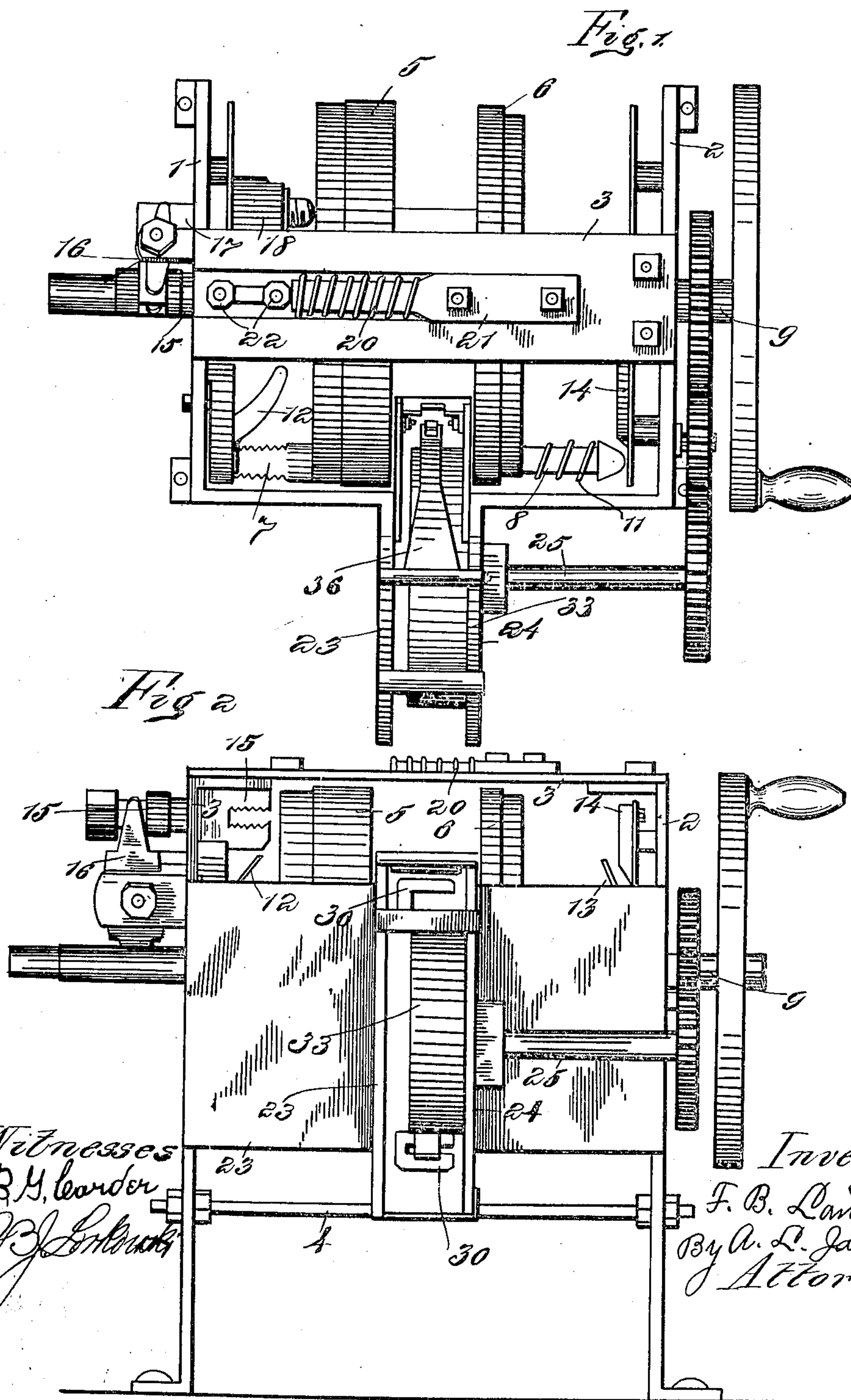


No. 885,262.

PATENTED APR. 21, 1908.

