

No. 865,445.

PATENTED SEPT. 10, 1907.

J. W. STEEL & J. C. TITUS.
MACHINE FOR STEMMING PEANUTS.

APPLICATION FILED NOV. 14, 1905.

3 SHEETS—SHEET 1.

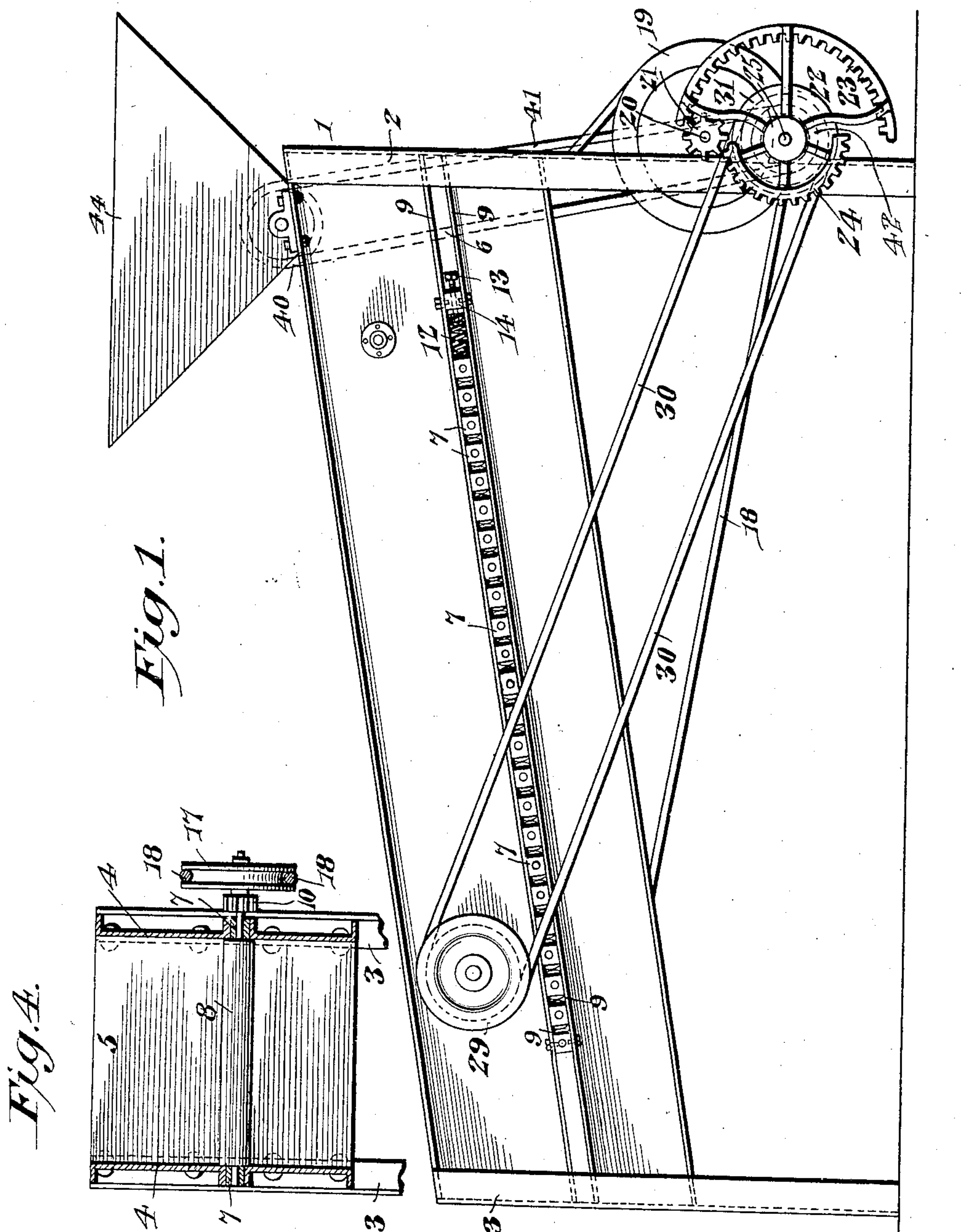


Fig. 4.

