

J. M. SAILER.

CORN SHELLER.

APPLICATION FILED MAY 10, 1910.

985,287.

Patented Feb. 28, 1911.

2 SHEETS—SHEET 1.

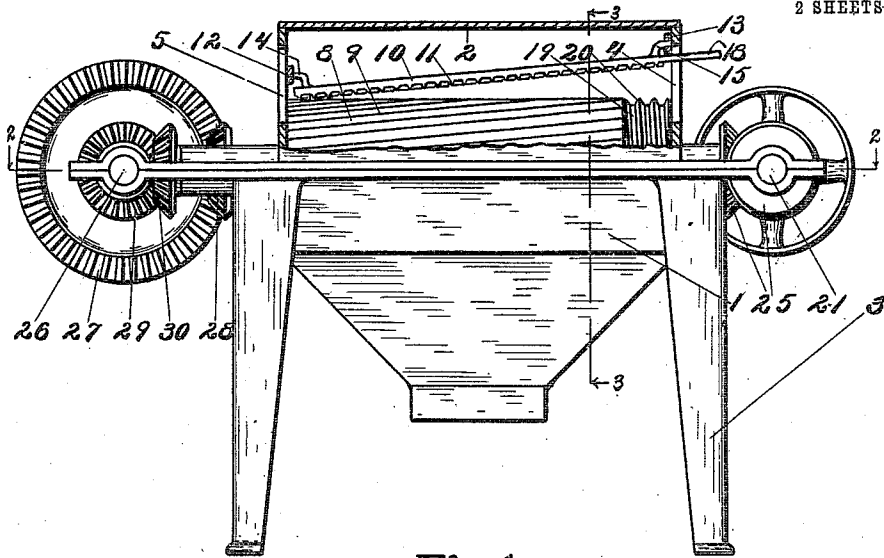


Fig. 1.

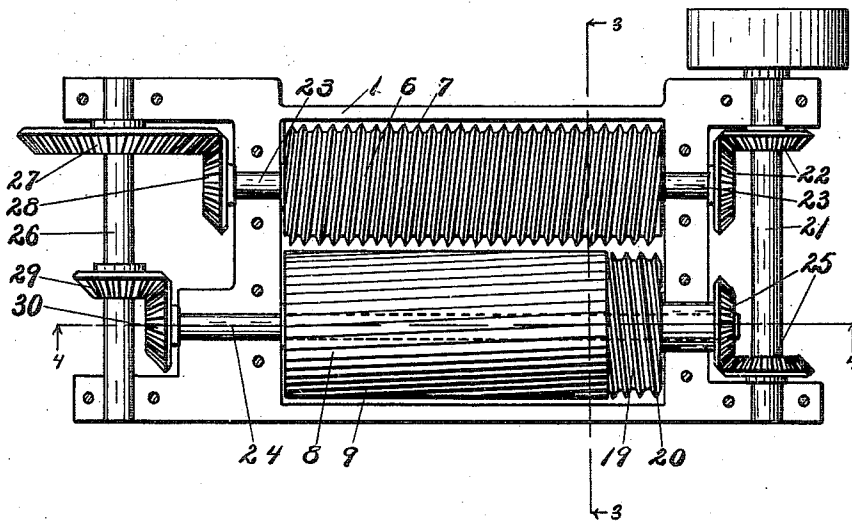


Fig. 2.

Inventor

Witnesses

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2 SHEETS—SHEET 2.

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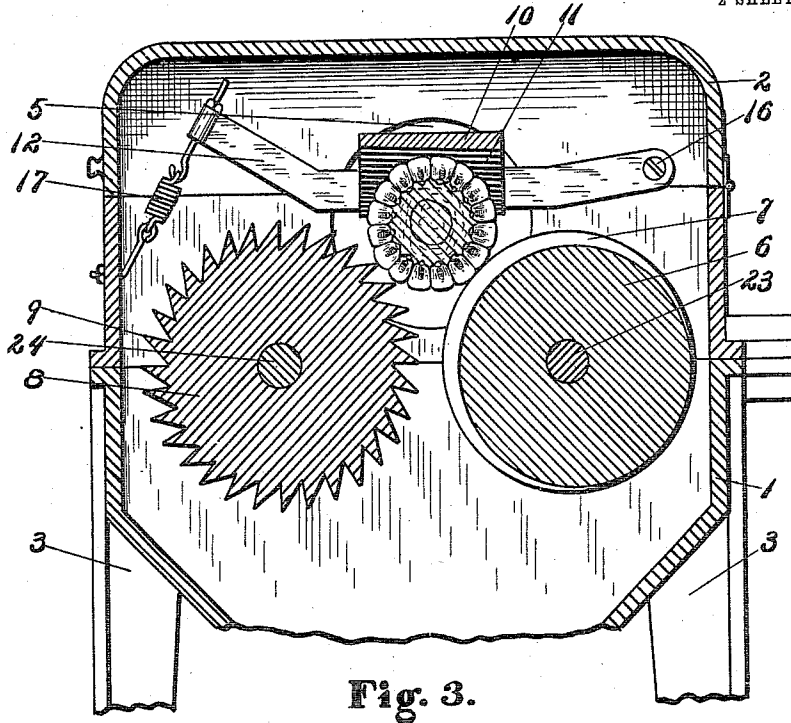


Fig. 3.

