

No. 762,906.

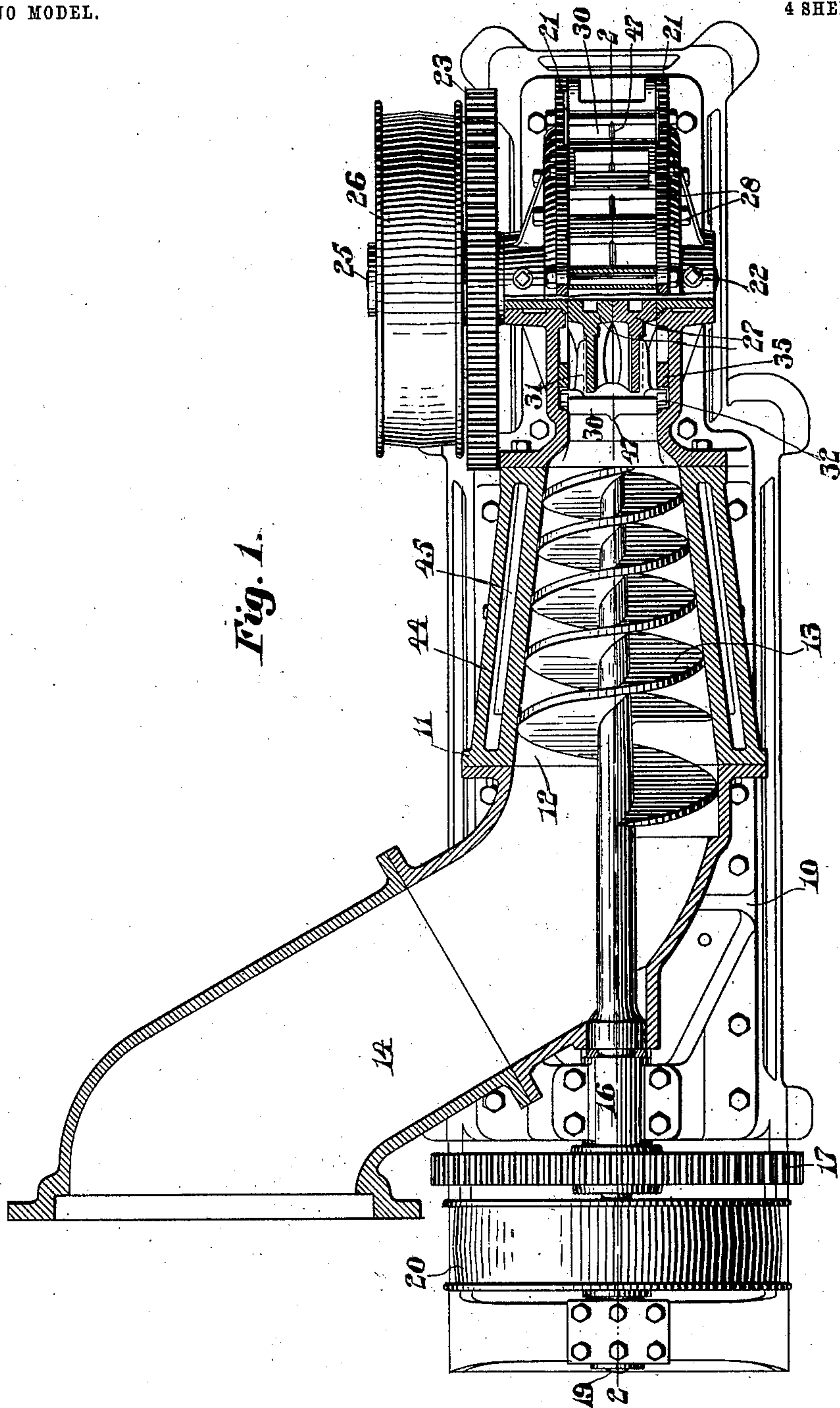
PATENTED JUNE 21, 1904.

C. D. JENKINS.
MACHINE FOR FORMING BRIQUETS.

APPLICATION FILED AUG. 21, 1903.

NO MODEL.

4 SHEETS—SHEET 1.



Witnesses:

Nathan C. Lombard, 2nd
Edna C. Cleveland.

Inventor:
Charles D. Jenkins,
by Walter E. Lombard,
Atty.

