

No. 668,470.

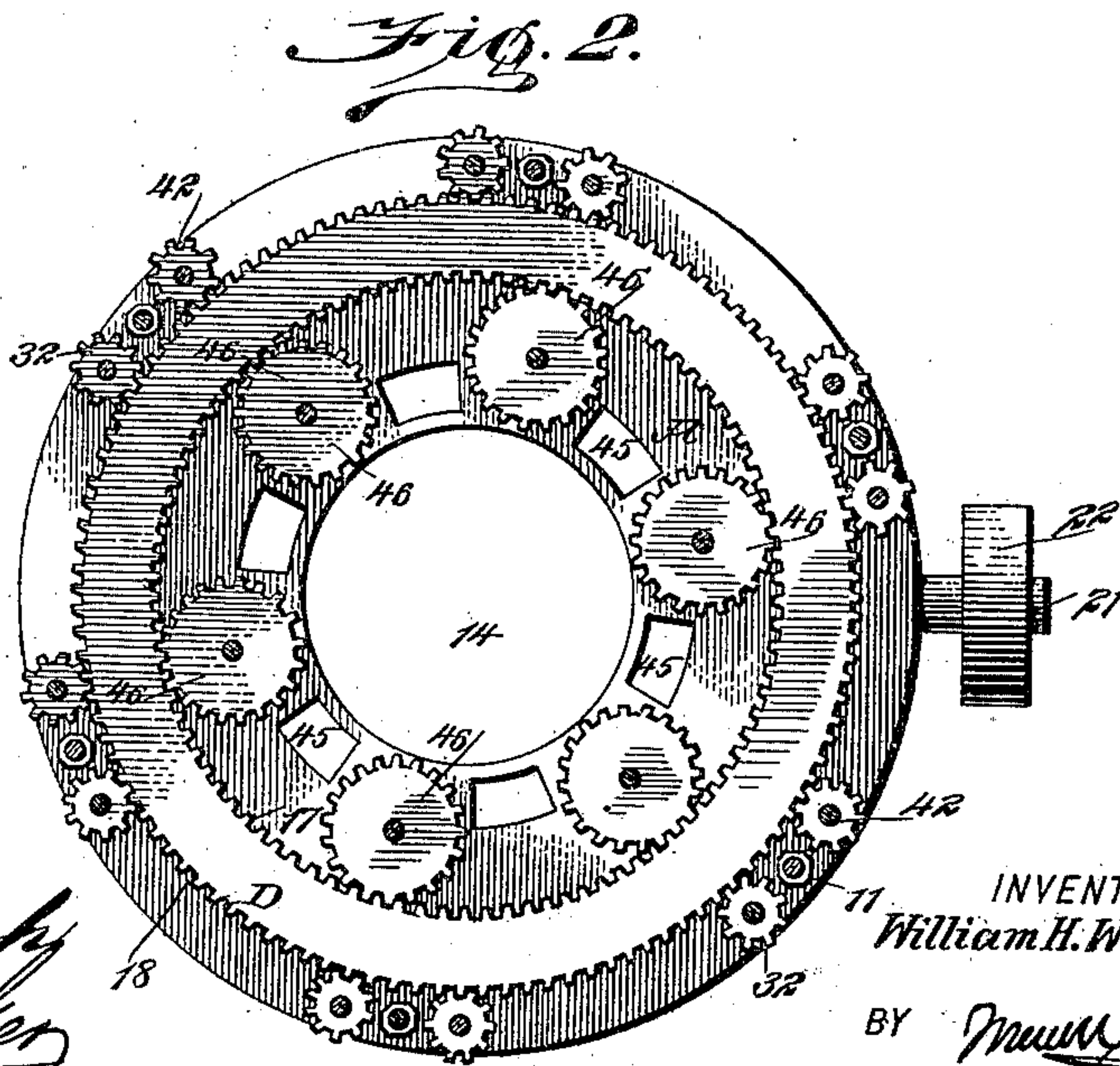
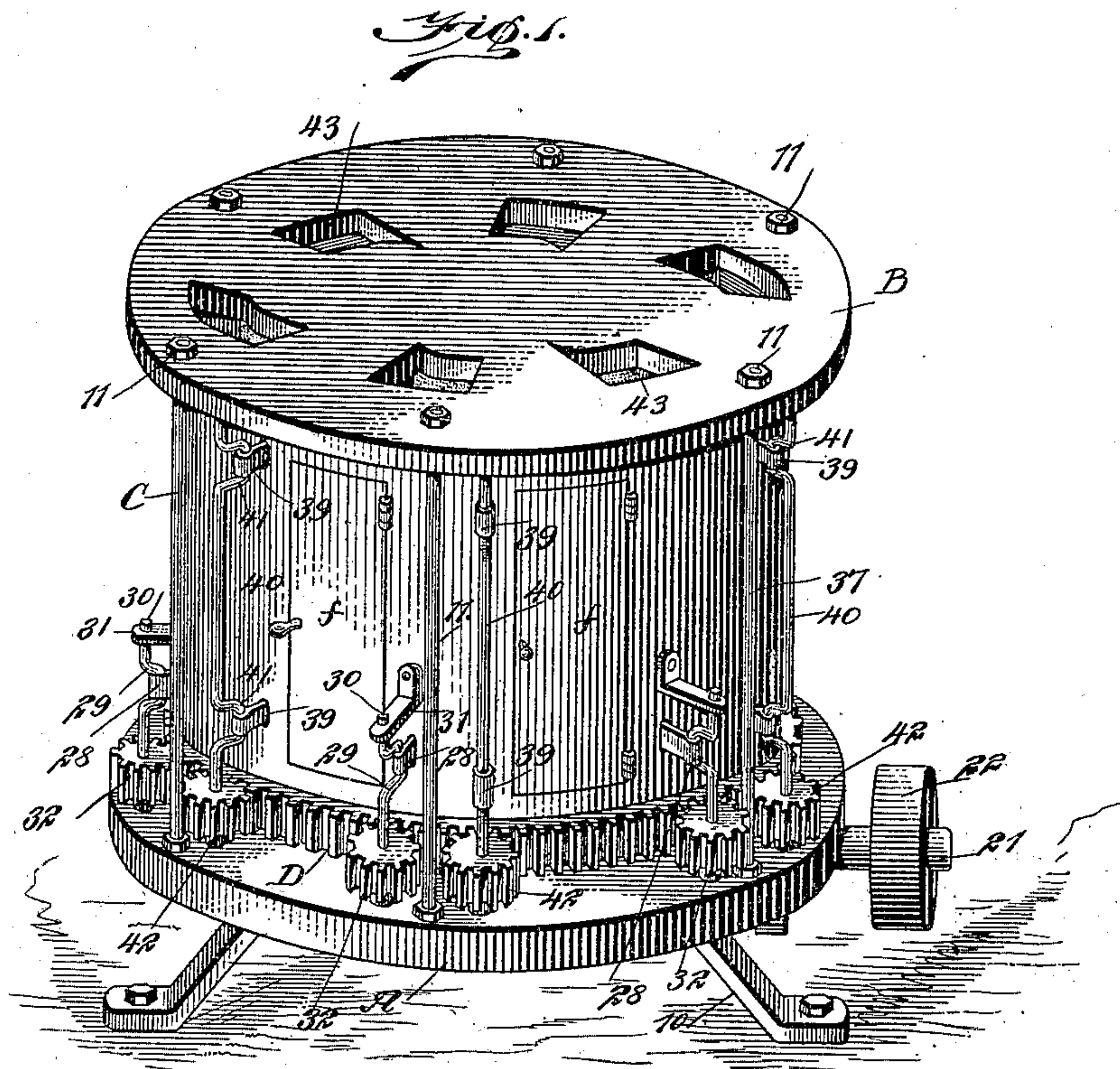
Patented Feb. 19, 1901.