F. B. LANTERY.
NUT CRACKING MACHINE.
APPLICATION FILED NOV. 1, 1906.

4 SHEETS—SHEET 1.

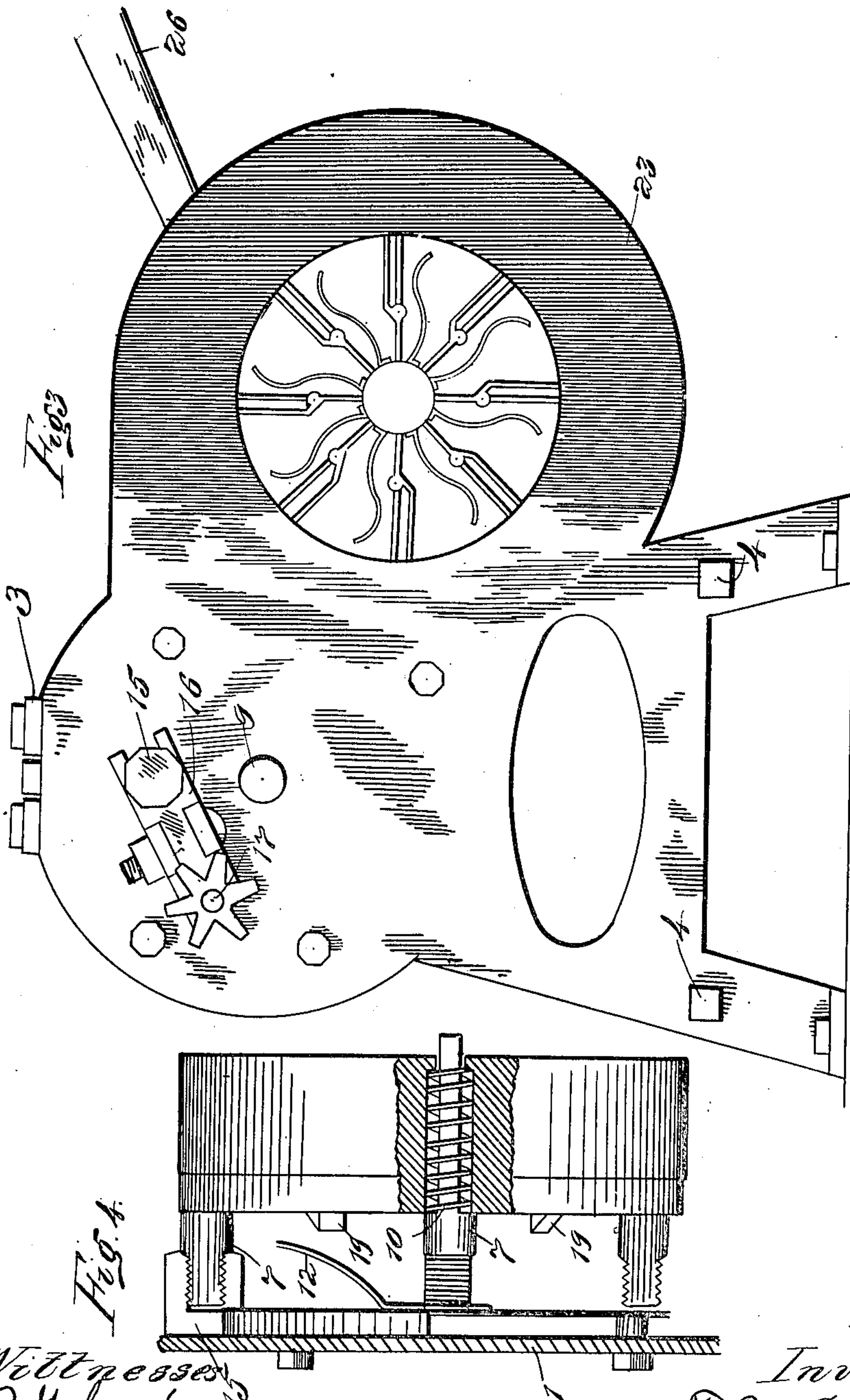


No. 885,262.

PATENTED APR. 21, 1908.

F. B. LANTERY.
NUT CRACKING MACHINE.
APPLICATION FILED NOV. 1, 1906.

4 SHEETS—SHEET 2.



Witnesses
B. M. Gordon
B. J. Lorkowski.

Inventor
F. B. Lantery.
By A. L. Jackson,
Attorney.

