

No. 809,097.

PATENTED JAN. 2, 1906.

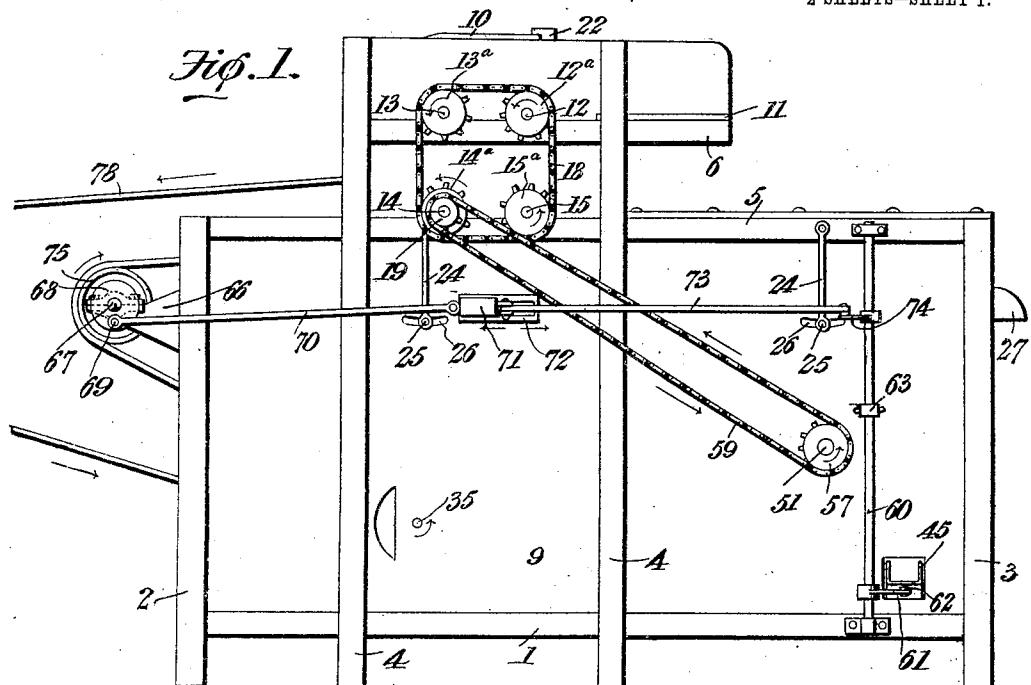
J. T. DELK.

PEANUT THRESHER.

APPLICATION FILED DEC. 28, 1904.

2 SHEETS—SHEET 1.

Fig. 1.



