

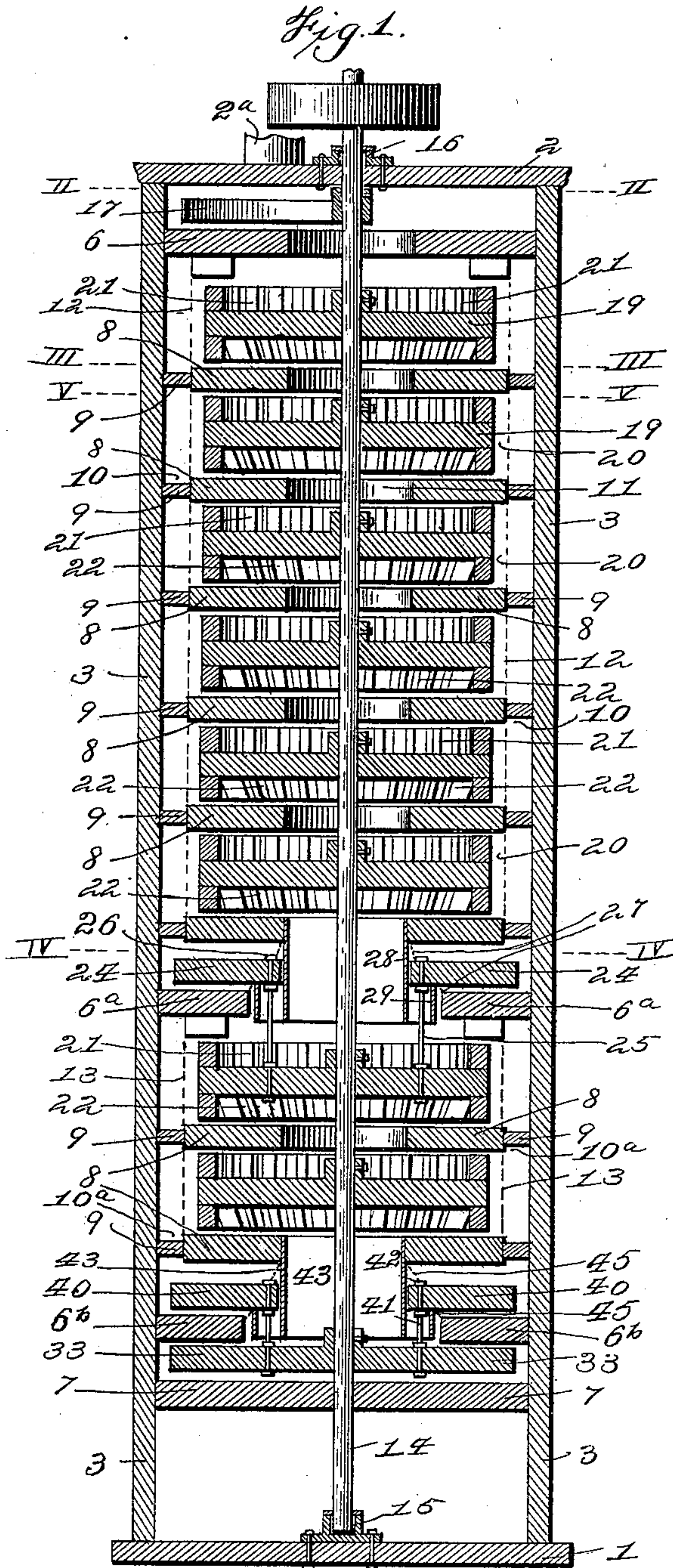
(No Model.)

4 Sheets—Sheet 1.

I. G. SEIFRIED.
VERTICAL BOLTING MACHINE.

No. 594,760.

Patented Nov. 30, 1897.



Witnesses:
Herbert Bradley
Geo. E. Cruse.

Inventor:
Isaac G. Seifried
By Knight Bros
Attorneys.

