H. C. & J. I. WALLACE.

PNEUMATIC STACKER HOOD.

APPLICATION FILED JAN. 10, 1916.

1,254,868.

Patented Jan. 29, 1918.

2 SHEETS—SHEET 1.

Fig. I.

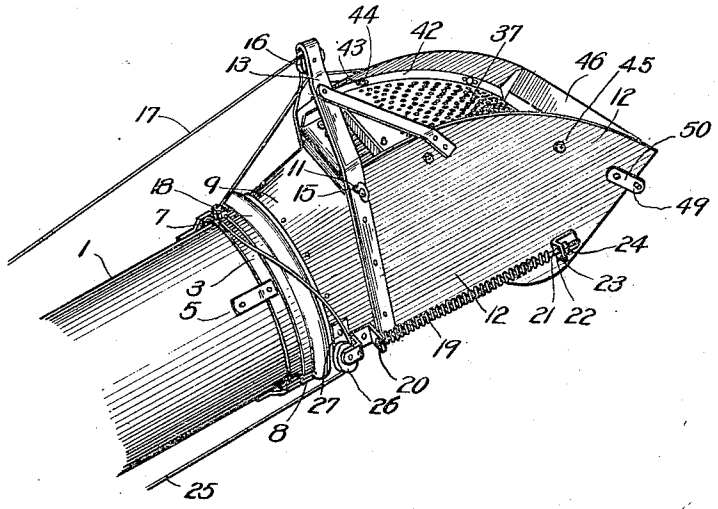
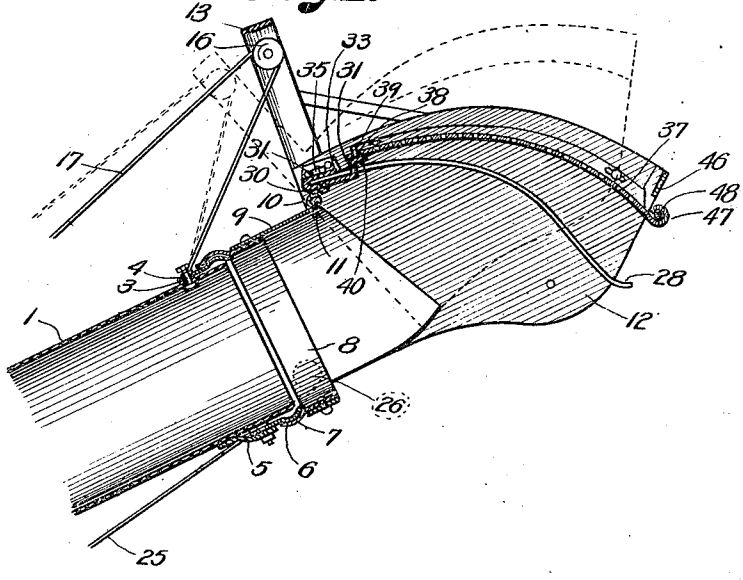


Fig. II.



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Fig. III.

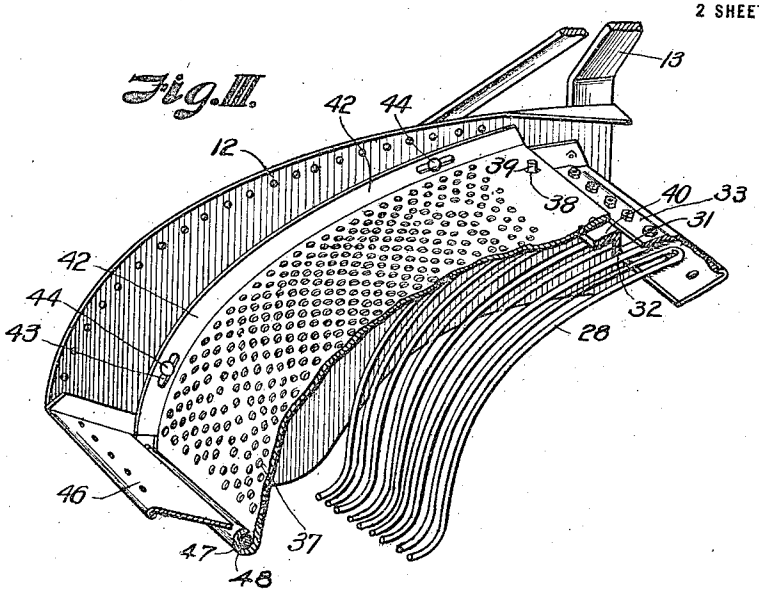


Fig. IV

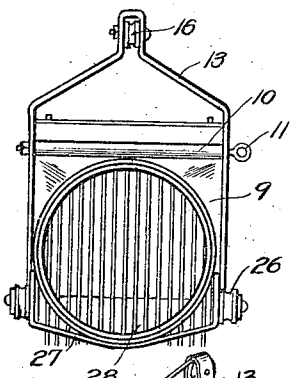


Fig. V.

