No. 741,136. PATENTED OCT. 13, 1903.

E. D. HURST.

THRESHING MACHINE.

APPLICATION FILED MAY 29, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

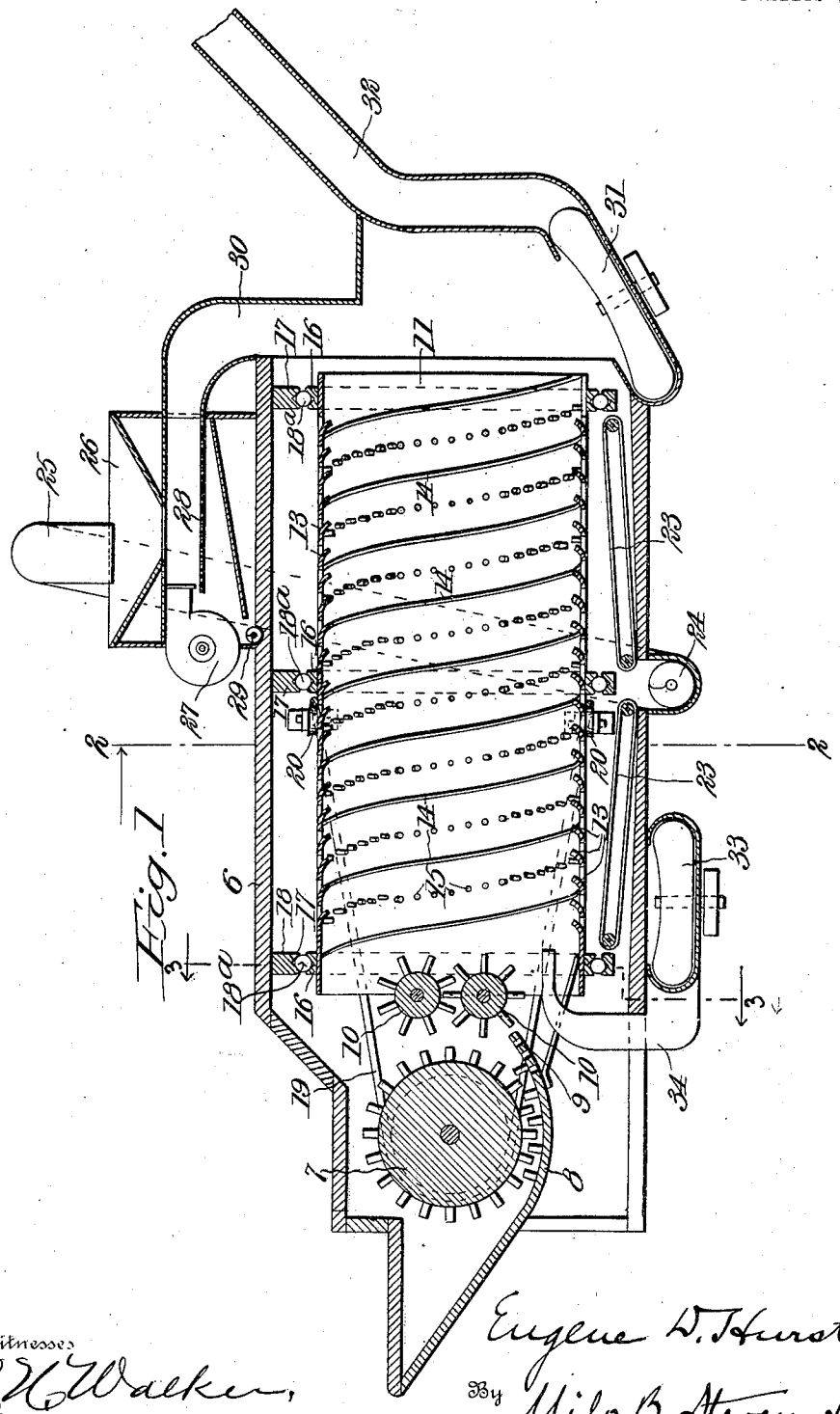


Fig. 1

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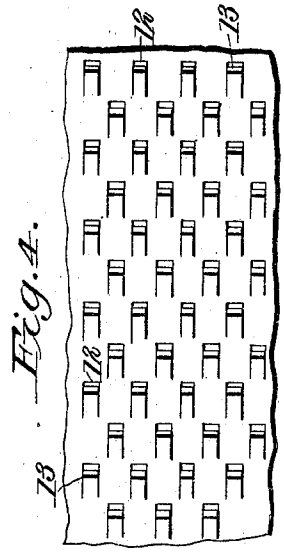


Fig. 4.