Fig. 1.

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Witnesses
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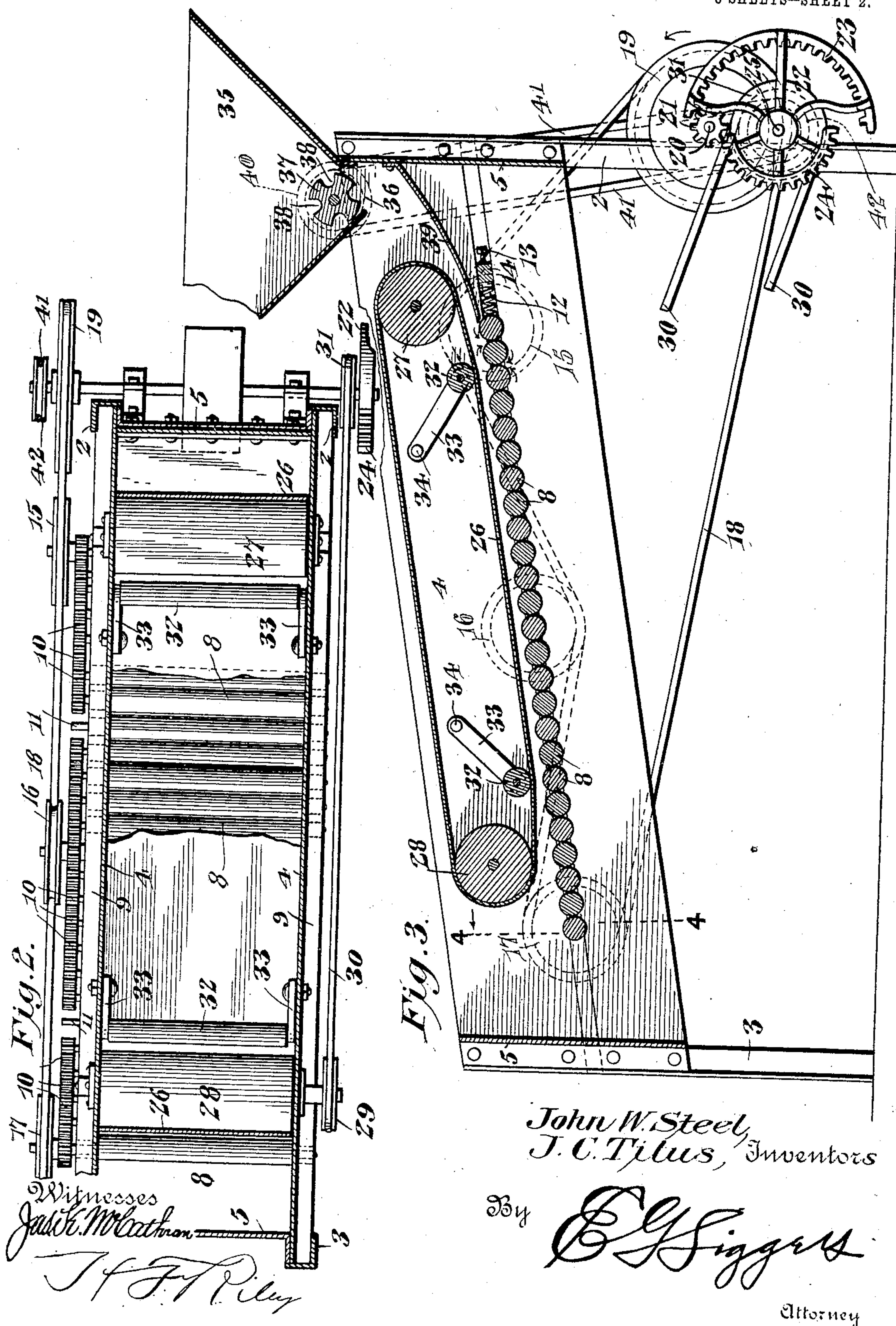
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3 SHEETS—SHEET 3.