W. H. WENTWORTH.
COTTON GIN.

(Application filed Apr. 18, 1900.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

H. G. Dietrich
Adelphus

INVENTOR

William H. Wentworth.

BY

Mauw

ATTORNEYS

No. 668,470.

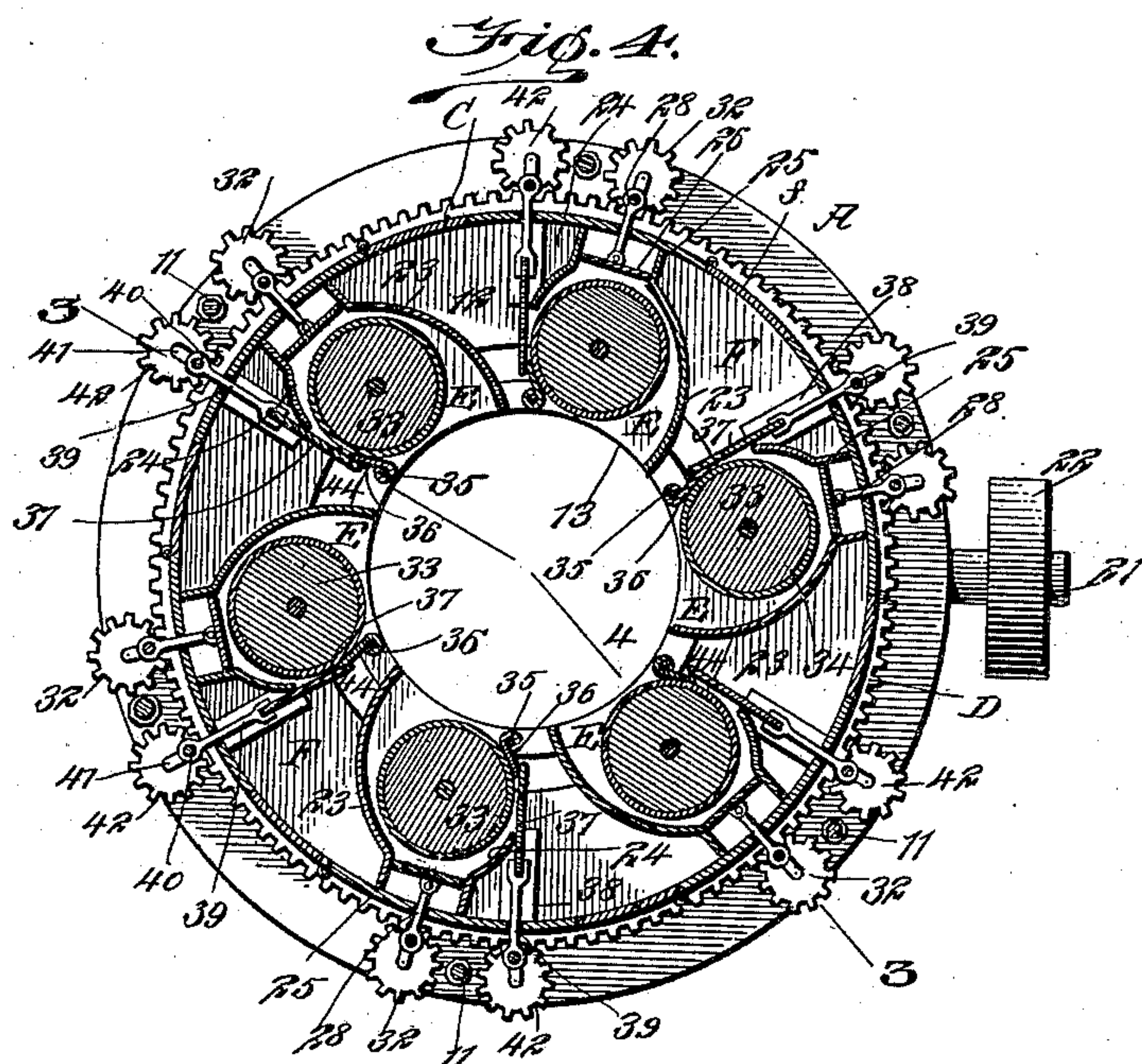
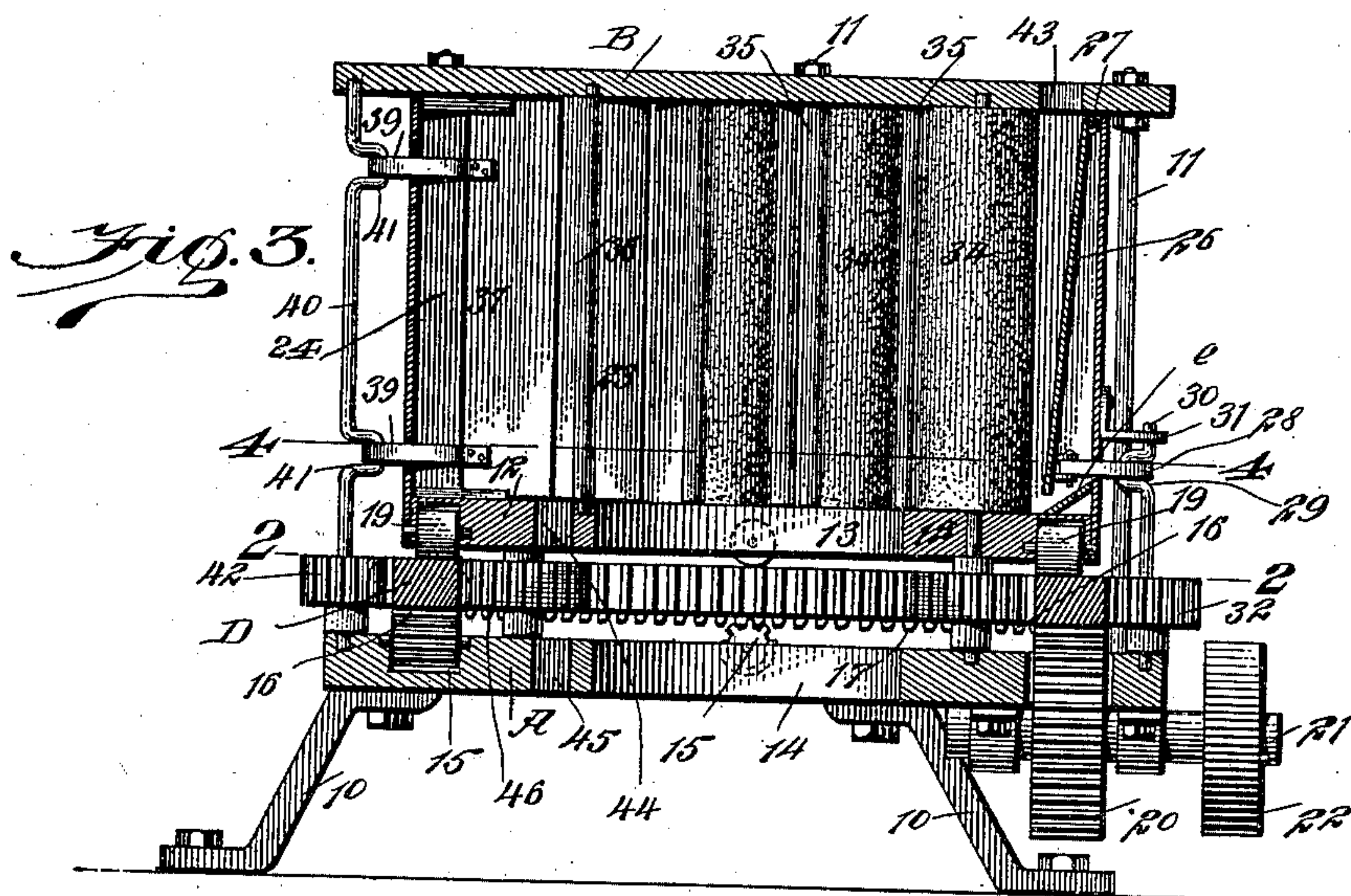
W. H. WENTWORTH.
COTTON GIN.

