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T. C. HENNINGER.

COMBINED SEPARATOR AND BAGGING DEVICE FOR GRAIN.

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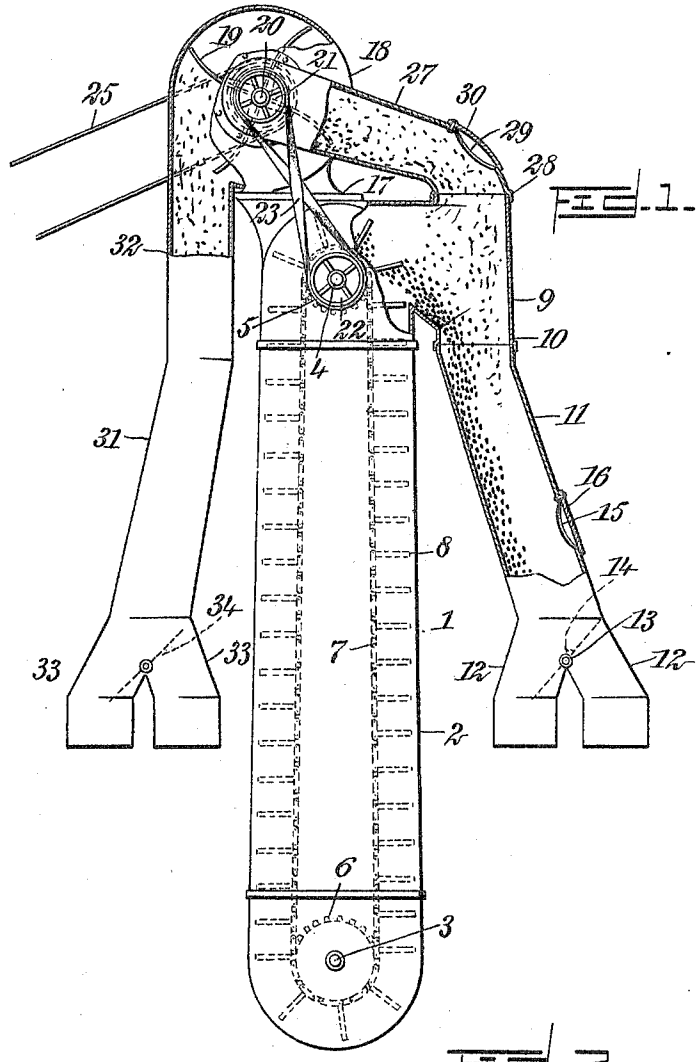
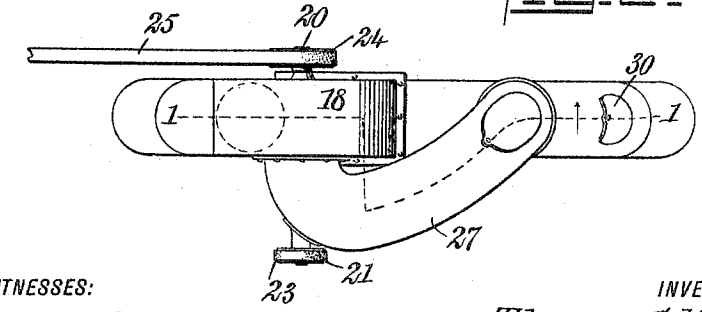


FIG. 1.

FIG. 2.



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THOMAS C. HENNINGER, OF MARKHAM, TEXAS.

COMBINED SEPARATOR AND BAGGING DEVICE FOR GRAIN.

No. 820,867. Specification of Letters Patent. Patented May 15, 1906.

Application filed May 20, 1905. Serial No. 261,346.

To all whom it may concern:

Be it known that I, THOMAS C. HENNINGER, a citizen of the United States, and a resident of Markham, in the county of Matagorda and State of Texas, have invented new and useful Improvements in a Combined Separator and Bagging Device for Grain, of which the following is a full, clear, and exact description.

This invention relates to combined separators and loading devices for grain; and it consists, substantially, in the details of construction and combinations of parts hereinafter more particularly described.

One of the principal objects of the invention is to provide an attachment for threshing-machines through the medium of which grain or other cereals may be taken directly from the machine and the lighter or inferior particles separated therefrom and the heavier or superior particles thereof delivered or loaded into bags or other receptacles therefor.

