G. BERNERT.

CONVEYER.

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1,264,601. Patented Apr. 30, 1918.

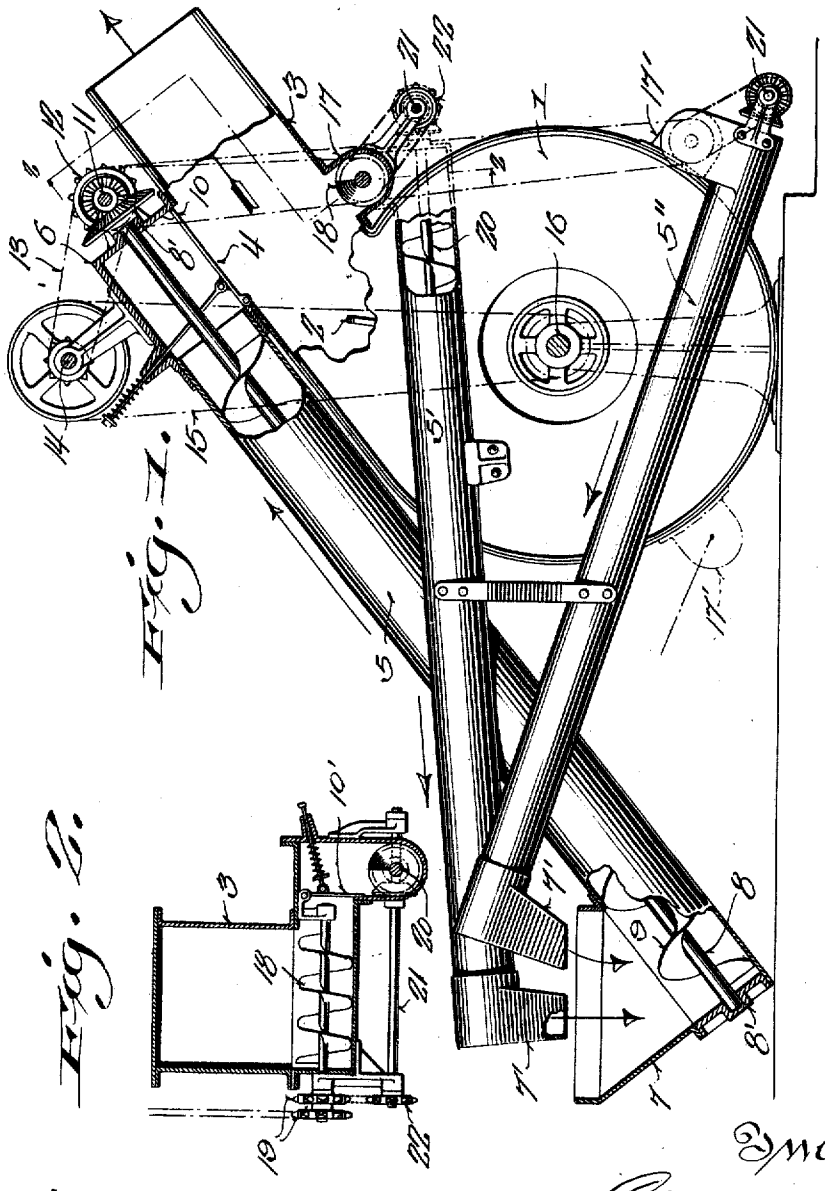


Fig. 1.



Fig. 2.

Witness:

Inventor
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by Geo. W. Young,
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# UNITED STATES PATENT OFFICE.

GEORGE BERNERT, OF MILWAUKEE, WISCONSIN.

## CONVEYER.

1,264,601. Specification of Letters Patent. Patented Apr. 30, 1918.

Application filed September 4, 1917. Serial No. 189,463.

*To all whom it may concern:*

Be it known that I, GEORGE BERNERT, a citizen of the United States, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Conveyers; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to certain new and useful improvements in pneumatic conveyers of the type that are used in elevating grain and the like into elevators, cars and the like, and, is an improvement over the conveyer exemplified in Letters Patent No. 1200699 granted to Geo. and Jacob Bernert, October 10, 1916.

The primary object of the present invention is to provide a collector pocket whereby to prevent the accumulation of grain in the blower fan casing and thus prevent choking of the fan blast which would occur should grain accumulate in the casing.

A further object of my invention is to provide means connected with the collector pocket for returning the material collected thereby to the hopper, whereby the same may be conveyed to its proper destination.

With the above and other objects in view which will appear as the description proceeds my invention resides in the novel construction, combination and arrangement of parts substantially as hereinafter described and particularly defined by the appended claims, it being understood that such changes in the precise embodiment of the herein disclosed invention may be made as come within the scope of the claims.

In the accompanying drawing I have illustrated one complete example of the physical embodiment of my invention constructed according to the best mode I have so far devised for the practical application of the principles thereof, in which:

Figure 1 is a side elevational view of a pneumatic grain conveyer with my present invention embodied therein, with parts broken away and in section to more clearly define structural details, and

Fig. 2 is a transverse sectional view through the passage chute and one of the collector pockets as indicated by the line 2—2 of Fig. 1.