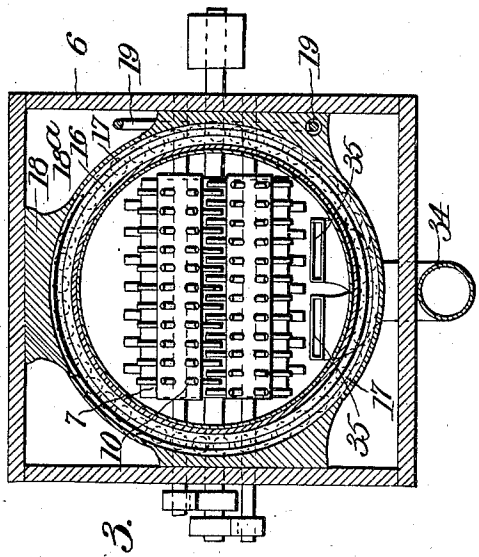


Fig. 3.

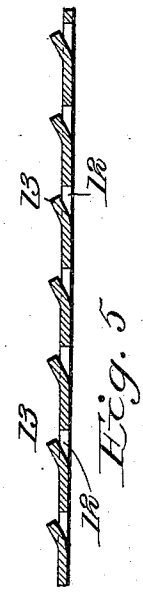


Fig. 5

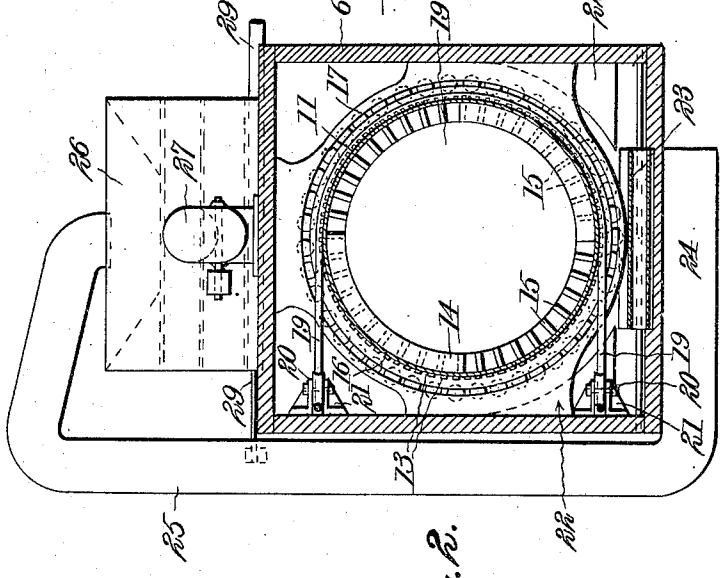


Fig. 2.

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No. 741,136. Patented October 13, 1903.

UNITED STATES PATENT OFFICE.

EUGENE D. HURST, OF WAHOO, NEBRASKA.

THRESHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 741,136, dated October 13, 1903.

Application filed May 29, 1903. Serial No. 159,322. (No model.)

To all whom it may concern:

Be it known that I, EUGENE D. HURST, a citizen of the United States, residing at Wahoo, in the county of Saunders and State of Nebraska, have invented new and useful Improvements in Threshing-Machines, of which the following is a specification.

This invention relates particularly to that class of threshers having a rotating separating-cylinder to which the grain is delivered from the threshing-cylinder and in which it is separated by centrifugal action, the grain escaping through holes in the cylinder and the straw being carried back by means of a blast and a spiral rib on the inside of the cylinder to the tail of the machine or to a stacker connected thereto.

The object of the invention is to form an improved machine of the kind stated having a cylinder improved with respect to its separating and agitating devices and also with respect to its bearings and manner of operation.

Other objects and advantages will be apparent from the following description and claims.