Patented Feb. 19, 1901.

(No Model.)

(Application filed Apr. 18, 1900.)

2 Sheets—Sheet 2.



WITNESSES:

W. H. Wentworth
W. H. Wentworth

INVENTOR
William H. Wentworth.

BY *W. H. Wentworth*
ATTORNEYS

UNITED STATES PATENT OFFICE.

WILLIAM HENRY WENTWORTH, OF SAN ANTONIO, TEXAS, ASSIGNOR OF
ONE-HALF TO OTTO KLAUS, OF SAME PLACE.

COTTON-GIN.

SPECIFICATION forming part of Letters Patent No. 668,470, dated February 19, 1901.

Application filed April 18, 1900. Serial No. 13,325. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HENRY WENTWORTH, a citizen of the United States, and a resident of San Antonio, in the county of Bexar and State of Texas, have invented a new and Improved Cotton-Gin, of which the following is a full, clear, and exact description.

One purpose of the invention is to so construct a cotton-gin that the rollers, feed devices, and blades will be vertically disposed and arranged in groups, which arrangement by the multiplication of groups admits of a single gin-stand being economically erected which will equal the capacity of a battery of gins now in general use.

Another purpose of the invention is to simplify the construction of cotton-gins and provide a speedy and effective separation of the seed from the fiber without injury to the latter and a thorough separation of the treated fiber from the seed.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of the improved gin. Fig. 2 is a horizontal section taken practically on the line 2 2 of Fig. 3. Fig. 3 is a vertical section taken substantially on the line 3 3 of Fig. 4, and Fig. 4 is a horizontal section taken practically on the line 4 4 of Fig. 3.