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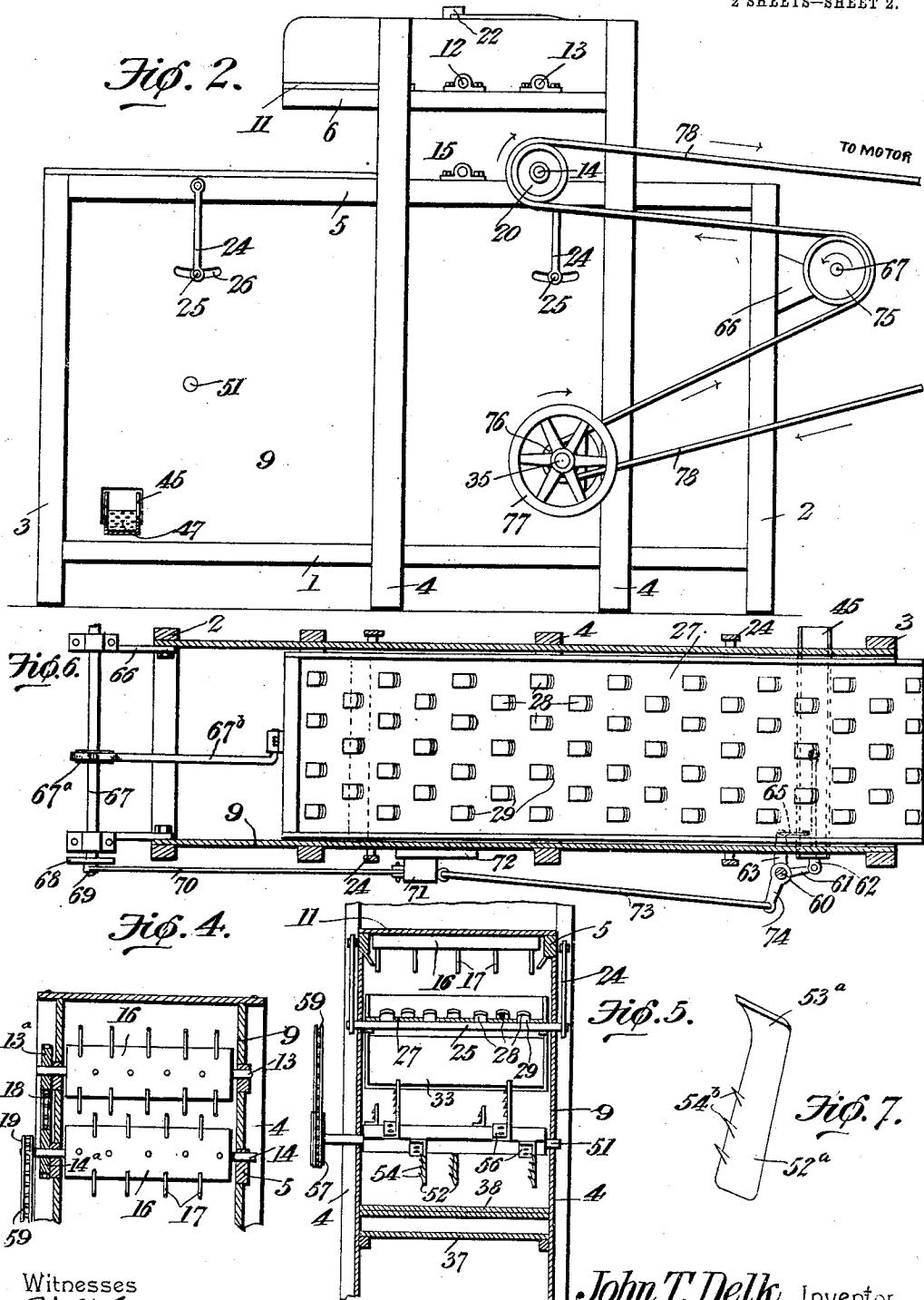
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2 SHEETS—SHEET 2.



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN THOMAS DELK, OF IVOR, VIRGINIA.

PEANUT-THRESHER.

No. 809,097.

Specification of Letters Patent.

Patented Jan. 2, 1906.

Application filed December 28, 1904. Serial No. 238,679.

To all whom it may concern:

Be it known that I, JOHN THOMAS DELK, a citizen of the United States, residing at Ivor, in the county of Southampton and 5 State of Virginia, have invented a new and useful Peanut-Thresher, of which the following is a specification.

This invention relates to machines for picking or threshing peanuts, whereby is 10 meant the operation of removing peanuts from their vines. In order to perform this operation, it is necessary to subject the vines to a beating action, whereby the pods shall be detached from the vines. Owing to the 15 brittle nature of the pods, however, it is desirable that this operation be performed at a moderate rate of speed.

The object of this invention is to provide a device whereby this operation may be performed in a simple, thorough, and efficient 20 manner, said device further including means whereby the nuts or pods are separated from the vines and whereby the said nuts or pods are cleaned by having the stems removed 25 therefrom.

With these and other objects in view, which will readily appear as the nature of the invention is better understood, the said invention consists in the improved construction, arrangement, and combination of parts, 30 which will be hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings has been illustrated a simple and preferred form of 35 embodiment of my invention, it being understood, however, that I do not necessarily limit myself to the precise structural details therein exhibited, but reserve the right to such changes, alterations, and modifications 40 as may be resorted to within the scope of the invention and without departing from the spirit or sacrificing the efficiency of the same.