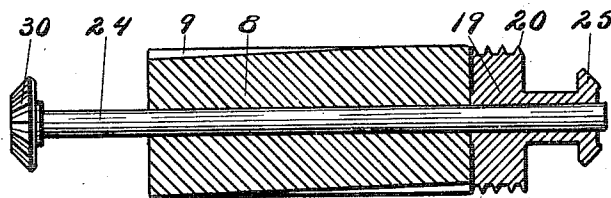


Fig. 4.

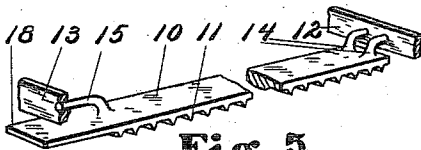


Fig. 5.

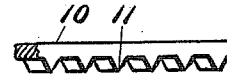


Fig. 7.

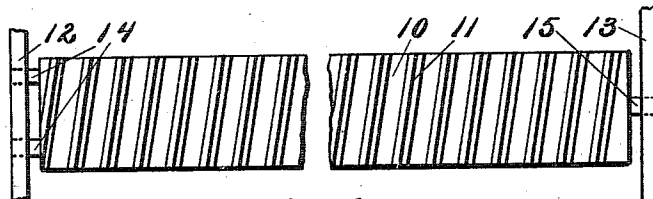


Fig. 6.

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UNITED STATES PATENT OFFICE.

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CORN-SHELLER.

985,287.

Specification of Letters Patent.

Patented Feb. 28, 1911.

Application filed May 10, 1910. Serial No. 560,405.

To all whom it may concern:

Be it known that I, JOHN M. SAILER, a citizen of the United States, residing at Janesville, Wisconsin, have invented certain new and useful Improvements in Corn-Shellers, of which the following is a specification.

This invention relates to improvements in corn shellers.

The main objects of this invention are to provide an improved corn sheller which is very effective, and, at the same time, simple and economical in structure.

Further objects, and objects relating to structural details, will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification.

The structure described constitutes one effective embodiment of my invention.

Other embodiments would be readily devised by those skilled in the art.

The invention is clearly defined and pointed out in the claims.

A structure constituting an effective and preferred embodiment of the features of my invention is clearly illustrated in the accompanying drawing, forming a part of this specification, in which:

Figure 1 is a side elevation of a structure embodying the features of my invention, a portion of the casing or housing being shown in vertical section. Fig. 2 is a horizontal section taken on a line corresponding to line 2—2 of Fig. 1, the feed and shelling rollers with their shafts and driving connections being shown in full lines. Fig. 3 is an enlarged detail vertical section taken on a line corresponding to line 3—3 of Figs. 1 and 2. Fig. 4 is a longitudinal section through the cylinder 8 and feed roll 20 taken on a line corresponding to line 4—4 of Fig. 2. Fig. 5 is a detail perspective view of the plate or toothed member 10 and its supports. Fig. 6 is an inverted detail of the plate or toothed member 10. Fig. 7 is a detail edge view thereof.

In the drawings, similar reference characters refer to similar parts throughout the several views, and the sectional views are taken looking in the direction of the little arrows at the ends of the section lines.

Referring to the drawing, the housing or casing 1 is preferably composed of horizon-

tally divided sections having bearings therein for the shafts. The casing is also provided with a cover 2. The lower end of the casing is hopper-like in form for the delivery of the shelled grain. This casing is, in the structure illustrated, supported on legs 3. At the forward end of the casing is a feed opening 4, and at its rear end a discharge opening 5 for the cobs.

The cylinder 6 is provided with thread-like teeth 7. The cylinder 8 is provided with longitudinal, spirally-disposed rib-like teeth 9. Supported to coact with these cylinders 6 and 8 is a toothed plate or member 10 having obliquely-disposed rib-like teeth 11. These teeth are inclined in the same direction as the thread-like teeth of the cylinder 6, but are preferably of different pitch and differently spaced. This plate, in the structure illustrated, is yieldingly supported in an inclined relation above the cylinders 6 and 8, being supported on bars 12 and 13, the bar 13 being arranged at the forward end and the bar 12 at the rear end. The member 10 is provided with a pair of bar-engaging fingers 14 at its rear end, and a single finger 15 at its forward end. This allows the bars 12 and 13 to swing on their pivots 16.