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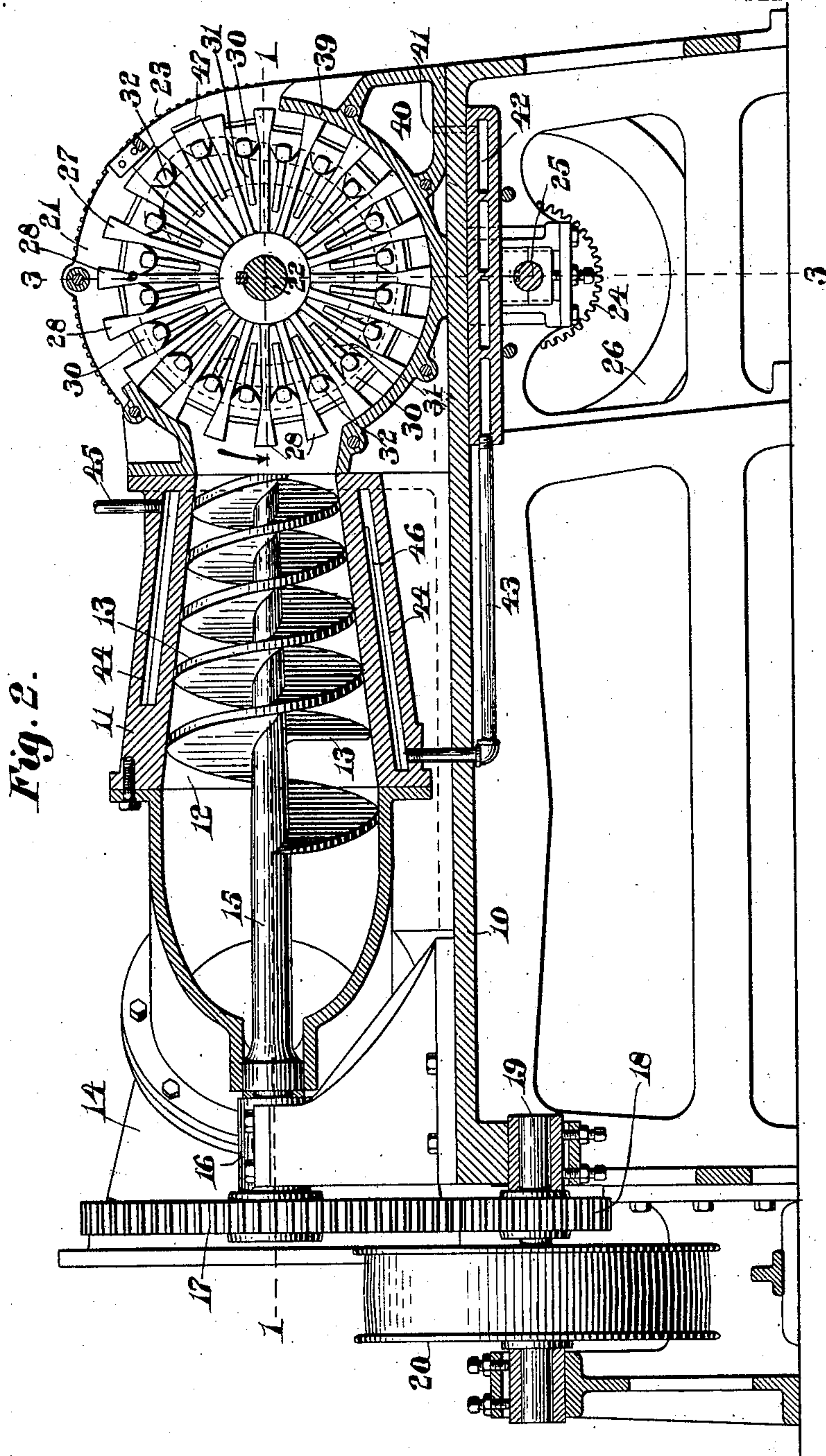
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