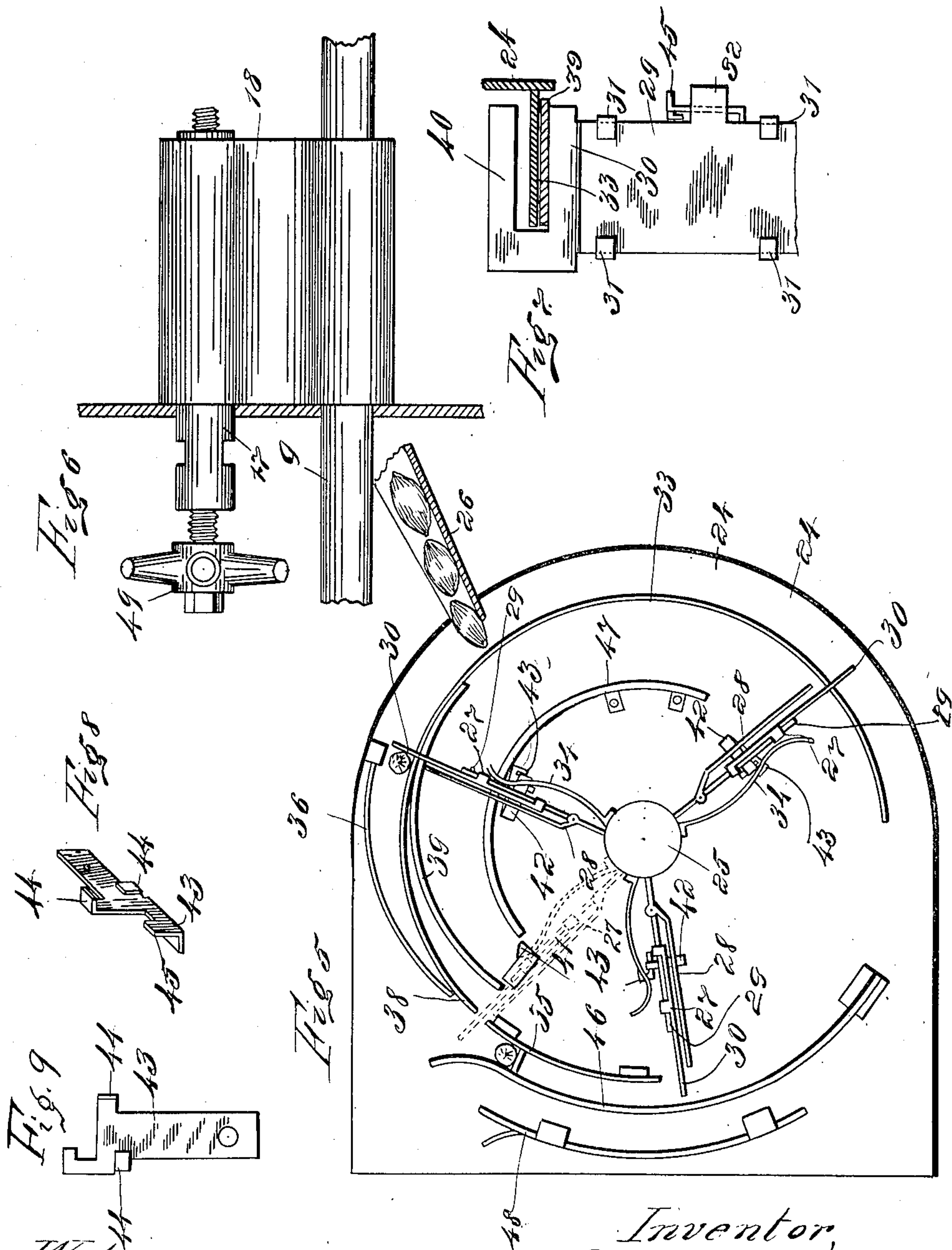
No. 885,262.

PATENTED APR. 21, 1908.

F. B. LANTERY.
NUT CRACKING MACHINE.

APPLICATION FILED NOV. 1, 1906.

4 SHEETS—SHEET 3.



Witnesses:
B. H. border
V. J. Lorkowski

Inventor,
F. B. Lantery
By A. L. Jackson,
Attorney.

