

J. M. SAILER.

CORN SHELLEK.

APPLICATION FILED MAY 10, 1910.

985,287.

Patented Feb. 28, 1911.

2 SHEETS-SHEET 1.

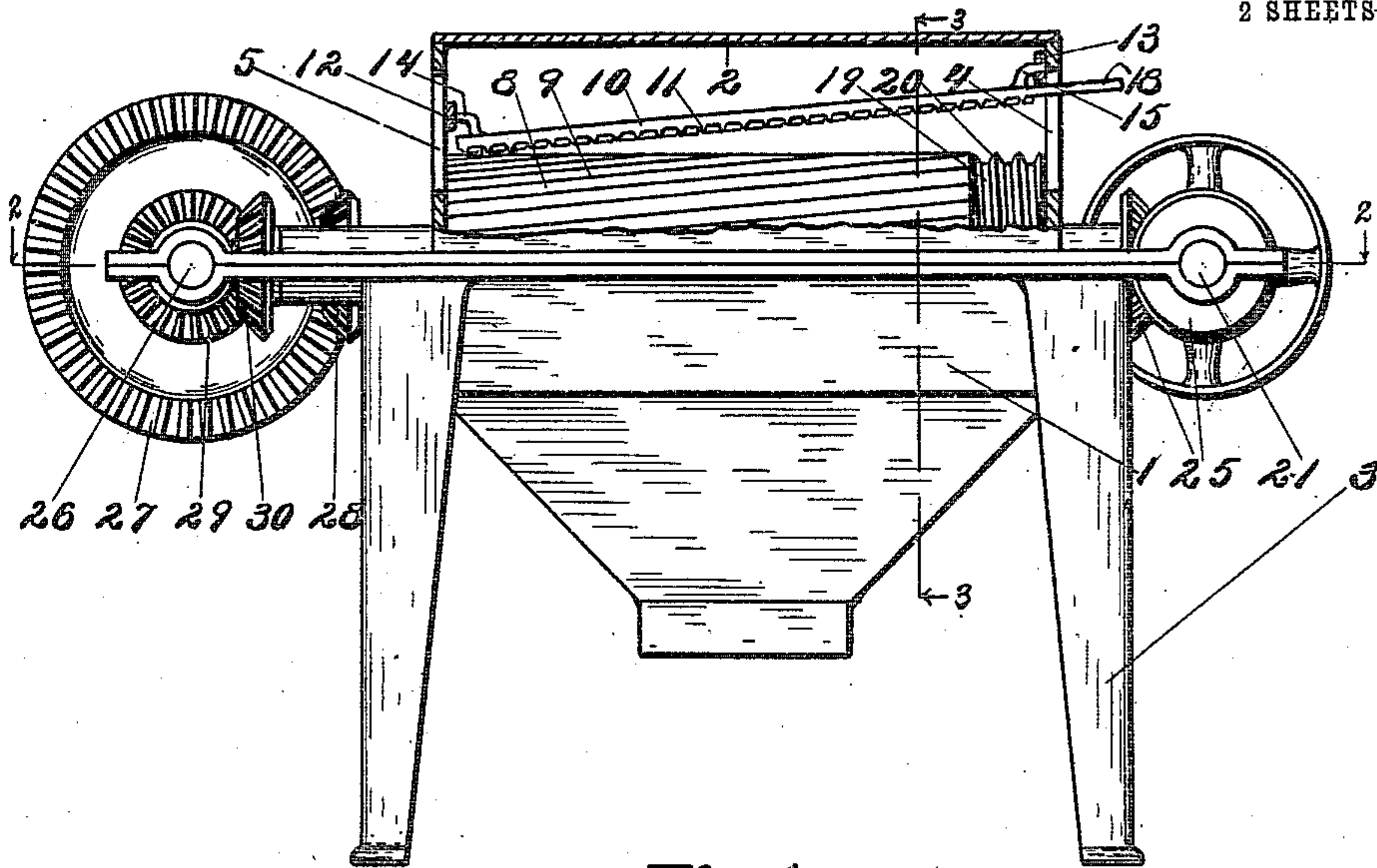


Fig. 1.

