(No Model.)

2 Sheets—Sheet 1.

W. E. JONES.

MACHINE FOR HULLING PEAS.

No. 408,627.

Patented Aug. 6, 1889.

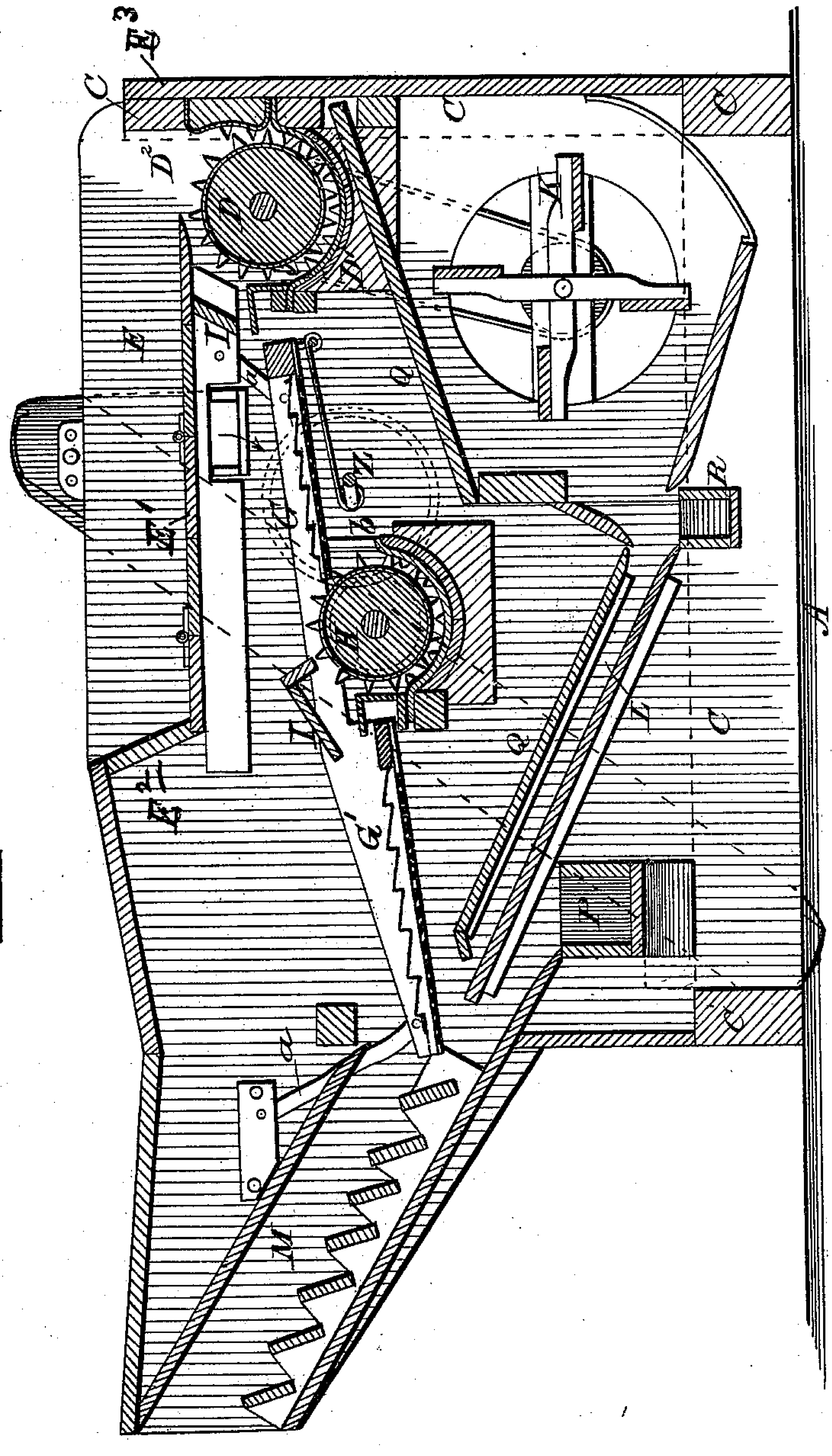

Fig. 1.

WITNESSES

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FIG. 2.

