H. W. EISENHART & M. W. DARDEN.

PEANUT PICKER AND STEMMER.

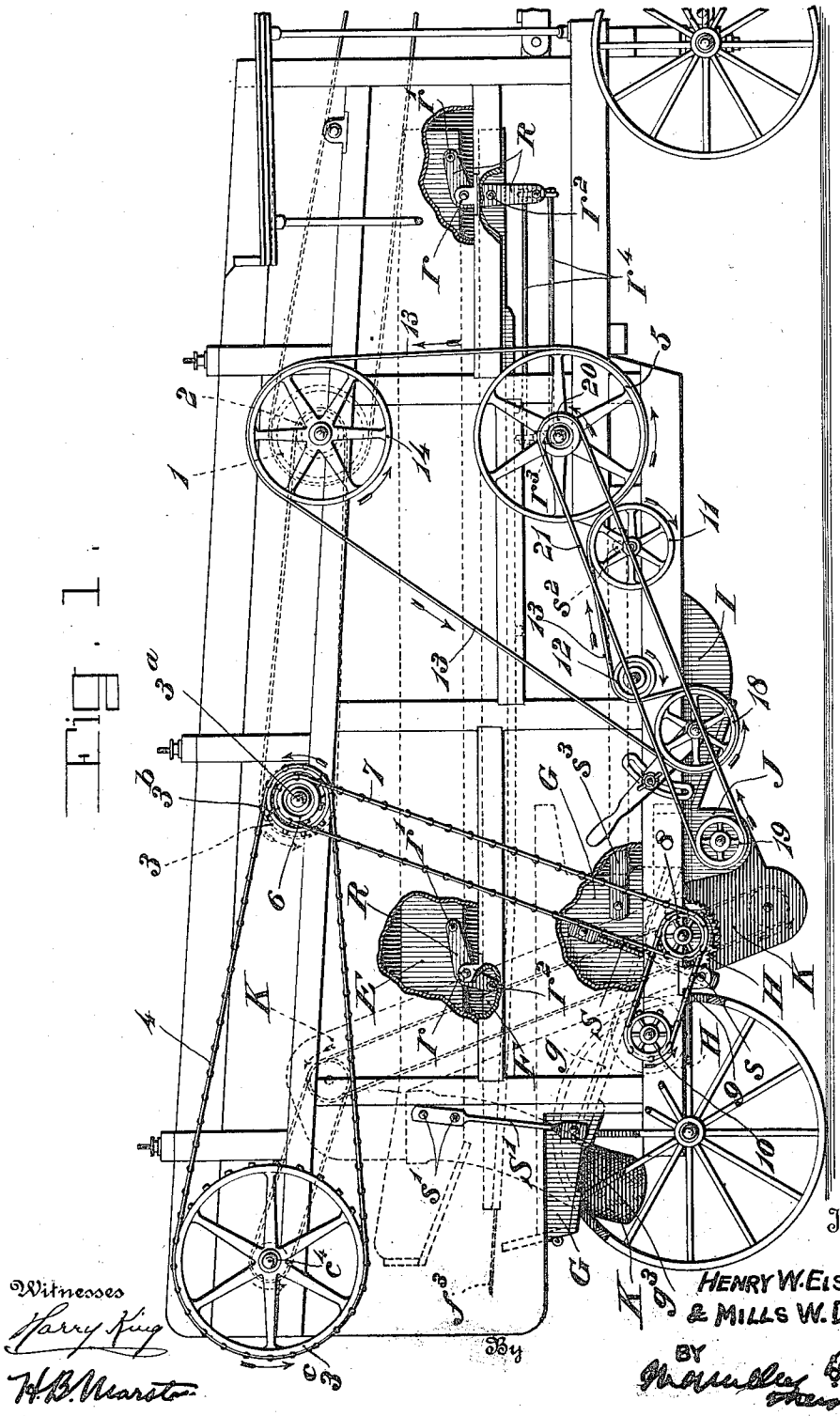
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5 SHEETS—SHEET 1.

Fig. 1.