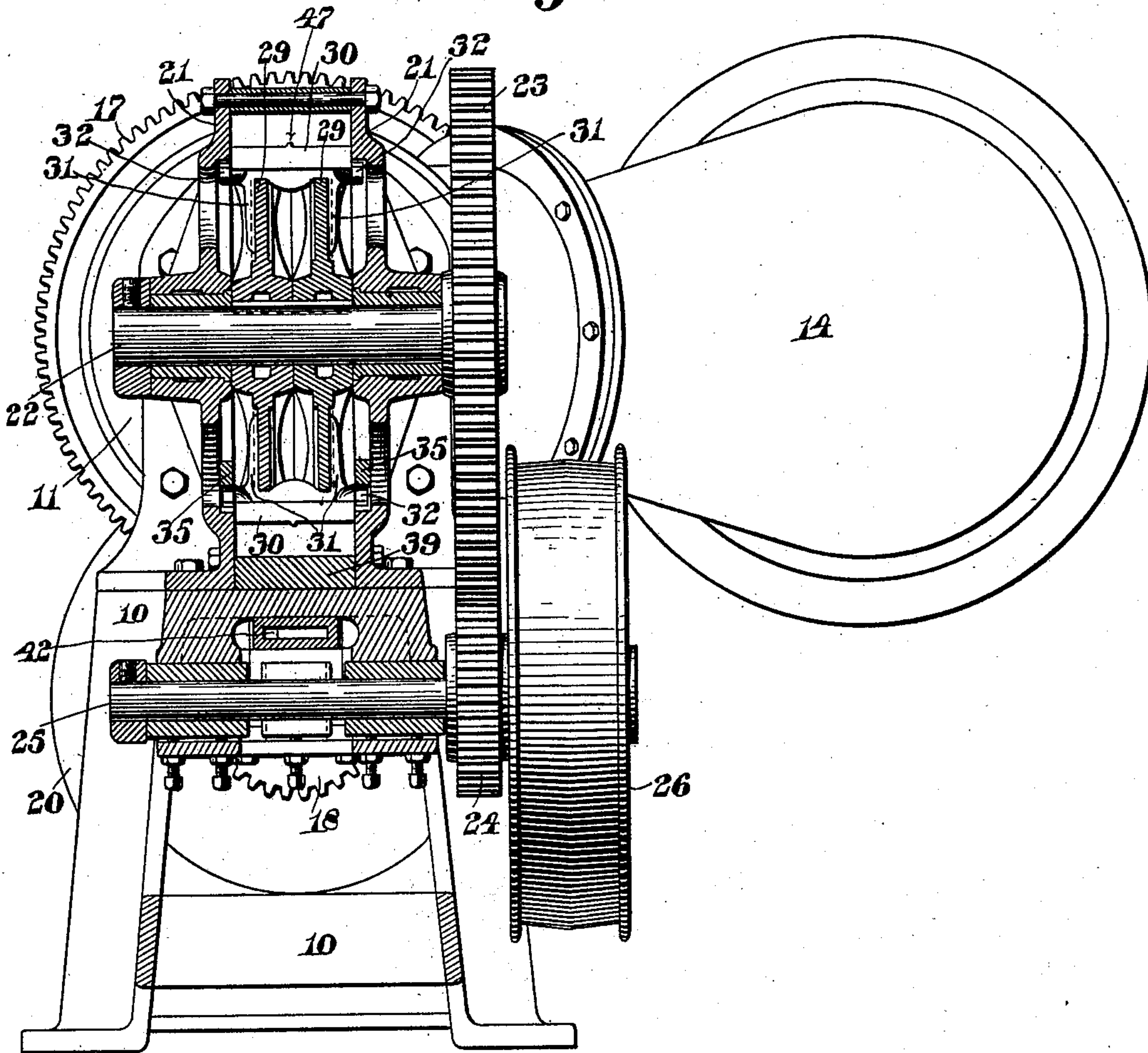
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Fig. 3.



