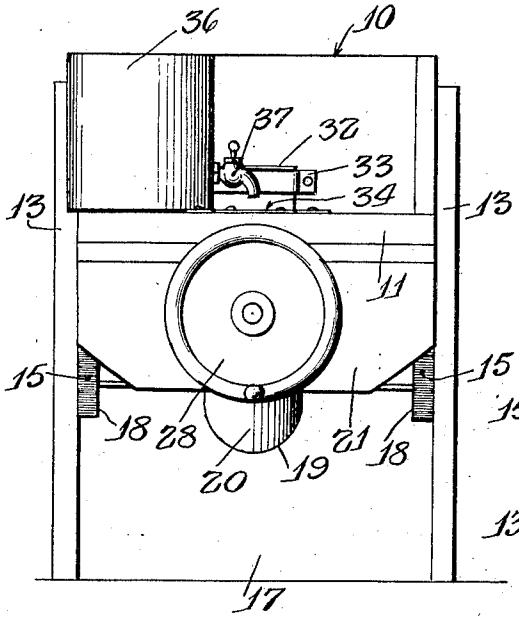
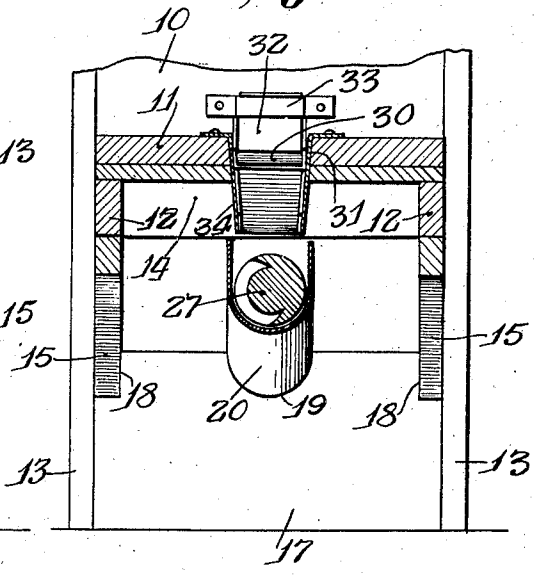


Fig. 3.

Fig. 5.



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UNITED STATES PATENT OFFICE.

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GRAIN-TREATING MACHINE.

1,382,981. Specification of Letters Patent. Patented June 28, 1921.

Application filed July 8, 1919. Serial No. 309,417.

To all whom it may concern:

Be it known that I, LUDVIG A. IVERSON, a citizen of the United States, residing at Lankin, in the county of Walsh, State of North Dakota, have invented certain new and useful Improvements in Grain-Treating Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an improved machine for treating grain to remove smut as well as to eliminate the production of smutty grain in the resultant crop, the invention having among its primary objects, to provide a machine which will insure thorough treatment with a minimum of cleansing fluid such as formaldehyde mixture; to efficiently discharge the grain so treated and to permit detachment of certain of the parts for cleaning when it is desired to treat different kinds of grain.

The invention further consists in an improved grain treating machine for the purposes specified, which embodies a hopper adapted to receive the grain to be treated or cleaned, said hopper having a discharge spout with means for controlling the feeding of the grain, said hopper being arranged upon a support or table beneath which is disposed a trough for a spiral conveyer, while also supported on the table is a tank for containing the fluid to treat the grain and from which the fluid is discharged to drop onto the grain as the latter is discharged into the trough, there being an opening in the table through which the grain passes and in which is arranged in a novel relation, a series of baffle walls which insure preliminary mixing so that the grain will be thoroughly treated in connection with the agitation thereof produced by operation of the conveyer.

With the above objects and others in view as will appear as the specification proceeds, the invention comprises certain novel combinations and arrangements of parts as will be hereinafter more particularly pointed out and claimed.

Reference is had to the accompanying drawings forming a part of this application, wherein like characters designate corresponding parts throughout the several views, in which—

Figure 1 is a side elevation of my improved grain treating machine,

Fig. 2 is a vertical longitudinal sectional view thereof,

Fig. 3 is an end elevation,

Fig. 4 is a plan view,

Fig. 5 is a transverse vertical sectional view, and

Fig. 6 is a fragmentary bottom view.