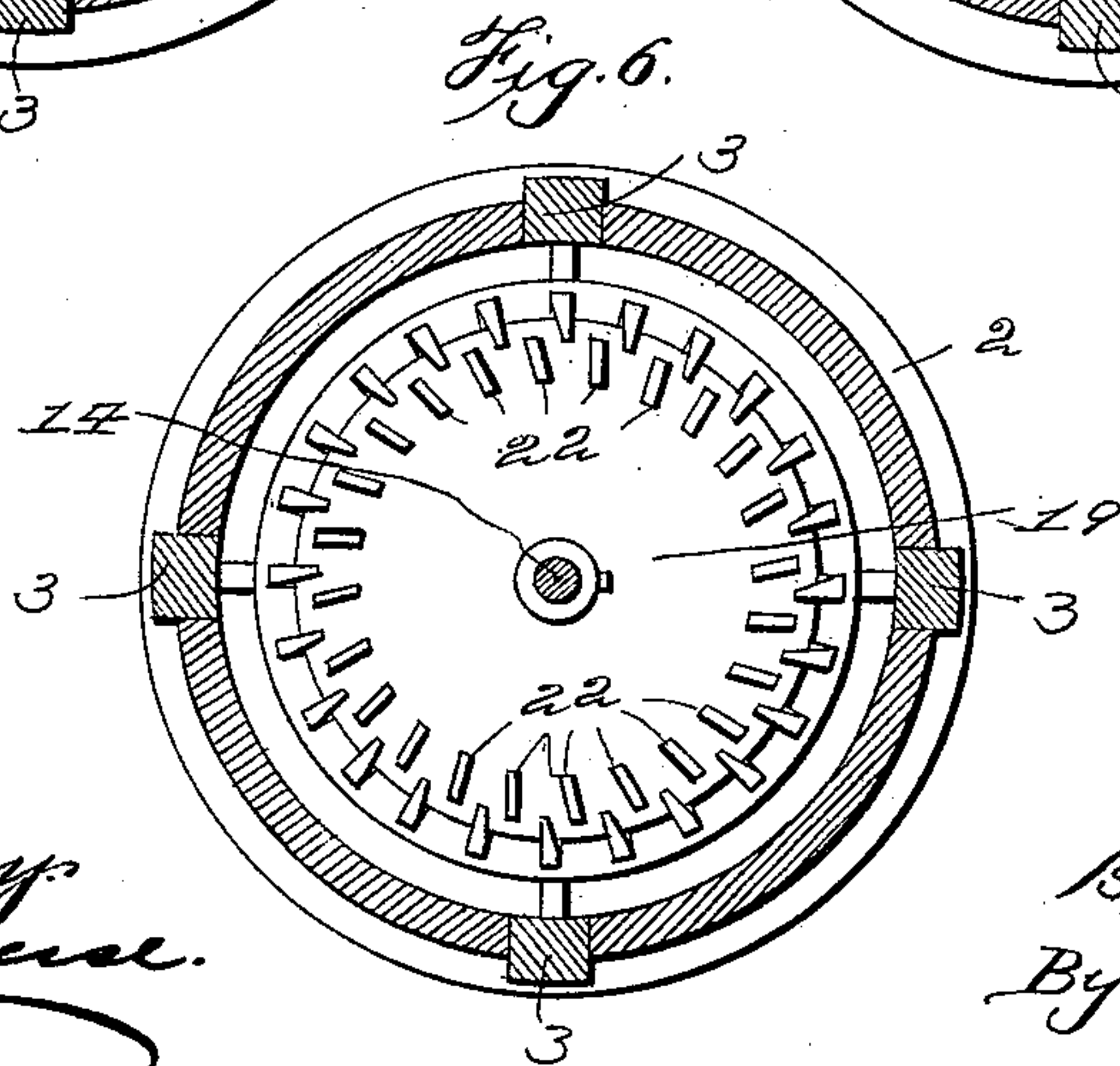
