

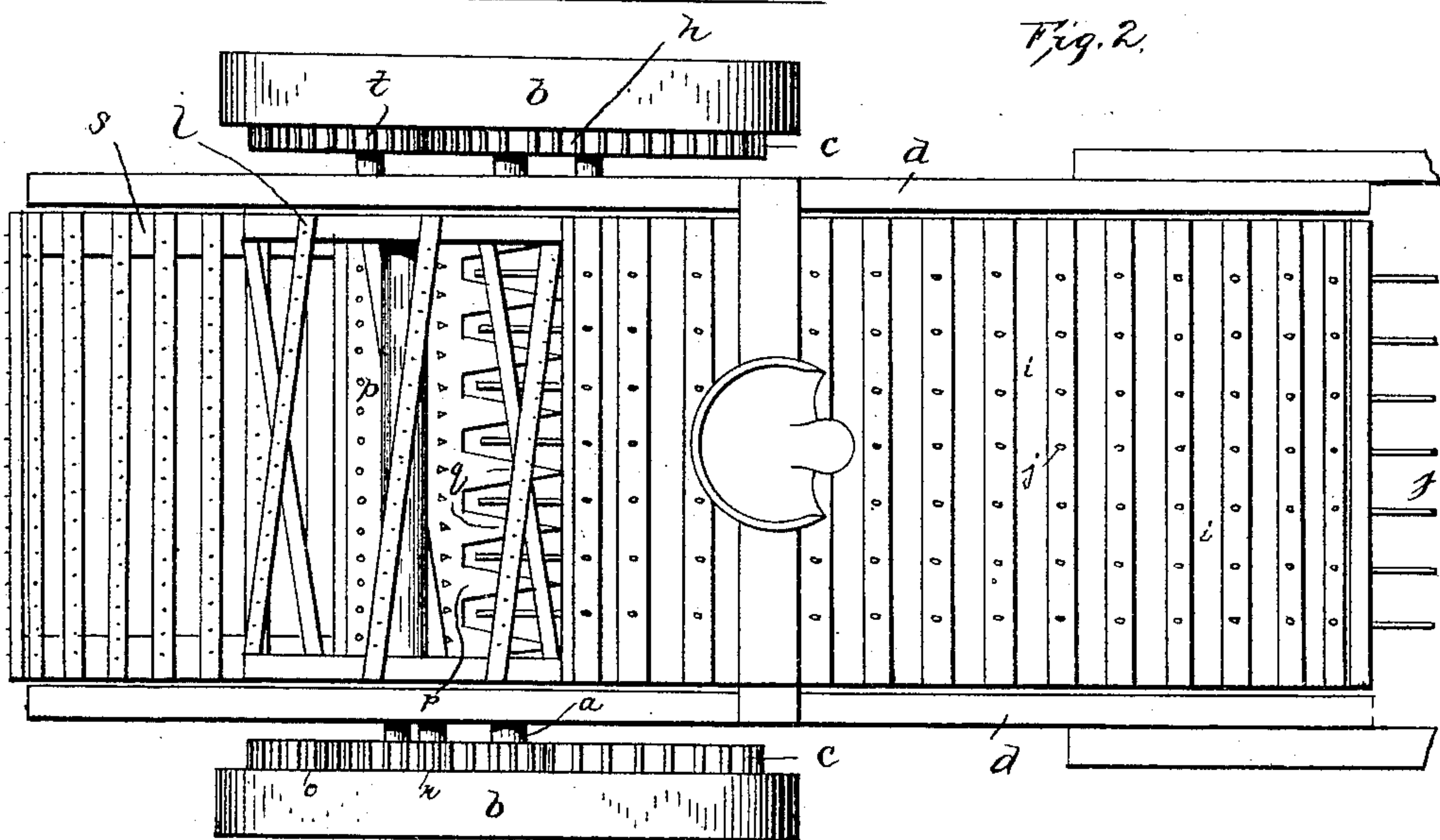