In said drawings, Figure 1 is a side elevation of a machine constructed in accordance 45 with the principles of the invention. Fig. 2 is a side elevation of the same seen from the opposite side. Fig. 3 is a longitudinal sectional view. Fig. 4 is a transverse sectional view taken on the line 4 4 in Fig. 3. Fig. 5 is a transverse sectional view taken on the line 5 5 in Fig. 3. Fig. 6 is a horizontal sectional view taken on the line 6 6 in Fig. 3. Fig. 7 is a perspective detail view illustrating a modified construction of one of the stemming-blades. Fig. 8 is a perspective detail view of the discharge-trough, part of the

same having been broken away for the purpose of better illustration. Fig. 9 is a detail view looking in the direction of the rear end of the stemming-trough. 60

Corresponding parts in the several figures are indicated by similar numerals of reference.

In the construction of the machine is included a frame comprising the sills 1 1, front uprights 2 2, rear uprights 3 3, and two pair 65 of intermediate uprights 4 4, all of said uprights being connected by the longitudinal top pieces 5 5. All of the uprights may be extended downwardly below the sills, if desired, to provide feet or supports for the machine, or the latter may be mounted upon wheels for convenient transportation from one place to another, if desired. 70

The intermediate uprights 4 4 are extended upwardly above the top pieces 5 5 and are 75 connected at the sides of the machine by longitudinal braces 6 6, which are disposed about midway of the upward extensions. Suitably-disposed cross-beams 8 connect the uprights which constitute the sides of the frame, 80 and the said frame supports paneling, which constitutes the sides 9 9 of the casing.

The upper portion of the casing, which is included between the upward extensions of the uprights 4, is provided with a hood 10, 85 which is open at its front end, where a feed-board 11 is mounted upon forward extensions of the beams 6. The latter and the longitudinal frame-beams 5 are provided between the uprights 4 4 with bearings for four 90 shafts 12, 13, 14, and 15, disposed at the four corners of a square and each carrying a drum or cylinder 16, provided with a plurality of radial teeth or spikes 17, the teeth of the several drums being disposed intercurrently, so 95 as not to interfere with each other when the drums are rotated. The drum - carrying shaft 12 is disposed most nearly adjacent to the feed-board 11. The shaft 13 is in rear of the shaft 12, but in the same horizontal plane. 100

The shaft 14 is below and in the same vertical plane as the shaft 13, while the shaft 15 is in front of and in the same horizontal plane as the shaft 14 and below and in the same vertical plane as the shaft 12. The several 105 shafts are provided at one side of the machine with sprocket-wheels 12^a, 13^a, 14^a, and 15^a, which are connected by an endless chain 18, whereby said shafts will all be rotated in the same direction. The shaft 14, in addition to the sprocket - wheel 14^a, carries a sprocket-pinion 19, adjacent to the sprocket- 110

wheel 14^a. At the opposite side of the machine-casing the said shaft carries a band-pulley 20, whereby it will receive motion from the source of power, as will be presently 5 more fully described.

The cross-brace 8 in rear of the shaft 14 is provided with a plurality of forwardly-extending teeth, forming a comb 21, and which are disposed intercurrently with the teeth of 10 the drum or cylinder upon said shaft, said teeth being preferably bent downwardly, as shown. A cross-piece 22, disposed at the front end of the head 10, is provided with a plurality of downwardly and rearwardly inclined teeth, forming a comb 23, and which are disposed intercurrently with the teeth of 15 the drum or cylinder upon the shaft 12.