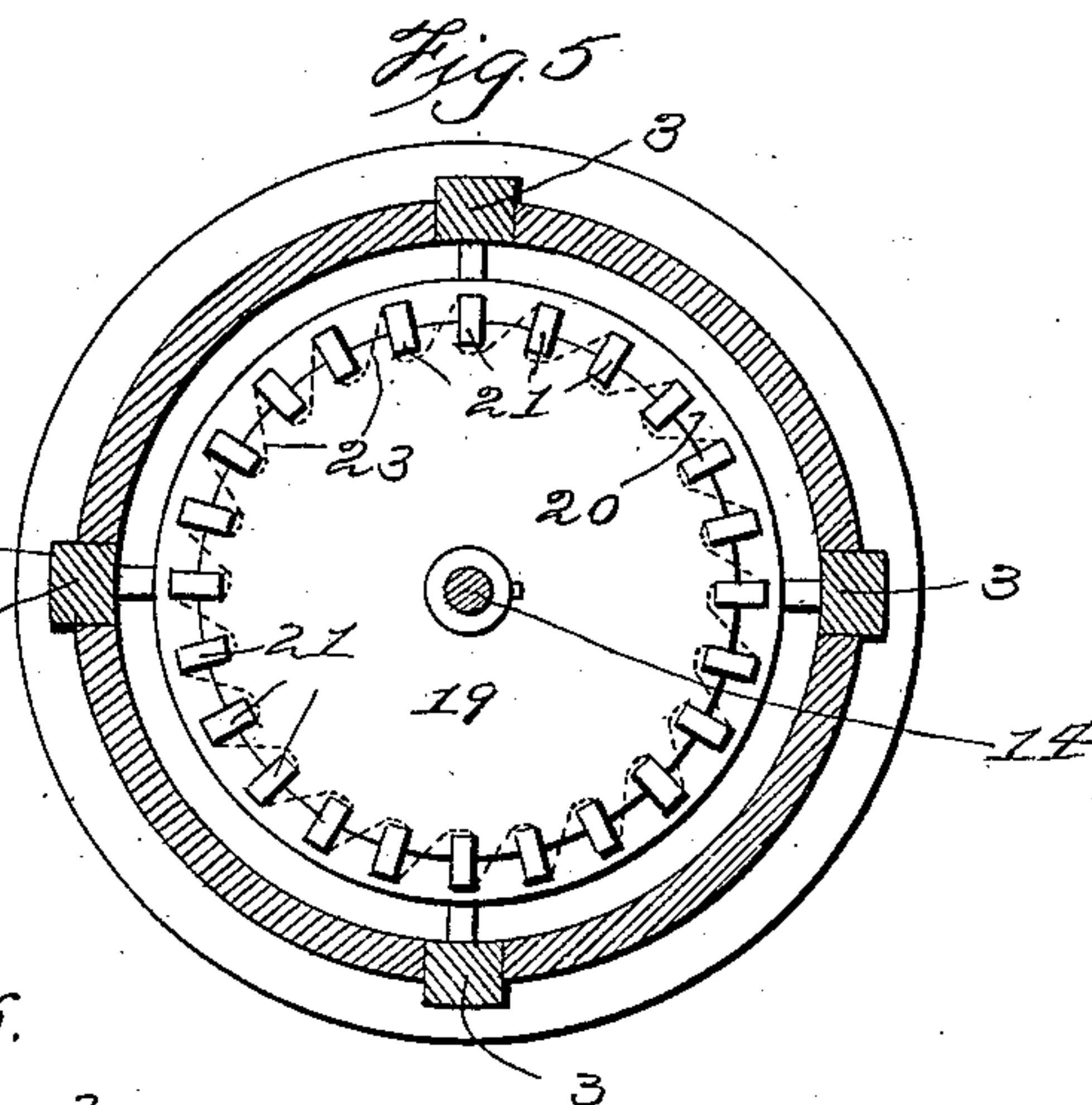
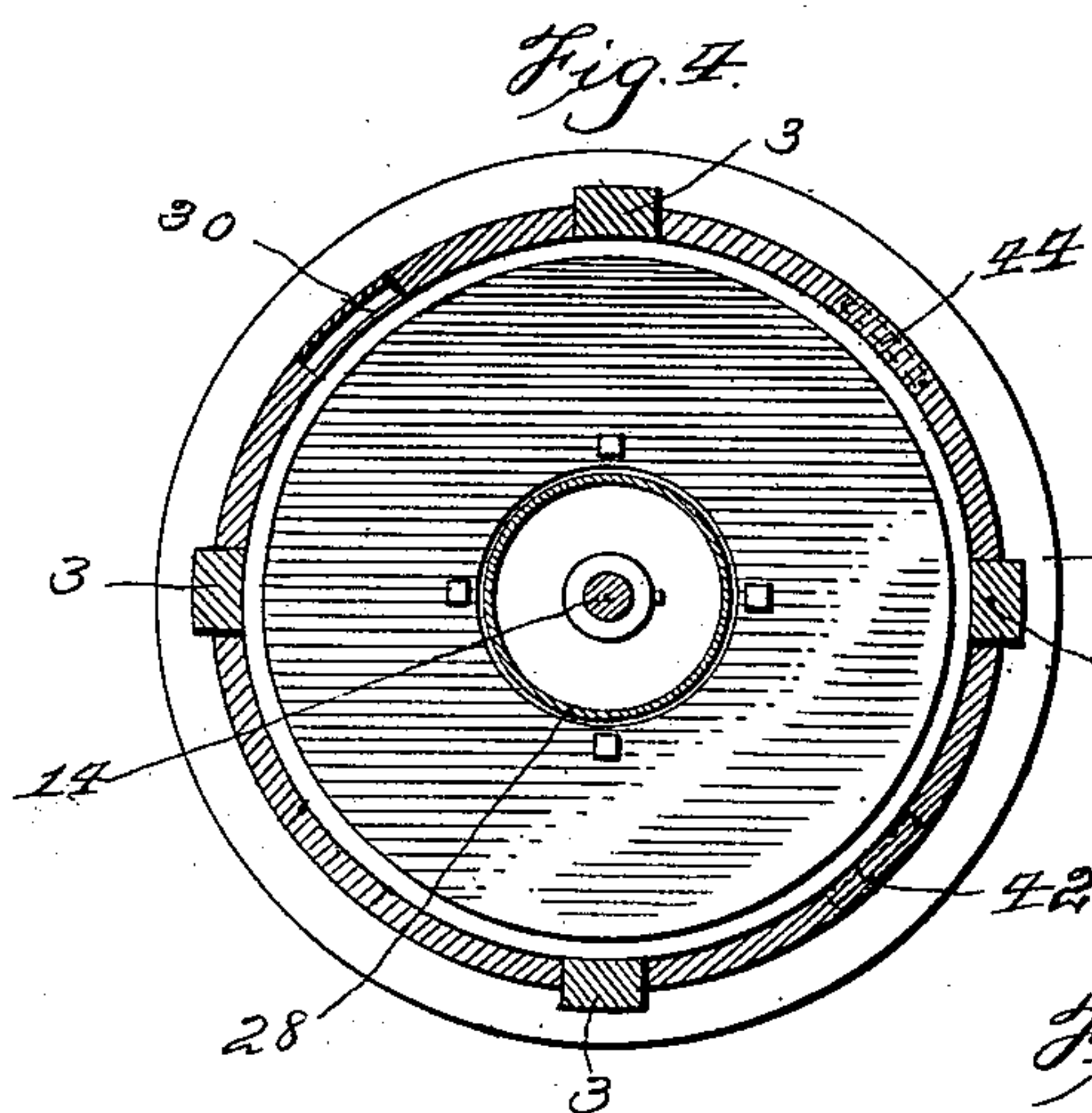
