

(No Model.)

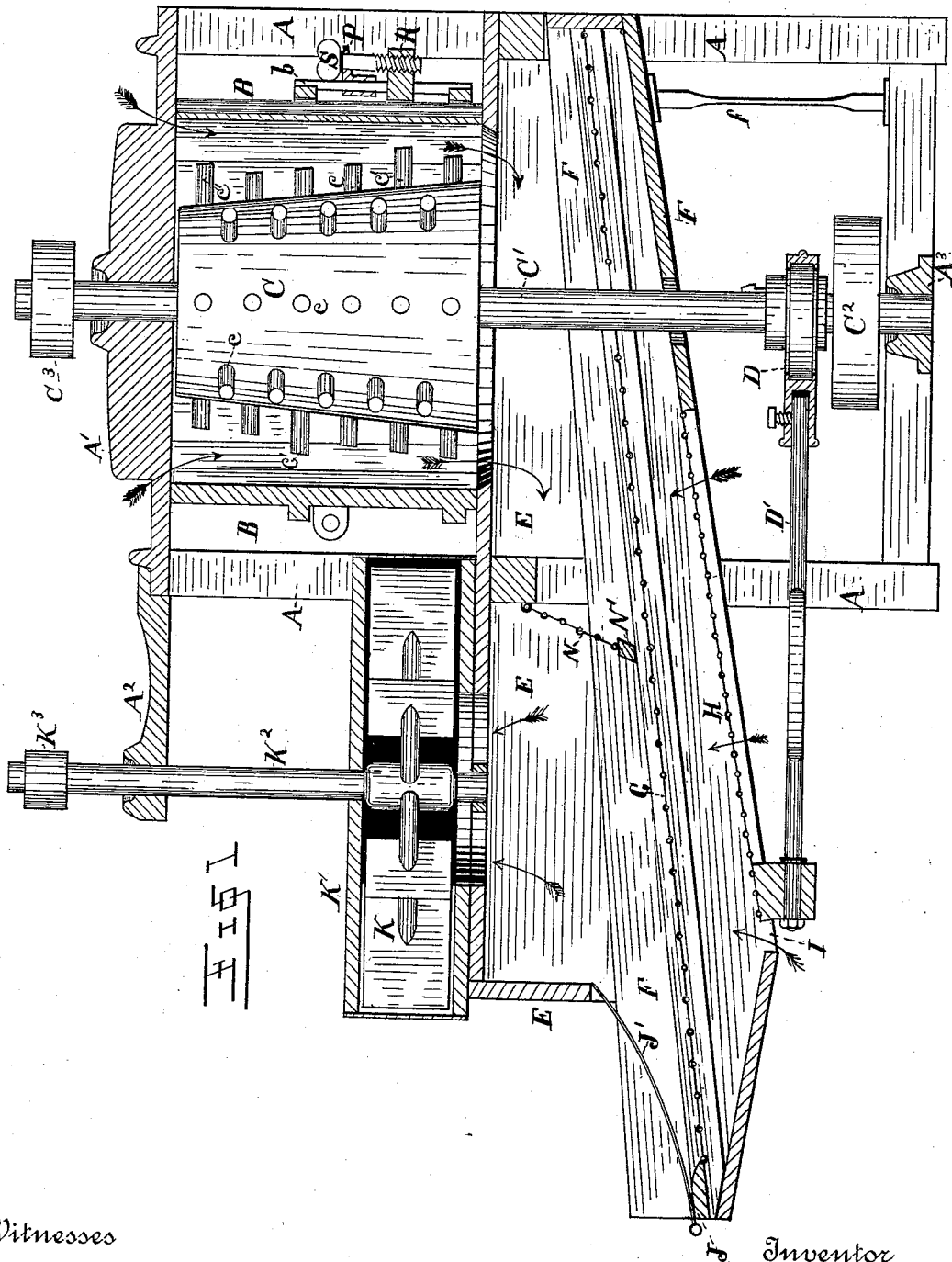
3 Sheets—Sheet 1.

H. LIPPOLD, Jr.

CORN SHELLER.

No. 407,829.

Patented July 30, 1889.