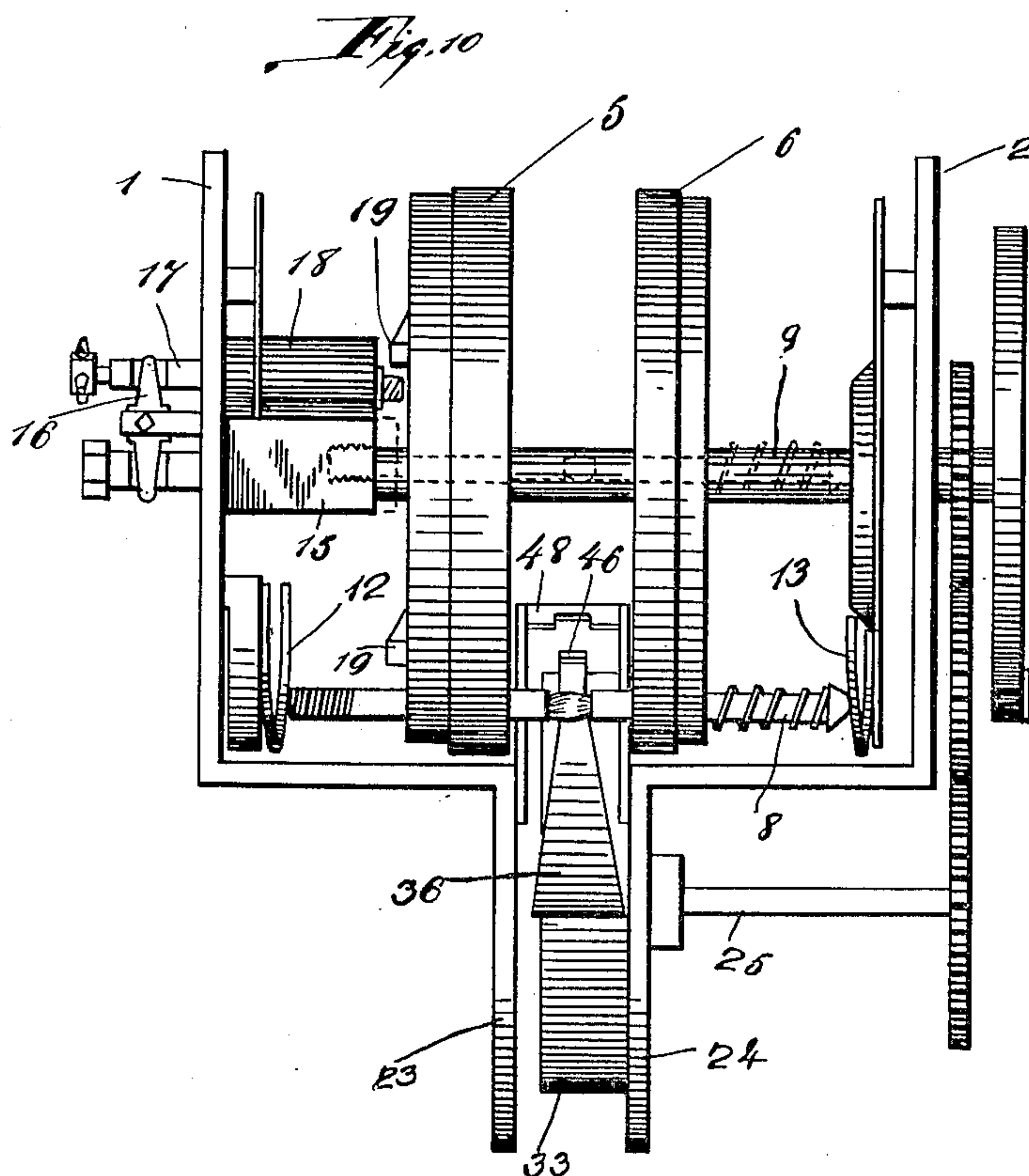
No. 885,262.

PATENTED APR. 21, 1908.

F. B. LANTERY.
NUT CRACKING MACHINE.

APPLICATION FILED NOV. 1, 1906.

4 SHEETS—SHEET 4.



Witnesses

B. J. Lockwood
J. M. Little

Inventor,

F. B. Lantery,

By

A. L. Jackson,

Attorney

UNITED STATES PATENT OFFICE.

FRANK B. LANTERY, OF FORT WORTH, TEXAS.

