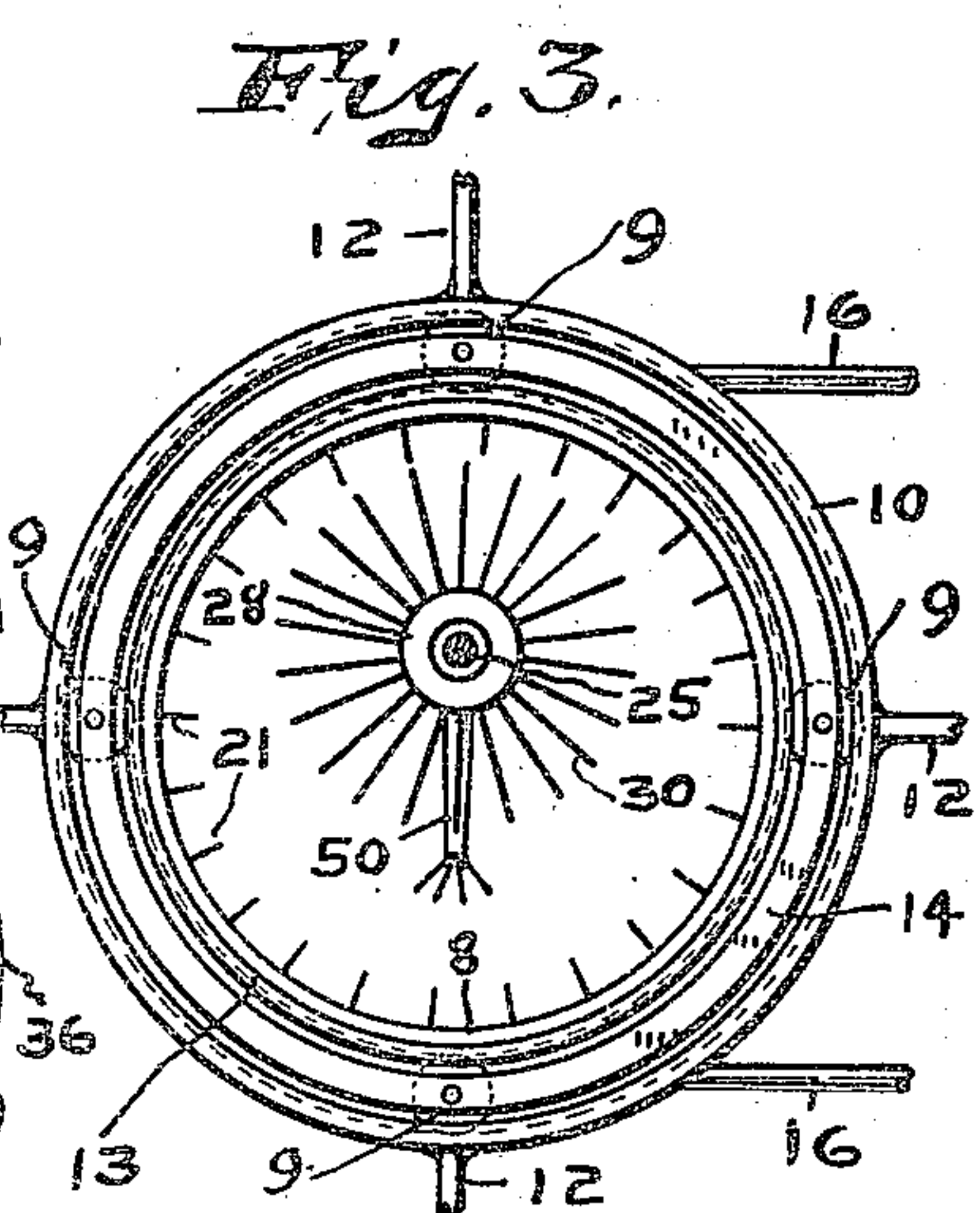