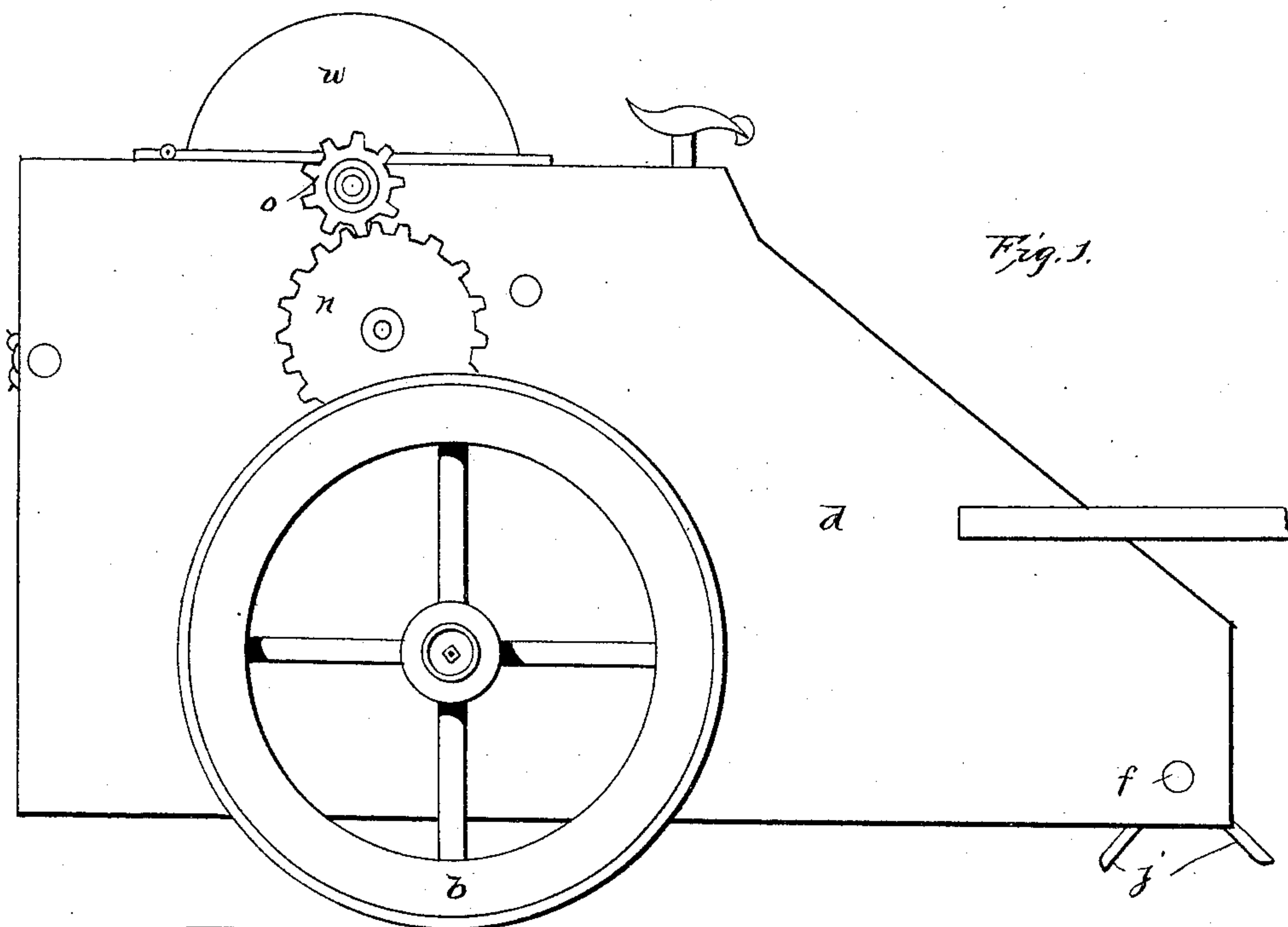
(No Model.)