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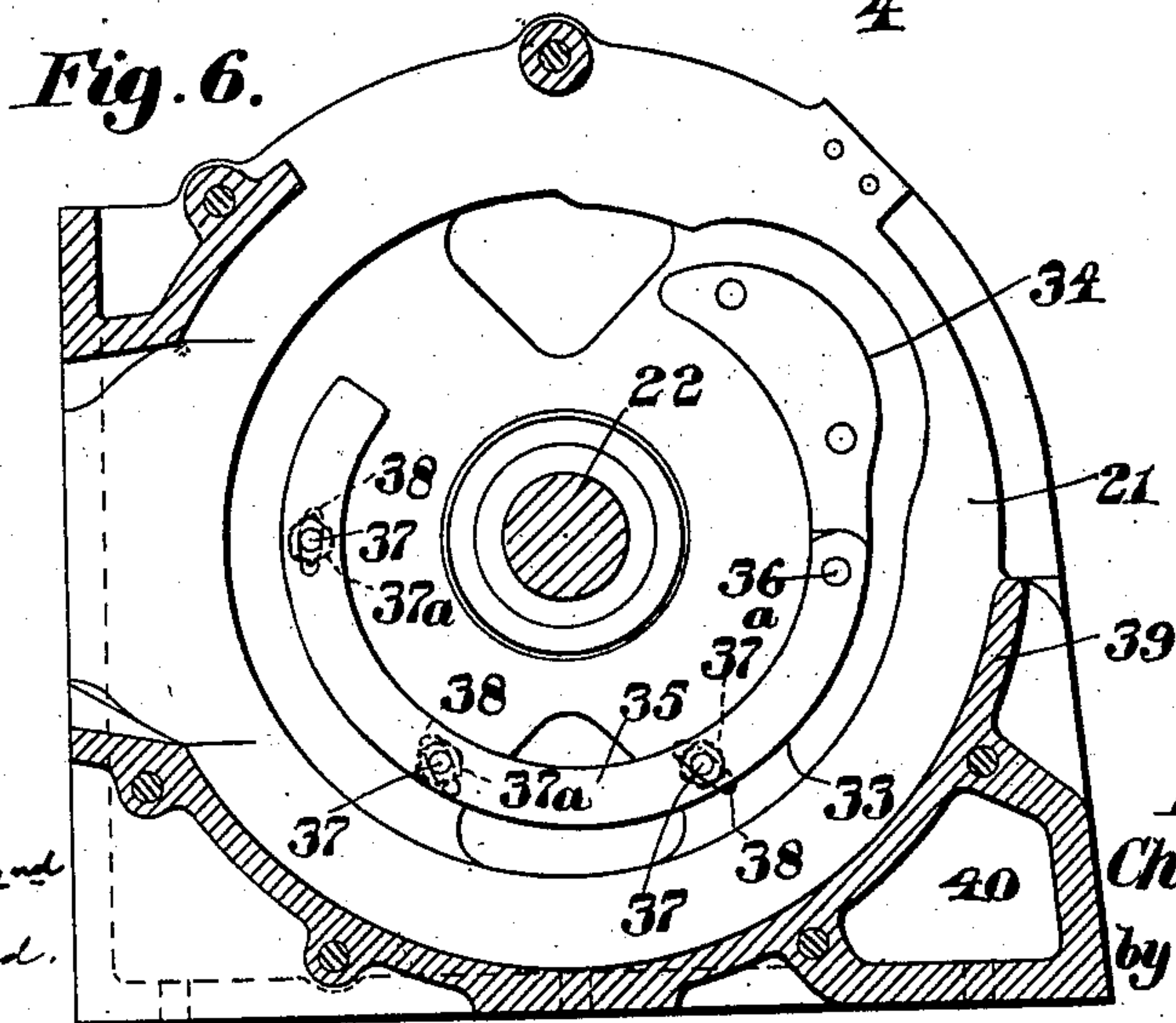
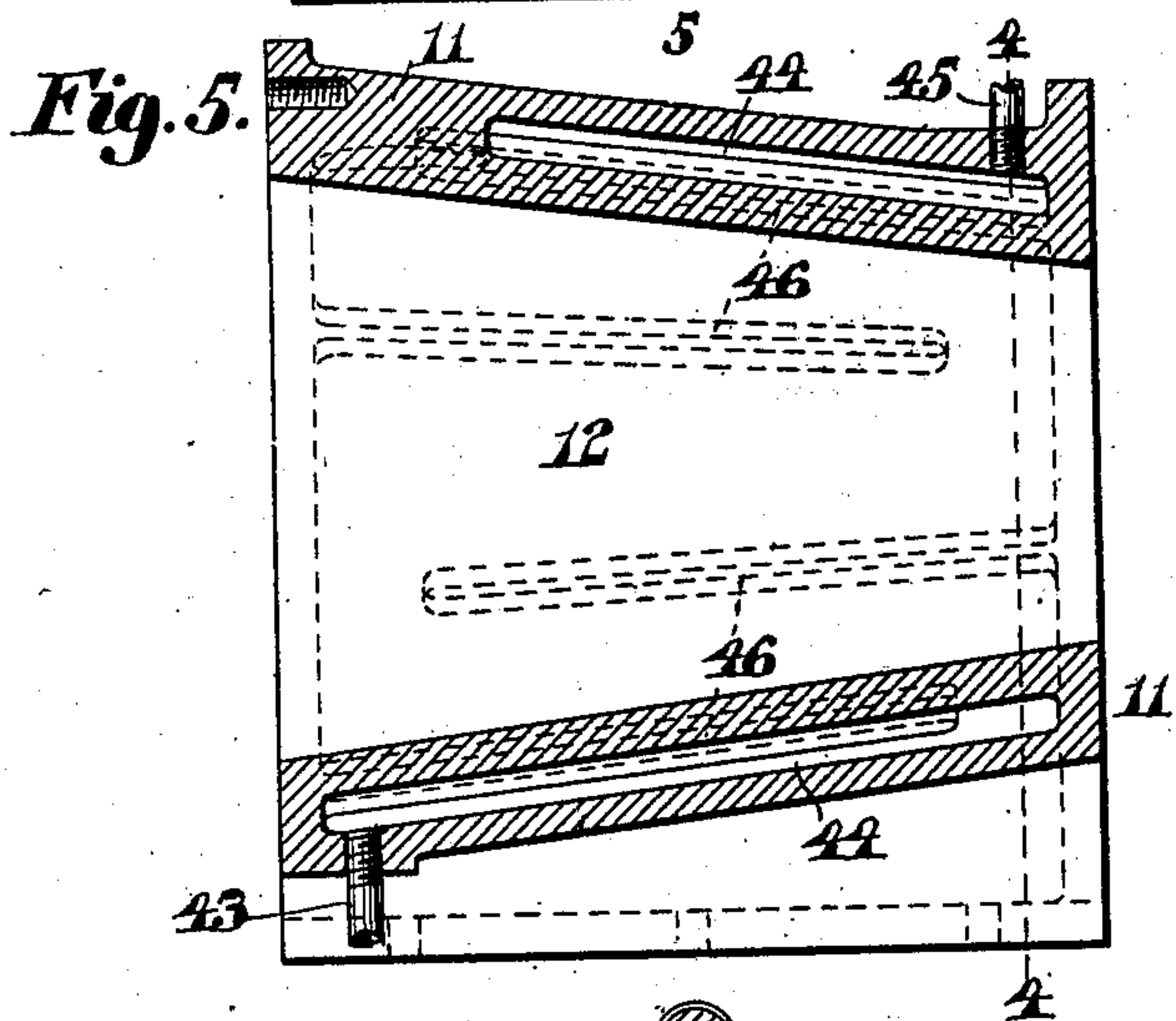
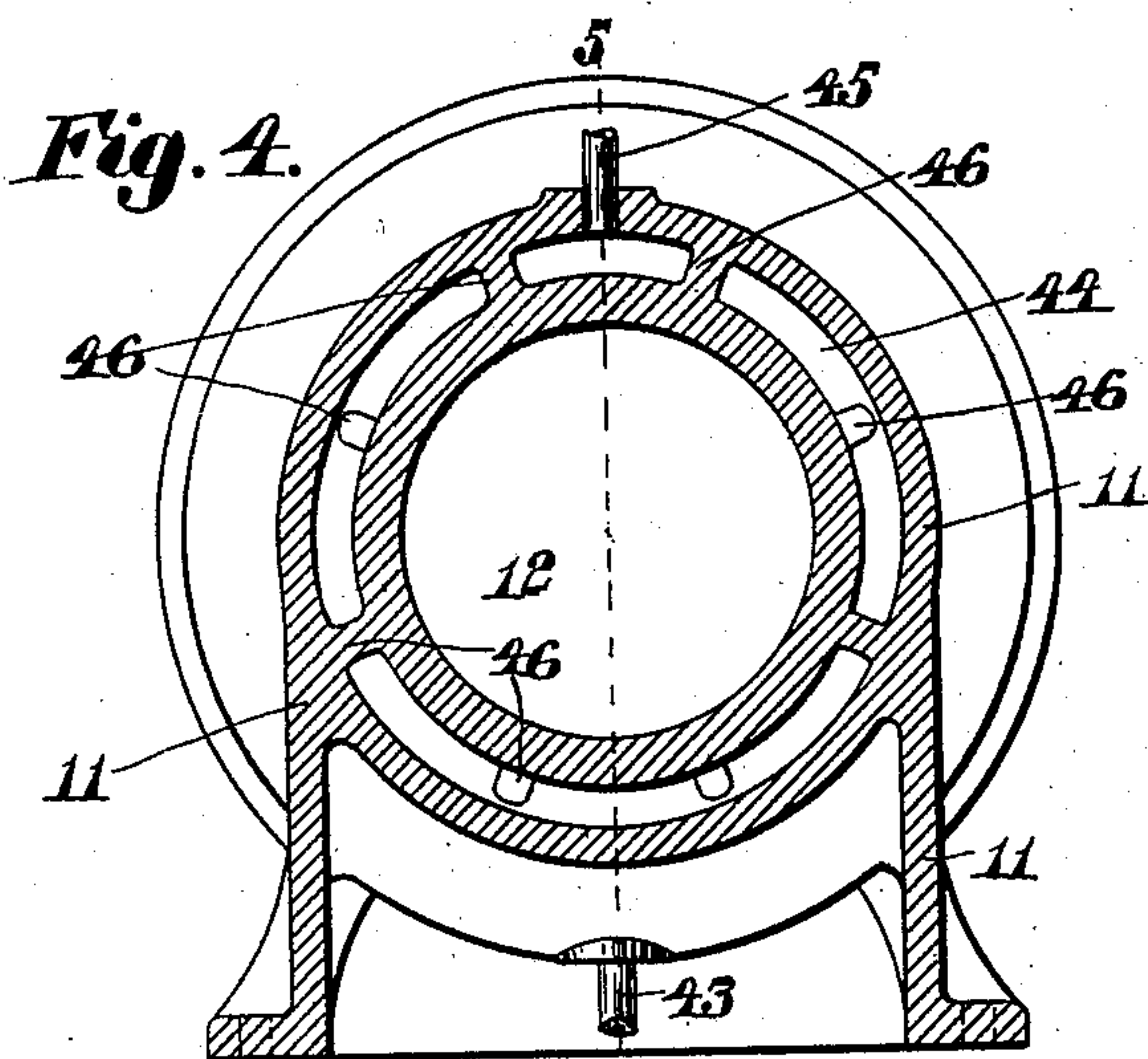
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Witnesses:
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Inventor:
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UNITED STATES PATENT OFFICE.