The gin is preferably of cylindrical shape, and the body comprises a circular base A, a circular head B, and a cylindrical body C, of less diameter than the head and the base. The body C is substantially independent of the base; but the head B is attached to the base A through the medium of suitable rods 11 or their equivalents. The base A is provided with legs 10, whereby the gin may be secured to the floor or other support.

The body C is provided with a bottom 12, in which a circular opening 13 is made, as shown in Figs. 3 and 4, and a corresponding opening 14 is made in the base A, as illustrated in Figs. 2 and 3. Toothed guide-roll-

ers 15 are mounted in the upper surface of the base, between the periphery thereof and the central opening 14, and a master-wheel D is mounted to travel on these toothed guide-rollers 15, the master-wheel having teeth 16 upon its under surface, and the said master-wheel is further provided with teeth 17, formed in its inner edge, and teeth 18, produced upon its outer edge, as is best shown in Fig. 2.

In order that the master-wheel may revolve and not be subjected to undue friction by reason of the weight of the body C, plain friction-rollers 19 are fitted in the bottom portion of said body, as illustrated in Fig. 3, which plain friction-rollers engage with the upper surface of the master-wheel D, which surface is plain. The master-wheel is turned by engagement with a gear 20, the gear meshing with the bottom teeth of the master-wheel, and this gear is mounted on a shaft 21, provided with a suitable pulley 22, adapted for connection with any source of power.

The body C is divided into a series of compartments E and chambers F, alternately arranged, the compartments being separated from the chambers by vertical partitions 23, which extend from the outer surface of the body to the edge of the opening 13 in the bottom of the body, and an opposing vertical partition 24, which extends from the outer surface of the body to a point about midway between the said surface and the edge of the said opening 13. The partitions 23 and 24 are curved or bowed outward or in opposite directions except at their outer edges, which portions 25 of the said partitions are straight. The space thus formed in each compartment E is adapted to receive a feed board or plate 26. These feed boards or plates are attached by means of pivots 27 to the under surface of the head B, as shown in Fig. 3, while arms 28 are pivotally attached to the outer faces of the said feed boards or plates near their lower ends, which arms extend out through suitable openings in the body-casing and are pivotally connected with crank-arms 29, formed in shafts 30, journaled at their upper ends in suitable brackets 31, carried by the body-casing, and the lower ends of the shafts 30 are suitably journaled in the base A. Each

shaft 30 has a pinion 32 secured thereto, and these pinions mesh with the exterior teeth on the master-wheel D. Therefore as the master-wheel revolves the feed plates or boards 26
5 are laterally reciprocated, swinging upon their pivots. In order that cotton shall not stick in the bottom portion of the section of the compartment E in which the feed-board is located, the bottom of this portion of each
10 compartment E is inclined from the body-casing downward and inward, as shown in Fig. 3.

A vertical roller 33 is mounted to turn in the wider portion of each compartment E, which compartments are adapted to receive
15 the seed-cotton, and these rollers are journaled in any suitable manner in the head and in the base of the gin, the trunnions or shafts of the rollers passing loosely through the floor 12 of the body C. Each roller 33 is preferably provided with a covering 34 of hide,
20 having the hair on the outside and cut off short, or the rollers may be covered with any other material adapted to attract and take hold of the seed-cotton. As the rollers revolve they carry the seed-cotton to two blades
25 36 and 37, located at the spaces in the compartments E formed by the shorter partitions 24, as is illustrated in Fig. 4. The blade 36 is a stationary blade and is attached to an
30 upright support 35, which extends from the bottom of the body C to the head B, quite close to the edge of the central opening 13 in the said bottom, and these blades 36 are adapted to engage with the peripheral sur-
35 faces of the rollers 33, as is also shown in Fig. 4. The blades 37 are movable to and from the stationary blades 36, being guided in ways produced in blocks 38, located upon the inner face of the head B and the bottom 12 of
40 the body C. Each movable blade 37 is preferably provided with two arms 39, and these arms extend through suitable openings in the body-casing and are pivotally connected with crank-arms 41, formed in shafts 40, said shafts
45 being journaled in the head B and the base A. Each shaft 40 at its lower end has an attached pinion 42, which meshes with the exterior teeth of the master-wheel D. Thus as the master-wheel is revolved the blades 37
50 are moved to and from the fixed blades 36.