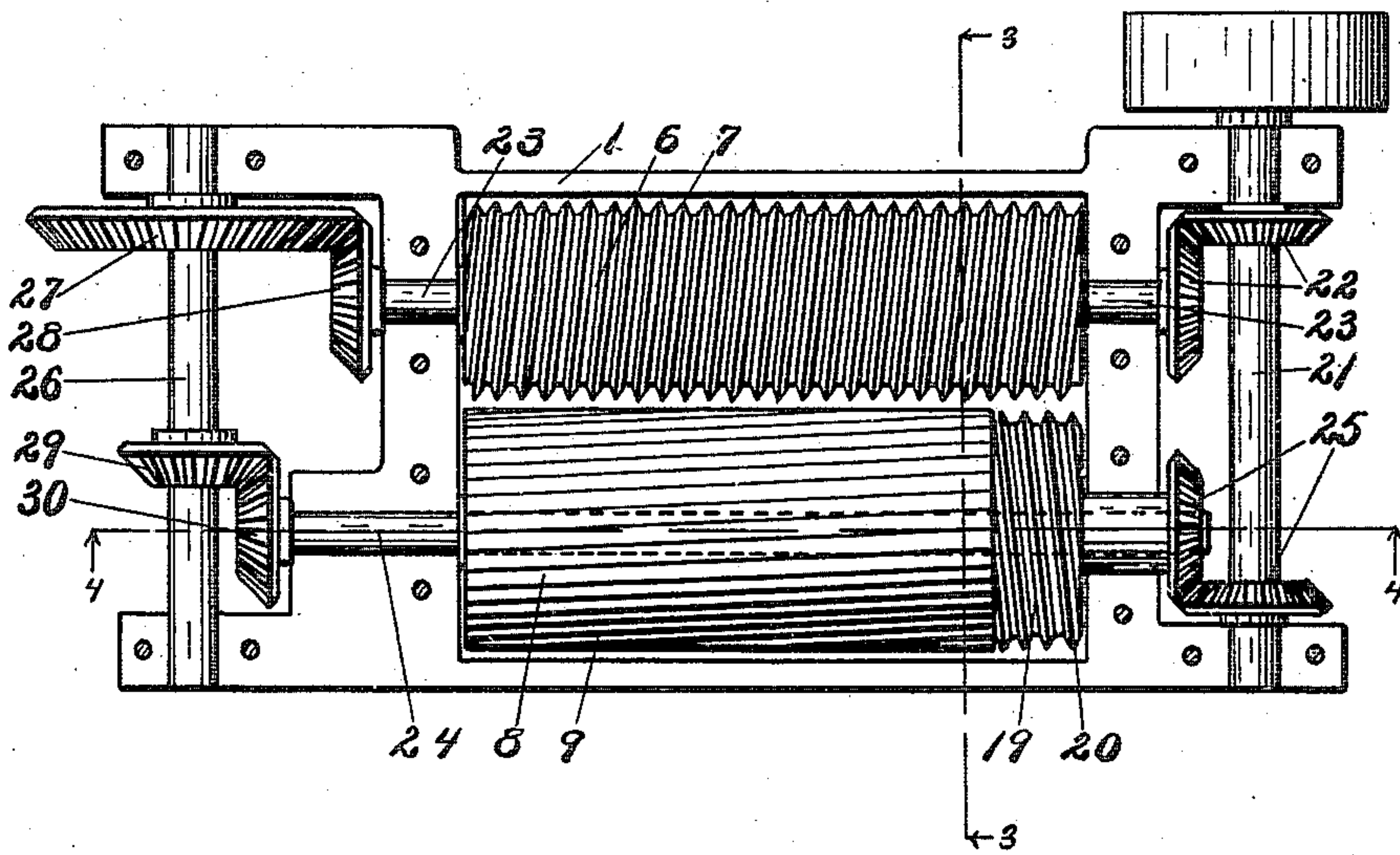


Fig. 2.

Inventor

Witnesses

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2 SHEETS—SHEET 2.

