

No. 656,679.

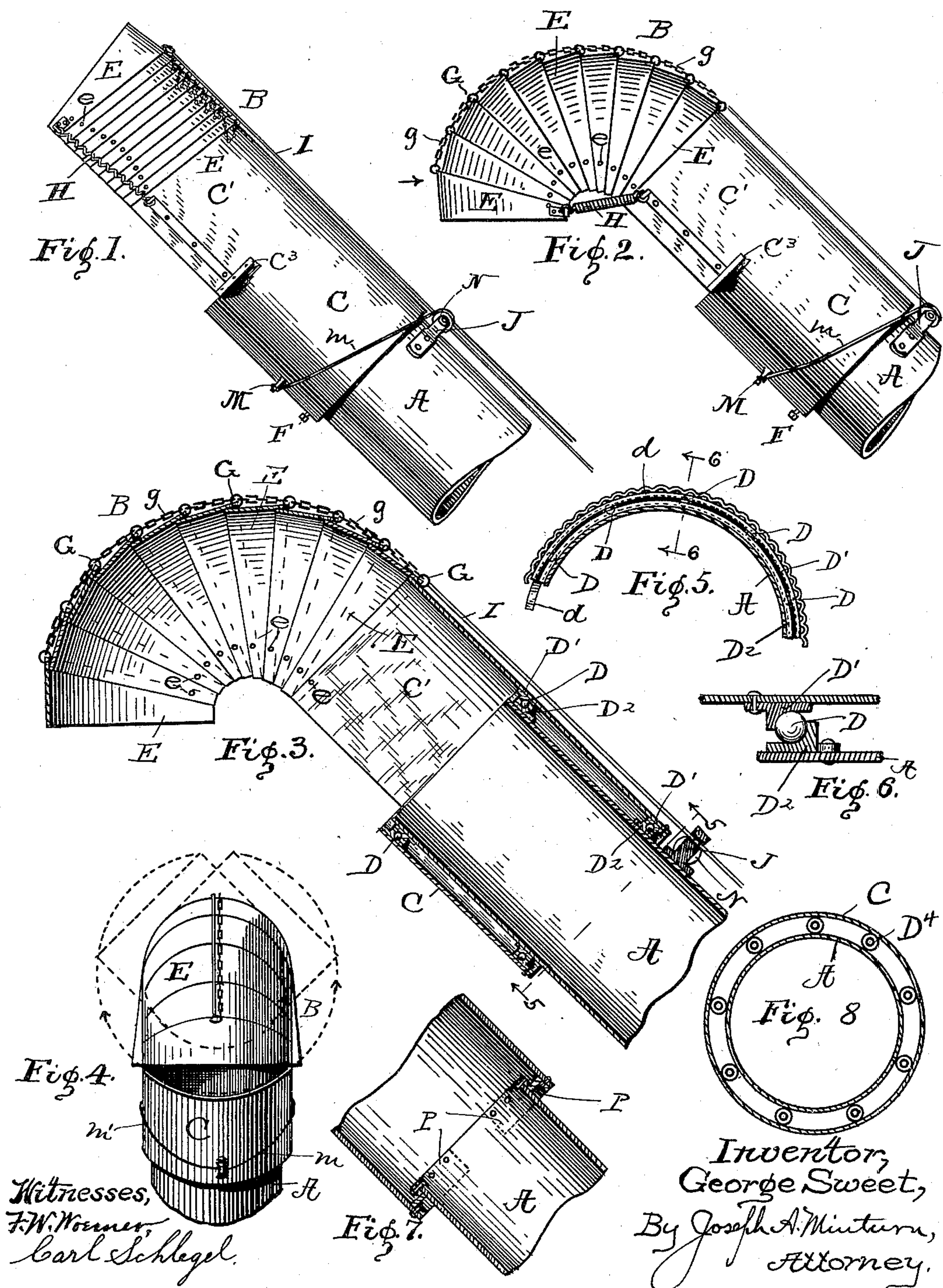
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G. SWEET.

HOOD FOR PNEUMATIC STACKER CHUTES.