2 Sheets—Sheet 1.

D. L. BARNES.  
PEA HARVESTER.

No. 451,359.

Patented Apr. 28, 1891.



WITNESSES:

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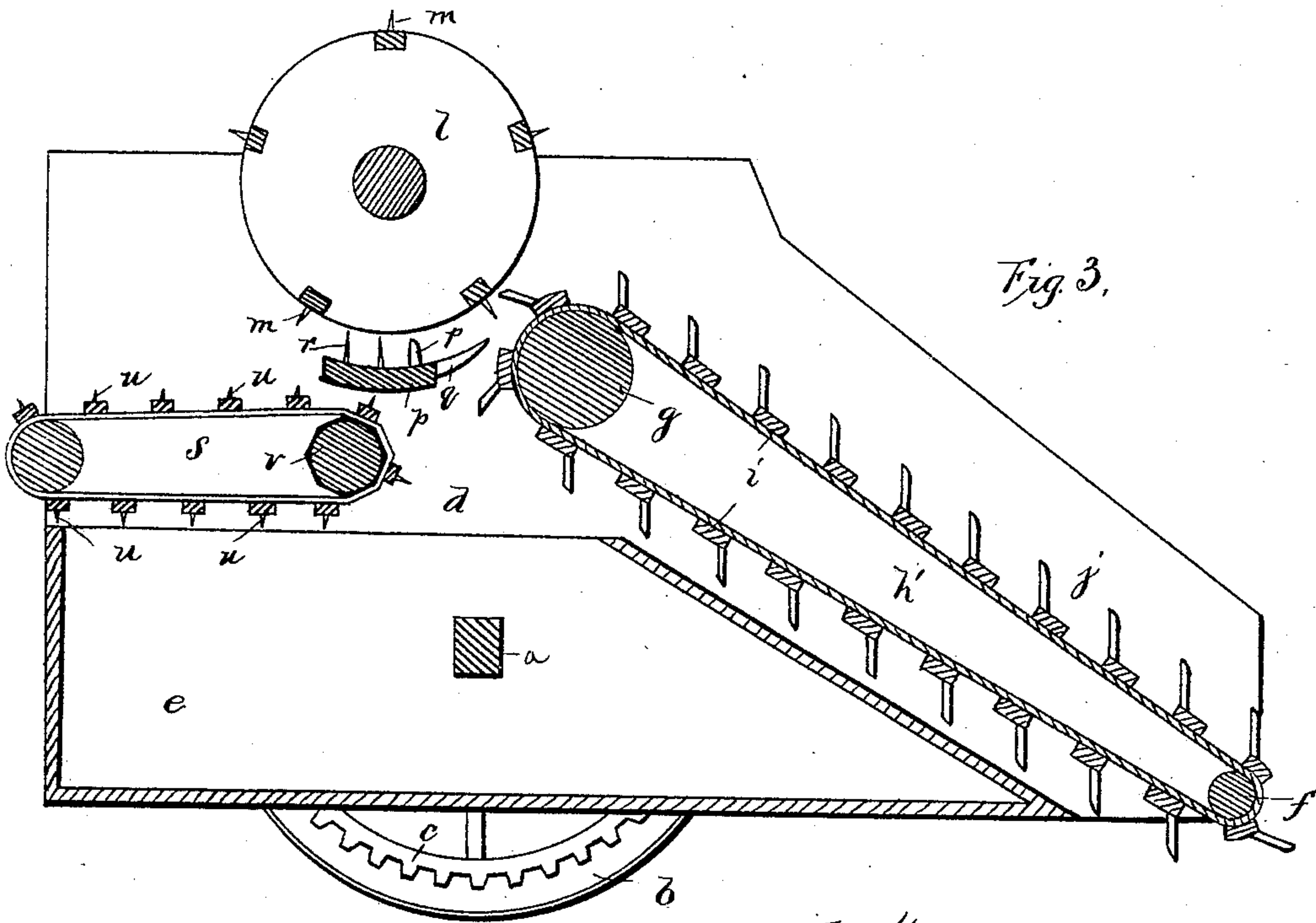


Fig. 3.

Fig. 4.