It will be understood when material is placed upon the feed-board and is caused to 20 pass into the path of the toothed cylinder upon the shaft 12 that said cylinder will grasp the material and carry it in a rearward direction between the teeth of the comb 23. The tendency of the toothed cylinder upon shaft 25 12 will now be to carry the vines and pods downwardly into the space between the four cylinders, while the tendency of the toothed cylinder upon the shaft 13 will be to lift the vines and to carry them in a rearward direction 30 under the hood of the machine. These opposite tendencies will cause the vines to be belabored and torn asunder, with the result that the nuts or pods will become separated from the vines. This operation is continued 35 and augmented by the action of the cylinders upon the shafts 14 and 15. The tendency of the toothed cylinder upon the shaft 14 will be opposed to that of the cylinder upon the shaft 12 as regards the material 40 which occupies the space between the four cylinders, while the said cylinder upon the shaft 14 will engage the material passing over the cylinder upon the shaft 14 and carry such material in a forward and downward direction between and past the comb 45 21. The material thus passing forward over the cylinder upon the shaft 14 will be beaten downwardly by the cylinder upon the shaft 15 and will be finally disposed of by means to 50 be presently described. It will be seen that the four cylinders disposed and caused to rotate in the manner herein set forth, in combination with the combs 23 and 21, serve to thoroughly beat and disintegrate the vines 55 and to cause the removal and separation therefrom of the nuts or pods. It is to be understood that this operation is to be performed at a comparatively low rate of speed, probably not exceeding one hundred revolutions per minute of said cylinders, and this I 60 consider an extremely important feature of this invention, for the reason that in devices of this class as previously constructed a large percentage of the nuts have become injured 65 by the breakage of the shells or pods, and

thereby rendered unfit for certain commercial purposes.

The sides of the casing of the machine are provided with suitably-disposed hangers 24, supporting a pair of cross-shafts 25, which 70 extend through segmental slots 26 in the sides of the casing. The cross-shafts 25 support the longitudinally-reciprocating sieve 27, the body of which is formed of sheet metal having a plurality of struck-up and rearwardly-facing tongues 28. This sieve receives the disintegrated vines and the nuts as the latter pass from between the beating-cylinders, and the nuts will pass through the openings 29 in the sieve from which the 80 tongues 28 have been struck, while the said tongues will serve to feed the halm in a forward direction to be finally discharged at the front end of the machine over the edge of the sieve.

Suitably secured to or connected with the under side of the sieve 27 is an inclined chute 33, which receives the peanuts as they drop through the openings in the sieve, said chute being for the purpose of conveying the nuts 90 to the stemming-trough, which will be presently described.

Between the sides of the casing below the chute or carrier 33 is located a fan-casing 34, and the sides of the casing are provided with 95 bearings for a shaft 35, carrying a fan 36. The outlet of the fan-case 34 is composed of a bottom plate 37, which extends forwardly below a semicylindrical trough or receptacle 38, which is supported near the front end 100 of the machine between the sides of the casing. The top plate 39 of the fan-case exit extends upwardly and rearwardly divergently from the bottom plate 37 and terminates above the rear edge of the trough 38 and below the 105 discharge end of the chute 33. Between the bottom and top plates 37 and 39 is disposed an angular deflecting member 40, the apex of which points in the direction of the fan. This deflecting member has been shown as being 110 constructed integrally with the trough or casing constituting the receptacle 38, the same being constructed of a plate of sheet metal of suitable proportions bent to the desired shape. It is obvious, however, that 115 within the scope of the invention these members may be constructed of separate parts suitably shaped and connected. The upper part of the deflecting member thus extends from the front edge of the trough in a forward direction, while the lower part of the deflecting member is extended rearwardly under the bottom of the trough and slightly beyond the latter, the rear edge thereof serving to support the free end of a separator- 120 plate 43, hingedly connected with the upper rear edge of the trough and preferably provided at its lower edge with fingers 43^a, spaced apart sufficiently to permit the passage 125 of peanuts, but preventing the passage 130

of trash, which will be blown out of the machine. It will be seen that the blast from the fan will be deflected into two separate currents, the upper current passing through 5 the space 41 between the upper part of the deflecting member 40 and the top plate 39 of the exit to be discharged between the upper rear edge of the receptacle 38 and the discharge end of the endless carrier 33, while the 10 lower current passes through the channel 42 between the bottom of the deflecting member 40 and the lower plate 37 of the exit, said current being discharged below the front edge of the receptacle 38. The rearward ex- 15 tension 44 of the lower part of the deflecting member 40, which supports the rear edge of the plate 43, serves, mainly, to properly direct the lower air-current, as will be readily understood.