NUT-CRACKING MACHINE.

No. 885,262.

Specification of Letters Patent.

Patented April 21, 1908.

Application filed November 1, 1906. Serial No. 341,632.

To all whom it may concern:

Be it known that I, FRANK B. LANTERY, a citizen of the United States, residing at Fort Worth, Texas, have invented certain new and useful Improvements in Nut-Cracking Machines, of which the following is a specification.

My invention relates to a machine for cracking nuts, and particularly to machines for cracking pecans, and the object is to provide a simple machine which may be driven by hand power or other suitable power and which is provided with automatic feeding devices and which will operate with great speed and crack nuts regularly.

One of the advantages of this machine is that it is provided with nut crackers or crushers which act automatically and positively to crack the nuts.

Other objects and advantages will be fully explained in the following description and the invention will be more particularly pointed out in the claims.

Reference is had to the accompanying drawings which form a part of this application and specification.

Figure 1 is a plan view of the machine. Fig. 2 is a front elevation of the same. Fig. 3 is an end elevation of the same. Fig. 4 is an elevation of one of the crusher carrier wheels and the means for actuating the crushers, a part of the crusher carrier wheel being in section to illustrate one of the crushers and the manner of mounting the crushers in the carrier. Fig. 5 is a side elevation of the feeder wheel provided with the devices for automatically feeding the nuts to the machine. Fig. 6 is a plan view of one of the shaft bearings and the bearing for the crusher actuating device. Fig. 7 is a detail view of one of the nut deliverers. Fig. 8 is a perspective view of one of the tripping devices. Fig. 9 is a plan view of the same. Fig. 10 is a plan view of the machine with portions of the machine removed to show the operation of the machine.

Similar characters of reference are used to indicate the same parts throughout the several views.

The improved machine is provided with a frame composed of uprights 1 and 2, a tie bar 3 attached to the tops of the uprights 1 and 2, and tie bolts 4. Two wheels 5 and 6 constitute carriers for plunger crushers 7 and 8, the plunger crushers being shiftable axially. The plunger crushers 7 and 8 oper-

ate in pairs, that is, a plunger 7 and a plunger 8 reciprocate towards and from each other.

The carriers 6 and 5 are mounted on a shaft 9 which is journaled in the frame pieces 1 and 2. The plunger crushers are held in their normal positions by spiral springs 10 and 11 and means are provided for actuating these crushers. Springs 12 and 13 which are attached to the uprights 1 and 2 respectively press these plungers towards each other, but not with sufficient force to crack nuts, but will cause the plungers to engage nuts of ordinary size. The springs 12 and 13 are stationary on the uprights 1 and 2 and are arc-shaped and concentric with portions of the wheel carriers 5 and 6 so that these springs will press against the outer ends of the plunger crushers 7 and 8. Besides being arc-shaped the springs 12 and 13 are inclined at their free ends towards the carriers 5 and 6. Whenever the plungers reach these springs in their annular beat, the springs commence to press these plungers towards each other. The spring 13 presses on the plunger 8 until this plunger is revolved far enough to come against the block 14 which block is concentric with the carrier disk 6 for a short distance. The plunger is then not yielding axially outward or towards the block 14. But the plunger 7 is yieldable until the grooved portion of the plunger engages the grooved block 15. It will be understood that the plungers 7 and 8 are holding a nut between the ends thereof when they are revolving towards the blocks 14 and 15. While the plunger 7 is moving through the grooved or threaded block 15, the block 15 is driven axially towards the center of the machine. This will cause the plunger 7 to be driven towards the plunger 8 and thus crush the nut which is being held between the ends of the plungers.

The means for driving the block 15 axially towards the central part of the machine may be described as follows: A lever 16 is fulcrumed on the end piece 1. One end of this lever engages the end of the block 15 and the other end of the lever 16 engages a reciprocating plunger 17 which is mounted in the bearing 18. The carrier 5 has beveled lugs 19 which are properly spaced apart to actuate the plunger 17 when a lug 19 passes the plunger 17 and these lugs 19 must be so spaced that they will actuate the plunger 17 while a plunger carrier 7 is passing through the block 15. When the plunger 17 is actu-

ated the lever 16 drives the block 15 axially towards the center of the machine and the block 15 drives the plunger crusher 7 towards the plunger crusher 8 which can not recede on account of the block 14, consequently the nut being carried by the plunger crushers will be cracked, and as the plungers 7 and 8 pass beyond the blocks 14 and 15, the plungers will release the cracked nut and let the
 10 same fall out of the machine. The block 15 and the plunger 17 are held in their normal positions by a spiral spring 20 which is located in a slot in the top bar 3. This spring is provided with a seat 21 which is bolted to
 15 the bar 3. The other end of the spring operates against an upstanding lug or bolt 22 carried by the block 15.