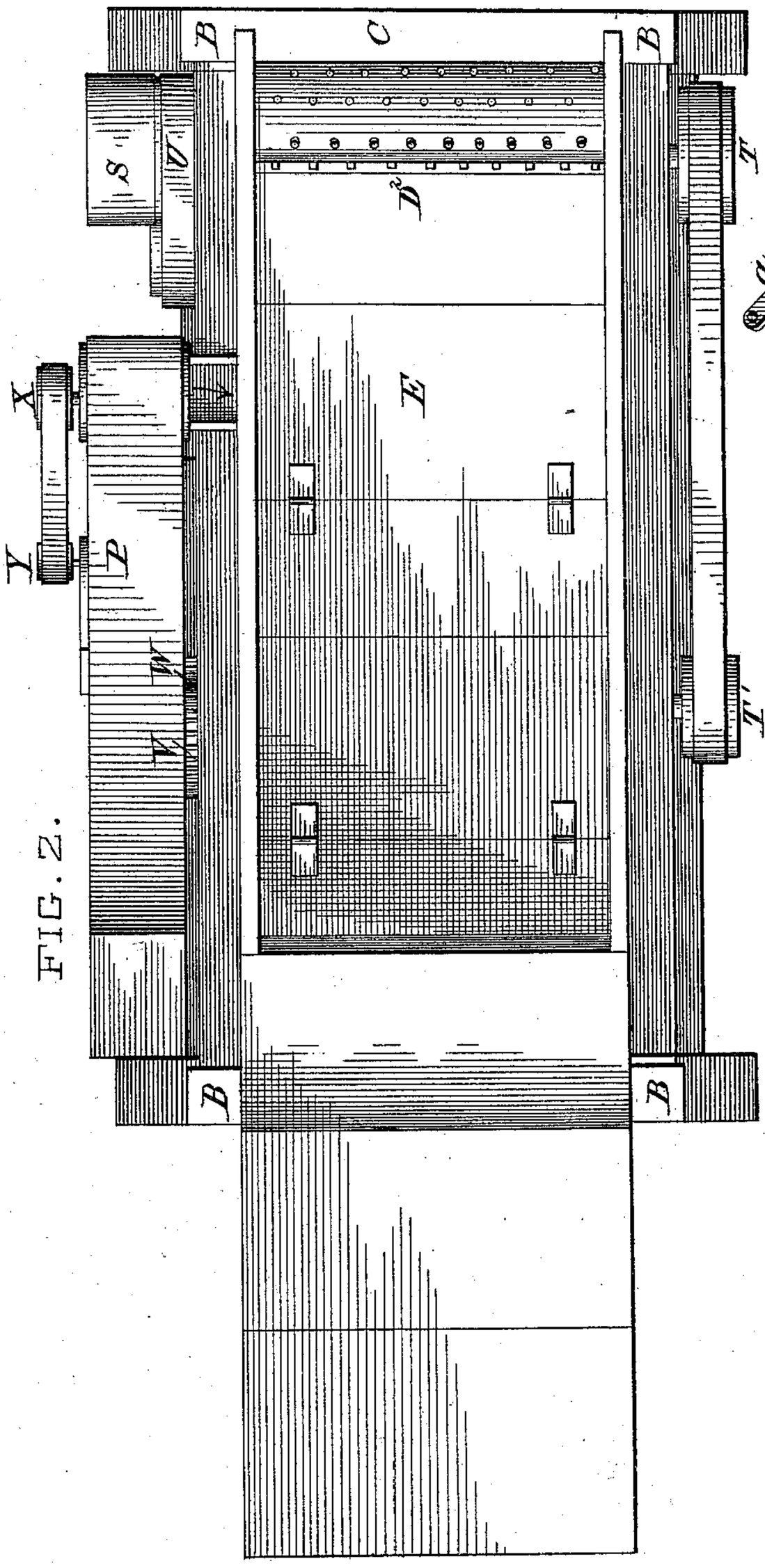
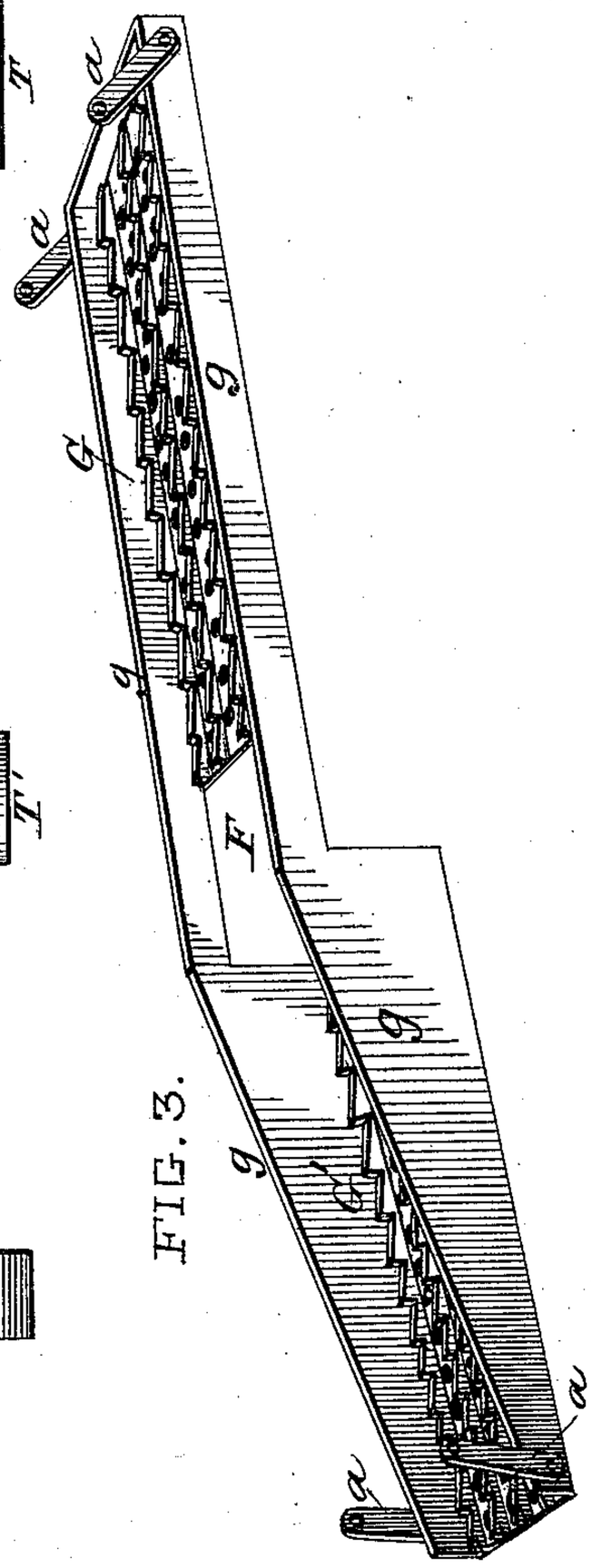