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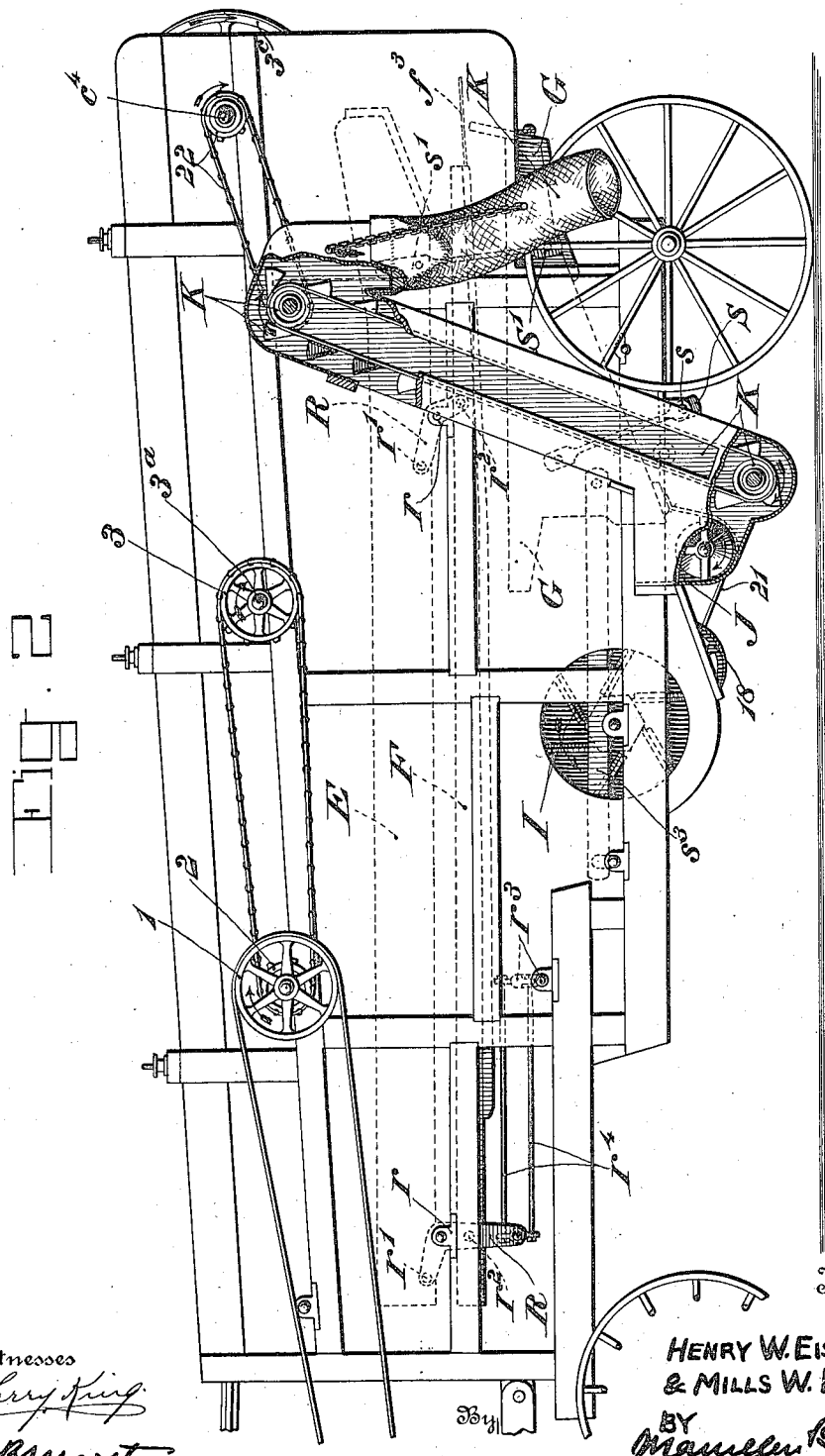


Fig. 2.