Means are provided for feeding nuts to the plunger crushers 7 and 8. A revolving
 20 feeder extends far enough between the carriers 5 and 6 to deliver nuts in the path of the plungers 7 and 8. The frame pieces 1 and 2 have extensions 23 and 24 and the feeding devices are supported between these ex-
 25 tensions. The revolving feeder is mounted on the shaft 25. A chute 26 delivers nuts to the revolving feeder. The feeder has a plurality of radiating arms 27. Every time one of these arms 27 passes the chute 26 it takes
 30 one nut and delivers the same to the holder 35 and every time a pair of plungers 7 and 8 pass the holder 35 they take the nut from said holder. The holder 35 is in the path of the plungers 7 and 8. The arms 27 are
 35 jointed and expansible for purpose herein-after explained. The arms 27 are carried by the shaft 25. The arms 27 are composed of three parts. The parts 28 are rigid with the shaft 25 and serve as supports for the
 40 other parts and also for exerting pressure on the outer ends of the other parts. The guides 29 are pivotally attached to the supports 28. The nut movers 30 are mounted on the guides 29 and are slidable thereon.
 45 The nut movers are held on the guides by lips 31 which are bent from the nut movers 30 about the edges of the guides 29. The guides 29 have lugs 32 which limit the movement of the nut movers 30 on the guides.
 50 The track 33 together with the extensions 23 and 24 form a path for the delivery of the nuts, the track 33 being mounted on the extension 24 of the frame. The nuts are delivered to the path or track 33 from the chute
 55 26. The arms 27 are yielding and these arms are reinforced by springs 34. The nut movers 30 have slots in the outer ends to receive the track 33, as shown in Fig. 7. The nut mover carries a nut on the curved
 60 path and delivers the same to the nut holder 35. A nut adjuster 36 is mounted above the track 33. This adjuster is a spring which coöperates with the track 33 and the mover 30 to arrange the nuts transverse the path
 65 of the nuts so that when the nut lies in the

holder 35, the plunger crushers 7 and 8 will engage the ends of the nut. The adjuster and the track 33 form a converging space in front of the nut and the mover 30 forces the nut between the spring and the track. 70

At the moment when the mover delivers the nut to the holder 35, the mover contracts and leaves the track 33 through a slot or groove at 38. The nut movers 30 are drawn through the slot at 38 by a spring 39 which
 75 is attached to the underside of the track 33. The spring 39 is caught in the slot 40 as the mover is carrying the nut forward. By the time the mover reaches the slot 38 there is sufficient tension to draw the mover through
 80 this slot. In order to give the mover time to drop through the slot 38, the part 28 is temporarily arrested by a stop 41. The parts 28 carry lugs 42 which extend both in front and to the rear of the arms 27. A latch
 85 43 is pivotally connected to the forward part of the lug 42 and extends backward flush with the lug 42 and has lips 44,—one on each side of the lug 42, far enough apart to allow a slight swinging or vibrating motion of the
 90 latch 42. The latch 43 has a catch 45 which engages the stop 41 to arrest the arm 27 momentarily. But more pressure being applied to the arm 27, the latch will easily swing to one side and the catch 45 will slide
 95 on the beveled portion of the stop 41 and thus let the arm 27 pass on, the nut mover 30 having dropped through the slot 38. The arms 27 being elastic, the temporary arresting of an arm 27 will not interfere with the
 100 turning of the shaft 25 because the arm is arrested only momentarily. A spring 46 forms part of the nut holder 35. When a nut is engaged by the plunger crushers this spring will yield and let the plungers carry
 105 the nut forward to be cracked. The arrested motion of the arms 27 is provided by the elasticity of the arms 27. The revolving feeder does not stop but the arms 27 will yield until the catch 45 slides past the stop
 110 41. After the nut mover passes the holder 35, it is forced to its normal position by centrifugal force and by gravity. A spring 47 is attached to the extension or casing 24 to hold the nut mover in position. If there
 115 was nothing to hold this nut mover in position, the centrifugal force caused by the continued rotation of the revolving feeder would cause too much friction against the guide 33. A guard 48 is attached to the casing 24 to
 120 prevent the displacement of the spring 46. The spring 46 will be arrested by the guard 48. Otherwise the spring 46 might be carried so far by the nut (as the nut is being removed by the plungers 7 and 8) that the
 125 spring would not resume its normal position in time to receive the next nut. The stroke of the plunger crusher 7 may be varied by varying the position of the plunger 17 which
 130 may be done by the screw bolt 49. This