Referring to the accompanying drawings by numerals it will be seen that the conveyer proper comprises in its general organization, a fan casing 1 having a fan or blower 2 therein, a trunk 3 being in communication with the casing 1 and projecting upwardly therefrom. The trunk 3 at the point above the junction of said trunk and the casing 1 is provided with a side opening 4 for the admission of grain or other material. A conveyer drum 5 is provided having its upper end secured in a casing 6 secured to the trunk 3 and communicating with the opening 4. At its lower end the drum 5 is provided with a horizontally disposed hopper 7, the extreme lower end of the drum being closed. The conveyer shaft 8 is disposed centrally in the drum 5 and has its ends journaled in bearings 8′ formed at the lower closed end of the drum and the upper end of the casing 6. A screw conveyer 9 is carried by shaft 8, the conveyer extending to the lower end of the drum 5 in position to receive the material that is to be elevated directly from the hopper 7 and terminating just below the opening 4 connecting casing 6 and trunk 3, and in order that the opening 4 may be normally closed, a spring held valve 10 is hinged to one side wall of the opening 4, the valve being of the usual or any convenient type.

The feed of the material by the conveyer 9 is upward and the material is discharged into the upper portion of the trunk above the fan or blower, and is forced upward by the air from the blower. This type of conveyer is of great utility in that the material is handled, or conveyed in an upward direction, thereby providing means whereby material may be quickly and efficiently transferred from the basement of an elevator into a car, or transferred from a wagon or other vehicle into the upper portion of an elevator.

Any convenient or desired method may be adopted for simultaneously operating the conveyer 9 and blower 2, as for example, the conveyer shaft has been shown projecting beyond the top of casing 6 and equipped with a gear that meshes with a gear on a shaft 11, the shaft 11 also carrying the sprocket 12 having a chain connection 13 with an upper shaft 14 carried by suitable journals on the casing 6, shaft 14 also having a suitable connection 15 with the shaft 16 of the blower.

All of the foregoing described construction is similar, except for a few minor struc-

tural details, to that form of conveyer illustrated in the aforementioned Patent No. 1200699 and what is especially desired to be protected by Letters Patent is the novel means I employ for preventing the accumulation of material in the fan casing 1 as hereinafter described.

Upon stopping or starting of the blower fan, in case the grain supply is not cut off in advance, or when the blast decreases in force through whatever cause, grain then in the pipe on to its way to destination, on account of the reduced air pressure, will stop its travel and of course fall to the bottom. As for instance in elevating it would drop back or down into the fan casing and if conveyed on a level it would drop to the bottom of the pipe. This together with a supply of grain still feeding into the fan or pipe will in every case result in choking the fan and cutting off completely the air pressure which in turn means a clean out of the fan and pipe. For collecting this material and preventing its accumulation in the casing, a collector pocket 17 is provided in the chute 3 and communicating therewith just above the casing as best shown in Fig. 1, however, it is understood that in some cases as for instance if the material is fed through the fan, this collector or pocket may be attached so as to communicate anywhere with the fan.

This pocket 17 has journaled therein the shaft of a screw conveyer 18 having one end terminating outward on the pocket and carrying thereon a pair of sprockets 19 one of which has a chain connection with shaft 11 whereby the same is revolved, and its other end terminating in the pocket adjacent the intake end of a conveyer drum 5′ which has its discharge end 7′ disposed over the hopper 7 for discharging therein. This conveyer drum 5′ is similar to drum 5 having journaled therein the shaft of a screw conveyer 20 having the conveyer shaft outward of its intake end and having thereon a gear meshing with a gear carried by a shaft 21 carrying a sprocket 22 connected with the other end of said sprockets by a suitable chain connection whereby the same is revolved.

Thus it will be seen that the simultaneous operation of all the parts is obtained by reason of the several conveyers and blower fan being connected with the driven shaft 11, and to prevent the loss of air pressure from the trunk 3 through the collector pocket 17, a spring held valve 10′ is disposed at its discharge end similar to the valve 10 controlling the opening between drum 5 and trunk 3.

If desired the collector pocket may be located as to communicate directly with the fan casing 1 as indicated at 17′, or both collectors may be utilized as exemplified in Fig. 1, and as the construction of collector pocket 17 and its conveyer drum 5′ is similar to the collector pocket 17′ and drum 5″, the aforegoing description will suffice for both. In locating the collector pocket on the fan casing 1, any desired location may be utilized.

Further it will be understood that if desired the collector pocket 17 can be so made as to discharge material collected therein in piles in place of returning same to hopper 7, and that in place of the screw conveyer any other convenient form may be utilized.

As will be obvious, my invention also serves to catch any foreign matter which may be in the grain, such as stones or the like, as the same will, by reason of its weight, fall downwardly and be received by the collector pocket.

I claim:

1. In a pneumatic grain conveyer, a casing having a blower fan therein, a trunk extending from the casing, a conveyer drum communicating with the trunk, means for preventing the accumulation of grain in the fan casing, and means for returning grain dropped in the fan casing to the conveyer drum.

2. In a pneumatic grain conveyer, a casing having a blower fan therein, a trunk leading therefrom, a conveyer drum having its intake end communicating with the supply hopper and its discharge end communicating with said trunk, a collector pocket for receiving grain dropped upon the entrance of grain from the conveyer drum to said trunk, a conveyer leading from the collector pocket back to said supply hopper, and means disposed between said collector pocket and said conveyer to prevent the escape therethrough of air generated by said blower fan.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee, in the county of Milwaukee and State of Wisconsin.

GEORGE BERNERT.

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