CHARLES D. JENKINS, OF BOSTON, MASSACHUSETTS.

MACHINE FOR FORMING BRIQUETS.

SPECIFICATION forming part of Letters Patent No. 762,906, dated June 21, 1904.

Application filed August 21, 1903. Serial No. 170,307. (No model.)

To all whom it may concern:

Be it known that I, CHARLES D. JENKINS, a citizen of the United States of America, and a resident of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Machines for Forming Briquets, of which the following is a specification.

This invention relates to machines for forming briquets of peat, soft coal, or similar material, and has for its object the production of a machine into which material may be fed, subjected to a great pressure, and delivered therefrom in briquets of uniform shape.

It consists in certain novel features in construction and arrangement of parts, which will be readily understood by reference to the description of the drawings and to the claims to be hereinafter given.

Of the drawings, Figure 1 represents a sectional plan of a machine embodying this invention, the cutting plane being on line 1 1 on Fig. 2. Fig. 2 represents a sectional plan of the same, the cutting plane being on line 2 2 on Fig. 1. Fig. 3 represents an enlarged sectional elevation of the same, the cutting plane being on line 3 3 on Fig. 2. Figs. 4 and 5 are respectively a transverse section and a vertical longitudinal section of the casing for the screw conveyer; and Fig. 6 represents a vertical section of a bed-plate, showing in elevation a side plate with its pivoted cam.

Similar characters designate like parts throughout the several figures of the drawings.

In the drawings, 10 is a main frame of the machine, having secured thereto a casing 11, in the conical chamber 12 of which is mounted a screw conveyer 13, to which the material to be used is fed through an inlet 14. The inlet 14 enters the conical chamber 12 near the outer end of the screw and at such an angle as to feed the material directly toward the edge of its blade, so that in the revolution of the screw conveyer 13 its cutting-blade will be forcing its way into the material being fed thereto.

The spindle 15 of the screw-conveyer 13 is mounted in a bearing 16 and is provided with

a gear 17, meshing with a pinion 18 on the main driving-shaft 19, which is driven by a pulley 20. On either side of the outlet of the chamber 12 and to the top of the frame 10 are secured two upright plates 21, provided with bearings for a shaft 22, which is provided with a gear 23, meshing with a pinion 24 on the shaft 25, which is driven at any desired speed by the pulley 26.

Between the plates 21 and upon the shaft 22 are securely mounted two wheels 27, each provided with a series of radial arms 28 and a central strengthening-rib 29, extending nearly to the end of said arms 28. These arms 28 of the two wheels 27 are in the same plane and coact with the side plates 21 to form a plurality of chambers open at their ends and in which are mounted a series of movable bottoms 30, provided with fingers 31, which straddle the ribs 29 of the wheels 27 for the purpose of directing the movement of said bottoms 30.

Each of the bottoms 30 is provided with lugs 32, which project into a recess in said plates 21 and are acted upon by the cam-surface 33 to control the movement of the bottoms 30, said bottoms 30 being kept at a uniform distance from the shaft 22 until they reach a convenient point, when the lugs 32 are operated upon by the throw 34 to move the bottoms to the extreme ends of the arms 28 to discharge from the chambers the briquets contained therein.