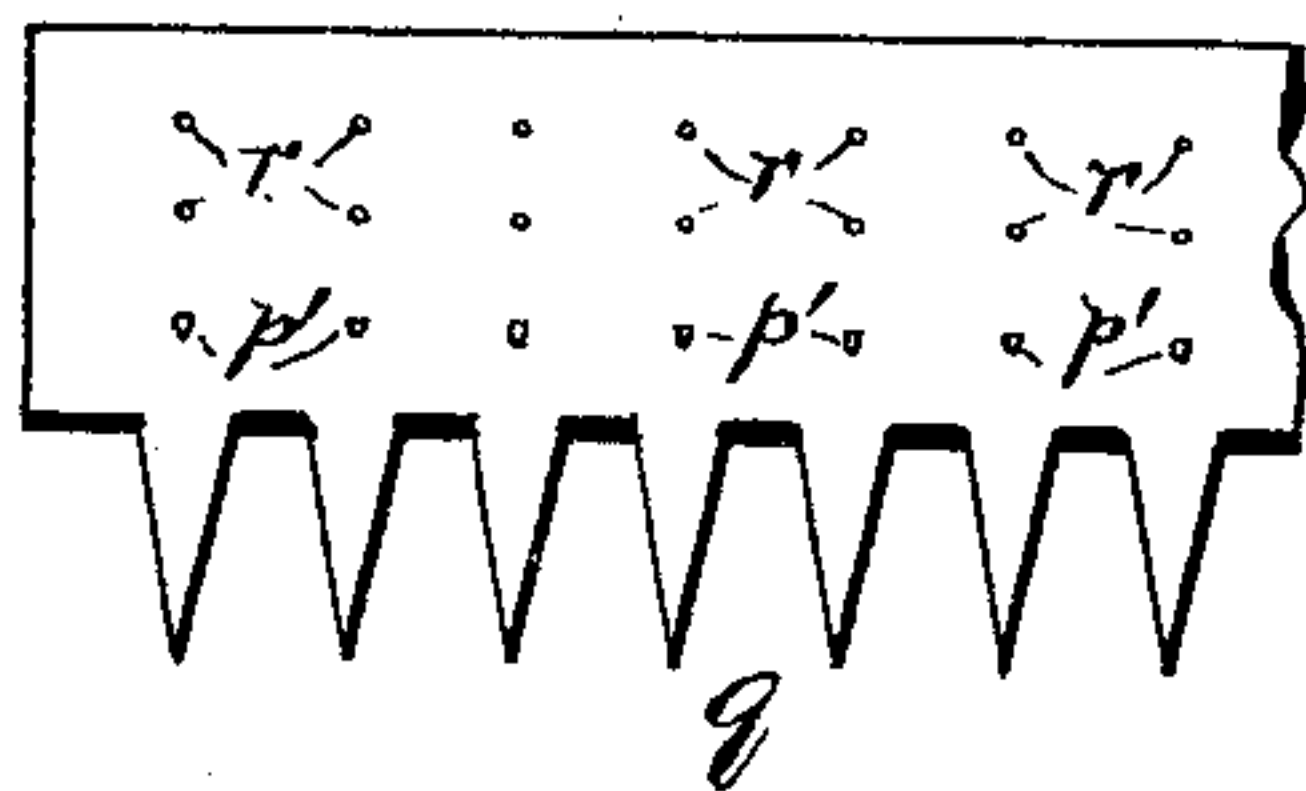


Fig. 6.

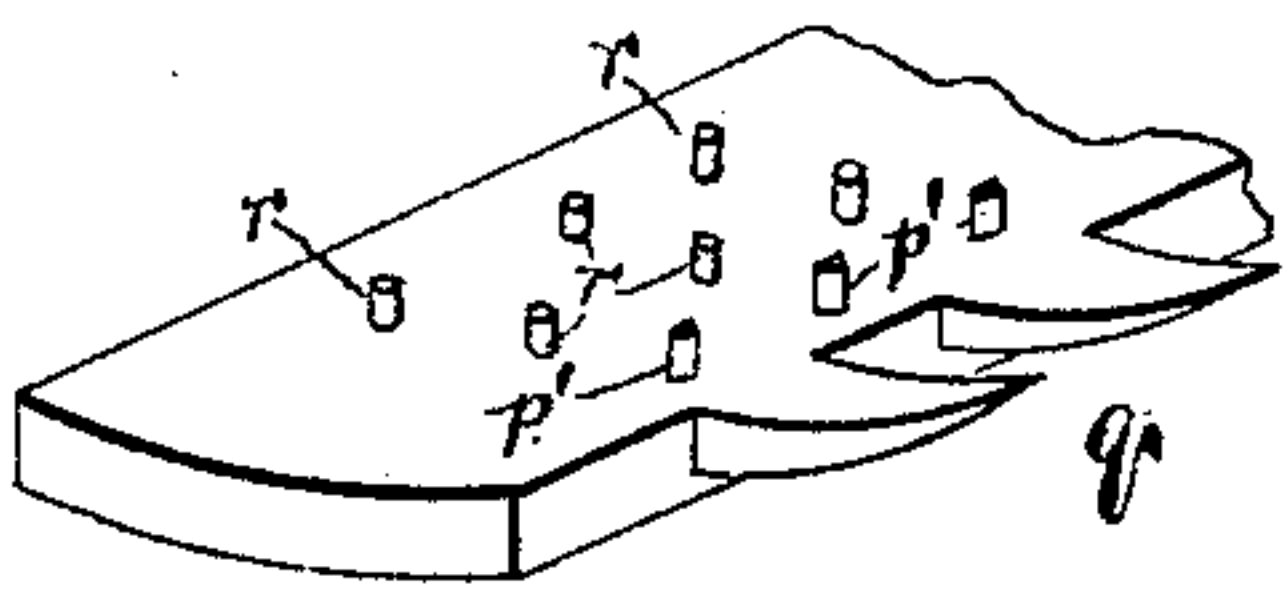
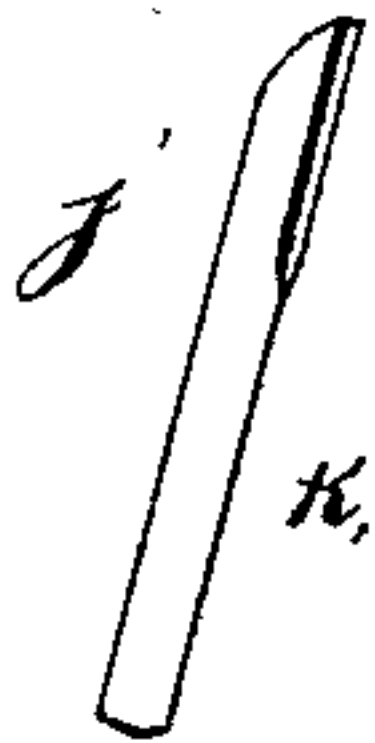