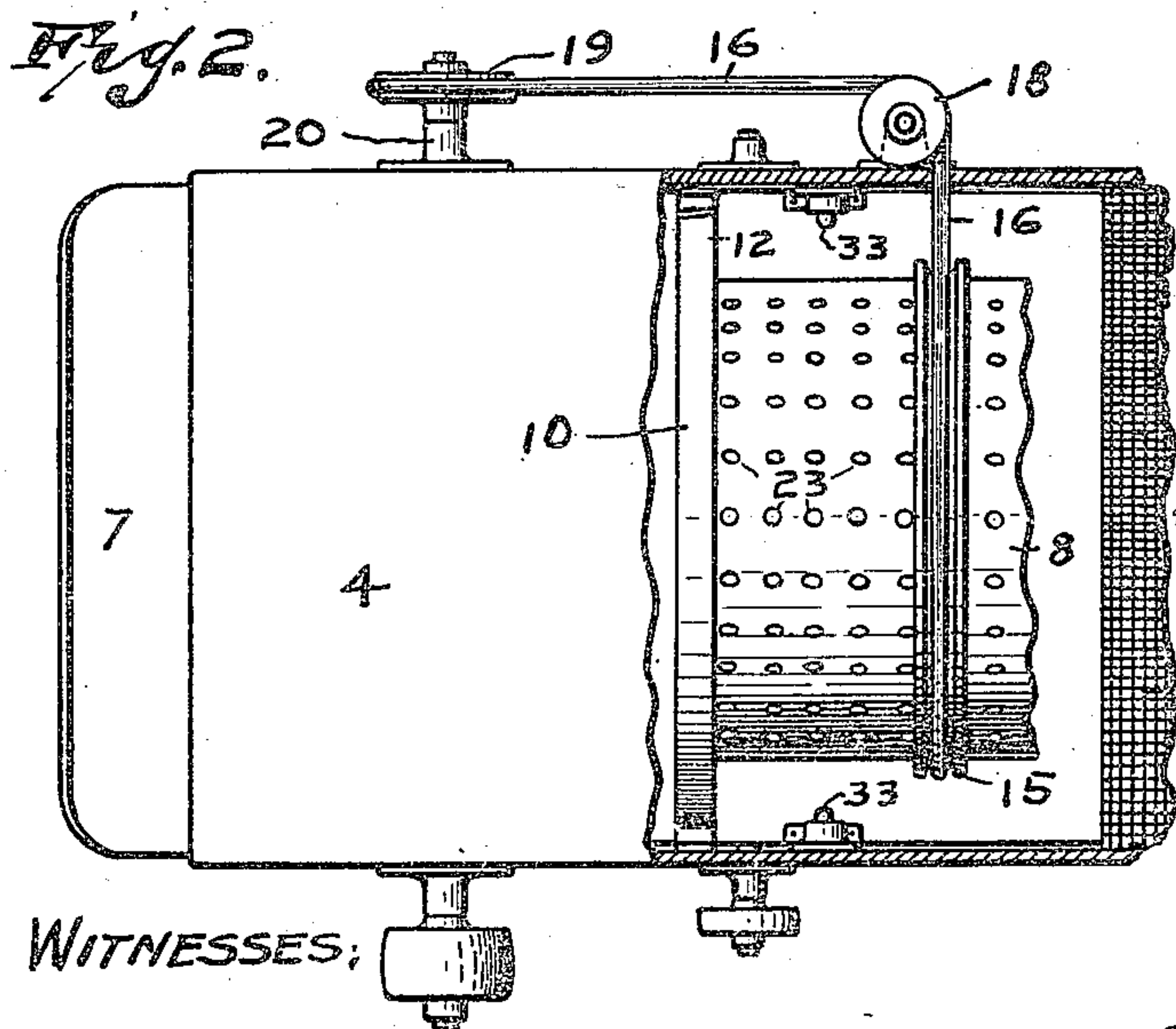