may be necessary in case of larger or smaller nuts.

The various parts of this machine may be changed or varied in construction without departing from my invention.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent, is,—

1. A nut-cracking machine comprising an upright frame, two revolving disks journaled in said frame and carrying axially thrustable plungers, means for feeding nuts to said plungers, yielding means for pressing said plungers towards each other during a portion of their revolution by said disks, and means for causing a rigid thrust of said plungers for a portion of their revolution.

2. In a nut-cracking machine comprising an upright frame, revolving disks journaled in said frame and carrying axially thrustable plungers, means for feeding nuts to said plungers, springs for pressing said plungers towards each other during a portion of their revolution by said disks, and means for causing a rigid thrust of said plungers towards each other during a portion of their revolution consisting of a stationary sloping block on one of the upright portions of said frame and a movable rack reciprocating in the other upright portion of said frame, the plunger to be operated by said rack having transverse grooves therein to be engaged by said rack.

3. A nut cracking machine comprising an upright frame having front extensions, revolving disks carrying plungers axially thrustable towards each other, means for periodically actuating said plungers consisting of means mounted on said frame for causing a rigid thrust of said plungers towards each other and springs attached to said frame and thrusting said plungers yieldingly towards each other until said plungers are engaged by said rigid thrusting means, and means for feeding nuts to said plungers consisting of a wheel journaled in said extensions and provided with yielding arms, a nut holder in the path of said plungers, nut movers carried by said arms, and a track for nuts while being moved by said nut movers to said holder.

4. A nut-cracking machine comprising an upright frame having front extensions, revolving disks carrying axially thrustable plungers, means for feeding nuts to said plungers consisting of a wheel journaled in said extensions and carrying a plurality of

yielding and contractible arms, nut movers carried by said arms, a track for the nuts while being moved by said nut movers, and means for shifting the nuts transverse said track.

5. A nut-cracking machine comprising an upright frame having front extensions, revolving disks carrying axially thrustable plungers, means for feeding nuts to said plungers consisting of nut holders, a wheel journaled in said extensions and carrying a plurality of yielding and contractible arms, nut movers carried by said arms, a track for the nuts while being moved by said nut movers, and means for shifting the nuts transverse said track to be delivered to said holders.

6. A nut-cracking machine comprising an upright frame having front extensions, revolving disks carrying axially thrustable plungers, means for feeding nuts to said plungers consisting of holders located in the path of said plungers, a wheel journaled in said extensions and carrying a plurality of yielding and contractible arms, nut movers carried by said arms, a track for the nuts while being moved by said nut movers, means for shifting the nuts transverse said track to be delivered to said holders, and means for shifting said movers through said track at the moment a mover delivers a nut to said holder.

7. A nut-cracking machine comprising an upright frame having front extensions, revolving disks carrying axially thrustable plungers, means for feeding nuts to said plungers consisting of a holder located in the path of said plungers, a wheel journaled in said extensions and carrying a plurality of yielding and contractible arms, nut movers carried by said arms, a track for the nuts while being moved by said nut movers, means for shifting the nuts transverse said track to be delivered to said holder, means for momentarily arresting each arm as a nut is delivered to said holder and means for drawing each nut mover through said track while its arm is arrested.

In testimony whereof, I set my hand in the presence of two witnesses, this 15th day of September, 1906.

FRANK B. LANTERY.

Witnesses:

A. L. JACKSON,
J. W. STITT.