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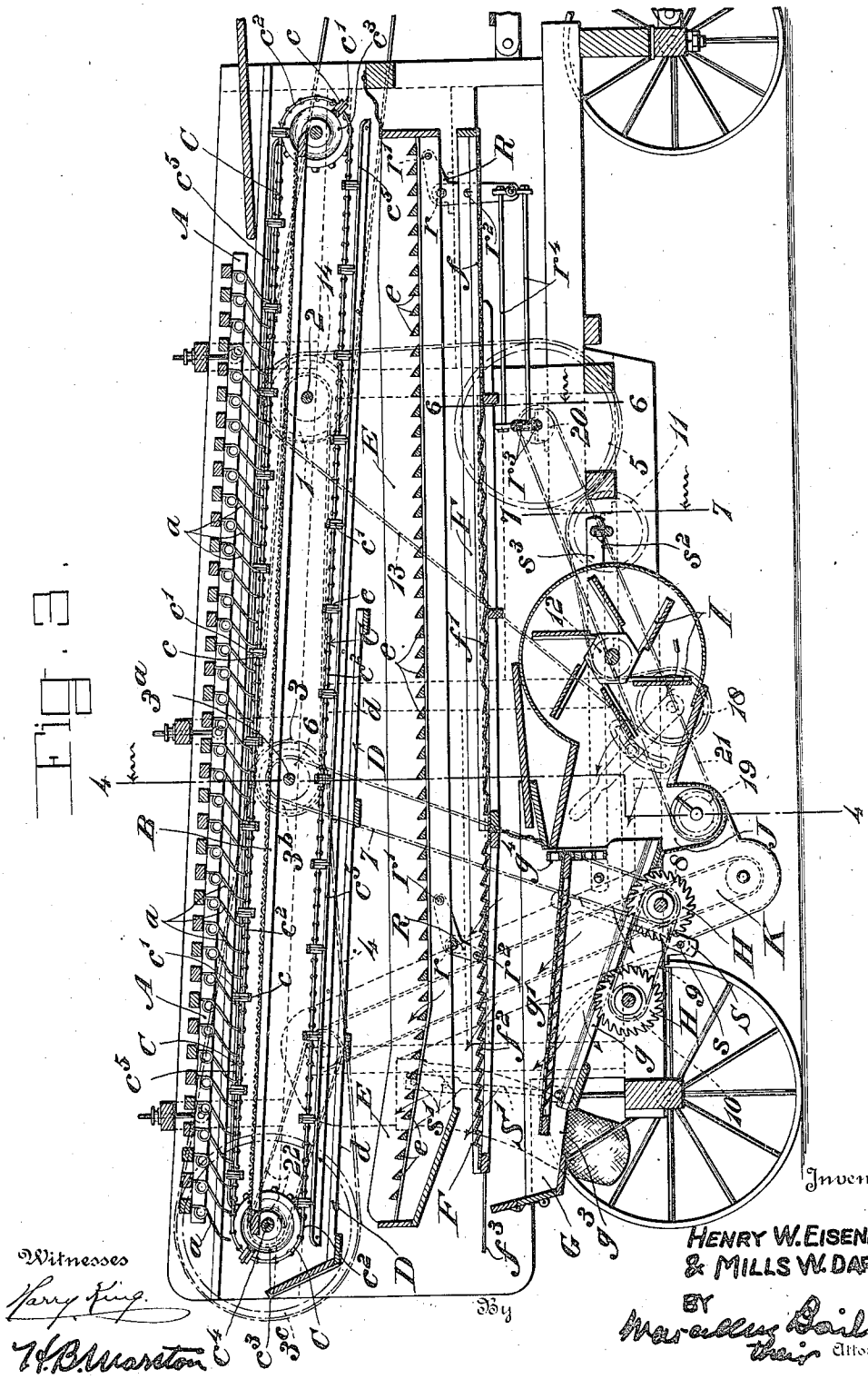
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5 SHEETS—SHEET 3.



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5 SHEETS—SHEET 4.

Fig. 6.

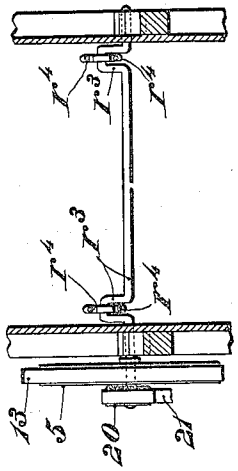


Fig. 7.