The seed-cotton is fed into the compartments E through openings 43 made in the head B, and as the seed-cotton is thus fed to the compartments E it falls between the feed
55 boards or plates 26 and the rollers 33. After it has been separated from the seed by the action of the blades 36 and 37 the fiber is delivered to the central openings or wells 13 and 14, while the seeds fall to the ground through
60 openings 44, made in the bottom 12 of the body, and corresponding openings 45, produced in the base A; but it will be understood that the cotton may be conducted to any desired point by suitable conveyers passing beneath the
65 wells 14, and conveyers likewise may be provided to receive the cotton-seed. Each of the

rollers 33 is provided below the bottom of the body C with an attached gear 46, as shown in Figs. 2 and 3, and these gears mesh with the inner teeth 17 of the master-wheel D, and by
this means the rollers are made to revolve simultaneously with the movement of the movable blades 37 and the feed boards or plates 26.

In operation the seed-cotton is forced by the feed-boards to the rollers and the rollers conduct the seed-cotton to the space between the fixed and movable blades, and by reason of the action of the movable blades in connection with the fixed blades the cotton-seeds
are forced from the fiber and by reason of their weight drop down to the exit-openings 44, while the fiber passes beneath the stationary blade to the opening 14. (See Fig. 2.) The chambers F are very useful, as they enable the blades to be adjusted or any cotton that may clog to be started on its way, and to that end each chamber F is provided with a door f, made in the body-casing.

When a gin is constructed as above set forth, the risk of fire is greatly lessened and the mutilation of the operator is made almost impossible. The gin can be used for cleaning or burring wool or mohair and all raw material of such class, it being understood that when the machine is so used the rollers are changed, as the grease, &c., from the wool would injure the cotton fiber. By subjecting the fiber to the action of the stationary blades while the fiber is gripped by the rollers the fiber is not only separated from the seed, but compressed, leaving the fibers parallel.

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

1. In cotton-gins, a compartment adapted to receive cotton, which compartment is provided with means for the exit of fiber and means for the exit of seed, a roller vertically mounted in the said compartment, a vertical feed-board pivoted at its upper end and movable to and from the roller, the bottom of the compartment beneath the feed-board being inclined, a stationary blade having bearing against the roller, a second blade having guided movement to and from the stationary blade, and means for simultaneously driving the roller, reciprocating the movable blade and imparting movement to the feed-board, as set forth.

2. In cotton-gins, a compartment, a roller vertically mounted in said compartment, a feed board or plate hinged at its upper end and free at its lower end, a fixed blade having bearing against the roller, a second blade adapted for movement to and from the fixed blade, crank-shafts, connections between the crank-arms of said shafts and the lower portion of the feed boards or plates and the upper and lower portions of the movable blade, a master-wheel, and a driving connection be-

tween the master-wheel and the crank-shafts and the master-wheel and the roller, as described.

3. In a cotton-gin, a series of compartments, a roller vertically mounted in each compartment, a feed board or plate in each compartment, the said feed-boards being hinged at their upper ends and free at their lower ends, crank-shafts, connections between the crank-arms of said shafts and the lower portion of the feed boards or plates, a fixed blade having bearing against each of said rollers a blade movable toward and from each fixed blade, shafts provided with crank-arms connected with the movable blades, a master-wheel, a driving connection between the master-wheel and the crank-shafts, and the master-wheel and each of said rollers, and means for driving the master-wheel, substantially as described.

4. In a cotton-gin, vertically-disposed ginning-rollers each provided with a gear, a feed device for each roller, crank-shafts provided with pinions, connections between the crank-arms of said shafts and the feed devices, a master-wheel having teeth on its inner edge meshing with the gears on the rollers, and teeth on its outer edge meshing with the pinions on the crank-shafts, and means for driving the master-wheel substantially as described.

5. In a cotton-gin, vertically-disposed ginning-rollers each provided with a gear, vertically-disposed blades acting in conjunction with the said rollers, one blade for each roller being stationary and the other blade movable to and from the stationary blade, crank-shafts provided with pinions, connections between the crank-arms of said shafts and the movable blades, a master-wheel having teeth on its inner edge meshing with the gears on the rollers and teeth on its outer edge meshing with the pinions on the crank-shafts, and means for driving the master-wheel, substantially as described.