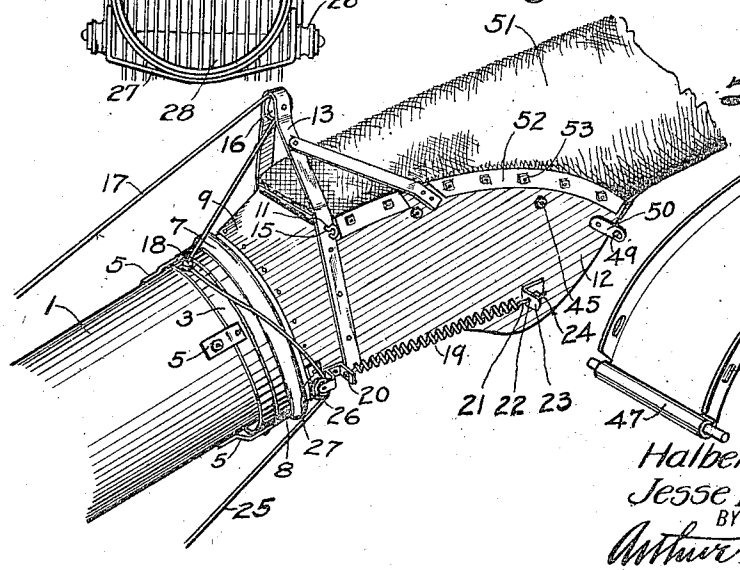
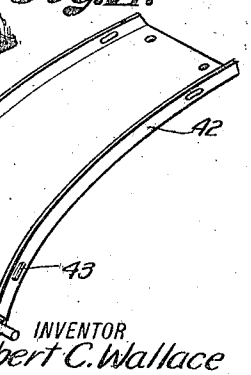


Fig. VI.



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PNEUMATIC-STACKER HOOD.

1,254,868. Specification of Letters Patent. Patented Jan. 29, 1918.

Application filed January 10, 1916. Serial No. 71,237.

To all whom it may concern:

Be it known that we, HALBERT C. WALLACE and JESSE I. WALLACE, citizens of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Pneumatic-Stacker Hoods; and we do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

Our invention relates to a hood for pneumatic or wind stackers for threshing machines, clover hullers, silo fillers, etc., and more particularly to a device of this character which may be adjustably attached to the stacker spout and is adapted for separating dirt, rust or foreign matter from the straw and chaff carried along with it from the machine.

While the general principles underlying the use of a device of this character are the same whether the device is used on a thresher, clover huller, silo filler, or other machine, certain conditions, such as the dryness of the straw, the relative proportions of clean straw to chaff, dust and refuse, weather conditions, and the ultimate use to which the straw is to be put, make flexibility of the hood and the direction and separation of its discharge desirable, if not essential, and it is to provide a hood of this character of such flexibility of direction and separation that we have devised the present improvement.

It is also an object of the invention to provide improved details of structure in the stacker hood, whereby the objects stated and other objects hereinafter disclosed, may be obtained, the preferred construction being illustrated in the accompanying drawings, wherein:—

Figure I is a perspective view of a stacker hood containing our improvements, and illustrating its combination with a stacker spout.

Fig. II is a central, longitudinal section of the same, illustrating the flexibility of direction of discharge in dotted lines.

Fig. III is a detail perspective view of a part of the hood, a portion of the separator plate being broken away for better illustration.

Fig. IV is a cross section on the line IV—IV, Fig. II.

Fig. V is a perspective view of the device, illustrating the mounting of a dust or dust and chaff delivering conduit thereon.

Fig. VI is a detail perspective view of a solid form of deflector plate which may be used in place of the perforated plate illustrated in the other figures.

Referring more in detail to the drawings:

1 designates a stacker spout which may be of any ordinary construction and suitably connected with a threshing or other machine (not shown), with which the hood is adapted for use.

As the stacker spouts of different types and sizes vary in diameter, we have, in order to standardize the hood connection, provided the spout and hood with swivel members, the first comprising a collar 3 of a diameter to fit the largest diameter of stacker spout, and which is attached directly to the spout at the top by a rivet or bolt 4 and indirectly at intervals throughout its circumference by straps 5, which may be bent to permit their attachment to the spout and collar, even should the collar be of substantially greater diameter than the spout and, consequently, spaced therefrom at the sides and bottom.

By fixing the collar at the top of the spout and leaving the spacing at the bottom, we avoid drawing in air at the top of the joint to interfere with the proper discharge of the straw under the wind pressure, the spacing at the bottom being immaterial for the reason that the greater flow is at the top of the spout.