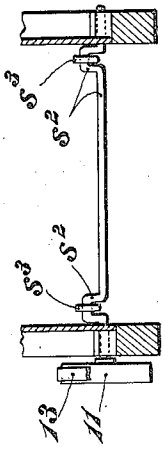
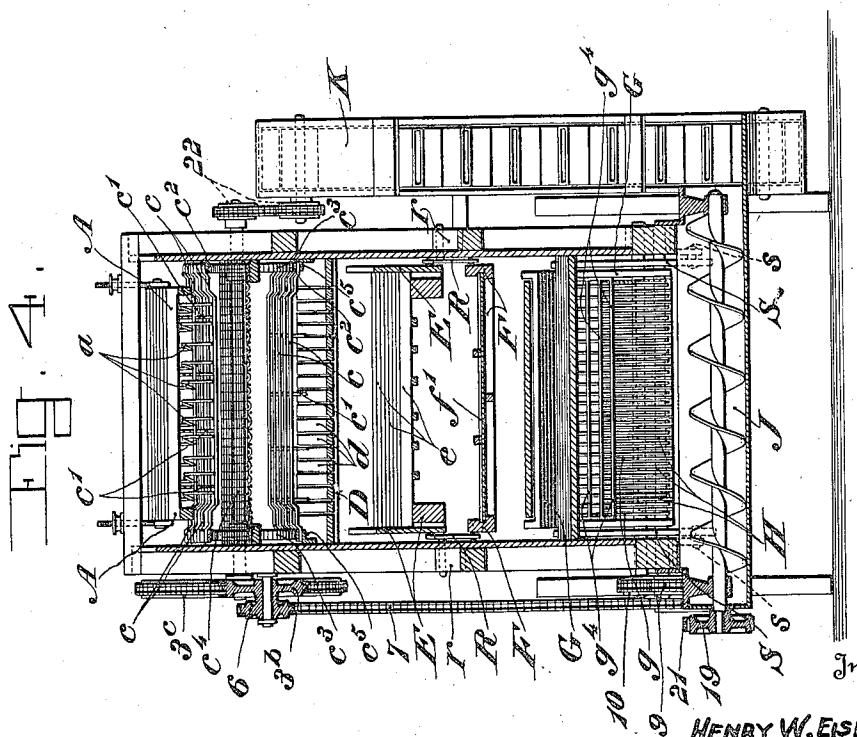


Fig. 4.



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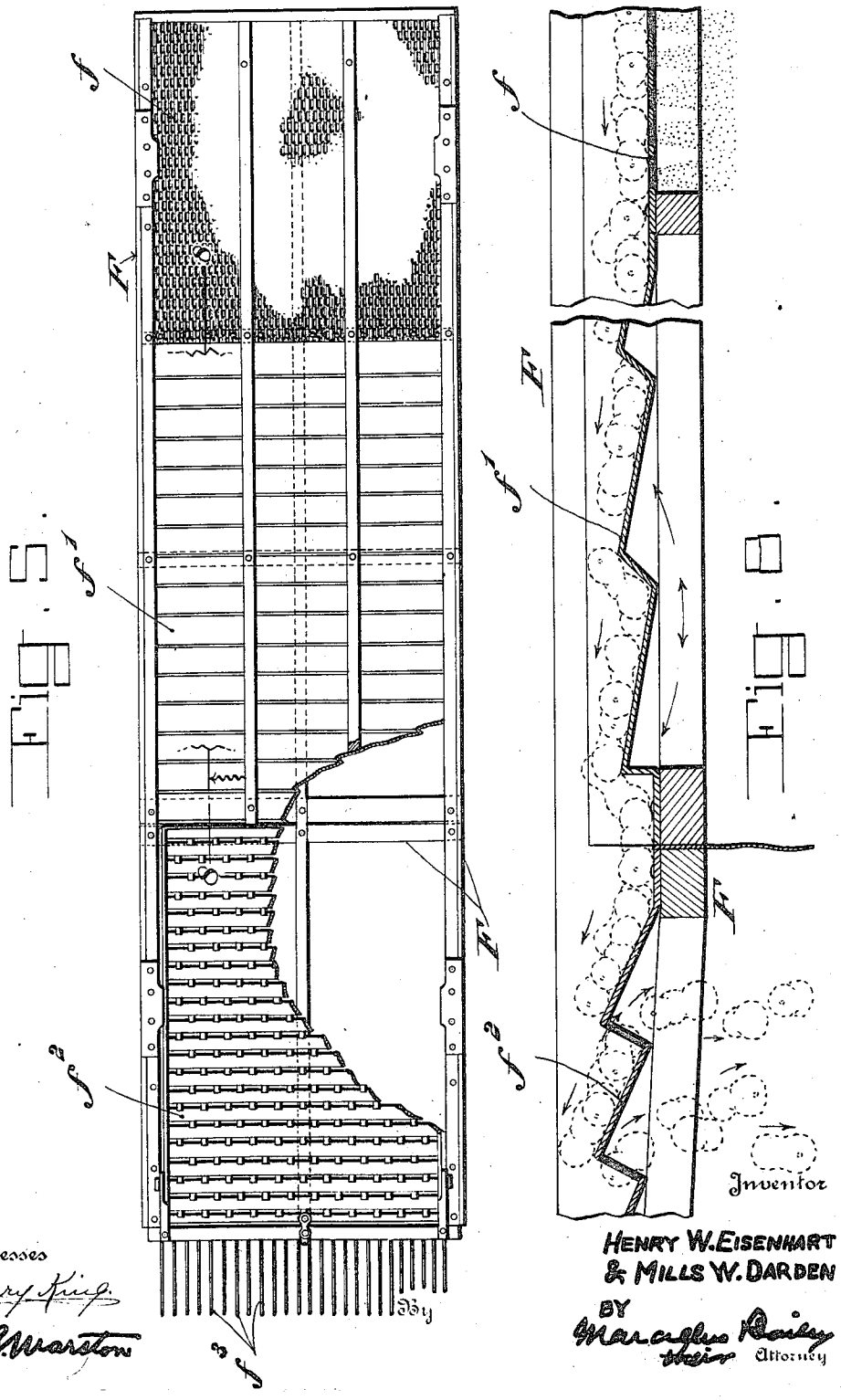
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5 SHEETS—SHEET 5.