The bars 12 and 13 are held under tension by means of springs 17, secured at one end to the casing and at the other to the bars, the connections for the spring to the bar 12 being preferably adjustable. As the supports for the bars 12 and 13 are the same, only one is illustrated.

The forward end of the member 10 projects through the feed opening 4 to provide a guide 18. At the forward end of the cylinder 8 I preferably provide a feed roll 19 having thread-like teeth 20 of the same pitch as the teeth of the roll 6, but disposed oppositely to such teeth. This roll and the cylinder 6 are driven in opposite directions and coact therewith in feeding the corn into the cylinders. The driving connections consist of the driving shaft 21, which is connected by the gears 22 to the shaft 23 of the cylinder 6. The feed roll 20 is revolubly mounted upon the shaft 24 of the cylinder 8, and connected by the gears 25 to the shaft 21, the gears being disposed so that the feed roll is driven in an opposite direction to that of the cylinder 6.

The shafts 23 and 24 are connected by the shaft 26 and the gears 27, 28, 29 and 30, the

gears 28 and 30 being arranged on the shafts 23 and 24, respectively, and the gears 27 and 29 on the shaft 26 to mesh with said gears 28 and 30. These gears are proportioned 5 and arranged so that the cylinder 8 is driven in the same direction as the cylinder 6, but at less speed.

In operation, the corn is fed into the opening 4, the structure illustrated being a hand 10 feed, where it is first engaged by the cylinder 6, the feed roll 20 and member 10. Owing to the arrangement of the teeth, it is carried rearwardly thereby. As it is carried along, the teeth on the cylinders and 15 the coacting member 10 serve to loosen and effectively remove the corn from the cob, the device being found effective in shelling very tough, undried corn. As the ear is carried through the cylinders, it is rotated by 20 the cylinders, as well as being carried forward, the teeth on the cylinder 6 and on the member 10 spreading and loosening the kernels. The cylinder 8 assists in rotating the ear and also in loosening and removing the 25 kernels, it removing the kernels with a movement substantially transverse to that given by the cylinder 6 and the member 10.

I have illustrated and described my improvements in detail in the form in which 30 I have embodied them in practice. I am, however, aware that the invention can be very greatly varied in structural details or embodiments, and I desire to be understood as claiming the same specifically, as illustrated, as well as broadly within the scope 35 of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

40 1. In a corn sheller, the combination of a cylinder having thread-like teeth thereon; a coacting cylinder having longitudinal, spirally-disposed rib-like teeth; a feed roll arranged at the forward end of said second 45 named cylinder to coact with said first named cylinder and having thread-like teeth disposed oppositely to but of the same pitch as the teeth of the said first named cylinder; a plate yieldingly supported in a rearwardly 50 inclined position relative to said feed roll and cylinders to coact therewith, said plate having transverse rib-like teeth disposed obliquely in the same direction as the teeth of said first named cylinder but at a different 55 pitch; and means for driving said cylinders and feed roll, said cylinders being revolved in the same direction at different speeds, the speed of the first named cylinder exceeding that of the second, said feed 60 roll being revolved at the same speed but oppositely to said first named cylinder.

2. In a corn sheller, the combination of a cylinder having spiral screw thread-like 65 longitudinally-disposed rib-like teeth, said

teeth being slightly spiral; a plate yieldingly supported in a rearwardly inclined position relative to said cylinders to coact therewith, said plate having transverse rib-like teeth disposed obliquely in the same 70 direction as the teeth of said first named cylinder but at a different pitch; and means for driving said cylinders, said cylinders being revolved in the same direction at different speeds, the speed of the first named 75 cylinder exceeding that of the second.

3. In a corn sheller, the combination of a cylinder having thread-like teeth thereon; a coacting cylinder having longitudinal, spirally-disposed rib-like teeth; a feed roll arranged at the forward end of said second 80 named cylinder to coact with said first named cylinder and having thread-like teeth disposed oppositely to but of the same pitch as the teeth of said first named cylinder; a 85 plate yieldingly supported in a rearwardly inclined position relative to said feed roll and cylinders to coact therewith, said plate having transverse rib-like teeth disposed obliquely in the same direction as the teeth 90 of said first named cylinder but at a different pitch; and means for driving said cylinders and feed roll, said cylinders being revolved in the same direction, said feed roll being revolved at the same speed but oppositely to said first named cylinder. 95

4. In a corn sheller, the combination of a cylinder having thread-like teeth thereon; a coacting cylinder having longitudinal, spirally-disposed rib-like teeth; a plate 100 yieldingly supported in a rearwardly inclined position relative to said cylinders to coact therewith, said plate having transverse rib-like teeth disposed obliquely in the same direction as the teeth of said first 105 named cylinder but at a different pitch; and means for driving said cylinders, said cylinders being revolved in the same direction.