In the accompanying drawings, Figure 1 is a longitudinal vertical section of the machine. Fig. 2 is a vertical cross-section on the line 2 2 of Fig. 1. Fig. 3 is a cross-section on the line 3 3 of Fig. 1 through one of the bearings of the separating-cylinder; and Figs. 4 and 5 are a fragmentary plan and section, respectively, of the separating-cylinder, showing the perforations therein on an enlarged scale.

Referring specifically to the drawings, the square casing of the machine is indicated at 6. The threshing-cylinder is indicated at 7, its concave at 8, grain-grate at 9, and beaters at 10, these parts being located at one end of the separating-cylinder 11, which is disposed lengthwise in the casing and rotates therein. This separating-cylinder is preferably formed of metal and is perforated, as at 12, throughout its entire length for the escape of the grain therefrom. At each perforation is a lip 13, which may be conveniently formed by turning up the edge of the metal where the hole is made. The purpose of these lips is to prevent the escape of the blast through the perforations. They are located at the front edge of the holes toward the blast and are inclined backward over the holes. Only two rows of the perforations 12 have been shown in Fig. 1. On the inside of the cylinder is a projecting spiral rib 14. There are two of these ribs, starting from opposite points at the front end of the cylinder and set at suitable distance apart—say a foot—to produce a screw which will gradually feed the grain and straw toward the rear end of the machine. Between the ribs thus produced are two rows of pins 15, which also extend spirally around the cylinder. The purpose of these pins or spikes is to dislodge the grain from the straw and by agitation separate the kernels, so that they may find their way to and through the holes in the cylinder. The cylinder rotates in ball-bearings produced by grooved rings 16 around the outside of the cylinder and grooved rings 17, suitably supported in frames 18, secured to the casing of the machine. The grooves are opposite, forming the race for the balls 18^a. The rings 16 also serve to reinforce the cylinder. There are preferably three of these bearings, one at each end and one in the middle. The cylinder is driven by a belt 19, which is bent around the same just in front of the middle bearing and thence over idle pulleys 20 to a pulley on the shaft of the threshing-cylinder. The speed of the separating-cylinder is thus in proportion to the speed of the threshing-cylinder. The idle pulleys 20 are supported in suitable brackets 21, fixed to the casing of the machine.

At 22 are indicated inclined deflectors projecting inwardly and downwardly from the sides of the casing. They serve to guide the grain to the middle of the bottom of the casing, where it will fall on the traveling aprons 23, whereby it is carried to the conveyer 24 and thence lifted in the spout 25 and delivered to the hopper 26 of the recleaner, which includes a fan 27 and a riddle 28, the grain going therefrom to the screw conveyer 29 and the tailings through the spout 30 to the stacker.

At the tail of the machine a stacker is attached, the fan thereof being indicated at 31 and the spout at 32.

The blast through the cylinder is produced by the fan 33, located under the bottom of the casing. The delivery-pipe 34 therefrom extends up through the casing and is divided into two branches, the mouths 35 of which

are located just below the beaters. The mouths are flattened and narrowed in a horizontal plane, so that they deliver a sheet of air under the straw delivered from the threshing-cylinder, which serves to hold and carry the straw along to the tail of the machine without allowing the lighter parts thereof to become matted against the cylinder.

The moving parts are all driven by suitable arrangement of belt or other gearing, the provision of which would be a matter of mechanical skill, and therefore believed to be unnecessary to illustrate.

In operation the matter from the threshing-cylinder is delivered into the head of the separating-cylinder and in consequence of the blast and the spiral ribs is carried therethrough. The heavier grain seeks the circumference of the cylinder and escapes through the holes thereof, whence it is carried by the apron to the elevator and recleaner referred to. The straw and other tailings pass out the tail end of the cylinder into the stacker.

What I claim as new, and desire to secure by Letters Patent, is—

1. A rotatable perforated separating-cylinder having means to produce a blast therethrough from front to rear, and inwardly-projecting lips at the front edge of the perforations inclined backwardly thereover.

2. The combination with a rotatable perforated separating-cylinder, and a threshing-cylinder opposite the head thereof, of upper and lower beaters extending across the separating-cylinder behind the threshing-cylinder, a fan, and a blast-pipe therefrom projecting into the head of the separating-cylinder and opening directly under the beaters.

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

EUGENE D. HURST.

Witnesses:
J. F. BASTAR,
CLATE COOK.