The collar 3 has a swivel head 6 at its outer edge adapted for carrying the bead 7 of a collar 8 forming the connecting member of the stacker hood, and side members 12, which are connected at their rear edges by an arch 13, preferably of strap metal, which is securely riveted to the side of the hood and is provided with apertures 15 through which the rod 11 may project in order to pivotally mount the hood on the neck 9, the sides of the neck projecting forwardly and preferably at a downward incline between the sides of the hood, so that when the hood is raised on its pivotal mounting, no break will occur between the hood and neck through which air may be taken into the hood or material escape therefrom.

The arch 13 carries a pulley wheel 16, and

run over said pulley is a rope 17, one end of which is attached to a post 18 on the stacker spout, and the other run back to a point convenient of access to the operator of the thresher, or other machine, so that when the backturned end of the rope is drawn, the rope will act to lift the hood and pivot the same on the rod 11 in order to provide for variation of discharge and delivery of material to various portions of a stack. Ordinarily the weight of the hood is sufficient to return same to initial position, but to insure such return, particularly when the hood is inverted or at a decided lateral incline, we provide springs 19, the rear ends of which are anchored to straps 20 on the neck 9, and the forward ends of which comprise shanks 21 that are projected through apertures 22 in straps 23 that are attached to the hood, the ends of the shanks being provided with nuts 24 which may be adjusted on the shanks and bear against the straps 23 to hold the springs at adjusted tension, so that they will tend to urge the hood to initial position and will return the same when the adjusting rope is released. Lateral adjustment of the hood may also be effected by ropes 25 that run over pulleys 26 on brackets 27 which are mounted on the sides of the neck 9 and are secured to post 18, so that when either rope is drawn it will pull the hood in that direction.

In order to avoid scattering the straw as it is delivered from the hood and also to separate the straw from chaff, dust and refuse that might be mingled therewith, we provide the hood with a grate, one form of which comprises a series of fingers 28, which are anchored to the hood and at the upper rear edge thereof and extend in a curved path across the line of flow through the hood, so that straw coming in contact therewith is deflected downwardly onto a stack, the spacing of the fingers being such that they will deflect the straw but will allow chaff, dust or refuse to pass therebetween and be carried away from the stack by the wind pressure.

The preferred means for anchoring the fingers comprises a plate 30 which is secured to the sides of the hood and is provided with a flange 31 having apertures 32, through which the fingers may project, and with a rear shelf 33 which overlies the body of the plate and is spaced therefrom sufficiently to allow the ends of the fingers to pass therebetween. The body of the plate and shelf 33 are provided with registering apertures for receiving bolts 35, and the fingers are preferably doubled so that their base ends may form an anchorage on the bolts, and so that when the fingers are seated in the anchoring plate the bolt may be projected through the plate and base ends of the fingers and tightened to hold the rings in position.

The fingers may be used alone when it is merely desired to separate the straw from chaff, dust and refuse, and it is not desired to save the chaff, or when the straw is moist. In order, however, to save the chaff, and separate the same from the dust and other particles, having no value, we provide a supplemental separator comprising a plate 37 which is preferably mounted removably within the hood in order that it may be removed when the fingers are to be used alone, or may be replaced by a plate of a different character. The preferred mounting of the plate 37 is that wherein the plate is provided along its rear edge with apertures 38 which are adapted for receiving posts 39 on a lip 40 that extends forwardly from the flange 31 at the front of the finger plate 30, so that when the rear edge on the separator plate 37 is resting on the lip, with the posts projected through the apertures, the said plate is anchored firmly at the rear. The plate 37 is also provided with upturned side flanges 42 having slots 43 therein adapted to overlie apertures 44 in the hood sides, so that bolts 45 may be projected through the apertures and slots to hold the edges of the plate to the sides of the hood. The front ends of the side members 12 are connected by a deflector plate 46 for directing the fine material that is passed through the grate outwardly from the hood, at substantially a right angle to the deflected travel of the chaff, the said deflector being of less depth than the sides 12 to form a slot 46′ therebeneath through which the forward end of the plate 37 may be projected. The forward end of the plate 37 is provided with a bead 47, and fixed in said bead is a rod 48, the ends of which project laterally beyond the hood when the parts are assembled and are adapted for taking into the apertures 49 in the spring straps 50 that are secured to the sides of the hood, so that when the separator plate is installed within the hood, the spring straps may be spread outwardly to allow the studs to seat in the anchoring apertures, and whereby the front end of the plate is firmly located within the hood.

If it is not desired to separate clean straw from the chaff, dust, etc., but it is merely desired to collect all of the material from the stacker spout in a stack, the perforated plate may be replaced with a solid plate (Fig. VI) which acts merely as a deflector, so that straw, chaff, etc., is thrown together onto the stack, the solid plate being of the same construction as the perforated one except for the perforations, and adapted for mounting in the hood in the manner described.

