

No. 697,188.

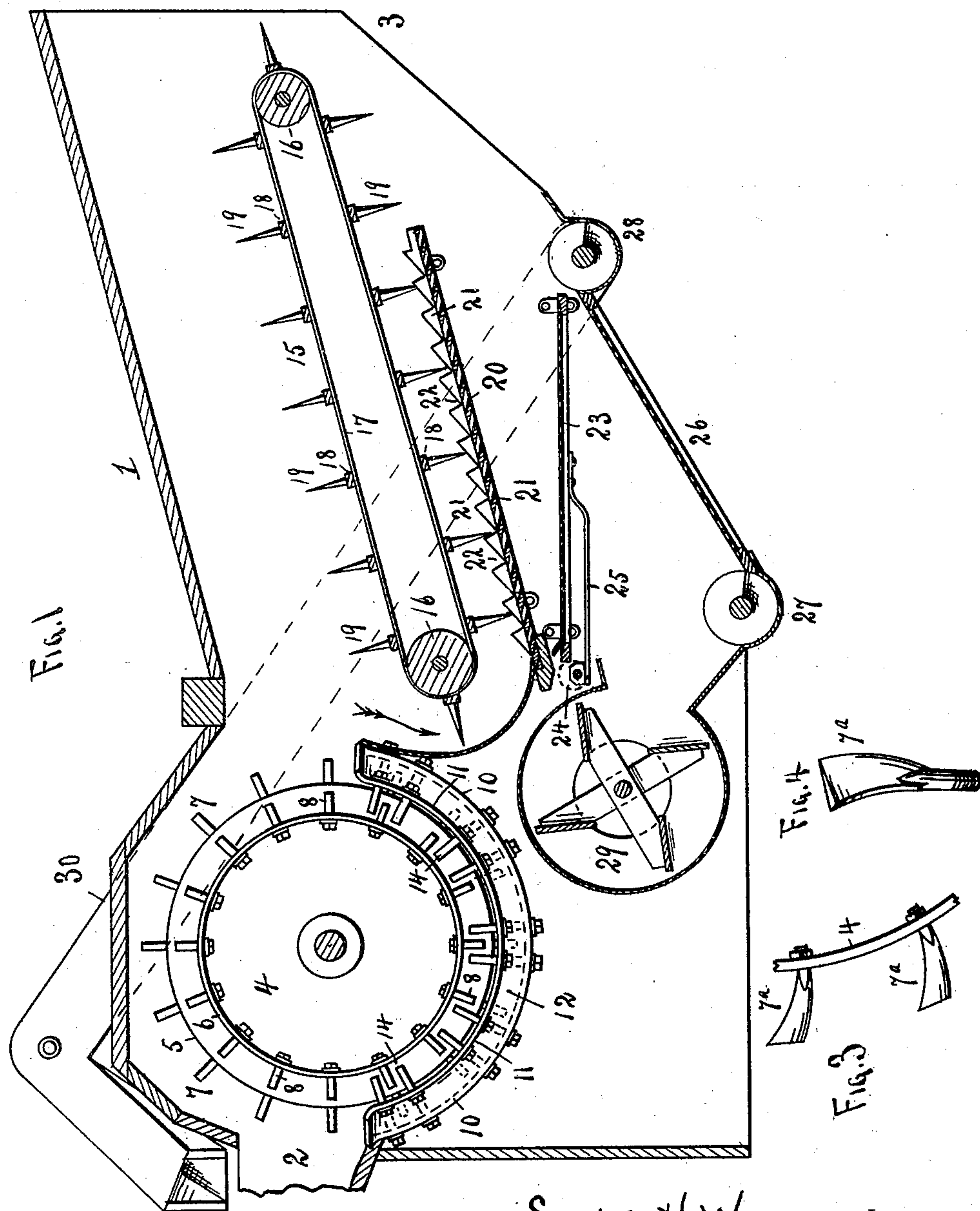
Patented Apr. 8, 1902.