FIG. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM ELI JONES, OF TRENTON, TENNESSEE.

MACHINE FOR HULLING PEAS.

SPECIFICATION forming part of Letters Patent No. 408,627, dated August 6, 1889.

Application filed May 2, 1889. Serial No. 309,330. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM ELI JONES, a citizen of the United States, residing at Trenton, county of Gibson, and State of Tennessee, have invented a new and useful Improvement in Machines for Hulling Peas, of which the following is a specification.

I have improved the machine for hulling and separating peas and beans; and my improvements are directed to a novel construction in which the breaking and opening of the pods and the separation of the kernels are rendered effective and with the least loss in breaking the kernels.

My improvement embraces a construction in which a reciprocating separator is adapted to operate with a toothed cylinder and concave which divide the separator-surface, and for this purpose the cylinder is placed in the path of the separator, and occupies a position within an open space between its side bars and in the middle of the length of the separator, while the concave of the cylinder forms the fixed bottom of this open space. This construction gives the advantage of a long separator with two thrashing-cylinders, one at its end and one in its middle, in which the latter operates to receive the pods direct from the surface of the separator and to carry them beneath the separator and deliver them again onto the separator at the other side of the cylinder. The separation of the loosened kernels from the hulls takes place along the length of the separator which, for the purpose, is provided with perforations, and the pods and hulls are moved along under the vibrations of the separator from the primary or end cylinder down to the secondary cylinder. During the passage between these parts about nine-tenths of the kernels will pass or drop through the perforations, while pods which are not opened pass to the secondary cylinder and are thrashed and delivered thereby upon the lower section of the separator. Any pods still retaining kernels pass thence onto the upwardly-inclined slatted bottom and fall through between the slats into the elevating-spout and are delivered thereby onto the upper section of the separator to be treated as before. The kernels which drop through the upper and the lower portions of the separator are directed into oppositely-inclined bottom boards and pass through the air-flue into the collecting-spout at the mouth of the fan-case.

The top of the machine above the separator is formed into a hopper-space which extends from the front cylinder to near the rear end of the machine with its bottom opening into the concave of the front cylinder, whereby a large open-top space is provided as a receptacle for the peas or beans, which can be fed by hand into the front concave.

The following is a description of the accompanying drawings, wherein is illustrated my invention and the precise improvement which I have made, and which will be embodied in specific claims at the end of this specification.