Fig. 5.



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# UNITED STATES PATENT OFFICE.

DOCTOR L. BARNES, OF CLAYTON, NORTH CAROLINA.

## PEA-HARVESTER.

SPECIFICATION forming part of Letters Patent No. 451,359, dated April 28, 1891.

Application filed December 2, 1890. Serial No. 373,358. (No model.)

*To all whom it may concern:*

Be it known that I, DOCTOR L. BARNES, of Clayton, in the county of Johnston and State of North Carolina, have invented certain new and useful Improvements in Pea-Harvesters; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

This invention relates to certain improvements in pea-harvesters.

The object of the invention is to provide an improved pea-harvester simple, cheap, and durable in construction, and which will pick up the vines and separate and shell the peas and throw the vines off.

These objects are accomplished by and this invention consists in certain novel features of construction and in combinations of parts more fully described hereinafter, and particularly pointed out in the claims.

Referring to the accompanying drawings, Figure 1 is a side elevation of the machine. Fig. 2 is a top plan of the machine, the top casing of the thrashing mechanism being removed. Fig. 3 is a longitudinal section. Figs. 4 and 5 are detail views. Fig. 6 is a detail view illustrating in detail the sharpened concave teeth.

In the drawings, the reference-letter *a* indicates the supporting-axle of the machine, carried by main wheels *b b*, which wheels are provided with driving-gear *c c* on their inner faces. The axle carries the frame of the machine, composed of the inclosing vertical sides *d d*, open entirely or partially at each end. The bottom of the frame at the rear end is closed to form a receptacle *e* to catch the shelled peas. A roller *f*, of small diameter, is mounted in the lower front corners of the sides to extend completely across the space between the same. A drum *g*, of larger diameter than and parallel with said roller, is transversely mounted in the upper portion of the frame near the longitudinal center thereof. One journal of this drum is extended through a frame side, and is provided with a gear-wheel *h*, rigid thereon and meshing with

the upper side of a gear *c* on one of the driving-wheels to rotate said drum rearwardly. An endless upwardly-traveling apron *h'* is mounted on said roller and drum, said apron extending across the space between the sides of the frame and upwardly and rearwardly from the bottom of the front end thereof to the upper portion of the frame. This apron is caused to travel upward continuously by the drum. The outer surface of the apron or belt has a series of closely-arranged transverse slats *i* rigidly secured thereon, preferably formed flat on their upper longitudinal edges, to form shoulders to retain the pea-vines on the belt. Each slat has a series of metal teeth, blades, or fingers *j* projecting therefrom and rigid therewith and located a distance apart. Each tooth is pointed and flat on its upper edge from the point a distance back toward the base, but is provided with a cutting-edge *k* on its upper edge near its base.