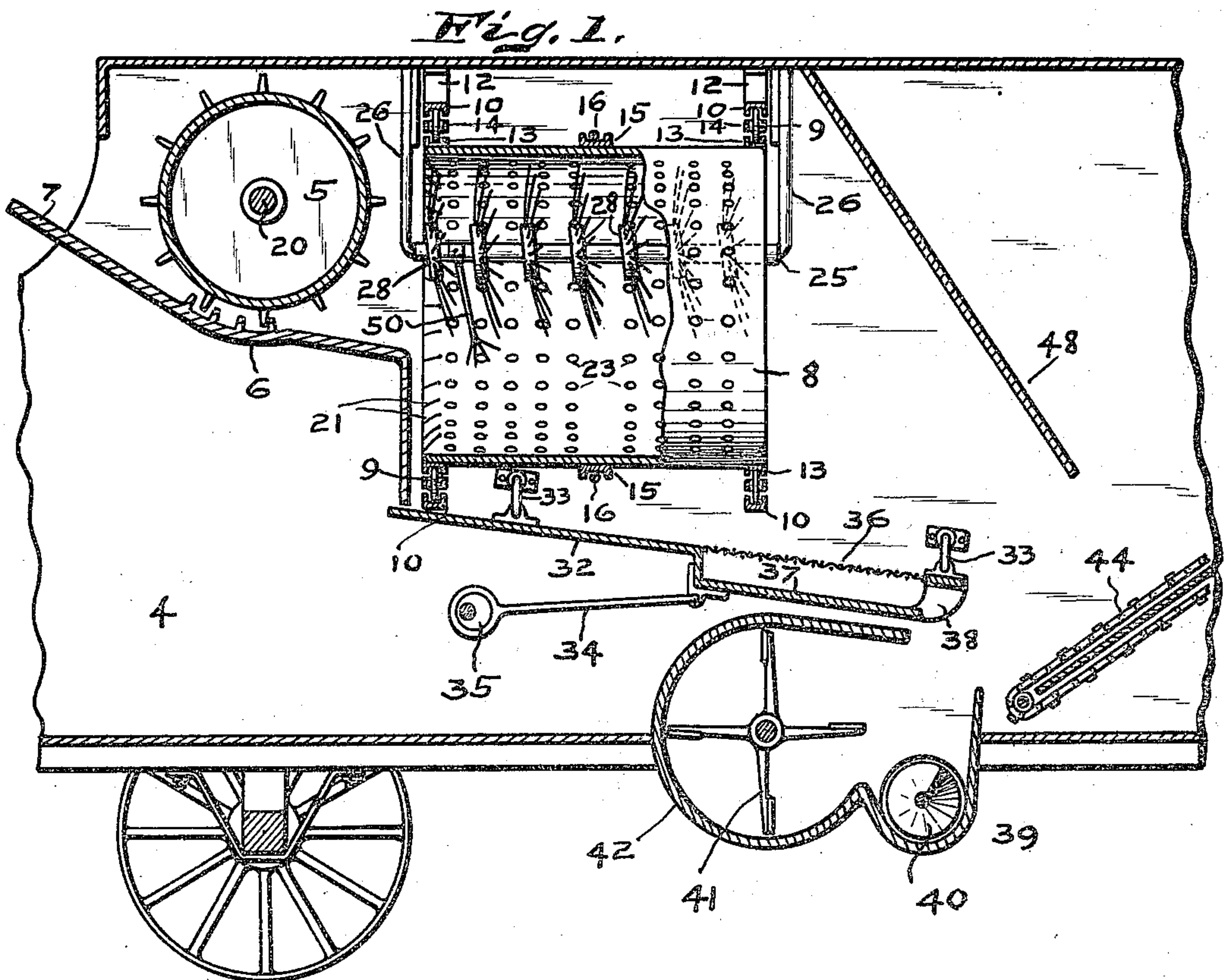


