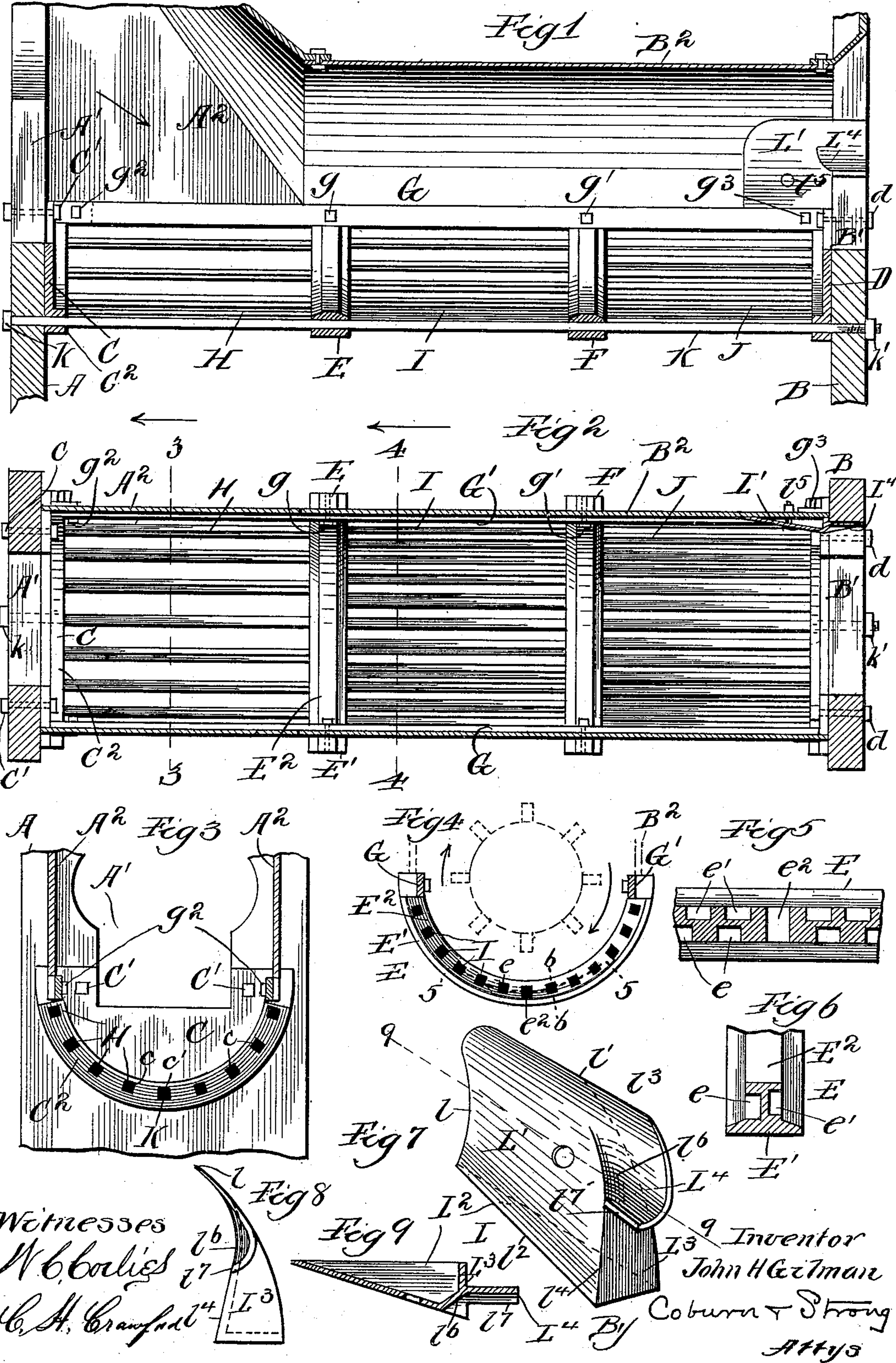


(No Model.)

J. H. GILMAN.
CORN SHELLER CYLINDER.

No. 585,093.

Patented June 22, 1897.



UNITED STATES PATENT OFFICE.

JOHN H. GILMAN, OF OTTAWA, ILLINOIS, ASSIGNOR TO THE KING & HAMILTON COMPANY, OF SAME PLACE.

CORN-SHELLER CYLINDER.

SPECIFICATION forming part of Letters Patent No. 585,093, dated June 22, 1897.