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PEANUT PICKER AND STEMMER.

1,081,593. Specification of Letters Patent. Patented Dec. 16, 1913.

Application filed October 9, 1913. Serial No. 794,271.

To all whom it may concern:

Be it known that we, HENRY W. EISENHART and MILLS W. DARDEN, both residing in the city and county of York and State of Pennsylvania, have invented certain new and useful Improvements in Peanut Pickers and Stemmers, of which the following is a specification.

Our invention relates to machines for separating peanuts from their vines, and subsequently cleaning and stemming the thus-separated nuts; and it consists of a certain construction, arrangement and combination of members for this purpose designed to increase the efficient action of the machine without increasing its bulk or expense of manufacture.

The invention will first be described in connection with the accompanying drawings forming part of this specification, and will then be more particularly pointed out in the claims.

In said drawings—Figure 1 is a view from the right hand side of a machine embodying our invention, portions of the side being broken away to expose the parts within; Fig. 2 is a view of the machine from the other side with the elevator partly in section; Fig. 3 is a longitudinal vertical section of the machine, designed more particularly to show the construction and relative arrangement of the devices for picking, separating and stemming the peanuts; in this figure the general system of driving gearing and belting for actuating the various parts is represented in broken lines—that portion of the system on the right side of the machine, as in Fig. 1, being in dot and dash lines, and that portion on the other side, as in Fig. 2, being in dotted lines; Fig. 4 is a vertical section on line 4—4 of Fig. 3; Fig. 5 is a view of the second shaker detached from the machine; Fig. 6 is a cross sectional detail of the crank shaft and its connections for actuating the two shakers E, F; Fig. 7 is a similar view of the crank shaft and its connections for actuating the shoe G; Fig. 8 is an enlarged sectional view of a portion of the second or lower shaker F on line 8—8 Fig. 5; in this figure the three arrows below the middle section f' indicate the path of reciprocation of this shaker; the load carried by the shaker is indicated in dotted lines.

The body of the machine, which contains the working parts, is practically open at the top, bottom, and both ends, and is mounted as usual on wheels so that it may be moved from place to place.

In the top part of the body of the machine is mounted the vertically adjustable stationary picker frame A, armed with spring wire picker teeth a of any usual or suitable construction, below which is a stationary coarse mesh screen B, which extends the length of the machine, and over which runs the top lead of the endless carrier C, by which the vines, peanuts and all, just as they are taken from the ground, when delivered into the front end of the machine, are carried along to and under the pickers, being subjected in their travel to the action of the picker teeth by which the peanuts are separated from the vines, as customary in this kind of picker mechanism, the screen permitting the passage of such of the separated elements as are small enough to pass through its meshes down to the shakers, etc. The carrier C consists of metallic cross bars c armed with stiff upright pins c', and secured at their ends to endless sprocket chains c^2, which run over sprocket wheels c^3 at each end of the carrier, one pair of sprocket wheels—in this instance the rear pair—being driven from the main driving pulley 1, Fig. 2 (which is driven from some suitable prime mover) by a sprocket wheel 2 on the shaft on which driving pulley 1 is mounted, which drives the shaft c^4 on which the rear pair of carrier sprocket wheels c^3 are mounted, through sprocket wheel 3 on cross shaft 3^a on the opposite end of which is a sprocket wheel 3^b geared to sprocket wheel 3^c by chain 4, as clearly shown in Fig. 1. The ends of the cross bars c of the carrier, as seen in Fig. 4, rest upon, and travel over, track rails c^5 which support the upper and lower leads of the endless carrier and prevent them from sagging.