20 The sides of the casing of the machine are provided with openings for the passage of a transversely - disposed carrier - trough 45, which is supported upon vibratory links 46 and the bottom of which is preferably pro- 25 vided with perforations 47 for the escape of such particles of dirt as may still adhere to the pods. This trough is disposed below the front end of the receptacle 38, and an inclined guide plate or chute 50 serves to con- 30 ney the material discharged over the upper front edge of said receptacle into the carrier-trough, whereby it is conveyed to a point of discharge at one side of the machine. The inclined plate or chute 50, as will be seen, re- 35 ceives the impact of the air-current passing through the channel 42.

The sides of the casing of the machine are provided with bearings for a shaft 51, which is concentric with the receptacle 38 and 40 which carries a plurality of radiating stemming-blades 52, each of which is provided on its downgoing side with a plurality of incisions 53, whereby a number of pointed teeth 54 are formed. Said stemming-blades ter- 45 minate in hook - shaped points 55. These blades may be constructed and attached to the shaft in any suitable and convenient manner. In the accompanying drawings the shaft has been illustrated as being square in 50 cross-section, and the blades are provided with bent portions 56, having perforations to receive screws, whereby they are attached to the shaft. This construction, however, may be departed from within the scope of my in- 55 vention.

The shaft 51 carries at one end a sprocket-wheel 57, connected by a chain 59 with the sprocket-wheel 19 upon the shaft 14, from which motion is thus transmitted to the 60 shaft carrying the stemmer - blades. One side of the machine-casing is provided with bearings for a vertically-disposed rock-shaft 60, having an arm or crank 61, which is connected, by means of a link 62, with the dis- 65 charge-trough 45, to which latter a vibratory

motion may thus be communicated. Said rock-shaft is also provided with a suitably-disposed arm or crank 63, extending through an opening 64 in the side of the casing and which is suitably connected, by means of a link 65, with an arm 43^b, connected with the hinged vibratory plate 43, to which motion may thus be communicated. 70

Suitably supported in brackets or bearings 66 upon one end of the frame of the machine 75 is a shaft 67, having a crank 67^a, connected by a pitman 67^b with the sieve 27, to which motion is thus communicated. Said shaft 67 also carries a crank - disk 68, having a wrist-pin 69, connected, by means of a pit- 80 man 70, with a slide 71, supported for reciprocation between a pair of guides 72 upon the frame of the machine. The slide 71 is connected, by means of a pitman 73, with a crank or arm 74 upon the rock-shaft 60, which 85 is thereby driven. The shaft 67 carries a band wheel or pulley 75. One end of the fan-carrying shaft 35, which projects through the side of the casing of the machine, carries a band-wheel 76 and a fly-wheel or balance- 90 wheel 77.

78 is a belt or band leading from the source of power over the pulley 76 upon the fan-shaft, thence over the pulley 75, thence over the pulley 20 upon the shaft 14, from which 95 the tooth-carrying cylinders are driven, and finally back to the source of power from which the several shafts 14, 35, and 67 are thus directly driven, motion being transmitted from the shaft 67 in the manner de- 100 scribed to the various moving parts of the machine.

I desire it to be understood that the means for transmitting motion from the source of power to the driven parts of the machine 105 may be varied and that the use of well-known means for the transmission of motion other than those herein specifically described will not be considered a departure from the invention. 110

From the foregoing description, taken in connection with the accompanying drawings, the operation and advantages of this invention will be readily understood. The action of the toothed cylinders 16 upon the vines 115 has already been described. It may be added that the beaters 23 serve to prevent material from passing in a forward direction under the hood, while the comb 21 will positively prevent material from returning 120 into the space between the cylinders, material discharged between the teeth of said comb being caused to drop directly upon the sieve 27. Such halm as is not discharged between the teeth of the comb 21 will be 125 caused to pass from the space between the four cylinders in a downward direction by the downgoing side of the toothed cylinder upon the shaft 15, material thus discharged having been thoroughly belabored and 130