Referring to the drawings in detail, my improved grain treating machine comprises a hopper 10, the same being supported upon a table or platform 11 which extends beyond one end of the hopper at the end toward which the bottom thereof inclines. The table is arranged upon a suitable frame 12 supported by corner legs 13 suitably secured to the frame, table or platform and the sides of the hopper 10. At the discharge end, the legs are connected by a cross brace 14 beneath which is disposed an inclined frame 15 extending from beneath the extended portion of the table at the front end thereof and protruding beyond the opposite end where it is provided with a cross member 16. This frame is supported in conjunction with a wall 17 recessed as shown at 18 to receive the inclined frame sides, and also provided with a substantial semi-circular central recess 19 for receiving therein removably, a trough 20 of corresponding cross section. The trough 20 is supported in the opposite end 21 of the frame through the medium of a recess 22 in a block 23 carried by the inner face of said end wall 21 in which the adjacent end of the trough fits, the trough being further provided with a depending lip 24 which facilitates its retention in proper snug relation to said end wall and block. The trough is supported by a slotted keeper plate 25 supported by the bottom edge of the block and having a gripping portion 26 by which it may be shifted across the slot to support or release the trough as desired. Journaled in the end wall 21 and in the cross member 16 is a spiral conveyer 27, the major portion of which is enveloped by the trough, which latter has its sides extending considerably above the conveyer in order to prevent the grain from being discharged over the top

edge of the trough, instead of being carried to the lower end thereof from which the conveyer projects and at which point the grain is caught in a suitable vessel placed there for the purpose.

The upper end of the conveyer is provided with a crank disk 28 by which it may be rotated, although it is to be understood that the conveyer may be driven or rotated in any suitable manner.

At the discharge end of the hopper there is provided an opening 29 from which leads a spout 30 preferably comprising a plate of sheet metal secured to the bottom of the hopper adjacent to the opening to facilitate the discharge of the grain, the spout projecting from the discharge end of the hopper and having flanged sides as shown. The spout also projects into an opening 31 in the table or platform forwardly of the hopper and the discharge of the grain into the spout is regulated through the medium of a slide gate 32 movable in a guide-way 33 above the discharge opening, so that the proper quantitiy of grain can be fed into the mixing device produced by the trough and spiral conveyer therein, both of which are inclined toward the discharge end of the machine.

Disposed within the opening 29 is a lining 34 providing opposed baffle walls arranged in tortuous relation or staggered relation at opposite sides of the opening beneath and opposed to the spout 30, the upper baffle wall being in the form of a ledge 35 forming a spreader for the treating fluid such as formaldehyde mixture contained within a tank 36 supported upon the projecting end of the table or platform and provided with a valved outlet 37 controlling the discharge of said mixture. It will thus be seen that the mixture will be discharged onto the ledge or spreader surface and in this way, as the grain is discharged it will strike beneath said ledge, thereby insuring that the fluid will drop thereon and that the grain will be thoroughly treated on its way to the conveyer in which it is subsequently further treated due to agitation produced therein and finally discharged. The above operation can be carried on in a simple and efficient manner and insures thorough treatment of the grain for smut. Owing to the removable character of the parts, particularly the trough, cleaning is faciliatated by detaching the trough for instance, this being especially desirable when changing from one kind of grain to another. In the trough 20 near its lower end, is an opening 40 covered by a screen 41, for drawing out surplus solution from time to time. This opening delivers into a funnel 42 having a valve 43 for controlling its discharge into a pail 44 or a similar receptacle. This detail is shown only in Fig. 2 of the drawing and may be used or not at will.

What is claimed is:—

In a grain treating machine, the combination with a hopper having a discharge opening and a grain conveyer and mixer located below the hopper, a spout mounted below the discharge opening, a guide plate in the discharge opening for directing the flow of grain to the center of the spout, a liquid container mounted adjacent the discharge opening and above the spout, and a horizontal plate mounted within the spout and extending transversely of the spout to receive thereon the liquid discharged from the said container, and to deflect the liquid across the path of flow of grain from the hopper.

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

LUDVIG A. IVERSON.

Witnesses:

E. K. HASSELL,

NILS. EIKAAS.