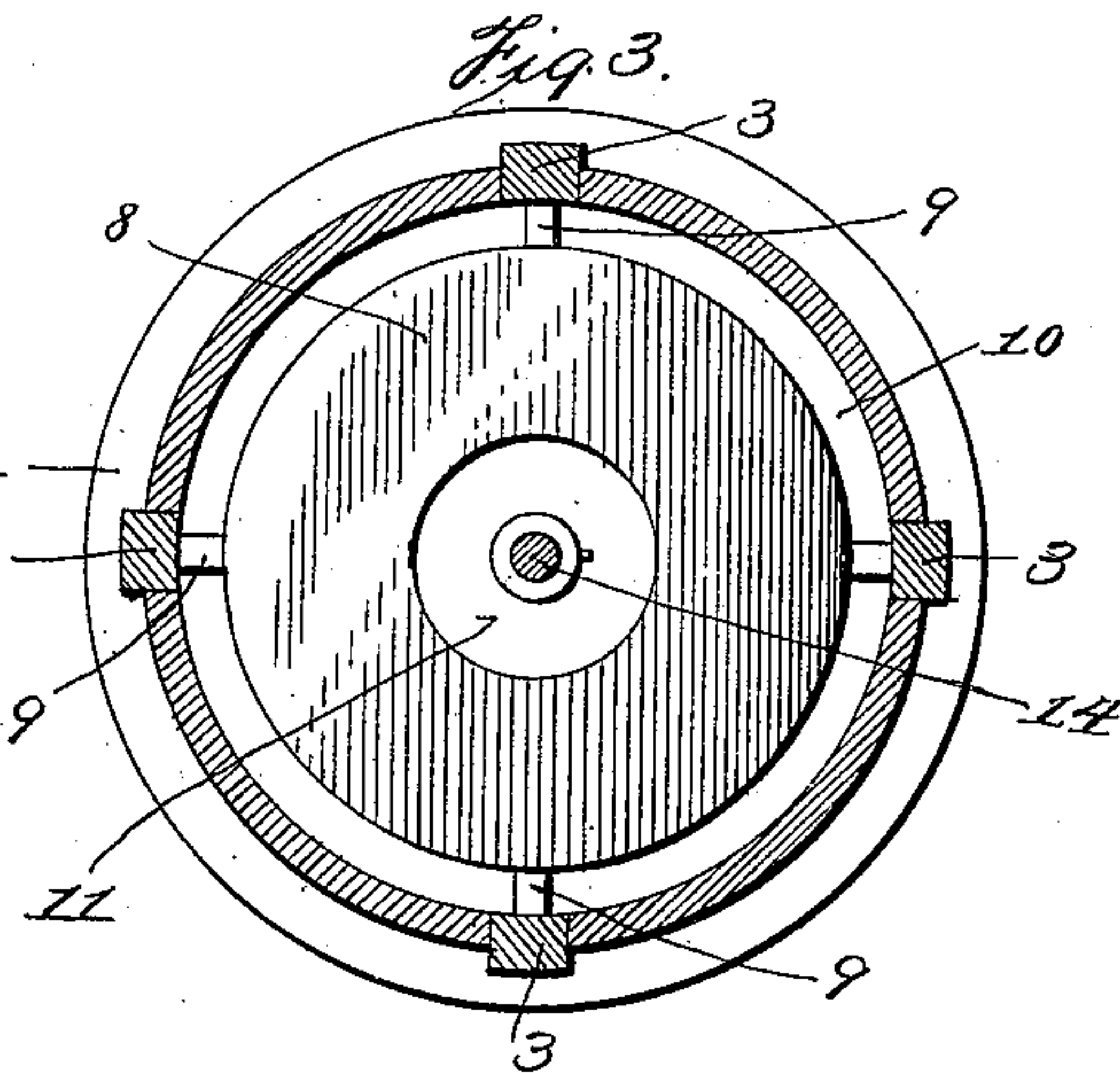