Fig. 6.

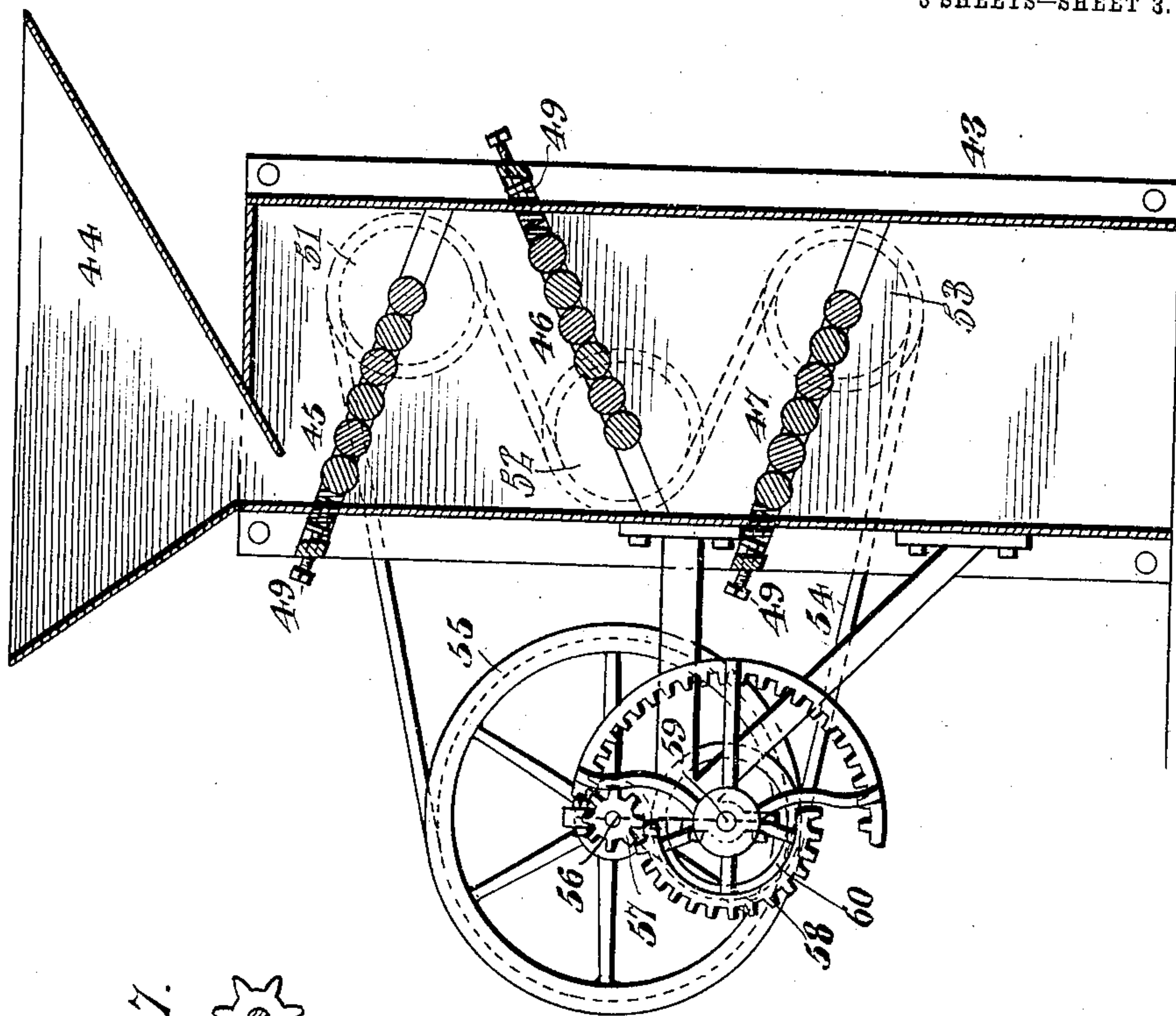


Fig. 7.