6. In a cotton-gin, a cylindrical body or casing provided in its bottom with a central opening for the exit of the fiber, a series of compartments adapted to receive cotton and arranged in a circle between the outer wall of the body or casing, and the said central opening, the said compartment being open toward said central opening, a vertically-disposed ginning-roller mounted to turn in the wider portion of each compartment, means for feeding the cotton to the rollers, vertically-disposed seeding-blades acting in conjunction with each roller, and arranged at one side of the compartment, one of said blades being fixed and the other movable to and from the fixed blade, the said roller conducting the cotton behind the movable blade to the space between the blades, the fiber passing beneath the fixed blade to said central exit-opening, a master-wheel, and driving connections between the master-wheel and the rollers, and the master-wheel and the said movable blades

for simultaneously driving the rollers and reciprocating the movable blades, substantially as set forth.

7. In a cotton-gin, a body or casing having a central opening in its bottom for the exit of fiber, vertical partitions extending from the wall of the body or casing to the edge of the central opening, opposing vertical partitions extending from the wall of the casing to a point about midway between the said wall and the edge of the opening, the said partitions forming a series of compartments open at their inner side, a vertically-disposed ginning-roller mounted to turn in each compartment, and vertically-disposed seeding-blades acting in conjunction with the rollers and located at the spaces in the compartments formed by the shorter partitions, one of said blades being stationary and the other movable to and from the stationary blade, the said body or casing being provided with a series of openings in its top for feeding the cotton to the compartments, and with openings in its bottom for the exit of seed, substantially as described.

8. In a cotton-gin, a compartment, a vertically-disposed ginning-roller in said compartment, a vertically-disposed feed board or plate for said roller arranged in a narrow portion of the compartment, the said feed-board being hinged at its upper end and movable to and from the roller, and means for simultaneously driving the roller and imparting movement to the feed-board, as set forth.

9. In a cotton-gin, a compartment, a vertically-disposed ginning-roller in said compartment a vertically-disposed feed board or plate for said roller the feed-board being pivoted at its upper end and movable to and from the roller, a seeding device operating in conjunction with the roller separating the seed from the fiber, the said seeding device comprising a fixed blade having bearing against the roller, and a second blade having guided movement toward and from the fixed blade, and means for simultaneously driving the roller, imparting movement to the feed-board and reciprocating the movable blade, as set forth.

10. In a cotton-gin, a body or casing having a series of openings in its head through which the seed-cotton is fed, a series of compartments formed in the body a vertically-disposed ginning-roller in each compartment, vertically-disposed feed boards or plates pivoted at their upper ends and movable in said compartments, and between which and the rollers the seed-cotton falls, the said feed-boards being reciprocated to force the seed-cotton to the rollers and vertically-disposed seeding-blades adapted to act in conjunction with each roller, one of said blades being fixed and the other movable to and from the fixed blade, the said rollers conducting the cotton to the space between the fixed and movable blades, the bottom of said body being provided with a central exit-opening for the fiber and exit-openings for the seed forced

from the fiber by the seeding-blades, the fiber passing beneath the fixed blades to said central exit-opening, substantially as described.

11. In a cotton-gin, a casing having a central opening in its bottom, a series of vertically-disposed rollers arranged in a circle around said central opening, and each provided with a gear, vertically-disposed seeding-blades acting in conjunction with the rollers, one blade for each roller being movable to and from the other blade, shafts mounted to turn and provided with pinions, connections between the said shafts and the movable blades for reciprocating the blades, a master-wheel having teeth on its inner edge meshing with the gears on the rollers, and teeth on the outer edge meshing with the pinions on the shafts, and means for driving the master-wheel, substantially as described.

12. In a cotton-gin, a series of compartments for receiving cotton, a roller vertically mounted in each compartment, vertically-dis-

posed seeding-blades for each roller and to which the cotton is carried by said roller, the said blades being arranged alongside the roller and one of said blades being movable to and from the other, the sides of the compartments being spaced from the rollers and one side of each compartment terminating at or near the movable blade, the rollers carrying the cotton around in the spaces behind the movable blades, whereby the feed of the cotton is uninterrupted by the movement of said blades, a driving mechanism, and a connection between the said driving mechanism, the movable blades and the shafts of the rollers, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM HENRY WENTWORTH.

Witnesses:

CARLOS BEE,
OTTO KLAUS.