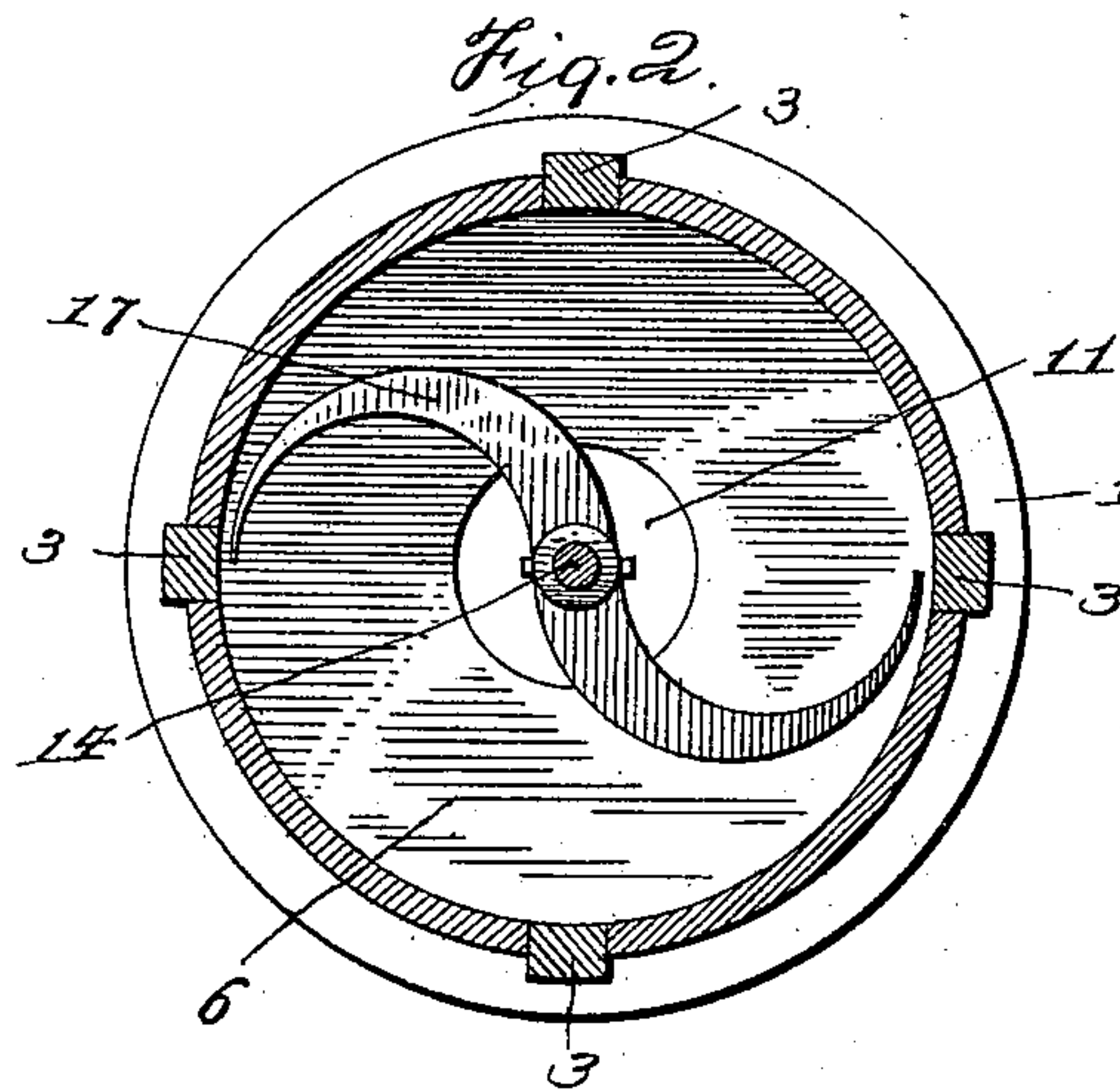
(No Model.)