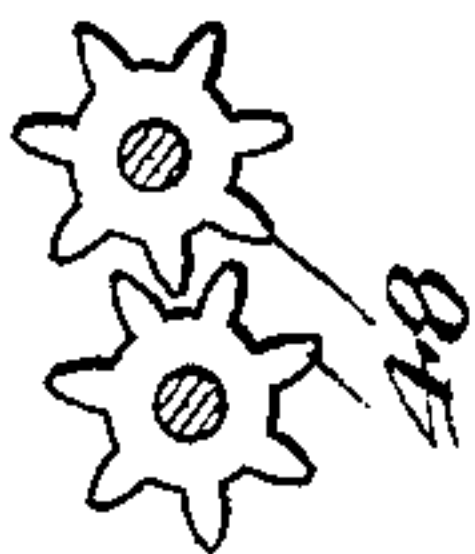
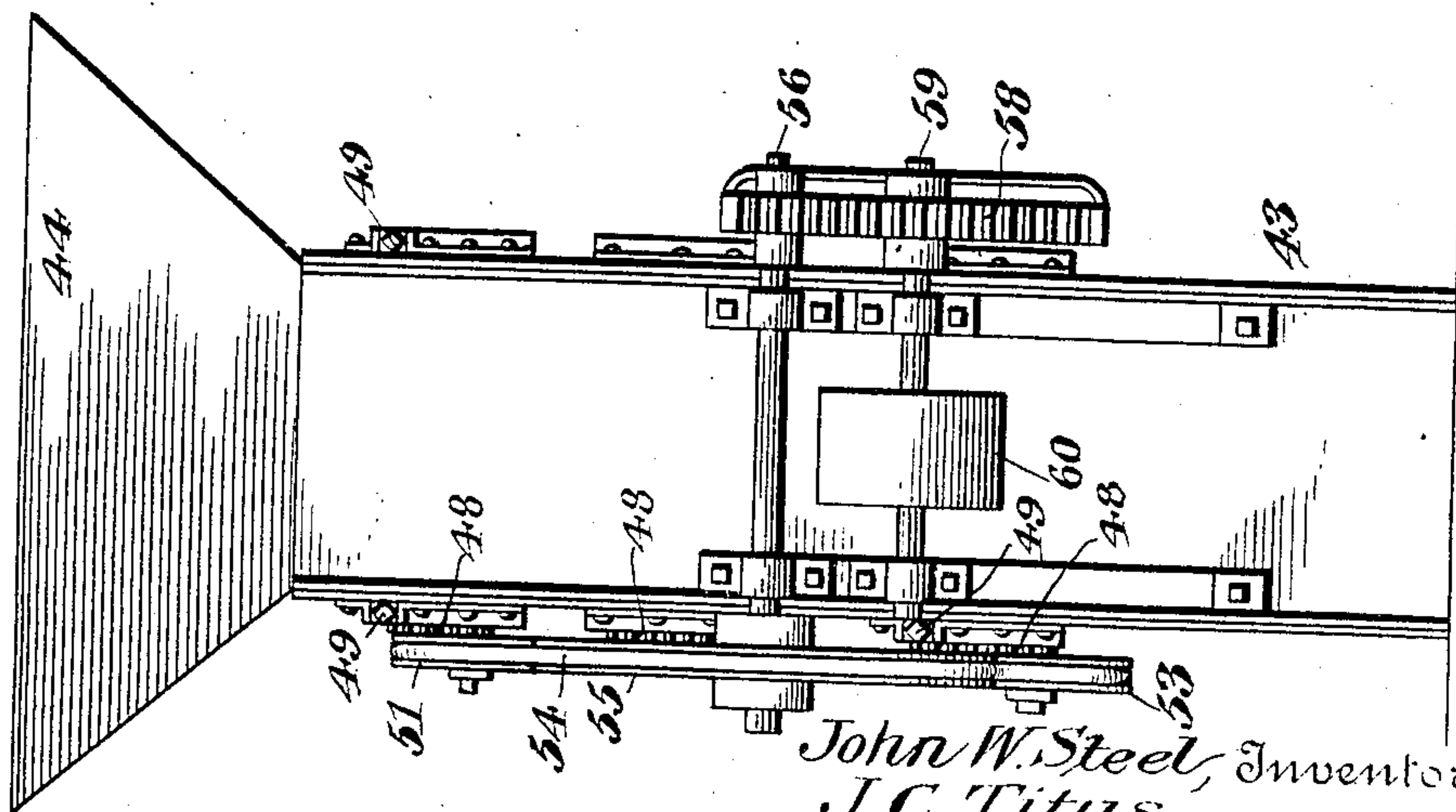


Fig. 5.