broken into fragments too small to be carried further by the action of the cylinders. The halm and nuts are deposited upon the reciprocatory sieve 27. The nuts will escape through the openings in the latter, while the halm is fed in a forward direction and discharged over the edge of the sieve at the tail end of the machine, where, by the action of the two currents of the blast, it is blown away from the machine a sufficient distance. The greater portion of the nuts will be dropped upon the chute 33, whereby they are conveyed into the receptacle 38, being, while dropping from the carrier, subjected to the action of the blast coming through the channel 41, whereby the lighter particles will be blown out through the open end of the machine. The blast through the channel 41 will also be directed upwardly against the under side of the sieve 27, thus tending to blow the straw and lighter particles out through the open end of the machine, while the nuts still unseparated will drop directly into the receptacle 38. In the said receptacle the nuts are subjected to the action of the stemming-blades, which, as described, are adapted to engage the stems and direct them downward through the body of nuts contained in the receptacle, while at the same time the action of these stemmer-blades will force the nuts, when a sufficient quantity has accumulated in the receptacle 38, over the edge of said receptacle, where they will be guided over the inclined plate 43 and caused to drop upon the deflecting-plate 50, the nuts being, while thus dropping, subjected to the action of the blast passing through the channel 42. The remaining lighter particles will thus be separated from the nuts and blown out through the open end of the machine, while the nuts will drop into the discharge-trough 45 and will be carried thereby to a receptacle or place of deposit at one side of the casing of the machine.

45 In Fig. 7 of the drawings has been illustrated a modified construction of a stemming-blade which under some circumstances may be preferably employed in connection with the improved machine. Under this construction the stemming-blade is preferably cast of malleable iron, and it is composed of a stem or shank 52^a, which is provided with rounded edges, the lower or downward edges being sharper than the upper edges and terminating at their forward ends in approximately triangular shoes 53^a, the points of which are broad but present comparatively sharp edges transverse to the length of the stems or shanks. While stemming-blades thus constructed are less liable to injure the nuts by breaking or cracking the pods they will be found quite efficient in disentangling and removing the vines from the nuts. It is obvious that stemming-blades of the modified construction just de-

scribed may be provided with stem-engaging points or spurs, as indicated at 54^b; but these may be omitted when desired.

Throughout the entire operation of the machine the nuts are not exposed to rough handling and few, if any, of the pods will be broken. The operation is performed rapidly and efficiently and with the best possible results. The nuts coming from the machine may, if desired, be discharged directly upon a suitably-constructed endless-carrier, whereby they will be conveyed to tables arranged for hand-picking.

Having thus described my invention, I claim—

1. A casing, shafts journaled in the sides of said casing at the four corners of a square around a vacant space, toothed cylinders upon said shafts, a hood extending over the top and one end of the casing, a feed-board at the opposite end of said casing, and means for rotating the several cylinder-carrying shafts in the same direction.

2. A casing, a plurality of shafts journaled in the sides of said casing at the four corners of a square around a vacant space, toothed cylinders upon said shafts, a hood extending over the top and one end, a feed-board at the opposite end of the casing in horizontal alignment with one of the upper cylinder-carrying shafts, and a plurality of comb-teeth extending forwardly and rearwardly from the front edge of the hood.

3. A casing, a plurality of shafts journaled in the sides of said casing at the four corners of a square around a vacant space, a feed-board disposed in horizontal alignment with one of the upper cylinder-carrying shafts, a hood extending and terminating above said shaft, a comb extending downwardly and rearwardly from the front edge of said hood, a cross-piece disposed in rear of the lower rear cylinder-carrying shaft, a comb extending forwardly and downwardly from said cross-piece, and a reciprocatory sieve disposed below the cylinder-carrying shafts.

4. A casing, a plurality of shafts journaled in the sides of said casing at the four corners of a square around a vacant space, cylinders upon said shafts having intercurrently-disposed teeth coöperating with each other, a reciprocatory sieve disposed below the cylinders to receive the discharge therefrom, a feed-board to supply material to one of the upper cylinders, a comb disposed above and coöperating with said upper cylinder to prevent material from passing back over said cylinder, and a comb disposed to coöperate with one of the lower cylinders to prevent material discharged from returning into the space between said cylinders.