S. H. WILLIAMS.
PEA THRESHER AND SEPARATOR.

(Application filed May 18, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses
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J. W. Garner

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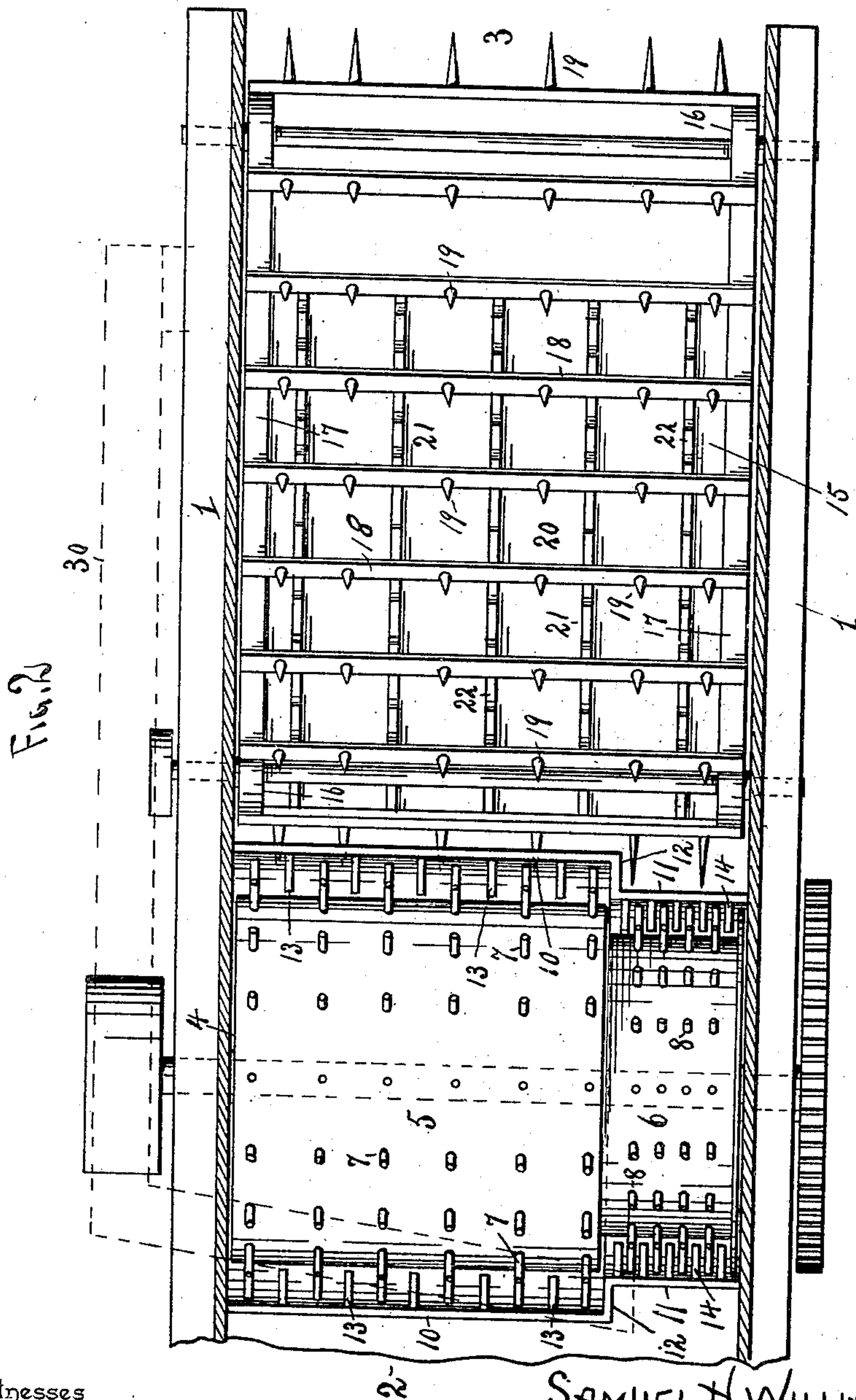
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UNITED STATES PATENT OFFICE.