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UNITED STATES PATENT OFFICE.

JOHN W. STEEL AND JOHN C. TITUS, OF NORFOLK, VIRGINIA.

MACHINE FOR STEMMING PEANUTS.

No. 865,445.

Specification of Letters Patent.

Patented Sept. 10, 1907.

Application filed November 14, 1905. Serial No. 287,262.

To all whom it may concern:

Be it known that we, JOHN W. STEEL and JOHN C. TITUS, citizens of the United States, residing at Norfolk, in the county of Norfolk and State of Virginia, have invented a new and useful Machine for Stemming Peanuts, of which the following is a specification.

The invention relates to improvements in machines for stemming peanuts.

The object of the present invention is to improve the construction of machines for stemming peanuts, and to provide a simple and comparatively inexpensive stemming machine, designed for the use of both farmers and cleaning factories, and capable of readily removing the stems from peanuts without injuring the latter.

A further object of the invention is to provide a stemming machine having a plurality of picking rolls, geared together and adapted to pull the stems from the peanuts, and to enable the rotation of such rolls to be automatically reversed for changing the points at which the stems are pulled, whereby the pulling action will be effected throughout the entire series of the rolls.

The invention also has for its object to provide means for positively moving the peanuts along the series of rolls, and for changing the position of the peanuts, so that the stems will be presented to the rolls.

With these and other objects in view, the invention consists in the construction and novel combination and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims, hereto appended; it being understood that various changes in the form, proportion, size, and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:—Figure 1 is a side elevation of a peanut stemming machine, constructed in accordance with this invention. Fig. 2 is a horizontal sectional view, a portion of the endless conveyer being broken away to illustrate the arrangement of the picking rolls. Fig. 3 is a central longitudinal sectional view. Fig. 4 is a transverse sectional view on the line 4—4 of Fig. 3. Fig. 5 is an end elevation of a peanut stemming machine, illustrating another form of the invention. Fig. 6 is a vertical sectional view of the same. Fig. 7 is a detail view, illustrating the construction of the gears for connecting the picking rolls.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

The frame 1 of the machine may be constructed of any suitable material, and it is preferably provided with angle iron posts, or corner uprights 2 and 3, which are connected by sides and ends 4 and 5, constructed of sheet metal, wood, or any other suitable material.

The sides 4 of the frame, which are preferably inclined, as clearly shown in Figs. 1 and 3 of the drawings, are provided with inclined guides 6, consisting of slots or openings and adapted to receive bearing boxes 7 of smooth picking rolls 8. The sides of the frame are preferably provided at the slots or openings 6 with outwardly extending flanges 9, but the guides for the bearing boxes 7 may be constructed in any other desired manner.

The picking rolls 8, which are disposed transversely of the machine, are arranged in sets or series, each set or series being connected by gears 10, and an idler roll 11, being interposed between the sets of gears. The rolls, which are sufficiently small in diameter to grasp the stems of the peanuts without damaging the shells, are yieldably maintained in engagement with each other by coiled springs 12 and adjusting screws 13, located at the upper ends of the series of picking rolls at opposite sides of the frame of the machine. The bearing boxes of the lowermost roll are suitably secured in the guides or ways of the sides of the frame, and the coiled-springs, which engage the bearing boxes of the roll at the upper end of the series, have their tension varied by the screws 13, which are mounted in suitable threaded openings of nuts or blocks 14, arranged in the guides or ways and secured by bolts or other suitable fastening devices, which pierce the outward extending flanges 9. By adjusting the screws 13, the desired pressure of the smooth rolls on the stems may be obtained so that a positive feeding and pulling action will be secured, without any liability of injuring the shells of the peanuts, which will not keep when the shells are cracked.