4 Sheets—Sheet 2.

I. G. SEIFRIED.
VERTICAL BOLTING MACHINE.

No. 594,760.

Patented Nov. 30, 1897.



Witnesses:

Herbert Padley
Ed. C. Bruce

Inventor:

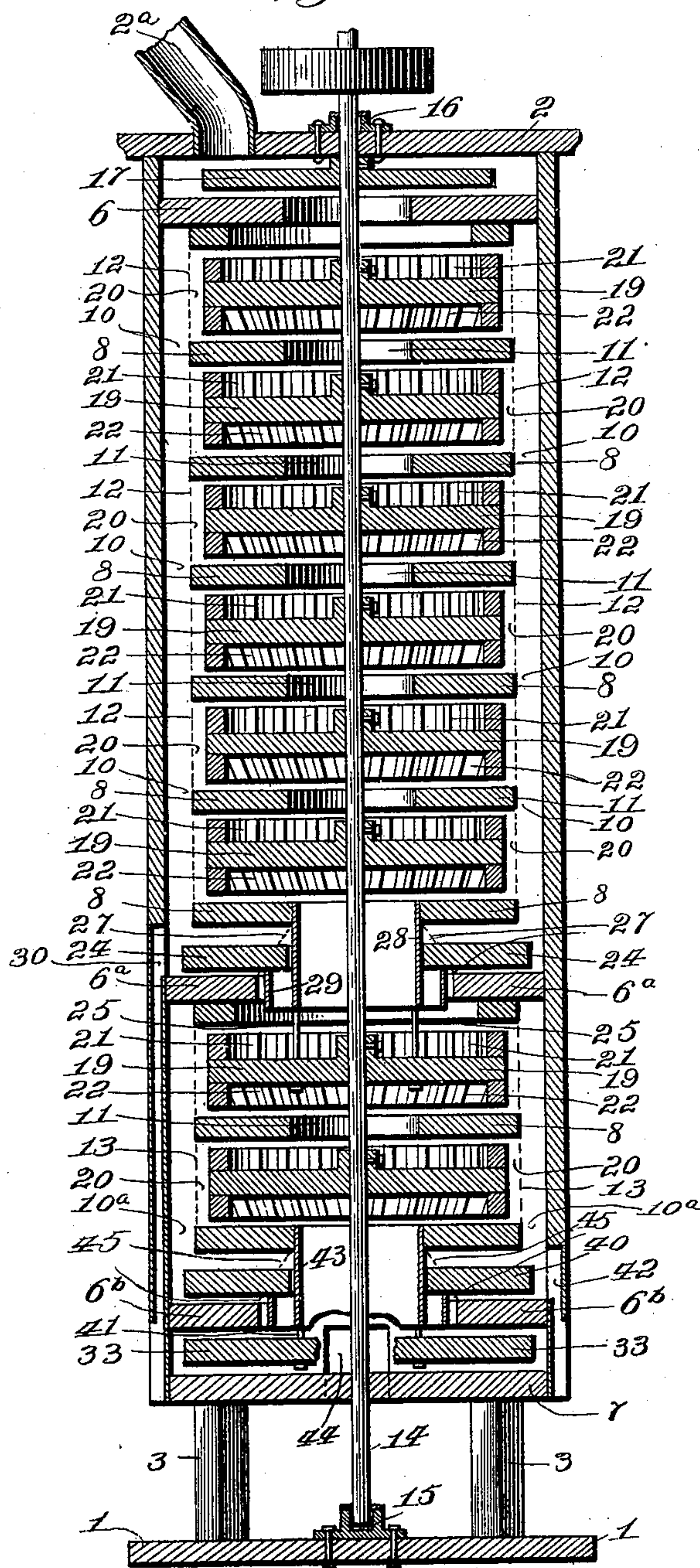
Isaac G. Seifried
By *Knight Bros*
Attorneys

4 Sheets—Sheet 3.

No. 594,760.

Patented Nov. 30, 1897.

Fig. 7.



Herbert Bradley

Fred R. Proctor.

Inventor.
Isaac G. Seyfried.

By Knight Bros
May's.

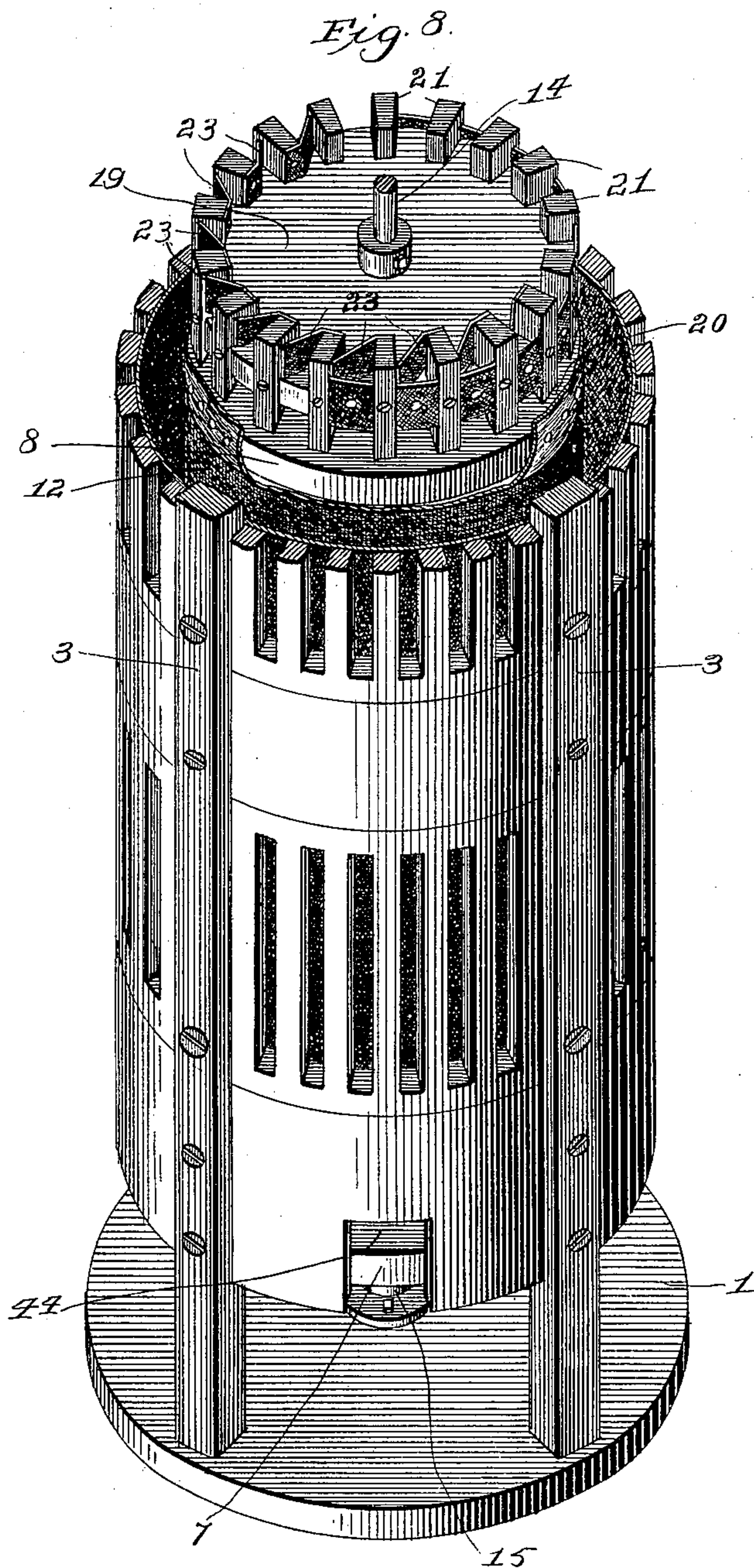
(No Model.)