A further object is to provide an attachment for threshing-machines through the medium of which the grain or other cereals may be taken directly from the machine and the lighter or inferior particles separated therefrom and either or both the said particles and the heavier or superior particles thereof delivered into bags or other receptacles therefor.

A still further object is to provide an attachment of the character referred to which is simple in construction and thoroughly effective and reliable in operation, besides being readily applied and controlled and possessing the capacity for long and repeated service.

The above and additional objects are attained by means substantially such as are illustrated in the accompanying drawings, in which similar characters of reference indicate corresponding parts in both the figures.

Figure 1 is a side elevation, partly in section, on the line 1 1 of Fig. 2 of a combined separator and loading device for grain embodying my improvements; and Fig. 2 is a top plan view thereof.

Before proceeding with a more detailed description it may be here stated that in the form of my improvements herein shown I employ a suitable elevator onto which the grain to be separated and bagged or loaded may be taken directly from the threshing-machine with which the attachment or structure of my improvements may be associated in any preferred way. Leading downwardly from the upper end of the housing for the elevator, at one side thereof, is a discharge spout or trunk of special embodiment through which the heavier or superior particles of grain are precipitated by gravity and delivered to bags or other receivers therefor, and mounted upon the upper end of said housing is a fan and casing therefor, the latter having special means of communication with the aforesaid discharge spout or trunk by which a suction of air may be produced in the latter in an upward direction. The lighter or inferior particles of grain are carried into and through the fan-casing, from which they may be discharged in any suitable way, special means being preferably employed, however, whereby such particles may also be precipitated and delivered into bags or other receivers therefor.

The elevator and fan may each be operated in any suitable way and from any suitable source, and while I have herein represented my improvements in a certain preferred embodiment it will be understood, of course, that I do not limit myself thereto in precise detail, since immaterial changes therein may be made coming within the scope of my invention.

Reference being had to the drawings and designating characters thereon, 1 represents in entirety an elevator structure which may be applied or mounted in any suitable way upon an ordinary threshing-machine for grain, (not shown,) said structure embodying a housing 2, between the sides of which, at the lower and upper ends thereof, respectively, are shafts 3 and 4, the latter carrying a sprocket-wheel 5 and the former a sprocket-wheel 6, said sprocket-wheels being connected by a sprocket-chain 7, (shown in dotted lines in Fig. 1,) having secured thereto at proper intervals buckets or lifting-blades 8, said chains and buckets constituting the elevator proper for the grain.

Suitably connected to the upper end of the housing 2, at one side thereof and communicating therewith, is a hollow or tubular member 9, having at the lower extremity thereof an extension 10, to which is coupled or fitted the upper end of a downwardly-extending spout or trunk 11, preferably provided at the lower end thereof with duplicate branches or discharge-outlets 12, intermediate of which is pivotally supported at 13 a rotatable

valve (see dotted lines, Fig. 1) 14, the turning of which to one side or the other effects the closing of one of the said branches or discharge-outlets 12 and the opening of the other to enable the grain to pass therefrom into a bag (not shown) or any other suitable receiver.

At a suitable point thereof the said spout or trunk 11 is provided with an air-inlet 15, having a flap or other form of closing-valve 16, it being noted that the spout or trunk 11 is extended away from the elevator at somewhat of an inclination in order to enable bagging or loading of the grain to be carried out without inconvenience or obstruction by the elevator structure *per se*. Mounted upon the housing 2 of said elevator structure at 17 is a fan-casing 18, having therein a rotatable fan 19, one of the outer ends of the shaft 20 of which is provided with a pulley 21, connecting with a similar pulley 22 on the corresponding end of the shaft 4 of the elevator by means of a twisted motion-transmitting belt 23, the other end of said shaft 20 having thereon a pulley 24, with which is connected a driving-belt 25, which may be operated from any suitable source of power for imparting motion to both the said fan and the elevator. Communicating at 26 with the opening in one side of the fan-casing is one end of a curved conduit or trunk 27, the other end of which is connected or coupled at 28 to the upper end of the hollow or tubular member 9, thus completing the structure by which the grain or other cereals may be separated, the upper part of said conduit or trunk 26 being formed with an air-inlet 29, closed by a suitable valve 30, as shown. The fan-casing 18 might only be provided with an ordinary outlet for the lighter or inferior particles of grain; but preferably I employ a discharge spout or trunk 31, leading downwardly therefrom at 32, preferably on the side of the elevator structure opposite to that on which the discharge spout or trunk 11 is located. This second discharge spout or trunk is also preferably provided at the lower end thereof with duplicate branches or discharge-outlets 33, either of which may be closed at will by an inner valve 34, (see dotted lines, Fig. 1,) while the other remains open.