The gears 10, which are keyed or otherwise secured to the journals of the picking rolls, are provided with teeth of sufficient length and spaced sufficiently apart to admit of an adjustment of the rolls longitudinally of the guides or ways without interfering with the proper meshing of the gears.

In Figs. 1 to 3 inclusive, three separate sets or series of picking rolls are shown, and grooved pulleys 15, 16 and 17 are connected with extended journals of the rolls of the said series, one pulley being provided for each series of rolls. These grooved pulleys receive a belt 18, which extends over the end pulleys 15 and 17 and under the intermediate pulley 16, and which also passes around a grooved pulley 19, mounted on a transverse shaft 20. By this arrangement of the belt, the picking or cleaning rolls of the adjacent sets or series are rotated in opposite directions, so that the idlers 11 will not interfere with the rotation of the adjacent rolls. When the drive pulley 19 is rotated in the direction of the arrow in Fig. 3 of the drawing, the picking rolls rotate in the direction of the arrow shown in the said figure, the picking action being effected at

the alternate engaging faces of the picking rolls. The engaging faces moving downwardly take hold of the stems and feed the same downwardly and pull the stems from the peanuts, which are round and too large to be grasped by the picking rolls. The contiguous upwardly moving faces of the picking rolls do not operate to pull the stems from the peanuts, as will be readily understood, and in order to enable the picking rolls to operate on the peanuts throughout the entire series of rolls, the rotation of the picking rolls at regular intervals is automatically reversed, so that the contiguous faces moving upwardly at one period of time, will move downwardly at another period of time. This automatic reversal of rotation is effected by means of a pinion 21 and an actuating gear 22, which carries opposite curved racks or tooth segments 23 and 24, located at different distances from the center of the actuating gear and arranged to alternately mesh with the pinion 21 at opposite sides thereof. The pinion 21 is keyed or otherwise secured to the transverse shaft, and the actuating gear is mounted on a countershaft 25, which is connected with a suitable motor or other means for operating the stemming machine. The outer segment of the actuating gear is provided with internal teeth, which rotate the pinion in one direction, and the inner segment or rack 24 is provided with exterior teeth, which engage the pinion at the opposite side and rotate the same in the opposite direction.

The inner and outer toothed segments are substantially semi-circular, sufficient space being provided for enabling one segment to clear the pinion as the other segment meshes with the same. By this construction, the picking rolls after being rotated a predetermined number of revolutions in one direction, are rotated in the opposite direction, which operation effects a change in the points along the series of rolls, where the stems are pulled, and the reversal of the rolls also assists in changing the position of the peanuts so that they will be more effectually operated on by the machine. The gearing for reversing the rotation of the picking and cleaning rolls may, however, be omitted, and the picking rolls may be continuously operated in one direction, as will be readily understood. By reversing the rotation of the picking and cleaning rolls, the machine is rendered more effective, and its capacity is correspondingly increased.

The peanuts are positively carried down the inclined series or picking rolls by an endless conveyer consisting of an endless belt 26, located above the picking rolls and arranged on transverse conveyer rolls 27 and 28, located at the upper and lower portions of the sides of the frame of the machine and journaled in suitable bearings thereof, the lower roll 28 being provided at one end with a pulley 29, which is connected by a belt 30 with a pulley 31 of the shaft 25. The lower stretch of the endless conveyer is spaced from the picking rolls, and is forced downward into engagement with the peanuts by means of pivotally mounted gravity devices consisting of transverse rolls 32, journaled in suitable bearings of inclined arms 33, which converge upwardly, and which are pivoted at their upper ends 34 to the sides of the frame. The arms 33, which are hung between the upper and lower stretches of the endless conveyer, diverge downwardly and they engage the lower stretch of the conveyer ad-

jacent to the rolls 27 and 28. These oscillatory pivotally mounted gravity devices yieldably hold the lower stretch of the conveyer in engagement with the peanuts, and are adapted to be forced upward by the peanuts to prevent the conveyer from exerting too great a pressure on the same. By this construction, the peanuts are positively held against the picking rolls without liability of injuring them.