Application filed March 3, 1897. Serial No. 625,824. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. GILMAN, a citizen of the United States, residing at Ottawa, in the county of La Salle and State of Illinois, have invented a certain new and useful Improvement in Corn-Sheller Cylinders, which is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation, partly in vertical section, of a corn-sheller cylinder constructed according to my invention. Fig. 2 is a plan view of the lower half of the said cylinder as shown in Fig. 1. Fig. 3 is a vertical cross-section on the line 3 3 of Fig. 2. Fig. 4 is a vertical cross-section on the line 4 4 of Fig. 2, showing in addition the shelling-drum. Fig. 5 is an approximately horizontal curved section on the line 5 5 of Fig. 4. Fig. 6 is an approximately vertical section on the line 6 6 of Fig. 4. Fig. 7 is a perspective view of the deflector. Fig. 8 is an end elevation of the said deflector in the direction of the arrow in Fig. 7. Fig. 9 is a horizontal section on the line 9 9 of Fig. 7.

My invention relates to corn-shellors, particularly to corn-sheller cylinders, within which the shelling-drums of the shellers are adapted to revolve.

More especially my invention relates to such cylinders when made in skeleton form at least through a portion of their circumference.

My invention has for its object to provide a construction of cylinder of this type comparatively free from the defect of clogging in operation, as is very commonly the case.

My invention consists in the construction and relative arrangement of the skeleton portion of the cylinder and in a deflector located at the exit end thereof.

Referring to the drawings by letter, A represents the upright frame of the machine at the entrance end of the cylinder, the said frame being provided with an aperture A', through which the ears of corn are fed into the cylinder. There is secured to this portion of the framework, inclosing the said aperture A' and extending over a portion of the cylinder, a roof or hood A², which thereby forms a hopper for the feeding of the said

ears into the cylinder. At the opposite or exit end of the cylinder the frame of the machine B is provided with an exit-aperture B' of a less diameter than that of the cylinder itself. Forming the upper portion of the body of the cylinder there extends a second semi-cylindrical hood or roof B², mounted at one end upon the framework B, at its other end secured to the hopper-roof A².

To the framework A is secured a hemispherical plate C, with its straight edge uppermost, into which the aperture A' extends part way. The said plate is secured to the frame by the bolts C'. Along the periphery of the inner flat face of the plate is formed a flange C², in which are formed a series of recesses or seats c. The lowest of the said recesses is c', which passes completely through the flange and plate. In the drawings I have shown the plate C as provided with eight such seats c. At the opposite end of the cylinder there is mounted a plate D, secured to the framework B by the bolt d and similar in most respects to the plate C. The aperture B' in the frame B, however, extends to form a hemispherical aperture in the plate D, and the said plate is preferably provided with some sixteen seats, corresponding to the seats c, in place of eight, as well as with a perforation corresponding to the perforation c'.

Between the end plates C and D are mounted one or more semicircular ring-castings, of which the drawings show two, E and F. The ring E comprises a ring proper, E', provided with a raised flange E², in the opposite vertical walls of which are formed seats. Upon the side of the ring adjacent to the end plate C there are formed eight such seats e. Upon the opposite side there are formed twelve such seats e', while the perforation e², corresponding to the perforation c', extends through the flange E'. The ring-casting F is similarly constructed, except that it is provided with twelve seats upon its left-hand and sixteen upon its right-hand side, as these sides appear in Figs. 1 and 2, these seats not being themselves shown. The two ring-castings E and F are supported chiefly by the side bars G and G', bolted to the castings, as at g and g', respectively, and secured to the end pieces C and D by bolts, as at g² and g³, respectively. Between

the end piece C and the ring-casting E, forming the lower half of this portion of the cylinder, are disposed eight horizontal rods or ribs H, the opposite ends of which are seated in the perforations *c* and *e*, respectively. Similarly between the ring-castings E and F are disposed twelve such ribs I. In the same manner between the ring-casting F and the end piece D are mounted sixteen such ribs J. Finally, extending the entire length of the cylinder, along the bottom thereof, passing through the apertures *c'* *e'*, &c., is mounted a long rod or bolt K, provided with a head *k* and a nut *k'* outside of the frame-pieces A and B, respectively. By this bolt K the entire cylinder is drawn firmly into position and the ribs H, I, and J securely held in their respective seats.

It will thus be seen that I form a shelling-cylinder, of which the lower portion is of skeleton construction. Hitherto in such skeleton cylinders it has been customary to have the ribs II spaced at the same distance apart throughout the cylinder, it being desirable to have them as far apart as possible without permitting any cobs to fall between the same. The spaces between the adjacent ribs have therefore been uniformly made slightly less than the diameter of an ordinary cob. In all cylinders of this type so constructed there is a tendency for the spaces between the ribs, particularly toward the hopper end of the cylinder, to become clogged with chaff as it enters in and with the ears of corn and so to prevent the shelled corn from dropping through between the ribs. As a result, the operation of the sheller is greatly impeded and its output impaired.