Witnesses

J. D. Robbins
T. J. Lippold

Inventor

Henry Lippold jr

By his Attorneys

Hall & Hall

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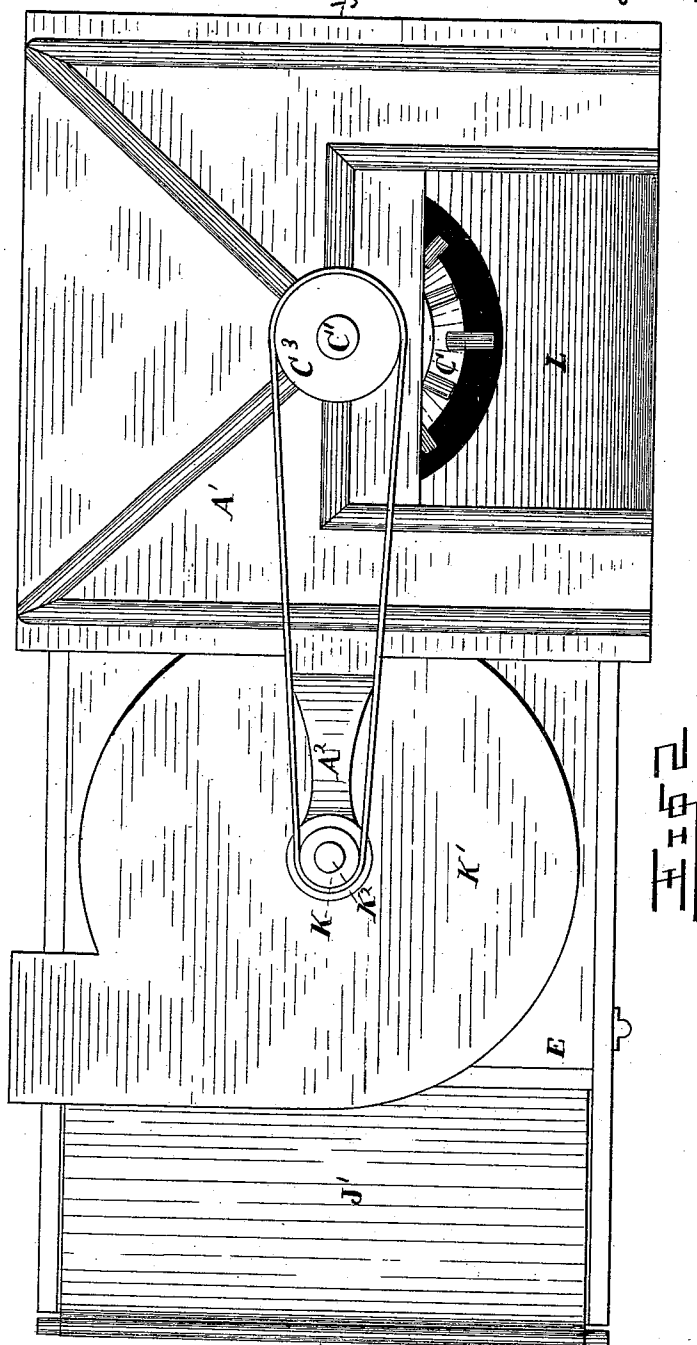
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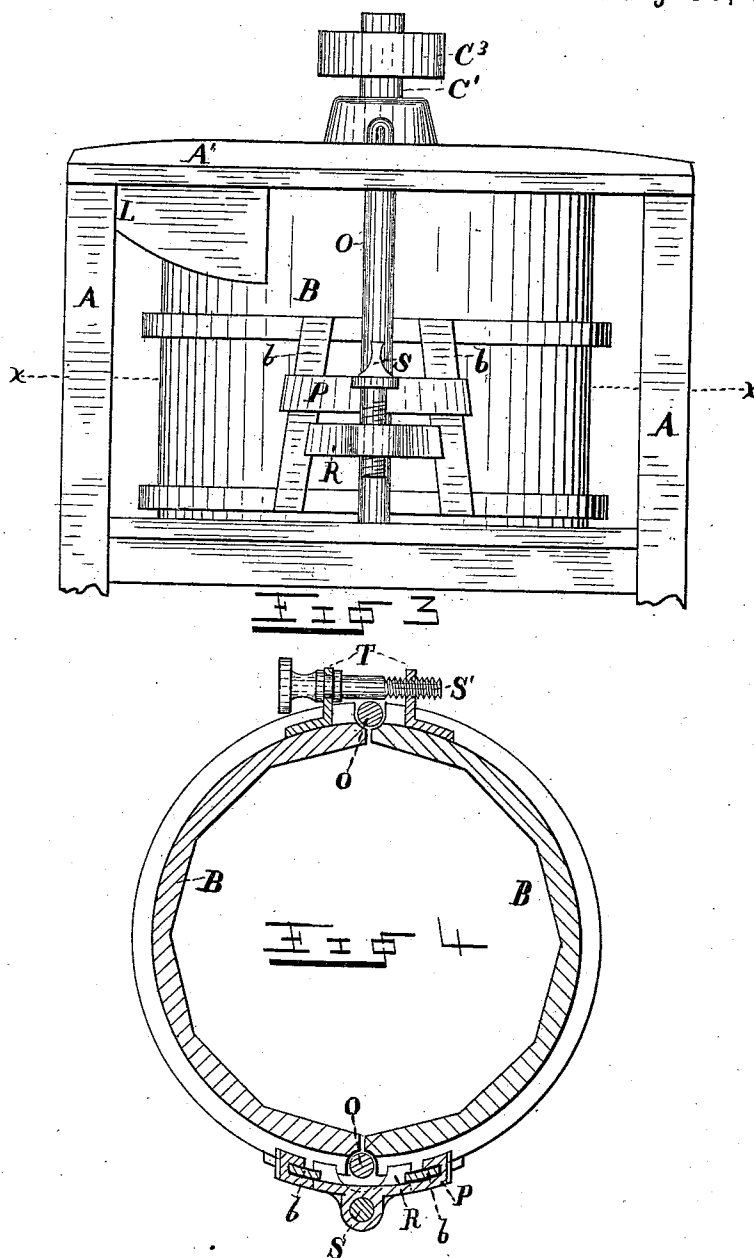
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UNITED STATES PATENT OFFICE.