5. A casing, shafts journaled in the sides of said casing, said shafts being disposed at the four corners of a square, means for rotating said shafts in the same direction, toothed

25 cylinders upon the said shafts, a feed-board disposed in alinement with one of the upper shafts, a reciprocatory sieve disposed below the lower shafts, a comb disposed above and coöperating with the toothed cylinder upon the shaft adjacent to the feed-board, and a comb having downwardly-extending teeth supported to coöperate with the cylinder diagonally opposite to the cylinder adjacent 10 to the feed-board.

6. In a machine of the class described, beating and disintegrating mechanism comprising a plurality of cylinders having intercurrently-disposed teeth coöperating with 15 each other, means for rotating said cylinders in the same direction, a reciprocatory sieve below said cylinders, and an inclined chute extending beneath and connected with said sieve.

20 7. In a machine of the class described, an imperforate semicylindrical receptacle having an overflow, a shaft mounted for rotation concentrically therewith, and stemming-blades upon said shaft, said stemming-blades 25 terminating in hook-shaped points.

8. A stemming-trough, means for directing a current of air immediately over the trough, and stemming-arms movable therein; said trough having an overflow-plate 30 hingedly connected therewith; and means to vibrate the plate.

9. A stemming-trough, means for directing a current of air immediately over the trough, and stemming-arms movable therein, said trough having hingedly connected 35 therewith a vibratory overflow-plate provided with outwardly-extending fingers; and means for directing an air-current beneath the trough and between the fingers.

40 10. A stemming-trough and stemming-arms movable therein, said trough having hingedly connected therewith a vibratory overflow-plate provided with outwardly-extending fingers, and an air-deflecting member supporting the free edge of said plate to 45 direct a current of air between the fingers.

11. In a machine of the class described, a semicylindrical receptacle, a shaft mounted for rotation concentrically therewith, and 50 stemming-blades upon said shaft, said stemming-blades having incisions in their down-going edges forming sharp-pointed teeth, and terminating in hook-shaped points at their free extremities.

55 12. In a machine of the class described, a trough or casing, a shaft mounted for rotation, concentrically therewith, stemming-blades upon said shaft, having hooks at their outer extremities and provided with sharp-pointed 60 teeth upon their down-going sides, a discharge-

chute disposed below the trough or casing, a deflector disposed to receive the overflow from the latter and deposit the same upon the discharge-chute, and means for directing an air-blast against said deflector.

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13. An imperforate receptacle having an overflow, a shaft mounted for rotation in said receptacle, and stemming-blades upon said shaft, said blades having hooked extremities and sharp points to engage the stems and to 70 remove the latter by dragging them through the contents of the receptacle, causing said contents to overflow at the upgoing sides of the stemming-blades.

14. A receptacle, a shaft mounted for rotation in said receptacle, stemming-blades upon said shaft, means for supplying material to the receptacle at one side of the shaft, an inclined plane extending from the edge of the receptacle at the opposite side of the 80 shaft, a discharge-chute, a deflector disposed to conduct material overflowing from the receptacle over the inclined plane to the discharge-chute, and means for directing an air-blast against said inclined plane.

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15. In a machine of the class described, a trough or casing, a shaft mounted for rotation, concentrically therewith, stemming-blades upon said shaft, having hooks at their outer extremities and provided with sharp-pointed teeth upon their down-going sides, a discharge-chute disposed below the trough or casing, a vibratory plate connected hingedly with the rear upper edge of the trough, a deflector disposed to receive the overflow 90 from the latter and deposit the same upon the discharge-chute, and means for directing an air-blast against said deflector.

16. In a machine of the class described, a trough or casing, a shaft mounted for rotation, concentrically therewith, stemming-blades upon said shaft, having hooks at their outer extremities and provided with sharp-pointed teeth upon their down-going sides, a discharge-chute disposed below the trough or casing, a vibratory plate having spaced 105 fingers at its lower edges, said plate being hingedly connected with the rear, upper edge of the trough, a deflector disposed to receive the overflow from the latter and deposit the 110 same upon the discharge-chute, and means for directing an air-blast against said deflector.

In testimony that I claim the foregoing as my own I have hereto affixed my signature 115 in the presence of two witnesses.

JOHN THOMAS DELK.

Witnesses:

S. H. DELK,

M. W. POWEE.