Referring to the drawings, Figure 1 is a vertical longitudinal section of my improved machine. Fig. 2 is a top view; and Fig. 3 is the separator, in perspective, showing the space wherein the secondary cylinder operates in the path of the separator.

The frame of the machine is of the usual construction of sills A A, posts B, and cross-girts C, and suitable boarding to inclose the operating parts and for forming suitable pea-collecting and air-blast passages.

The usual toothed thrashing-cylinder D is mounted in the upper front end of the machine, and its concave D′ opens at D^2 into a top hopper-space E, the bottom whereof is on a level with the top of the cylinder and extends back over the machine, so that the inclosing side boards and a bottom form a long deep open-top hopper for receiving the peas or beans to be hulled. The back end of this open-top space is closed by the board E^2, and at the feed-opening D^2 the front end E^3 of the frame rises above the said feed-opening and above the plane of the bottom E′ of said feed-hopper, so that in feeding the pea-pods over this opening the front raised end will prevent the pods falling out at the front, and the pins of the cylinder will draw them into the concave.

The separator is suspended by links *a a* within the machine in a downwardly-inclined position from the primary cylinder, the inner end of the concave whereof stands in over the upper end of said separator. At about the middle of its length and between its side bars I interrupt the surface of the separator by a

space F, so as to divide the separator into two sections G G′, the lower section G′ being preferably in a plane a little lower than that of the upper section. Suitably mounted in the frame of the machine is a secondary thrashing-cylinder H, operating within the space F and within the path of the separator, while the concave of said cylinder, being fixed to the frame, forms the bottom of the opening in the separator. The upper edge *b* of this concave stands under the upper section of the separator, while the lower edge of this concave stands over the lower section of the separator, so that it receives the pods from the surface of the upper section, and, carrying them under the separator, delivers them onto the lower separator-section by the co-operative reciprocating action of the separator and the rotary motion of the cylinder.

The bottom of the separator is of sheet metal perforated to allow the peas or beans to drop down over it, while the surface is also provided with longitudinal strips of saw-tooth-formed teeth, so that the inclined backs will ride under the pods on the upstroke of the separator, and thereby loosen and free the kernels and facilitate their escape through the perforations. In the downward movement of the separator the saw-teeth serve to carry the pods along. Each cylinder has a dash-board I to receive the stuff thrown out of its concave and direct it upon the separator, and the latter is operated by means of a pitman J, which is operated by the crank-shaft K with a stroke permitted by the open space of the separator.

K is the fan and L is the air-flue, while M is an upwardly-inclined blow-out flue having a bottom which extends from the lower end of the separator in the upward line with the air-blast, which carries out the hulls, while any kernels remaining in this stuff drop through the slats and pass down into an elevator P, from which they are returned to the hopper. The peas falling through the perforations in the separator are directed by the inclined bottom boards Q, and also through the air-passage into a collecting-spout R. The secondary cylinder is preferably run with a greater speed than the primary cylinder, and is also preferably of smaller size.

S is the driven pulley of the machine, T T′ are the belt-connected pulleys of the cylinder, and U is a belt leading from a pulley on the primary cylinder-shaft to a pulley on the fan-shaft.

The secondary cylinder-shaft has a gear-wheel V, which engages with a larger gear-wheel W on the crank-shaft Z of the separator, whereby the latter is operated by belt-connected pulleys X Y.

I claim as my improvement—

1. In a machine for hulling and separating peas, the combination of the primary toothed cylinder and its toothed concave, and the secondary toothed cylinder and its toothed concave arranged at a lower level, with the reciprocating separator composed of two perforated sections G and G′, each provided with suitable surface-feeders, and connected by side bars *g g*, leaving a cross-opening F between the sections and the bars, the upper section G inclining downward from the primary cylinder, and the lower section D′ inclining downward from the said second cylinder, and suitable means for suspending and for vibrating the said separator in relation to the two concaves and their cylinders, for operation as described.

2. In a machine for hulling and separating peas, the separator composed of two perforated sections G G′, connected by side bars *g g*, leaving a cross-opening F between the latter and the sections, the section G′ being on a plane below the other section, and each provided with suitable surface-feeders, in combination with the primary cylinder D and its concave, and the secondary cylinder H, arranged to operate within the opening F, the toothed concave of said second cylinder, the dash-boards I I, and the links *a a*, suspending the separator in a downwardly-inclined relation to each cylinder, as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIAM ELI JONES.

Witnesses:
T. J. PARR,
J. Q. WELLS.