When the solid plate is used there is no purpose served by the fingers, so the fingers, being removable, may be taken out of the hood and the solid plate used alone, the re-

moval of the fingers being effected by removing the bolts 35 to free the base ends of the fingers, tipping the fingers to project said base ends over the front edge of the lip 33 and then withdrawing the fingers from the flange 31.

When it is desired to conduct the dust and refuse away from the hood, particularly when the threshing is being done under cover, as in a barn, and thereby save discomfort to the workman, a conduit may be attached to the discharge end of the hood and run through a suitable opening in the building or to any desired point. This conduit 51 is preferably constructed of canvas and has flaps 52 at its base end which may be attached to the sides and ends of the hood by bolts 53, or the like, so that all of the material passing from the end of the hood is delivered directly into the conduit and taken away to be deposited in a stack at whatever distance from the hood may be desired.

In using the device, assuming the parts to be constructed and assembled as described, and further assuming that it is merely desired to separate the straw from the chaff, dust, dirt and refuse, so that the straw may be used alone for packing or other purposes, the fingers alone are located within the hood, so that when the straw is delivered from the spout it will be deflected onto a stack while chaff and other matter is blown through the fingers and carried away to a distant point. Should it be desired to use the straw for feed, the chaff should be saved with the straw, and in order to effect the separation of the straw from the dust and other small matter of no food value, the fingers and the perforated plate are both located within the hood.

When the machine is in operation, with the hood so arranged, straw is caught by the fingers and deflected onto the stack and the chaff, dirt and dust passed through the fingers to contact the perforated plate, and dust and dirt passing through the apertures in the plate, but the chaff being caught thereby and deflected down onto the stack closely adjacent the point of delivery of the straw, so that the straw and chaff are both saved, while the dust and dirt is carried away.

Should the user, however, not be particular as to the separation, he may replace both the fingers and the perforated plate with the solid plate, so that all the material delivered from the stacker spout is carried to the stack and saved, and should the material delivered from the stacker consist of fine, chopped straw, clover, or the like, the perforated plate may be used alone.

When threshing in a barn, in order to save the workmen discomfort from the dust that is carried along with the straw, the fingers and perforated plate may be used singly or together, and a conduit attached to the delivery end of the hood for catching and carrying the dust and dirt, the ends of the conduit affording flexibility that will permit the same to be carried to an opening in the building through which the dust and dirt may be carried to an outside stack.

Irrespective of its detail arrangement, the hood may be adjusted as to position by means of the ropes and the angle of deflection varied to distribute the material over a stack either longitudinally or transversely.

Having thus described our invention, what we claim as new therein, and desire to secure by Letters-Patent, is:—

1. In a stacker hood, a skeleton frame comprising side members and a deflector plate connecting the side members at the front ends thereof, an interior deflector plate having outturned edge flanges lying along the side members and provided with slots and bolts extending through said slots to attach said interior plate to the side members, and a flange member at the rear of the frame provided with upstanding studs; the said connecting deflector plate being of less depth than the side members, whereby the end of the interior deflector plate may lie therebeneath without projecting from the lower edge of the frame, and the said interior plate having apertures for receiving said studs to anchor the plate to the flange member.

2. The combination with a stacker spout, of a hood comprising an attaching collar movable over the spout and bolted to the top thereof and straps connecting said collar and spout at intervals about the same, whereby the collar may be applied to spouts of different diameter and any surplus of space located at the bottom of the spout; the said collar having an outstanding curved bead extending circumferentially thereabout, a neck comprising a collar overlying the first named collar, and having a bead inclosing the bead thereon to provide for circumferential movement of the parts and an anchorage against longitudinal movement of the hood.

3. A stacker hood comprising side members, a bar located at the upper, rear portion of the hood and provided with upstanding studs, a curved plate having support at the rear on said lip and having apertures through which the studs are projected, stud members on the front end of said plate projecting laterally beyond the sides of the hood, and flexible members on said sides for engaging said studs to anchor the plate.

4. A stacker hood comprising side members, and having a deflector plate at its forward end spaced from the lower edges of said side members, a curved plate located between the side members with its forward

end projected beneath said deflector plate and having a bead at its forward end, a rod carried in said bead and having its ends projected beyond the sides of the plate, means for anchoring the ends of the rod, and means for securing the curved plate to the hood along the longitudinal edges of the plate.

5. A stacker hood comprising side members, a bar at the upper, rear end of the hood, having an apertured flange and a lip on said flange, fingers extended through the flange apertures, and having head portions extended across the line of discharge through the hood, a plate located between the side members and spaced outwardly from the fingers, the inner end of the plate seating on said said lip and provided with apertures, studs on said lip projected through the apertures in the end of said plate, and means for anchoring the outer end of the plate to said side members.

In testimony whereof we affix our signatures.

HALBERT C. WALLACE.
JESSE I. WALLACE.

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