HENRY LIPPOLD, JR., OF CORRY, PENNSYLVANIA.

CORN-SHELLER.

SPECIFICATION forming part of Letters Patent No. 407,829, dated July 30, 1889.

Application filed October 18, 1888. Serial No. 288,485. (No model.)

To all whom it may concern:

Be it known that I, HENRY LIPPOLD, JR., a citizen of the United States, residing at Corry, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Corn-Shellers; 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 corn-shellers; and it consists in certain improvements in the construction of the same, as will be hereinafter fully set forth, and pointed out in the claims.

My invention is illustrated in the accompanying drawings as follows: Figure 1 is a vertical longitudinal central section view taken on line Y Y in Fig. 2. Fig. 2 is a top plan view of the machine. Fig. 3 is an elevation view of the upper part of the machine, looking from the right of Figs. 1 and 2. Fig. 4 is a horizontal section taken on the line X X in Fig. 3.

The construction and operation are as follows: A, A', A², and A³ is the frame-work. B is the beater-case. C is the beater. C' is the beater-shaft. C² is the driving-pulley. E is the screener. f is one of the flexible supports of the screener. An eccentric D on the shaft C' and a connecting-rod D', which takes hold of the screener, are the means for agitating the screener, and G is the main screen. I is the point of discharge of the shelled corn. J is the point of discharge of the cobs, and L is the throat of the hopper.

My improvements in the construction are as follows: On top of the screener-case E, I put a suction-fan K in a case K', the shaft K² of which is supported by an arm A² from the top casting A', and a pulley C³ is put on the beater-shaft C' and another pulley K³ on the fan-shaft. The eye of the fan opens directly through the wall of the case E into the space above the screener, so that all the air that passes through the fan is drawn from this space. The object of this arrangement is to draw out of that space all light particles—such as husks, chaff, dust, &c.—leaving the cobs clean. This is particularly advantageous where unhusked corn is being shelled, as it separates the husks from the cobs, which is very desirable. It is also advantageous, as it

makes the machine practically dustless. To make this fan effective for the purpose of winnowing the shelled corn, I make part of the bottom of the screener F of screening, as at H. The shelled corn passes through the screen G and falls upon the screen H, which is too fine to allow it to pass, but allows the current of air induced by the fan to pass up through the shelled corn and carry off from it the dust and fine pieces of cob. The shelled corn being quite heavy, a considerable current of air may be passed through it. The air-current will carry the light matter up through the screen G and off out through the discharge-pipe of the fan, which may be projected to any distance desired. This not only thoroughly cleans the shelled corn, but it prevents objectionable dust about the mill.

To compel as much air as possible to pass through the corn, and at the same time allow free exit for the cobs, I close the cob-discharge opening J with an apron J', which prevents a current of air coming in at that point, and yet allows the cobs to pass out freely.

Immediately in front of the point where the corn and cobs fall upon the screen G from the beater-case I put a curtain-screen N, which has a bar N' across its lower side. This bar can be lifted up by the passing cobs if they are too numerous to pass under it freely. The object of this curtain is to act as a drag upon the passing corn and cobs to prevent their too rapid passage from the machine.