Below the carrier C are the two shakers E, F placed one above the other in the order named. Interposed between the first shaker E and the lower lead of the carrier, is a longitudinally slatted stationary chute D, which extends from beyond the rear end of the picker mechanism far enough toward the front of the machine to deliver the vines, etc., to the front portion of the first shaker, and has a slight downward incli-

nation from rear to front. The vines, after passing the picker A, are delivered to this chute by the carrier, and by the action of the lower lead of the carrier are swept over the slatted floor thereof, to drop therefrom upon the shaker E below. The slats *d* of the floor, as seen in Fig. 4, are separated from one another by narrow longitudinal openings forming a grid, through which the smaller bits of dirt and trash can sift.

The two shakers E F are hung on, and carried by, two pairs of rock arms R, one pair at each end of the shakers. The rock arms approximate an angle lever in shape. Each rock arm is journaled at its elbow in a box *r* on the body of the machine; at its upper end it is pivoted to the upper shaker E at *r'*, and at its lower end it is pivoted to the lower shaker F at r^2. The two shakers are so constructed and arranged that the one balances the other; and when the rock arms are oscillated to produce the requisite combined to and fro, and up and down, movement of the shakers, the shakers will move simultaneously but in opposite directions—the direction of feed in each shaker, however, being the same, that is, from front to rear of the machine. The rock arms are thus oscillated from a crank shaft r^3, extending crosswise of the machine, through the medium of connecting rods r^4, hung at one end upon the cranks of shaft r^3, and at the other end connected to the lower ends of one pair of rock arms—in this instance the front pair, for which purpose the lower end of each rock arm of this pair is prolonged beyond the point r^2 where it is pivoted to the lower shaker F, as shown in Fig. 3, to permit its connecting rod r^4 to be jointed or pivoted to this prolongation. Rotary movement is imparted to the crank shaft r^3 by a pulley or band wheel 5 (Fig. 1) thereon, which is driven from the main driving pulley 1 by connections which will be presently described.

Below the lower shaker F are the shaking shoe G and the fan I, the shoe being provided with a longitudinally slatted bottom or grid *g*, through which project the stemming saws H. From the grid *g* the stemmed peanuts drop into a conveyer spout J, through which they are carried to the elevator and bagger K.

The upper shaker E is formed with cross ribs *e* which are shaped and inclined to feed from front to rear of the shaker when the latter is in motion. The ribs are separated by openings intervening between them extending the width of the shaker and of sufficient dimensions to permit the picked peanuts to drop through them down into the shaker F below. In this way the preliminary separation of the picked peanuts from the vines with which they are mingled is effected, the vines and such trash as will not pass through the openings in this shaker being discharged from the machine over the tail of the said shaker, which, as seen in Fig. 3, overhangs and extends rearwardly beyond the second shaker F and the shoe G below.

The bottom of the second or lower shaker F is composed of three sections, viz: front section *f* of perforated sheet metal with perforations of a size to retain the peanuts in the shaker but to permit the escape of sand and bits of dirt and trash of smaller dimensions than the peanuts; a middle imperforate section *f'* provided with transverse feed ribs or corrugations, and extending through the central portion of the body of the machine above the fan and the crank shafts by which the shakers and the shoe are actuated; and a rear perforated and transversely ribbed or corrugated section f^2 directly over the shoe, the ribs or corrugations being shaped to feed in a direction from front to rear, and the perforations of a size to permit the passage of picked peanuts, being formed between one rib or corrugation and the next, as shown in Figs. 5 and 8. The peanuts, and whatever remains on this shaker after the escape of such material as can pass through the front screen section *f*, pass back to the rear section f^2, being assisted in this movement by the imperforate corrugated middle section *f'*, the corrugations of which also prevent the material from lying close together on the bottom and not moving, which is likely to occur if this portion of the screen be made flat and plain. Such material as will not pass through the perforations in section f^2 is carried over the tail of the lower shaker on horizontal wires f^3 projecting from the rear end of the shaker far enough to permit the material which passes over them to clear the rear of the shoe G below before being discharged from the machine.