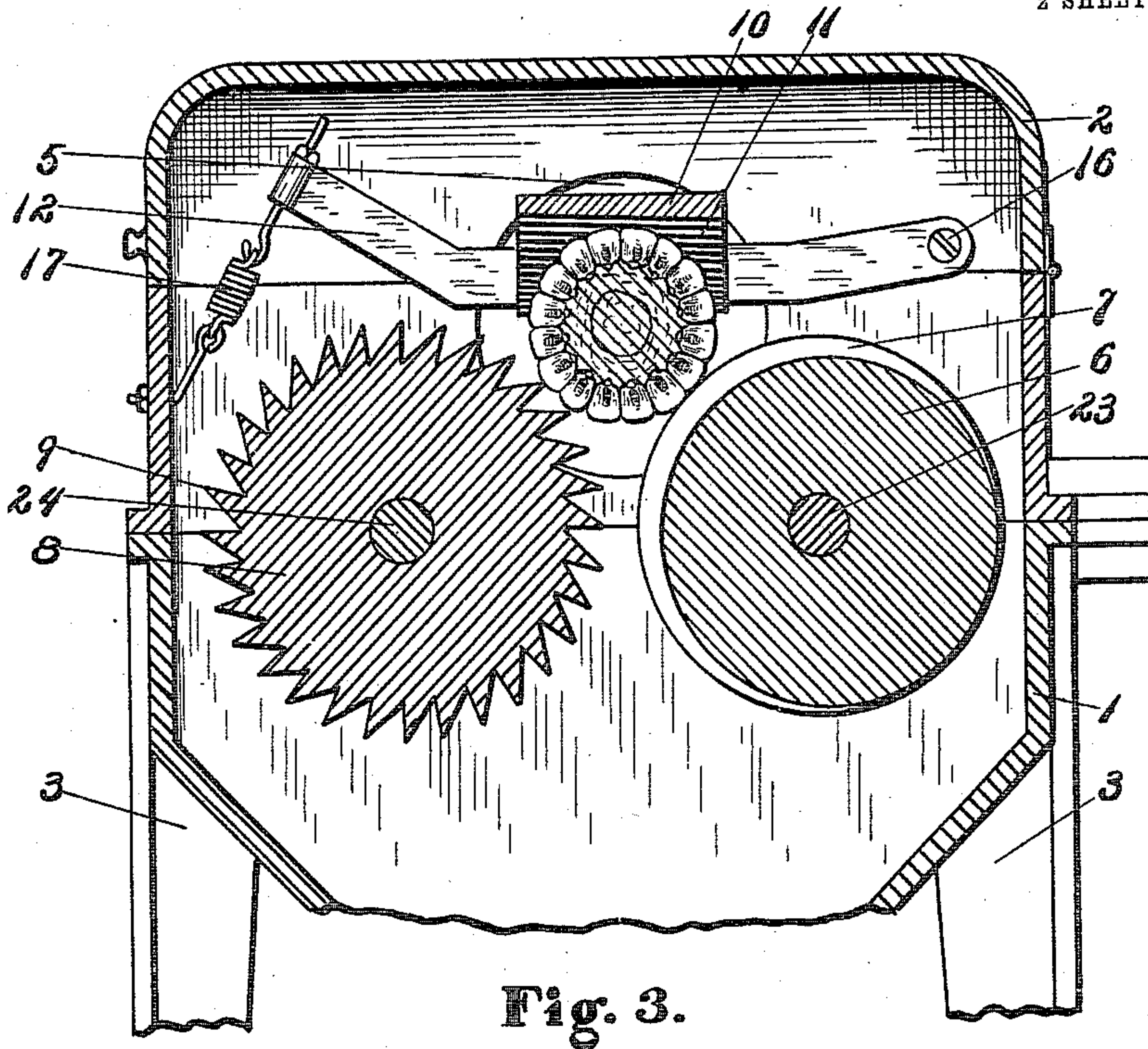


Fig. 3.