I have discovered that the spaces between the ribs may safely be made greater than the width of an ordinary cob toward the hopper end of the cylinder, since in this part of the cylinder the ears are rarely, if ever, completely shelled, and consequently will not pass through the spaces so enlarged. To effect this, I have invented the construction hereinabove described, in which the ribs are made and arranged in two or more sets, those nearer the hopper being spaced more widely apart than those toward the exit end of the cylinder. It has proved in practice that with a shelling-cylinder so constructed the chaff readily passes through the spaces between the ribs H, together with such corn as is shelled at that point. All tendency to clog is thus obviated, and at the same time none of the cobs are found to fall through. With this construction the spaces between the remaining ribs may be successively narrowed until even narrower than in the ordinary construction, since with my construction a greater part of the chaff leaves the shelling-cylinder nearer its hopper end than in the other previous constructions.

Although I have shown and described a specific number of ribs as constituting each one of the three sections, it is obvious that

such numbers will be varied according to the size of the ribs, length and number of the sections, &c., and may be very considerably varied, both relatively and absolutely, without departing from the general principle of my invention.

The direction of the revolution of the drum in the cylinder is indicated in Fig. 4. Upon that side of the cylinder along which the drum descends as it revolves, at the exit end of the cylinder, I secure a deflector L of the form presently to be described. It will be seen that the aperture B' in the framework is less in diameter than the frame itself. Accordingly the frame B projects part way across the exit end of the cylinder, and in the corners so formed the chaff and cobs tend to accumulate and to impede the operation of the machine. For the purpose of obviating this defect I employ the deflector L aforesaid. The said deflector is preferably formed in a single casting and comprises a slightly-curved plate L', the inner end edge of which, *l*, and the upper edge of which, *l'*, are adapted to contact with the interior of the cylinder along the roof thereof, B², while along its lower edge *l*² the said plate extends outward somewhat into the cylinder-cavity. Back of the lower edge *l*² is a horizontal flange L², adapted to contact with the interior of the cylinder and hold the plate in the said position, while a second and upright flange L³ is formed integral with the outer end edge *l*⁴ of the plate L' and with the end of the flange L² and is curved to fit against the interior of the cylinder. The plate L', with its flanges L² and L³, may thus firmly be secured in position in the cylinder by a bolt *l*⁵.

Along the upper portion of the edge *l*⁴ and integral therewith is formed a concave deflecting-piece L⁴, which unites with the plate L' in the rib or shoulder *l*⁶, which thus forms a continuation of the end edge *l*⁴ of the said plate, while the lower edge *l*⁷ of the said deflecting-piece comes out flush with the surface of the plate L'.

In the operation of the machine the cobs are carried by the revolution of the drum onto the face of the plate L' and thence against the deflecting-piece proper, L⁴, which forces them out of the shelling-cylinder. It proves in practice that a deflector so constructed prevents the tendency of the cobs and chaff to clog the lower end of the cylinder in the manner hereinabove stated.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a corn-sheller cylinder, two or more series of parallel ribs disposed lengthwise of the cylinder and adapted to form the skeleton portion thereof, the ribs of that series nearer the entrance end being spaced farther apart than those of the succeeding series.

2. In a corn-sheller cylinder, the lower half of which is of skeleton construction, two or more series of parallel ribs disposed length-

wise of the cylinder and forming the skeleton portion thereof, the spaces between the ribs being successively smaller in each series from the entrance toward the exit end of the cylinder.

3. In a corn-sheller cylinder, the end plates C and D, provided with seats; the ring-castings E and F, also provided with seats; and three series of parallel ribs H, I and J mounted in the said seats, the number of ribs in each series being successively greater from the entrance toward the exit end of the cylinder.

4. In a corn-sheller cylinder, two or more series of parallel ribs disposed lengthwise of the cylinder and adapted to form the skeleton portion thereof, the ribs of that series nearer the entrance end being spaced farther apart than those of the succeeding series, in combination with the deflector L upon that side of the cylinder along which the drum moves

downwardly, near the exit from the said cylinder, adapted to guide the cobs out from the said exit.

5. In a corn-sheller cylinder, two or more series of parallel ribs disposed lengthwise of the cylinder and adapted to form the skeleton portion thereof, the ribs of that series nearer the entrance end being spaced farther apart than those of the succeeding series, the said cylinder being provided with an exit-aperture less in diameter than that of the cylinder; in combination with the deflector L comprising the plate L', the lower flange L², the upright flange L³, and the curved deflecting-piece L⁴ integral with the said plate and united with the same along the rib l⁶.

JOHN H. GILMAN.

Witnesses:

S. E. KING,

EDW. R. CLAUS.