The peanuts are dumped into a hopper 35, located at the head of the machine and provided at the bottom with a discharge opening 36, at which point is located a rotary feed roll 37, provided with longitudinal grooves 38 to receive the nuts and adapted to feed the same uniformly to the machine.

The machine is provided beneath the hopper with an inclined chute 39, constructed of sheet metal or other suitable material and extending downward to the uppermost picking roll of the series and adapted to direct the peanuts to the same. The inclined chute extends beneath the upper portion of the lower stretch of the endless conveyer which will positively feed the peanuts to the picking rolls. The feed roll is provided with an extended journal on which is mounted a pulley 40, which is connected by a belt 41, with a pulley 42 of the transverse shaft 25. The stems, which are fed through the picking roll drop therefrom, and any suitable means may be arranged at the lower end of the series of picking rolls to receive the stemmed nuts.

In Figs. 5 and 6 of the drawings is illustrated another form of the invention, in which an upright frame 43 is employed. The hopper 44 is mounted upon the top of the frame, and is adapted to deliver the peanuts to the picking rolls, which are arranged in oppositely inclined sets or series 45, 46 and 47. The picking rolls are connected by gears 48, and are engaged by tension devices 49 constructed and arranged similar to those heretofore described. The bearing boxes of the rolls slide in inclined slots of the frame, and the tension devices 49 are located at the upper ends of the sets or series of rolls for regulating the pressure of the rolls on the stems of peanuts. The peanuts, after passing down the upper series or sets of picking rolls 45, drop upon the intermediate set or series 46 and finally upon the lower set or series 47. Any desired number of sets or series may be employed, and any number of picking rolls may be arranged in the sets or series of either form of the machine to provide a machine of the desired capacity.

The pulleys 51, 52 and 53 are connected with the series or sets of picking rolls, and they receive a belt 54, which is also arranged on a large driving pulley 55 of a transverse shaft 56. The transverse shaft 56 is provided with a pinion 57, which is actuated by a gear 58, having reversely arranged inner and outer toothed racks or segments adapted to reverse the rotation of the picking rolls at regular intervals for the purpose heretofore described. The actuating gear is mounted on a countershaft 59, which also carries a pulley 60, adapted to be connected with the suitable motor or other means for running the machine.

Although the stemming machine has been explained in connection with the stemming of peanuts, it will be readily understood that they are adapted for stemming or cleaning various other products.

Having thus fully described my invention, what I

claim as new, and desire to secure by Letters Patent, is:—

1. In a machine of the class described, the combination of a series of contiguous stem-engaging rolls having their
5 contiguous faces moving in the same direction, the alternate contiguous faces of the rolls moving downwardly and the contiguous faces of the other rolls moving upwardly, and means for automatically reversing the rotation of the rolls to change the positions of the downwardly moving
10 faces in the series.
2. In a machine of the class described, the combination of a plurality of rolls arranged in separate sets or series, gearing connecting the rolls of each set or series, idler rolls interposed between the sets or series of rolls, and
15 means for rotating the rolls, said means being arranged to rotate the adjacent sets or series in opposite directions.
3. In a machine of the class described, the combination of a plurality of rolls arranged in separate sets or series,
20 each set or series having the contiguous stem-engaging faces of its rolls moving in the same direction, gearing connecting the rolls of each set or series, means for rotating the rolls of all the sets or series, the rolls of the adjacent sets or series being rotated in opposite directions, and means for passing the material along the sets
25 or series of the rolls.
4. In a machine of the class described, the combination of a plurality of rolls having contiguous stem engaging faces adapted when moving downwardly to carry the
30 stems between the rolls, gearing connecting the rolls, and means for automatically reversing the rotation of the rolls, said means embodying a pinion and an actuating gear having toothed segments located at different distances from the center of the gear at different portions
35 of the same and having reversely arranged teeth for engaging the pinion at opposite sides thereof.
5. In a machine of the class described, the combination of a plurality of rolls having contiguous stem engaging portions, means for rotating the rolls, and means for auto-
40 matically reversing the rotation of the rolls, the latter means embodying a rotary element and an actuating element having curved engaging portions located at different distances from the center of the actuating element and arranged to engage the rotary element at opposite sides
45 thereof to change the direction of the rotation of the same.
6. In a machine of the class described, the combination of a plurality of contiguous stem-engaging rolls, each set or series having the rolls composing the set or series moving in the same direction, the alternate contiguous faces of
50 the rolls moving downwardly to engage and carry the stems between the rolls, and the contiguous faces of the other rolls moving upwardly to change the position of the material operated on, and means for rotating the rolls a predetermined number of revolutions in one direction and
55 a predetermined number of revolutions in the opposite direction.
7. In a machine of the class described, the combination of a plurality of contiguous stem engaging rolls arranged in separate sets and the contiguous faces of the rolls of
60 each set being movable in the same direction, and the alternate engaging faces moving downwardly to carry the stems between the rolls, and gearing for reversely rotating the sets of rolls.
8. In a machine of the class described, the combination
65 of a plurality of contiguous stem engaging rolls arranged in separate sets and the contiguous faces of the rolls of each set being movable in the same direction, and the alternate engaging faces moving downwardly to carry the stems between the rolls, and gearing for reversely rotating