4 Sheets—Sheet 4.

I. G. SEIFRIED.
VERTICAL BOLTING MACHINE.

No. 594,760.

Patented Nov. 30, 1897.



Witnesses:

Herbert Bradley
J. O. Cruise.

Inventor:
Isaac G. Seifried.

By *Knight*
Att'y.

UNITED STATES PATENT OFFICE.

ISAAC G. SEIFRIED, OF FINDLAY, OHIO.

VERTICAL BOLTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 594,760, dated November 30, 1897.

Application filed March 30, 1896. Serial No. 585,472. (No model.)

To all whom it may concern:

Be it known that I, ISAAC G. SEIFRIED, a citizen of the United States, residing at Findlay, in the county of Hancock and State of Ohio, have invented certain new and useful Improvements in Vertical Bolting-Machines, of which the following is a specification.

My invention relates to an improvement in vertical bolting-machines by which and aside from the fact that in machines of this class a better separation of the material is had I am enabled to construct it much cheaper and smaller than the machines commonly used and to operate it with much less power.

In my present machine the bolting-cloth is stationary and the material is thrown against it a number of times by centrifugal force, while at the same time it is made to pass in a circuitous direction through the machine, and after the complete separation the different grades are conducted away without any danger of their becoming mixed again, as is sometimes the case in other machines; and my invention consists in certain features of construction, as will be hereinafter more fully pointed out, for attaining the above and other desirable results.

In order that my invention may be fully understood, I will proceed to describe the same with reference to the accompanying drawings, in which—

Figure 1 is a vertical section of my machine. Fig. 2 is a horizontal section taken on the line II II, Fig. 1. Fig. 3 is a similar section taken on the line III III, Fig. 1. Fig. 4 is a similar section taken on the line IV IV, Fig. 1. Fig. 5 is also a section taken on the line V V, Fig. 1; and Fig. 6 is a bottom view of the wheel shown in Fig. 5. Fig. 7 is a vertical axial section taken through the two diametrically opposite flour-outlets and showing the tailings-outlet beyond, parts being broken away to disclose the latter. Fig. 8 is a perspective view, partly broken away, to show the interior thereof.

In the said drawings, 1 represents the circular base, 2 the top, and 3 the upright posts, connecting the parts 1 and 2. The intervening space between the posts 3 is closed by lattice-work or by any other means, and it is so secured as to be readily moved in case it is desired to repair any of the parts.

6 represents an annular shelf located at the top of the machine, extending out to the outer

wall and upon which the material is fed by suitable means through an opening 2^a in the top. 7 is the bottom shelf, upon which the tailings fall and over which they pass from the machine. These shelves are secured directly to the post by any suitable means.

8 represents a number of smaller annular shelves spaced apart in vertical series intermediate of the top and bottom. They are also secured to the post 3, but through the medium of the blocks 9, for the purpose of forming spaces 10 and 10^a, hereinafter referred to.

As will be seen, all of the interposed smaller shelves 8 are formed with the central openings 11, and they are divided into a plurality of groups, (I have shown two,) and about the peripheries of the respective groups the bolting-cloths 12 and 13, of different mesh, are secured to inclose the said shelves and permit the escape in a radial direction of as many grades of flour.

6^a 6^b represent larger annular shelves placed at the bottom of each bolting-section and forming bottoms to the settling-spaces 10 and 10^a, from which the separate grades of flour are passed off, as will presently appear.

14 represents a central shaft which is mounted at its lower end in the step-block 15 and suitably journaled at its upper end, as shown at 16, and there provided with means for driving the shaft. Secured to the shaft at its upper end and working on the top shelf 6 is an S-shaped conveyer 17 for primarily feeding the material from that shelf.