5. In a corn sheller, the combination of a cylinder having thread-like teeth thereon; 110 a coacting cylinder having longitudinal, spirally-disposed teeth; a feed roll arranged at the forward end of said second named cylinder to coact with said first named cylinder and having thread-like teeth disposed 115 oppositely to but of the same pitch as the teeth of the first named cylinder; a member coacting with said cylinders having teeth disposed obliquely in the same direction as the teeth of said first named cylinder but at 120 a different pitch; and means for driving said cylinders and feed roll, said cylinders being revolved in the same direction at different speeds, the speed of the first named cylinder exceeding that of the second, said 125 feed roll being revolved at the same speed but oppositely to said first named cylinder.

6. In a corn sheller, the combination of a cylinder having spiral screw thread-like teeth thereon; a coacting cylinder having longi- 130

5 tudinally-disposed rib-like teeth, said teeth
being slightly spiral; a member coacting
with said cylinders having teeth disposed
obliquely in the same direction as the teeth
of said first named cylinder but at a differ-
ent pitch; and means for driving said cylin-
ders, said cylinders being revolved in the
same direction at different speeds, the speed
of the first named cylinder exceeding that
10 of the second.

7. In a corn sheller, the combination of a
cylinder having thread-like teeth thereon; a
coacting cylinder having longitudinal,
spirally-disposed teeth; a feed roll arranged
15 at the forward end of said second named
cylinder to coact with said first named cyl-
inder and having thread-like teeth disposed
oppositely to but of the same pitch as the
teeth of the said first named cylinder; a
20 member coacting with said cylinders having
teeth disposed obliquely in the same direc-
tion as the teeth of the said first named cyl-
inder but at a different pitch; and means
for driving said cylinders and feed roll,
25 said feed roll being revolved at the same
speed but oppositely to said first named
cylinder.

8. In a corn sheller, the combination of a
cylinder having spiral screw thread-like teeth
30 thereon; a coacting cylinder having longi-
tudinally-disposed rib-like teeth, said teeth
being slightly spiral; a member coacting
with said cylinders, having teeth disposed
obliquely in the same direction as the teeth
35 of said first named cylinder but at a differ-
ent pitch; and means for driving said
cylinders.

9. In a corn sheller, the combination of a
cylinder having thread-like teeth; a coact-
ing cylinder having longitudinally disposed
teeth; a feed roll arranged at the forward
end of said second named cylinder to coact
with said first named cylinder and having
thread-like teeth disposed oppositely to but
45 of the same pitch as the teeth of said first
named cylinder; a toothed member coacting
with said cylinders; and means for driving

said cylinders and feed roll, said cylinders
being revolved in the same direction at dif-
ferent speeds, the speed of the first named
cylinder exceeding that of the second, said
50 feed roll being revolved at the same speed
but oppositely to said first named cylinder.

10. In a corn sheller, the combination of
a cylinder having thread-like teeth; a coact-
ing cylinder having longitudinally disposed
teeth; a feed roll arranged at the forward
end of said second named cylinder to coact
with said first named cylinder and having
thread-like teeth disposed oppositely to but
60 of the same pitch as the teeth of said first
named cylinder; a toothed member coacting
with said cylinders; and means for driving
said cylinders and feed roll in the same di-
rection at different speeds, said feed roll be-
ing revolved at the same speed but oppo-
65 sitely to said first named cylinder.

11. In a corn sheller, the combination of
a cylinder having thread-like teeth thereon;
a coacting cylinder having longitudinal
teeth; a feed roll arranged at the forward
end of said second named cylinder to coact
with said first named cylinder and having
thread-like teeth disposed oppositely to but
75 of the same pitch as the teeth of said first
named cylinder; a toothed member coacting
with said cylinders; and means for driving
said cylinders and feed roll comprising
shafts for said cylinders, said feed roll be-
ing revolubly mounted on said shaft for
said second named cylinder, a driving shaft,
gear connections therefor to said shaft for
said first named cylinder and said feed roll,
a driven shaft geared to said shaft of said
first named cylinder, and gear connections
85 for said cylinder shafts whereby the cylin-
ders are driven in the same direction.

In witness whereof, I have hereunto set
my hand and seal in the presence of two
witnesses.

JOHN M. SAILER. [L. S.]

Witnesses:

LUELLA G. GREENFIELD,
F. GERTRUDE TALLMAN.