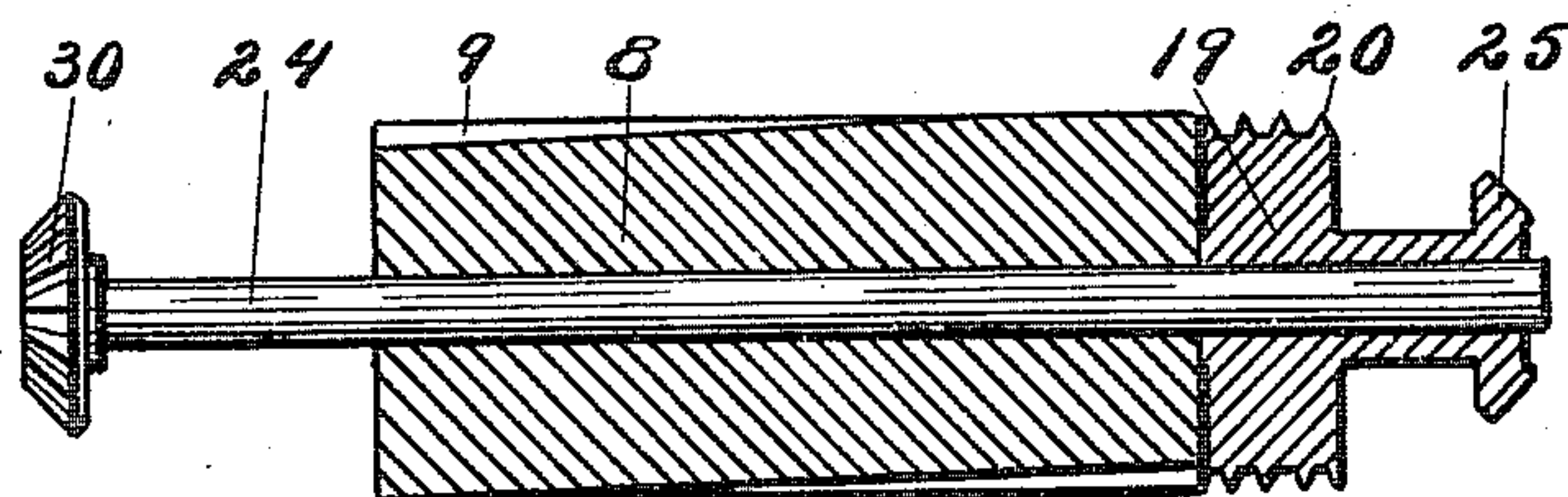


Fig. 4.

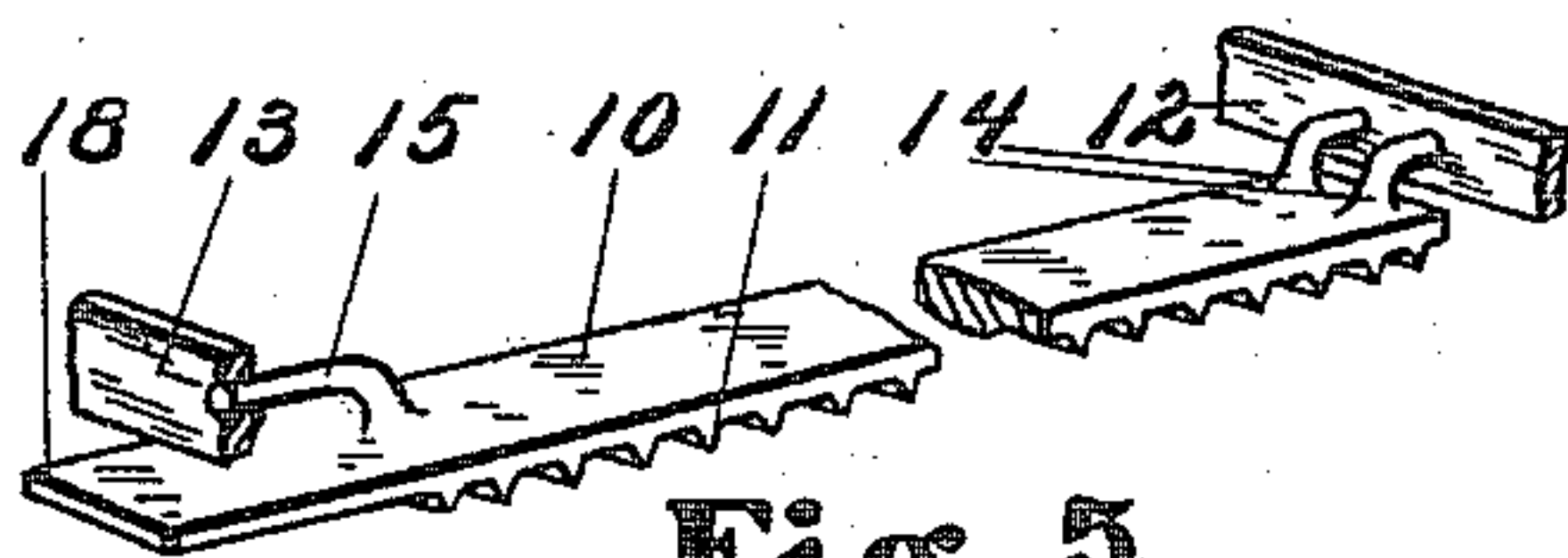


Fig. 5.

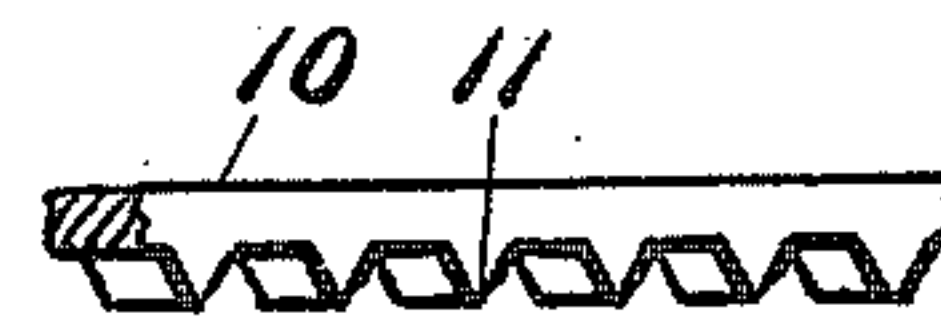


Fig. 7.