(Application filed Apr. 20, 1898.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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HOOD FOR PNEUMATIC-STACKER CHUTES.

SPECIFICATION forming part of Letters Patent No. 656,679, dated August 28, 1900.

Application filed April 20, 1898. Serial No. 678,263. (No model.)

To all whom it may concern:-

Be it known that I, GEORGE SWEET, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Hoods for Pneumatic-Stacker Chutes, of which the following is a specification.

This invention relates to improvements in hoods such as are commonly used on the ends of the tubular chutes in pneumatic stackers of threshing-machines to direct the discharge; and the objects of the invention are, first, to increase the outside opening or "throat" of the hood to permit a more free discharge from the hood than has been previously secured; second, to control the direction of the discharge, whereby the sides of the stack, and more particularly the side farthest from the threshing-machine, may be built up in a more nearly perpendicular manner than heretofore to make it shed water better, but especially to make the side too steep for live stock to climb up and ruin the stack by running over it; third, to provide a hood with walls of an easy curvature—that is, without abrupt angles—to deflect the straw gradually and prevent clogging the discharge-orifice of the stacker; fourth, to provide a back discharge for air at the base of the hood around the outside of the chute, and, fifth, to provide a hood which can be rotated to discharge laterally from either side of the chute and provide easy bearings for the revoluble portion, whereby it can be adjusted with the minimum effort.

I accomplish the objects of the invention by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a view in side elevation of my improved hood in closed position on the end of the chute, only a portion of the outer section of the latter being shown in this and the other figures of the drawings. Fig. 2 differs from Fig. 1 in that the hood is opened out into operative position. Fig. 3 is a vertical central longitudinal section of Fig. 2. Fig. 4 is a front view looking in the direction of the arrow in Fig. 2. Fig. 5 is a detail in cross-section on the line 5 5 of Fig. 3 looking in the direction of the arrow and showing the upper portion of the section. Fig. 6 is a detail in longitudinal section of the hood and chute on the line 6 6 of Fig. 5. Fig. 7 is a detail in

longitudinal section of a modified construction in which a non-revoluble hood is secured to the chute in a manner to provide a rear air-discharge. Fig. 8 is a transverse sectional view of a modified construction in which rollers are used instead of balls for the bearings of the hood.

Similar letters of reference indicate like parts throughout the several views of the drawings.

A represents the outer section of the tubular chute of a pneumatic stacker, which may be of any usual and desired construction. These chutes are adjustable vertically and are usually operated at an angle of forty-five degrees with the ground on which the machine stands. They are made out of galvanized iron and are generally fifteen and one-half inches in diameter.

B represents the hood, the base of which, C, is a tubular ring or band somewhat larger in diameter (seventeen inches) than the diameter of the chute A, and between the parts A and C are two rows of ball-bearings to insure easy rotation of the hood upon the chute.

D represents the balls, the runs for which each comprise two annular metal bands D' and D². The outer bands D' are riveted to the inside of the hood and have concave inner corners, which form the upper half of the runs. The inner bands are correspondingly riveted to the chute and have concave outer corners, which form the lower half of the runs for the balls. For economy the balls will be placed several inches apart, and the intervening spaces will be taken up by blocks of wood d, which are laid in the runs between the balls.

F is a set-screw by which the hood can be locked in a fixed position when it is desired to do so.

Integral with the band C is the part C', the lower side of which is split longitudinally and the metal walls spread to make an opening nineteen inches wide—two inches more than the diameter of the part C. A metal gore C³ holds the spread walls in position in the usual manner. The walls of the part C will be corrugated where they contact with the rings or bands D' to relieve the back pressure of air in the hood by allowing the air to escape between the rings and the corrugated wall, and the purpose of providing an open annular space between the smaller chute end and the larger tubular portion of the hood

is to provide an outlet or discharge for the air in this rearward direction, to thereby lessen the force with which the straw is expelled at the front through the mouth of the hood.