SAMUEL H. WILLIAMS, OF BARNARDSVILLE, TENNESSEE.

PEA THRESHER AND SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 697,188, dated April 8, 1902

Application filed May 18, 1901. Serial No. 60,923. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL H. WILLIAMS, a citizen of the United States, residing at Barnardsville, in the county of Roane and State of Tennessee, have invented a new and useful Pea Thresher and Separator, of which the following is a specification.

My invention is an improved pea thresher and separating machine; and it consists in the peculiar construction and combination of devices hereinafter fully set forth and claimed.

My present invention is an improvement on the pea thresher and separating machine for which Letters Patent of the United States, No. 657,373, were granted to me September 4, 1900.

One object of my present invention is to effect improvements in the construction of the cylinder and concave.

A further object of my present invention is to effect improvements in the separating mechanism.

In the accompanying drawings, Figure 1 is a vertical longitudinal sectional view of a pea thresher and separator embodying my improvements. Fig. 2 is a top plan view of the same, the casing being indicated in section. Figs. 3 and 4 are detail views.

The casing 1 may be either of the form here shown or of any other suitable construction, is provided with a feed-opening 2 at its front end and with a discharge 3, as shown. In the said casing is disposed a threshing-cylinder 4, the shaft of which is mounted in suitable bearings. The said cylinder is rotated by any suitable means, preferably by the means usually employed in machines of this class. The threshing-cylinder comprises the large section 5 and the section 6, of considerably-reduced diameter as compared with section 5, the said reduced section 6 being at one end of section 5. The section 5 is provided with stripping-teeth 7, which are spaced at considerable intervals apart. The section 6 is provided with hulling-teeth 8, which are spaced at comparatively slight distances apart. The said sections 5 6 of the cylinder may be either formed integrally or separately, and they may be either in immediate con-

tact with each other, as here shown, or they may be spaced apart, if preferred, and I do not limit myself in this particular.

The concave is provided with a section 10, which coacts with the enlarged section 5 of cylinder 4 and with a reduced section 11, which coacts with the reduced section 6 of the said cylinder. Thereby an offset flange 12 is formed in the said concave between the said sections 10 11, which offset flange bears against the shoulder formed at the inner end of the enlarged section of the cylinder, as shown in Fig. 2, isolates the two working surfaces of the cylinder and concave, and prevents the material between the enlarged sections of the cylinder and concave from working laterally and getting between the reduced sections thereof. The enlarged section 10 of the concave has teeth 13, with which the teeth 7 are intercurrent, and the reduced section 11 of the concave has teeth 14, with which the teeth 8 of the reduced cylinder-sections are closely intercurrent.

The feed-opening 2 leads to the enlarged sections of the cylinder and concave. In rear of the cylinder and concave is an endless traveling carrier 15, which may be of any suitable construction. As here shown, it comprises a pair of rollers 16, endless belts 17, which connect said rollers, transverse bars 18, which connect said belts, and spurs 19, which project from said bars. The said endless traveling carrier is actuated by any suitable means, such as are well understood by persons skilled in this art, and the said endless traveling carrier moves in the direction indicated by the arrow in Fig. 1. Under the said endless carrier at the front portion of the same is a stationary shoe 20, which comprises a series of bars 21, appropriately spaced apart and provided on their upper sides with serrations 22. Under the said shoe 20 is a screen 23, which also travels longitudinally, being driven by an eccentric 24 and a pitman 25. An inclined screen 26 is below the screen 23 and conducts to a conveyer-worm 27. In rear of the screen 23 is a tailings-conveying worm 28. A fan or blower 29 of the usual construction is disposed in front of the screens 23 26, the blast

from the said fan passing rearward between and through the said screens and serving to carry off dust, light trash, and other impurities. An elevator 30 of suitable construction, the trunk of which is here shown, leads from the tailings-conveying worm 28 to a point above the reduced section of the cylinder and serves to feed the tailings to the reduced sections of the cylinder and concave.