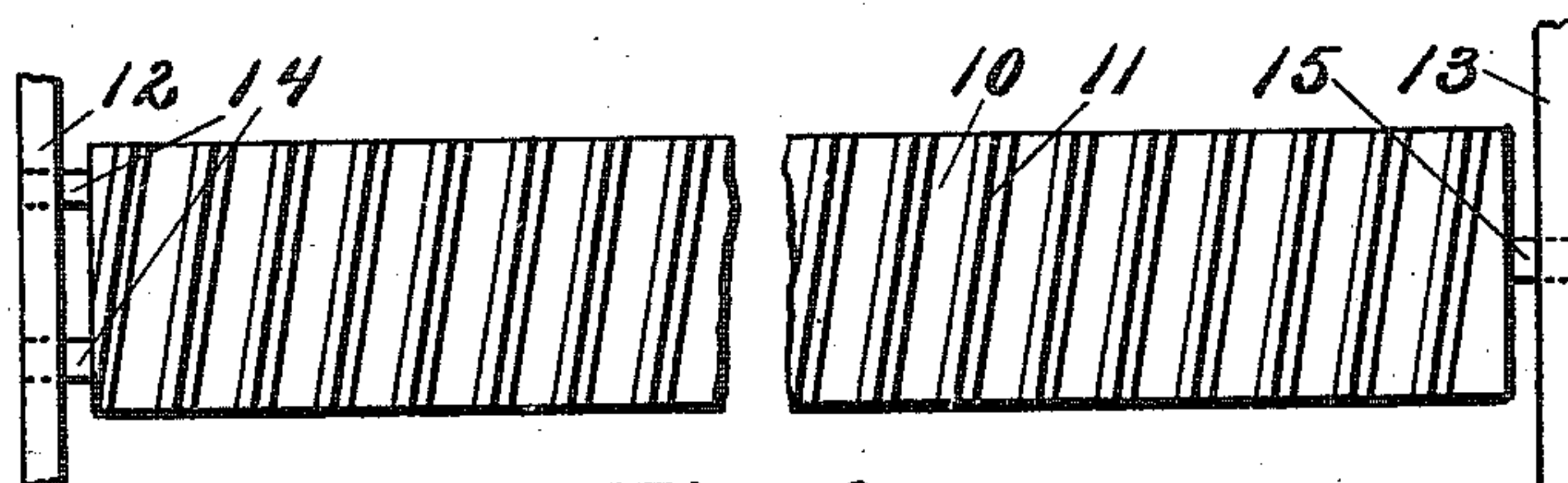


Fig. 6.

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CORN-SHELLER.

985,287.

Specification of Letters Patent.

Patented Feb. 28, 1911.

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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 revolvably 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 teeth thereon; a coacting cylinder having 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 plate yieldingly supported in a rearwardly inclined position relative to said feed roll
85 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 pitch; and means for driving said cylinders and feed roll, said cylinders being revolved in the same direction, said feed roll
90 being revolved at the same speed but oppositely to said first named cylinder.

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; a coacting cylinder having longitudinal, spirally-disposed teeth; a feed roll arranged at the forward end of said second named
110 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 first named cylinder; a member coacting with said cylinders having teeth disposed obliquely in the same direction as
115 the teeth 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 at different speeds, the speed of the first named cylinder exceeding that of the second, said
120 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

itudinally-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 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 cylinder exceeding that 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 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 of the same pitch as the teeth of the said first named cylinder; a member coacting with said cylinders having teeth disposed obliquely in the same direction as the teeth of the said first named cylinder but at a different pitch; and means for driving said cylinders and feed roll, 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 thereon; a coacting cylinder having longitudinally-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 different pitch; and means for driving said cylinders.

9. In a corn sheller, the combination of a cylinder having thread-like teeth; a coacting 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 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 different speeds, the speed of the first named cylinder exceeding that of the second, said 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 coacting 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 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 direction at different speeds, said feed roll being revolved at the same speed but oppositely 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 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 being 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 for said cylinder shafts whereby the cylinders 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 TALIMAN.