5 E represents galvanized iron strips long enough to reach from one side edge of the part C' to the other. These strips will be one and three-fourths inches wide at their ends and four inches wide at their middles and will taper gradually from middle to ends. The strips will be hinged together by means of the rivets *e*, there being a double row of rivets, one near each end of the strips, and the connected series will be hinged in like manner to the outer edge of the part C'. In this construction but two edges are connected by the same rivet, the opposite edge of each strip being separately pivoted to its next adjacent strip. By this construction an expanded opening in a direction longitudinally of the chute is secured. The pivots of the middle section are a greater distance in from the section ends than those of any preceding or following section, the distance of the pivots in the sections either way from the middle one being of a gradually-decreasing distance from the ends of the sections in order, first, to present a curved line or row when the sections are folded, thereby avoiding a tendency to form a lock against the action of the spring H, and, second, to cause the outer sections to draw in closer to the body of the chute into a nearer vertical position than would otherwise obtain. The upper edge of each strip or section E is perforated and supplied with a link or ring G, and these rings are joined together by the short chains *g*, which permit the necessary freedom of movement in opening and closing the sections, but prevent the opening to an extent which produces a space between the sections.

H is a spiral spring one end of which is fastened to the outside section E and the other end to the part C'. The tendency of the spring is to pull the said outside section E toward the part C', which opens the sections out into their curved and operative position, as shown in Figs. 2 and 3. It will be noticed in Fig. 1 that the rivets forming the pivots for the folding sections are in a curved and not a straight line. This is to keep the sections which are not held rigidly from assuming positions relative with each other, which would form a lock sufficient to resist the action of the spring.

I is a cord which is fastened to the outside section and passes through an eye in the standard J down to the bottom of the chute, where it will be fastened in any convenient and well-known way.

On the under side of the part C of the hood is a staple M, to which cords *m* and *m'* (see Fig. 4) are fastened. One cord passes to the right and the other to the left around the hood, and both are carried over pulleys N, mounted on the standard J, and are carried thence back to the bottom of the chute.

These cords afford means for rotating the hood on the ball-bearings by operating the cords from the bottom of the chute. The dotted lines in Fig. 4 show the wide range in the lateral adjustment of the hood.

In the modification shown in Fig. 7 a double angle-bar P is interposed between the chute-section and the base of the hood, and the latter is riveted in a stationary manner to the chute. The angle-bars are removed in parts of the circle around the chute, and thereby provide openings for the escape of the air to relieve the back pressure in the hood.

I have shown the hood with an adjustable portion made out of ten sections or strips, but do not desire to limit the invention to any fixed number, except that they shall be so numerous as to prevent the formation of abrupt angles; but it is obvious that the placing of the chute at a greater angle than forty-five degrees would require more sections to present the bottom sections in a nearly-vertical position, which position is a necessary one in order to give the vertical downward delivery of the straw to build a stack with steep sides. Rollers, as shown at D⁴ in Fig. 8, might be used instead of balls in the bearings between the hood and the chute, and while I consider the use of ball-bearings to be the preferable construction I do not wish to limit this invention in that respect to either balls or rollers.

I am aware that hoods for stacker-chutes have been made of a plurality of sections having the edge of each section near both of its ends pivotally secured to the edge of the next adjacent section, not more than two sections being connected by the same pivot, and said pivots from the middle to the outside sections being a gradually-lessening distance from the ends of the sections, and I do not claim such construction, broadly; but

What I do claim as new, and wish to secure by Letters Patent of the United States, is—

1. The combination with a tubular chute of a hood having an annular portion greater in diameter than the chute and into which the end of the chute is projected and means for fastening the two parts equidistant from each other with an annular space between the hood and chute whereby a back discharge of the air from the hood will be permitted substantially as described and for the purposes specified.

2. The combination with a chute of a hood larger in diameter than the chute and corrugated and secured thereto with air-outlets between the corrugations of the hood and chute substantially as described and specified.

In witness whereof I have hereunto set my hand and seal at Indianapolis, Indiana, this 16th day of April, A. D. 1898.

GEO. SWEET. [L. S.]

Witnesses:

JOSEPH A. MINTURN,
CARL SCHLEGEL.