The cam-surface 33 is formed on a curved arm 35, pivoted at 36 to the side plates 21, and is held in adjusted position by a series of studs 37, projecting therefrom through slots 38 in said side plates 21, said studs being provided with clamping-nuts 37^a, the object of this arrangement being to be able to adjust the arm into different positions to vary the movement of the movable bottoms 30, and thereby vary the amount of compression given to the briquets in the chambers in the periphery of the wheels 27. Between the side plates 21 is secured by suitable bolts a bed-plate 39, the upper surface of which conforms to the periphery of the wheels 27, with which

it coacts when the material in the peripheral chambers of said wheels is being compressed. This bed-plate is provided with a heating-chamber 40, which is connected by a passage 5 41 to a heating-chamber 42, secured to the under side of the frame 10 beneath the revoluble wheels 27. This chamber 42 is connected by a pipe 43 to another heating-chamber 44, formed in the casing 11. This chamber 44 10 is provided with an inlet 45, by which steam or other heat may be introduced to said chambers, circulating through the series of heating-chambers, causing the material being fed to the wheels 27 and being operated upon to be 15 thoroughly heated, thereby facilitating the operation of the machine, and discharging the compressed peat in a thoroughly dried and baked form free from moisture.

The chamber 44 is provided with a series of 20 partitions 46, thereby forming a series of tortuous passages from the inlet 45 to the outlet 43, thus causing the heat to pass over the entire surface of the casing 11, thoroughly heating all parts thereof.

25 Each of the movable bottoms 30 is provided with a central rib 47 on its working surface, which is adapted to make a depression in the briquets compressed in each of said peripheral chambers, this depression acting as a ready 30 means for dividing the briquets, as is often desired for some uses.

The operation of the machine is as follows: The material to be used is fed into the machine through the inlet 14 to the screw conveyer 13, 35 which revolves toward the same, thereby cutting into the material being fed thereto and forcing the same through the conical chamber 12 to the inlet between the side plates 21 and into the chambers in the periphery of the 40 wheels 27, which, revolving in the direction of the arrow, Fig. 2, compresses the material therein by means of the action of the cam 33 upon the lugs 32, secured to the movable bottoms 30.

45 The screw conveyer 13 is arranged to deliver a greater quantity of material than the wheels 27 can remove without compression of the same, and as a consequence the material is forced into the chamber under a greater pressure and is delivered at a predetermined 50 point in a compact mass of uniform size. Both of the driving-shafts are driven from the counter-shafts at such a speed as will produce the best results.

55 It is believed that from the foregoing the invention will be thoroughly understood without further description.

Having thus described my invention, I claim—

60 1. A revoluble wheel provided with a series of compartments in its periphery and a movable bottom to each compartment, in combination with a frame, two independent side plates mounted upon said frame with parallel 65 sides rising at right angles thereto in contact

with said revoluble wheel and provided with suitable bearings for the same, an independent bed-plate interposed between said side plates having a bearing-surface conforming to the periphery of said revoluble wheel, and 70 means for securing together said side plates and bed-plate.

2. A revoluble wheel provided with a series of compartments in its periphery and a movable bottom to each compartment, in combination 75 with a frame, two independent side plates mounted upon said frame with parallel sides rising at right angles thereto and provided with suitable bearings for said revoluble wheel, and a bed-plate provided with a 80 heating-chamber.

3. A revoluble wheel provided with a series of compartments in its periphery and a movable bottom to each compartment, in combination 85 with a frame, a heating-chamber located beneath said revoluble wheel, two independent side plates mounted upon said frame with parallel sides rising at right angles thereto and provided with suitable bearings for said revoluble wheel, and a bed-plate interposed 90 between said side plates having a bearing-surface conforming to the periphery of said revoluble wheel.

4. Two revoluble wheels each comprising a hub, a series of transverse plates radiating 95 therefrom and a central rib connecting said transverse plates, in combination with a bed-plate, two independent side plates with parallel sides rising at right angles to said bed-plate and provided with suitable bearings for 100 said revoluble wheels, said side plates coacting with said transverse radial plates to form a series of compartments in the periphery of said wheels, and a series of movable bottoms 105 for said compartments having legs straddling said revoluble wheels.

5. Two revoluble wheels each comprising a hub, a series of transverse plates radiating 110 therefrom and a central rib connecting said transverse plates, in combination with a bed-plate, two independent side plates with parallel sides rising at right angles to said bed-plate and provided with suitable bearings for 115 said revoluble wheels, said side plates coacting with said transverse radial plates to form a series of compartments in the periphery of said wheels, a series of movable bottoms for said compartments having legs straddling said 120 revoluble wheels, each bottom being provided with a transverse projection adapted to make an indentation in the material compressed in each compartment to facilitate the division thereof.

6. A revoluble wheel comprising a hub, a series of transverse plates radiating therefrom 125 and a series of movable bottoms interposed between said plates, in combination with a bed-plate and two independent side plates with parallel sides rising at right angles to said bed-plate and provided with suitable bearings 130

for said revoluble wheel, a screw conveyer adapted to force the material to said revoluble wheel, and a heating-chamber encircling said screw conveyer.