S. HERR.  
THRESHING MACHINE.  
APPLICATION FILED MAR. 25, 1909.

961,775.

Patented June 21, 1910.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

SHIRL HERR, OF CRAWFORDSVILLE, INDIANA.

THRESHING-MACHINE.

961,775.

Specification of Letters Patent. Patented June 21, 1910.

Application filed March 25, 1909. Serial No. 485,739.

*To all whom it may concern:*

Be it known that I, SHIRL HERR, a citizen of the United States, residing at Crawfordsville, in the county of Montgomery and State of Indiana, have invented certain new and useful Improvements in Threshing-Machines, of which the following is a specification.

This invention relates to improvements in machines for separating grain or seed of any kind from its straw or stalk, and for thoroughly cleaning said grain or seed, and the object of the invention is to improve and simplify the construction and arrangement of machines of this character whereby the same will be efficient and reliable in operation, compact, and less expensive to manufacture.

With the above and other objects in view the invention consists of certain novel features of construction, combination, and arrangements of parts, as will be hereinafter described and claimed.

Referring to the accompanying drawing, in which like characters indicate like parts throughout the several views—Figure 1 is a detail in longitudinal vertical section of a threshing machine embodying my invention. Fig. 2 is a detail in plan view and partial horizontal section of the front portion of the machine, and Fig. 3 is a detail in end view of the drum for separating the loose grain or seed from its straw or stalks.

In the drawing, 4 denotes the frame of the machine, which may be of any suitable construction. On the forward end of the frame 4 is arranged the usual spike-thresher cylinder 5 which coacts with the usual concave 6 located below the cylinder and into which grain to be threshed is fed from the usual feeding board 7. The grain is discharged from the cylinder 5 into a perforated rotary separator-drum 8, which extends longitudinally of the machine in a horizontal plane. The drum 8 is mounted on friction wheels 9 which run in annular tracks 10. The tracks 10 are channel bars with their channels formed to receive the wheels 9, and said tracks 10 are supported in a fixed position by the stays 12 which extend from the tracks to the frame 4. There may be as many tracks 10 and series of wheels 9 as may be deemed necessary to properly support the drum 8. In the drawing I have illustrated two tracks, one at each end of the drum. The wheels 9 have their bearings in the

channels of the annular bars 13 which are attached to the ends of drum 8 in the manner shown, and in order to maintain the friction wheels 9 at their proper relative distances from each other I provide said wheels with axles which are journaled in annular bars 14, each series of wheels 9 being mounted between two of said annular bars 14 placed parallel with each other for the intended purpose.

15 is a channel bar annularly surrounding the drum 8 approximately at its middle portion to form the sheave or run for a cable 16 which passes out of the frame 4, from the drum 8 around the idlers 18 and pulley 19 on the same shaft 20 which carries the threshing-cylinder 5. Rotary motion is thus transmitted to the drum 8. The rear end of the drum 8, or end toward the rear of the frame 4, is open for the free discharge of straw therefrom, and the opposite or front end of the drum is open in like manner for the entrance of the grain coming from the threshing-cylinder 5, but this end is provided with a series of hooks 21 which have their free ends turned inwardly of the interior of the drum. The purpose of these hooks is to prevent the straw, which has once entered the drum 8, from being forced back toward the cylinder 5. The walls of the drum 8 are provided with the numerous perforations 23.

The loosely mixed straw and grain from the threshing-cylinder 5, upon entering the drum 8, is thrown centrifugally by the rapid rotation of the drum 8, against the inner walls of said drum, and the kernels of wheat or other grain by their weight, will be carried into and generally through the perforations 23, but without some means to agitate this material in the drum it will become packed against the inner walls of the drum, and means are also necessary to keep it moving with positive feed through the drum. I feed the straw through the drum 8 and at the same time actuate it by means of a series of brushes which I will now describe: A stationary shaft 25 passes longitudinally through the drum 8, preferably above the center of the drum and is supported by bent ends 26 which extend to the frame 4. Mounted upon shaft 25 are the hubs 28, here shown as seven in number, but this number may be more or less as deemed necessary. These hubs are not at right angles to shaft 25, but are inclined thereto as



shown in Fig. 1. The hubs 28 form bases for stiff wire tines 30 which are oblique to their respective hubs in a slightly conical or concave formation. The tines thus stand  
 5 in an oblique plane to the cylinder 8 and as the straw is forced against the tines by the action of the cylinder, the tines revolve upon the shaft 25 and by their inclined mounting or pitch the straw is forced to  
 10 travel through the drum and it is also agitated and kept from packing against the inner walls of the drum and from closing the perforations 23. Mounted on the shaft 25 is a fixed arm 50 extending downwardly  
 15 and terminating with a wire brush to aid in preventing the backward movement of the straw in the drum 8.