From the foregoing it will be seen that by properly mounting the entire structure upon a threshing-machine the grain may be taken directly from the latter upon the buckets or lifting-blades of the elevator and carried to the upper end of the housing for the latter, where it is discharged into the hollow or tubular member 9 and subjected to the action of a strong suction of air produced upwardly through the spout or trunk 11 by the fan 20, thence through the hollow tubular member 9, and finally to and through the fan-casing by way of the conduit or trunk 27, it being understood that while the fan is operating in the casing the valve 16 of the spout or trunk is opened an extent sufficient to supply air to the interior of the said spout or trunk 11. As the grain is discharged from the upper end of the elevator into the said hollow tubular member 9 it encounters strong suction or upward currents of air, thereby having the lighter or inferior particles thereof carried upwardly through the conduit or trunk 27 to and through the fan-casing 18, while the heavier or superior particles of grain will fall or gravitate through the spout or trunk 11 and be discharged through one or the other of the branches or outlets 12, as will be apparent, said heavier or superior particles of the grain being received by bags or other receptacles (not shown) therefor which may be suitably supported beneath or temporarily attached to one or both of said branches or discharge-outlets. The lighter or inferior particles of grain carried upwardly and outwardly through the fan-casing may be delivered at any desired place from the fan-casing; but preferably these particles are similarly delivered to bags or other receptacles (not shown) therefor, through the aforesaid branches or discharge-outlets 33, via the spout or trunk 31 leading therefrom and connecting with said fan-casing in the manner hereinbefore set forth. It is thought that the construction and operation of my improvements will be thoroughly understood, and it should be mentioned that by the proper regulation of the valve 30, closing the air-inlet 29 to the trunk 27, the force of the suction or currents of air passing upwardly in the manner set forth may be regulated in such manner as to render the operation of separation of the grain thoroughly effective and complete. As before stated, the motion imparted to the fan from the belt 25 is communicated to the upper sprocket-wheel of the elevator, both of such elements being thereby operated from the same source of power.

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

1. As an attachment for threshing-machines, a combined grain-separator and loading device comprising an elevator for the grain, a downwardly-extending air-trunk into which the grain is discharged at the upper end of the elevator, the same being provided with a valve-controlled inlet for air and a discharge-outlet for the heavier particles of grain, a fan and a casing therefor, means of communication between the upper end of the air-trunk and fan-casing for the passage of the lighter particles of grain to and through the latter, and a trunk communicating with the fan-casing and pendent therefrom into which the lighter particles of grain are received from the fan-casing.

2. As an attachment for threshing-ma-

chines, a combined grain-separator and loading device comprising an elevator for the grain, a downwardly-extending air-trunk into which the grain is discharged at the upper end of the elevator, the same being provided with a valve-controlled inlet for air and a discharge-outlet for the heavier particles of grain, a fan and a casing therefor, means of communication between the upper end of the air-trunk and fan-casing for the passage of the lighter particles of grain to and through the latter, and a trunk communicating with the fan-casing and pendent therefrom into which the lighter particles of grain are received from the fan-casing, this trunk being provided at its lower end with a plurality of valve-controlled discharge-outlets from which the lighter particles of grain may be delivered to a suitable receptacle therefor.

3. As an attachment for threshing-machines, a combined grain-separator and loading device comprising an elevator for the grain, a housing for the elevator, a tubular member communicating with the upper end of the housing, a pendent air-trunk connected at its upper end to the lower open end of the said member and provided with a valve-controlled air-inlet thereto, a fan-casing mounted upon the upper end of the housing and containing a fan, a trunk forming communication between the upper end of the tubular member and fan-casing, said trunk being provided with an air-inlet having a controlling-valve, another trunk leading downwardly from the fan-casing and in communication therewith, and motion-transmitting devices between said fan and elevator whereby the two may be operated from the same source of power.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THOMAS C. HENNINGER.

Witnesses:

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H. AUSTIN PERRY.