5 7. A revoluble wheel comprising a hub, a series of transverse plates radiating therefrom and a series of movable bottoms interposed between said plates, in combination with a bed-plate, two independent side plates with parallel sides rising at right angles to said bed-plate and provided with suitable bearings for said revoluble wheel, a screw conveyer adapted to force material to said revoluble wheel, a heating-chamber encircling said screw conveyer, a chamber within which said screw conveyer is mounted, and an inlet to said chamber entering the same at such an angle as to feed the material directly against the edge of the blade of said screw conveyer.

20 8. A revoluble wheel comprising a hub, a series of transverse plates radiating therefrom and a series of movable bottoms interposed between said plates, in combination with a bed-plate, two independent side plates with parallel sides at right angles to said bed-plate and provided with suitable bearings for said revoluble wheel, said plates coacting with said transverse radial plates and movable bottoms to form a series of compartments in the periphery of said wheel, a cam-path formed in the faces of said plates to operate said movable bottoms, and a pivoted section by the adjustment of which the compression of the material in said compartments may be varied.

35 9. A revoluble wheel provided with a series of compartments in its periphery and a movable bottom to each compartment, in combination with a frame, two independent side plates mounted upon said frame with parallel sides between which said wheel revolves in contact with the side walls thereof, an independent bed-plate interposed between said side plates having a bearing-surface conforming to the periphery of said revoluble wheel, and means for securing together said side plates and bed-plate.

10. A revoluble wheel provided with a series of compartments in its periphery and a movable bottom to each compartment, in combination with a frame, two independent side plates mounted upon said frame with parallel sides between which said wheel revolves, and a bed-plate provided with a heating-chamber.

11. A revoluble wheel provided with a series of compartments in its periphery and a movable bottom to each compartment, in combination with a frame, a heating-chamber located beneath said revoluble wheel, two independent side plates mounted upon said frame with parallel sides between which said wheel revolves, and a bed-plate interposed between said side plates having a bearing-surface conforming to the periphery of said revoluble wheel.

12. Two revoluble wheels each comprising a hub, a series of transverse plates radiating therefrom and a central rib connecting said transverse plates, in combination with a bed-plate, two independent side plates with parallel sides between which said wheels revolve, said side plates coacting with said transverse radial plates to form a series of compartments in the periphery of said wheels, and a series of movable bottoms for said compartments, each extending over both wheels and having legs straddling their central ribs.

13. Two revoluble wheels each comprising a hub, a series of transverse plates radiating therefrom and a central rib connecting said transverse plates, in combination with a bed-plate, two independent side plates with parallel sides between which said wheels revolve, said side plates coacting with said transverse radial plates to form a series of compartments in the periphery of said wheels, a series of movable bottoms for said compartments each extending over both wheels and having legs straddling their central ribs and each bottom being provided with a transverse projection adapted to make an indentation in the material compressed in each compartment to facilitate the division thereof.

14. A revoluble wheel comprising a hub, a series of transverse plates radiating therefrom and a series of movable bottoms interposed between said plates, in combination with a bed-plate and two independent side plates between which said wheel revolves, a screw conveyer adapted to force the material to said revoluble wheel, and a heating-chamber encircling said screw conveyer.

15. A revoluble wheel comprising a hub, a series of transverse plates radiating therefrom and a series of movable bottoms interposed between said plates, in combination with a bed-plate and two independent side plates between which said wheel revolves, a screw conveyer adapted to force the material to said revoluble wheel, and a heating-chamber encircling said screw conveyer and provided with a series of tortuous passages.

16. A revoluble wheel comprising a hub, a series of transverse plates radiating therefrom and a series of movable bottoms interposed between said plates, in combination with a bed-plate, two independent side plates with parallel sides between which said wheel revolves, a screw conveyer adapted to force the material to said revoluble wheel, a heating-chamber encircling said screw conveyer, a chamber within which said screw conveyer is mounted, and an inlet to said chamber entering the same at such an angle as to feed the material directly against the edge of the blade of said screw conveyer.

17. A revoluble wheel comprising a hub, a series of transverse plates radiating therefrom and a series of movable bottoms interposed between said plates, in combination with a bed-

plate, two independent side plates with parallel sides between which said wheel revolves, said plates coacting with said transverse radial plates and movable bottoms to form a series
5 of compartments in the periphery of said wheel, a cam-path formed in the faces of said plates to operate said movable bottoms, and a pivoted section by the adjustment of which

the compression of the material in said compartments may be varied.

Signed by me at Boston, Massachusetts,
this 20th day of August, 1903.

CHARLES D. JENKINS.

Witnesses:

WALTER E. LOMBARD,

EDNA C. CLEVELAND.