The grains of wheat or seeds passing through the perforated walls of the drum 8  
 20 are deposited by gravity upon the floor of a riddle 32. The riddle 32 is suspended by links 33 and is vibrated by a connection through rod 34 with the eccentric 35 in the usual manner. The floor of the riddle is  
 25 oblique and discharges upon a wire screen 36 through which the sound and heavy grain passes to the sub-floor 37 and is thence discharged through opening 38 into a trough 39 having a screw-conveyer 40 which dis-  
 30 charges the grain from the machine.

41 is a rotary fan in housing 42, which discharges across the path of the grain dropping from the riddle into trough 40 and blows the chaff and worthless portions out  
 35 and upon a carrier 44. The straw issuing from drum 8 is also carried by this air draft onto the carrier 44 and straw and chaff are discharged by the carrier in the usual manner. An oblique wall 48 opposite the dis-  
 40 charge end of drum 8 aids in directing the straw to carrier 44.

Having thus fully described my invention what I claim as new and wish to secure by Letters Patent of the United States, is—

45 1. In a machine of the character described, the combination with threshing mechanism, of a separating-drum into which the straw and loose grain from the threshing mechanism is discharged, said drum having perfo-  
 50 rated sides, means for rotating said drum, a fixed shaft passing longitudinally through said drum, and tines in a plurality of conical series mounted obliquely and loosely on said shaft to produce a pitch to feed the straw  
 55 through the drum.

2. In a machine of the character described, the combination with threshing mechanism, of a separating-drum into which the material from said threshing mechanism is dis-  
 60 charged, said drum having perforated sides, means for rotating said drum, a stationary shaft passing longitudinally through the drum, hubs in planes oblique to the drum and shaft loosely mounted on said shaft and  
 65 tines secured to the hubs in a conical series

for each hub with the bases of the conically arranged tines toward the discharge end of the drum.

3. In a machine of the character described, the combination with threshing mechanism, 70 of a separating-drum into which the material from said threshing mechanism is discharged, said drum having perforated sides, and inwardly and rearwardly disposed hooks at the receiving end of the drum, 75 means for rotating the drum, and means including a fixed shaft and tines arranged in a plurality of conical series loosely mounted on said shaft for feeding the straw through the drum. 80

4. In a machine of the character described, the combination with threshing mechanism, of a separating-drum into which the material from said threshing mechanism is dis- 85 charged, said drum having perforated sides, and inwardly and rearwardly disposed hooks at the receiving end of the drum, means for rotating the drum and means including tines arranged in a plurality of con- 90 ical series each capable of rotation separate from the other and from the drum for feeding straw through the drum.

5. In a machine of the character described, the combination with threshing mechanism, of a separating-drum into which the material from said threshing mechanism is dis- 95 charged, said drum having perforated sides, means for rotating the drum, a shaft passing longitudinally through the drum, tines mounted loosely and obliquely on the shaft 100 to contact with an inner side of the drum, and an arm carrying a brush mounted in a fixed manner on the shaft and extending toward the opposite side of the drum from that closest to said brushes. 105

6. In a machine of the character described, the combination with threshing mechanism, of a separating-drum into which the material from said threshing mechanism is dis- 110 charged, said drum having perforated sides, a shaft in the drum parallel with the axis of the drum, and tines in a plurality of conical series each having a hub mounted obliquely on said shaft.

7. In a machine of the character described, 115 the combination with threshing mechanism, of a separating-drum into which the material from said threshing mechanism is discharged, said drum having perforated sides, a plurality of friction wheels in a plurality 120 of series to support and retain the drum said wheels having axles, a pair of annular bars for each series in which the axles of the wheels are journaled, annular channel bars forming tracks or runs for said wheels, and 125 means for rotating said drum.

8. In a machine of the character described, the combination with threshing mechanism, of a separating-drum into which the material from said threshing mechanism is dis- 130

charged, said drum having perforated sides,  
means for rotating said drum, and tines in  
a plurality of conical series mounted within  
the drum each of said series being separately  
5 movable from the others.

In witness whereof, I have hereunto set  
my hand and seal at Crawfordsville, In-

diana, this 20th day of March, A. D. one  
thousand nine hundred and nine.

SHIRL HERR. [L. s.]

Witnesses:

F. W. WOERNER,  
E. E. MILLER.