The shoe G carries a sieve or riddle *g'* interposed between the end section f^2 of the lower shaker and the grid or slatted inclined bottom *g* of the shoe. This riddle receives what drops through the perforated rear section f^2, and the upward blast of the fan I separates very thoroughly the loose dirt and trash from the peanuts. The meshes of the riddle are of a size to permit clean picked peanuts to pass therethrough down to the bottom *g* to be acted on by the stemming saws; whatever does not pass through the riddle is worked back over the rear end of the same, and passes off through an opening g^3 in the bottom of the shoe, whence it may be carried off to be again put through the machine, as also may those vines which have not been clean picked. One or more riddles *g'* can be employed as preferred, a rack g^4 being provided, as indicated in Fig. 3, in which said riddles may be

removably mounted and held. The peanuts thus delivered to the stemming saws H—of which there are two gangs or rows in the present instance—pass, after having been subjected to the action of these saws, into the conveyer J, and thence to the elevator K, as usual in machines of this kind.

The shoe G has a rapid vibrating movement of limited extent. For this purpose it is pivoted or hung on the ends of two pairs of arms S S′ which at their opposite ends are connected to the body of the machine. The front pair of arms S are pivoted or journaled at s to the frame. The rear pair of arms S′ may have a similar connection with the main frame, but I prefer to secure their upper ends rigidly to the frame as indicated at s', Fig. 1, and to make them of somewhat resilient material, so that they will flex or bend during the vibrating movement of the shoe, and, by their spring action, aid that movement. The shoe is actuated by a crank shaft s^2 having small cranks connected to the shoe by connecting rods s^3. The shafts which carry the two gangs of stemming saws are operated from the shaft 3^a through the intermediary of sprocket gearing—wheel and chain—6, 7, 8, 9, 10, Fig. 1.

5, as before said, is the band wheel or pulley of the shaker actuating mechanism; 11 is the pulley for the crank shaft s^2 that actuates the shoe G; 12 is the fan actuating pulley. All of these three pulleys are driven by a single endless belt 13 from pulley 14. The shaft on which said pulley 14 is mounted extends across the machine to the opposite side thereof, and on its end on that side (see Fig. 2) has the main driving pulley 1.

The endless belt 13 (Fig. 1) passes from pulley 14 directly to, under and partly around, a combined idler and tightener pulley 18, then back over fan pulley 12, over shoe pulley 11, down between that pulley and pulley 5, and partly around the last named pulley, and then up to the place of beginning. The direction of movement of the belt 13 is indicated by the arrows. The conveyer pulley is shown at 19; it gets its movement from wheel 5, by a pulley 20 on the hub of the latter wheel and a belt 21. The sprocket gearing for the cup elevator K is shown at 22 (Fig. 2); it takes its movement from the shaft c^4 on which the rear pair of carrier sprocket wheels c^3 are mounted.

Having described our invention, and the best way now known to us of carrying the same into practical effect, what we claim herein as new and desire to secure by Letters Patent, is:

1. In a peanut picker and stemmer, the combination with the picker mechanism, the shoe provided with slatted bottom, and the stemming saws projecting therethrough, of the two shakers E and F, placed one above the other in the order named; mechanism for imparting to the shakers a combined up and down and to and fro movement, simultaneously but in opposite directions; mechanism for vibrating the shoe; a fan and mechanism for operating the same; and a riddle interposed between the lower shaker and the slatted bottom of the shoe, and mounted in and moving with the shoe— these parts being constructed and arranged together for joint operation, substantially as and for the purposes hereinbefore set forth.

2. In a peanut picker and stemmer, the combination of the picking mechanism, the chute for delivering the material acted on by the picking mechanism; the upper shaker E, to which said material is delivered from said chute, having a transversely ribbed bottom, with openings between adjoining ribs; the lower shaker F located directly beneath the upper shaker, and having a bottom composed of a front perforated section f, a middle transversely ribbed, imperforate section f', and a rear transversely ribbed and perforated section f^2; the shoe located directly beneath the said rear section f^2; the riddle mounted in the shoe and interposed between said rear section f^2 and the bottom of the shoe; the stemming saws projecting up through slits in the bottom of the shoe; the fan; and mechanism for actuating the two shakers, the shoe, the stemming saws and the fan—all substantially as and for the purposes hereinbefore set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

HENRY WOLF EISENHART.
MILLS W. DARDEN.

Witnesses:
J. B. Raby,
George B. Kraber.