19 represents a series of wheels secured to the shaft 14 and working intermediate of the annular shelves 8. These wheels are of such diameter as to leave a peripheral space 20 between them and the bolting-cloth, so as to permit the material which does not pass through the cloth to fall upon the next annular shelf below. The wheels 19 are provided with peripheral beaters 21, which drive the material against the bolting-cloth to cause the sifting action, and on their under sides with the inclined flights 22, which serve to guide the material which drops upon the shelf inward to the central openings 11, whence it is discharged upon the wheel beneath. The peripheral beaters projecting above the wheels are provided with cloths 23, Fig. 5, each secured at one end to the inner edge of a beater and having a free end lapping over against

the outer edge of an adjacent beater. The objects of this valve-like arrangement are to prevent the material passing off the wheels too rapidly and to cause the material to be 5 sprayed out against the bolting-cloth.

As above stated, the cloths 12 and 13 are of different mesh, and at the bottom of the space 10, surrounding the upper group of annular shelves carrying the cloth of finer mesh 10 and leading from shelf 6^a, I provide an outlet 30, while leading from the shelf 6^b on the opposite side I provide an outlet 42, so that the material which passes through the top cloth will fall down through the space 10 15 upon the shelf 6^a and there escape, while material passing through the lower bolting-section drops on shelf 6^b and there escapes to a separate receptacle.

Above the shelf 6^a is a conveyer 24 for insuring discharge of material accumulating thereon, while above the shelf 6^b is a conveyer 40 for a similar purpose. This conveyer 24 is supported from and rotated by the wheel 19, next below it, through the medium 25 of bolts 25 and nuts 26, while the conveyer 40 is similarly supported by bolts 41 and nuts 42 from the bottom wheel 33. Cloths 27 (shown in dotted lines) close the spaces between shelf 6^a and conveyer 24 and between said conveyer 30 and a tube 28 to prevent the flour becoming again mixed with the coarser material. Similar cloths 45 make tight closures at the bottom of the other bolting-section. The conveyers move over the shelves 6^a and 6^b and 35 force the material to the openings 30 and 42, formed in the lattice-work, whence it may pass to receptacles provided for it. The coarser material, which could not pass through the first cloth, is guided to the tube 28, which 40 is secured to one of the shelves 8, and it drops through this tube upon the first wheel of the next bolting-section, which throws it against the cloth 13 of coarser mesh and another separation takes place. The particles which pass 45 through the cloth drop upon the ring 6^b, whence it is delivered as above explained. The residue of coarse material is then guided by the conveyers on the wheel to the tube 43, through which the material falls onto the 50 wheel 33 and bottom shelf 7, and it is then conducted by the wheel 33 out through the opening 44. (Shown best in Fig. 7.)

The operation of my device will be readily seen from the above description and drawings, but, briefly stated, is as follows: The material is fed to the machine and the S-shaped conveyer feeds it onto the first wheel. This wheel throws it by centrifugal force against the cloth, and the material that does 60 not pass through drops through the peripheral space onto the shelf beneath, and it is then guided to the central opening of this shelf onto the next wheel by the blades on the preceding wheel. This operation is kept 65 up throughout the machine, the material being thrown by centrifugal force against the cloth and the residue passing in a circuitous

direction through the machine until it is completely separated and conducted away. Obviously by mere multiplication of parts the 70 separation could be divided into more than three grades.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent: 75

1. In a vertical bolting-machine, the combination of a suitable casing, a series of superposed shelves having central openings, and secured within said casing, a series of revolving wheels located intermediate of each shelf, 80 and each wheel having restricted peripheral passages for throwing the material received from one shelf against the bolting-cloth and having means on its under side for guiding the residue of material upon the next shelf 85 below and suitable means for conducting away the separated material, substantially as shown and described.

2. In a vertical bolting-machine, the combination of a suitable casing, a series of superposed annular shelves secured therein, bolting-cloth inclosing said shelves, a series of revolving wheels located intermediate of said shelves and each wheel having means for 90 throwing the material received from one shelf against the bolting-cloth, consisting of a series of beaters located on the periphery of the wheels, cloths, each secured at one side to one of the beaters and having its free end bearing against the adjacent beater, and inclined conveyer-strips located on the under 95 side of the wheels, for guiding the residue of material over the next shelf below upon the next wheel below, substantially as shown and described. 100 105

3. In a vertical bolting-machine, the combination of a suitable casing having a top and bottom piece, a series of superposed shelves having central openings located within the framework, bolting-cloth of one mesh surrounding a number of said shelves, and bolting-cloth of different mesh surrounding the remainder of said shelves, settling-chambers outside of said bolting-cloths, separated by 110 suitable bottoms having separate outlets, a central shaft for said framework and having secured thereto, a number of wheels revolving intermediate of said shelves and having means in connection with each wheel for throwing the material against the bolting-cloth and conveying the residue over the next 115 shelf to the next wheel below, conveyers located over the bottoms of the respective settling-chambers for conveying away the separated material, tubes leading from the tailings of each section and extending through the conveyers and bottoms, and bolts extending to and supporting each of said conveyers from the wheel next below, substantially as 120 and for the purpose set forth. 125

ISAAC G. SEIFRIED.

Witnesses:

BEECHER W. WALTERMIRE,
CHARLES W. SEIFRIED.