the sets of rolls, said gearing being also provided with means for automatically reversing the rotation of the rolls. 70

9. In a machine of the class described, the combination of a plurality of rolls, an endless conveyer for forcing the material against the rolls, and pivotally mounted oscillatory inclined gravity devices located at the end portions of the conveyer and diverging downwardly towards the same. 75

10. In a machine of the class described, the combination of a plurality of rolls, an endless conveyer for forcing the material against the rolls, pivotally mounted arms, and rolls carried by the pivotally mounted arms, said arms being hung between the stretches of the conveyer and diverging downwardly and engaging the lower stretch of the conveyer. 80

11. In a machine of the class described, the combination of a plurality of contiguous stem engaging rolls, a conveyer located above the rolls and spaced from the same, a hopper, and means for directing the material from the hopper into the spaces between the conveyer and the rolls. 85

12. In a machine of the class described, the combination of a plurality of contiguous stem engaging rolls, an endless conveyer located above the rolls, a hopper, and an inclined chute for directing the material from the hopper to the rolls, said chute being spaced from a portion of the endless conveyer and cooperating with the same to provide a positive feed. 90

13. In a machine of the class described, the combination of a plurality of rolls, a hopper having a bottom opening, and a feed roll operating within the hopper at the bottom opening thereof and having grooves for positively and uniformly feeding the material to the said rolls. 100

14. In a machine of the class described, the combination of a plurality of rolls arranged in separate sets or series, means for rotating the rolls of each set or series, idler rolls interposed between the sets or series of rolls, and means for holding the rolls in yielding engagement with each other. 105

15. In a machine of the class described, the combination of a plurality of rolls arranged in separate sets or series, gearing connecting the rolls of each set or series, and idler rolls interposed between the sets or series of rolls; all of the said rolls being in contact for engaging the stems of the peanuts. 110

16. In a machine of the class described, the combination of a plurality of contiguous stem-engaging rolls arranged in separate sets or series and having contiguous downwardly moving faces arranged at intervals, gearing for reversely rotating the sets or series to change the position of the downwardly moving faces in the sets or series, and idler rolls interposed between the sets or series of rolls. 115

17. In a machine of the class described, the combination of a series of closely-arranged smooth-faced rolls of small diameter arranged with their faces in contact, the alternate contiguous faces of the rolls moving downwardly and the intervening contiguous faces moving upwardly, means for rotating the rolls, and means for holding the rolls in yielding engagement with each other, said rolls being sufficiently small in diameter to grasp the stems thereof and not damage the shells. 120

In testimony, that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses. 125

JOHN W. STEEL.
JOHN C. TITUS.

Witnesses:

PHILIP M. PRESCOTT, Jr.,
J. STANLEY PRICE.