The front end of the machine is supported at such a distance from the ground that as the machine moves forward the endless apron will operate, and as the blades *j* swing around the lower roller they will catch and hold the pea-vines and carry them up the elevator or apron. If a vine sticks or is tough and strong, it slides back on the blades and is severed by the cutting-edges, and hence carried up the elevator. Just in rear of the discharge end of the elevating-apron a thrashing-cylinder *l* is mounted in the upper portion of the frame and has the series of pins *m* projecting radially from the longitudinal strips or periphery thereof. This cylinder is rapidly rotated rearwardly by gearing *n o*, driven by gearing *c* on one of the drive-wheels. The concave *p* for said thrashing-cylinder is located just in rear of the discharge end of the elevating-apron, the front edge of the concave being a sufficient distance from the elevator-apron to admit passage of the blades thereof. The blades of the elevator-apron are arranged in rows, so that they pass between the long separated fingers *q*, projecting from the front edge of the concave toward the elevator-apron, said fingers being of such length as to just admit the slats on the elevator-apron moving past their ends. These fingers prevent the vines brought up by the



elevator from falling through the space between the concave and elevator-apron; but the elevator-blades deliver the vines and pods upon these fingers and the cylinder-teeth sweep them rearwardly across the concave. The upper face of the concave has the rows of teeth *r*, between which the teeth of the cylinder closely pass, said cylinder-teeth being also arranged in rows. The front longitudinal row of teeth *p'* of the concave are sharpened on their front edges, so that the vines are acted upon by said teeth and the cylinder-teeth, and hence cut into short lengths and prevented from clogging the machine or winding around the cylinder. The cylinder and concave shell the peas, which are then swept off the rear edge of the concave and fall through conveyer *s* into the bottom of the frame which forms the receptacle. The vines and pods are carried off and discharged at the rear end of the machine. This conveyer is composed of slats located a distance apart just sufficient to allow peas to drop between them, and the slats are carried by belts mounted on pulleys, one of which carries a gear-wheel *t*, driven by a gearing *c*. The slats have pins *u* to catch the vines and pods, and the driving-roller *v* of the conveyer has flat faces, so that the conveyer will move irregularly. The fingers projecting forwardly from the concave prevent the vines falling through, but allow any peas that may have been shelled to fall through into the receptacle beneath.

*w* is the casing for the thrashing-cylinder, preferably hinged to swing open.

The machine is provided with a suitable draft tongue-pole, and can be provided with a driver's seat, if desired.

The extreme simplicity and many advantages of this machine are obvious, and the complete operation of the machine will be clearly understood from the foregoing description.

It is evident that various changes might be made in the form and arrangement of the parts described without departing from the spirit and scope of my invention. Hence I do not wish to limit myself to the precise construction herein set forth.

What I claim is—

1. In a harvester, the combination of a wheeled frame, the roller mounted in the front portion of the same, the drum mounted above and in rear of said roller, the endless apron on said drum, carrying the series of project-

ing picking-blades, the belt being so arranged that when in operation said blades travel down beneath the frame and catch and draw up the vines, the shelling apparatus into which said belt delivers, and means to drive said parts, substantially as described.

2. The combination of a wheeled frame, the inclined endless elevator extending to the bottom of the lower portion of the frame and carrying the picking-blades projecting therefrom, said elevator being so arranged that the picking-blades thereof travel down beneath the frame and catch and draw up the vines, the toothed shelling cylinder and concave at the upper end of said elevator having the forwardly-extending fingers, the front row of concave teeth having sharp front edges, the discharge-conveyer in rear of said concave, a receptacle beneath the same, and driving means.

3. In combination, the frame and driving-wheels, the endless elevating-apron having the series of slats rigid thereon, the series of blades projecting from and rigid with said slats, the toothed concave at the discharge end of said elevator, having the forwardly-extending fingers, and the toothed cylinder, substantially as described.

4. In a pea-harvester, the catching and elevating apron having the series of projecting metal blades, said blades being flat on the front portion of their top edges and sharpened at the rear portions of their edges.

5. The combination of the elevating-apron having the blades, the concave having the forwardly-extending fingers, between which said blades pass, the shelling-teeth, the toothed shelling-cylinder, and gearing to drive said parts.

6. In combination, the frame having driving-wheels, the elevating and catching apron having the metal blades, the toothed shelling concave and cylinder, the open discharging and separating conveyer having the slats provided with pins, the driving-roller having flat faces, the receptacle beneath said conveyer, and gearing to drive said parts.

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

DOCTOR L. BARNES.

Witnesses:

J. C. ELLINGTON, Jr.,  
W. A. BARNES.