In operation the threshing-cylinder is rotated at low speed, which is essential to prevent the peas from being split. The vines are fed through the opening 2 to the coacting enlarged sections of the cylinder and concave and are subjected to the action of the intercurrent widely-spaced stripping-teeth thereof, which serve to strip the pods from the vines without entangling and breaking up the latter. The halm, together with the pods which have been stripped therefrom, passes from between the enlarged sections of the cylinder and concave onto the front portions of the endless traveling conveyer 15, which latter serves to sweep the halm and the detached pods rearward on the shoe 20. The action of the spurs 19 of the conveyer causes the detached pods to fall from the halm between the bars 21 of the said shoe, and during the passage of the halm over said shoe 20 all of the pods become dislodged therefrom and drop, together with the loose or hulled peas, onto the screen 23. The halm from which the pods have been stripped and separated is discharged by the conveyer 15 through the opening 3, and since, owing to the widely-spaced stripping-teeth of the coacting enlarged sections of the cylinder and concave, the halm is not broken into small pieces, the same is excellent hay and is of great value for feeding purposes. Such of the peas as have been shelled or hulled pass through the screen 23, drop therefrom onto the screen 26, find their way to the worm 27, and are by the latter discharged from the machine. The pods pass rearward from the screen 23 to the worm 28 and are by the latter delivered to the elevator 30 and by the said elevator returned to the front end of the machine and fed to the coacting reduced sections of the cylinder and concave. Owing to the fact that the reduced section 6 of the cylinder is of less diameter than the section 5 thereof, the hulling-teeth of said reduced section move even more slowly than do the stripping-teeth of the enlarged section. This reduction of speed is advantageous to avoid the splitting of the peas. The hulling-teeth of the reduced sections of the cylinder and concave are so closely spaced that the pods are effectually broken thereby and the peas shelled or hulled. The shelled peas are discharged, as before, onto the shoe 20, pass through the screen 23 to the

conveyer-worm 27 and discharged from the machine.

The teeth of the cylinder and concave may be of any suitable construction.

In Fig. 3 of the drawings I show the stripping-sections of the cylinder and concave provided with curved teeth 7^a, the front edges of which are narrow and the sides of which diverge rearwardly, as shown in Fig. 4. I prefer to use such teeth for stripping the pods from the vines, as the same are effective in stripping the pods from the vines without bursting the pods and shelling and splitting the peas.

Having thus described my invention, I claim—

1. A pea-threshing runner and concave, each comprising a stripping and a hulling division of unequal diameter, joined by closely-approaching shoulders isolating the two working surfaces, and means substantially as described, whereby a portion of the product discharged from the one may be delivered to the other.

2. A pea-threshing runner and concave each comprising a stripping and a hulling division of unequal diameter, joined by closely-approaching shoulders, isolating the two working surfaces, the teeth in the hulling division being more closely spaced than those in the stripping division, in combination with means to separate the pods from the halm discharged from the stripping division, and means to return the pods to the hulling division, substantially as described.

3. A pea-threshing runner and concave, each comprising a stripping and a hulling division, of unequal diameter, joined by closely-approaching shoulders isolating the two working surfaces, in combination with means to separate the pods from the halm discharged from the stripping division, and means to return the pods to the hulling division, substantially as described.

4. A pea-threshing runner and concave, each comprising a stripping and a hulling division, of unequal diameter, joined by closely-approaching shoulders isolating the two working surfaces, the teeth on said stripping division having narrow front edges and rearwardly-diverging sides, in combination with means to separate the pods from the halm discharged from the stripping division, and means to return the pods to the hulling division, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

SAMUEL H. WILLIAMS.

Witnesses:

G. P. WALLER,

J. G. CRUMBLISS.