I am aware that in thrashing-machines a fan has been used to draw air from the space above the screen—as, for example, see Letters Patent No. 60,813—and I do not wish to be understood as broadly claiming such an application of a fan. I am also aware that a fan has been applied in a grain-cleaner similar to the way I apply it—as, for example, see English Patent No. 889 of 1862—and I shall therefore not broadly claim such an arrangement of a fan; but the constructions above referred to differ very greatly from mine, and could not be used for the purposes above stated.

My improvement in the construction of the beater C consists in making an occasional tooth longer than the others, as at c'. These longer teeth are placed at intervals about the beater, so as to break the conical contour of the same. Their purpose is to expedite the

passage of the corn-ears through the machine. I have found that when the teeth are all of one length, or substantially so, the corn-ears often clog in the case, and when a few of the teeth—
 5 say four or five—are considerably longer than the others, so as to present an irregular working-surface, as above described, this is not the case, and the machine will do a good deal more work without any trouble to the
 10 operators.

A further improvement consists in the means for adjusting the case B. The case is made of two parts, as seen clearly in Fig. 4. These parts meet at the binding-bolts O. In
 15 practice these parts have to be adjusted more or less near the beater. This is the case in all machines of this class. When properly adjusted, they should be held against further movement.

On one side I show a common method of fastening binding-hoops—namely, the perforated ears T T and the screw-bolt S'. On the opposite side of the case I show a more desirable device. It consists of an incline bar
 25 b on each part, a clasp P, which passes over and hooks around the bars b, a grooved block R, which embraces the inner edges of the bars b, and a binding-screw S, which passes through an ear on the clasp P and screws
 30 into an ear on the block R. When the screw S is loosened, the bar and clasp can be moved upon the bars b up or down, and when moved up the parts of the case can be moved apart, and when moved down they will draw the
 35 parts of the case together. When they are at the point desired, the screw S is tightened, drawing the clasp and block to a binding on the bars b, and thus holding the sections of the case firmly against lateral movement
 40 from or toward each other.

Referring to Fig. 1, arrows will be seen which show the direction of air-currents induced by the fan. From these it will be seen that the air is drawn down through the beater-
 45 case as well as through all other openings into the case E. The amount of air that will enter through the beater-case will depend on the condition of the work. If the case is full of corn, there will be a limited amount of air
 50 pass through the case, but there will always be enough to prevent dust from rising from the beater-case. The current of air will keep all the dust moving toward the fan.

Where a blowing-fan is used in place of a
 55 suction-fan, the tendency is to blow dust out of all openings, and it is almost impossible to make such a machine dustless.

What I claim as new is—

1. In a corn-shelling machine, the combination of a horizontal screener-case, a screener
 60 operating within said case, a sheller which is mounted at one end of said case and discharges upon said screener, and a suction-fan which is mounted on the other end of said case and has its eye opening through the
 65 wall of said case into the space above said screener, whereby husks and other light particles mixed with the cobs on the top of said screener will be separated from said cobs by the action of said fan.

2. In a corn-shelling machine, the combination of a horizontal screener-case, a vertical
 70 sheller located above one end of the screener-case and mounted upon a vertical shaft, an exhaust-fan located above the opposite end of the screener-case, and mounted
 75 also upon a vertical shaft parallel to the beater-shaft and run by the latter, and having its eye opening directly into the screener-case above the screen, and a screen-frame
 80 mounted horizontally within the screen-case and reciprocated longitudinally by gearing from the beater-shaft, substantially as and for the purposes described.

3. In a corn-shelling machine, the combination, with a toothed beater-case, of a
 85 toothed beater, as C, having a number of teeth of greater length than the remainder of the teeth, said longer teeth serving to break the conical contour of the beating-surface,
 90 substantially as and for the purpose specified.

4. In a corn-shelling machine, the combination of the beater C, the screener case or
 95 chamber E, the screener F, having fine and coarse screens H and G, as described, the curtain-screen N dividing the screener-chamber, as described, the curtain or apron J' over the
 100 cob-exit from said screener, and an exhausting-fan in position to draw air from said screener-chamber at a point above said screen G.

5. In a corn-shelling machine, the combination, with the two parts B of the beater-
 105 case, of the inclined bars b, the clasp P, block R, and screw S, as shown, and for the purposes specified.

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

HENRY LIPPOLD, JR.

Witnesses:

JNO. K. HALLOCK,
 WM. P. HAYES.