

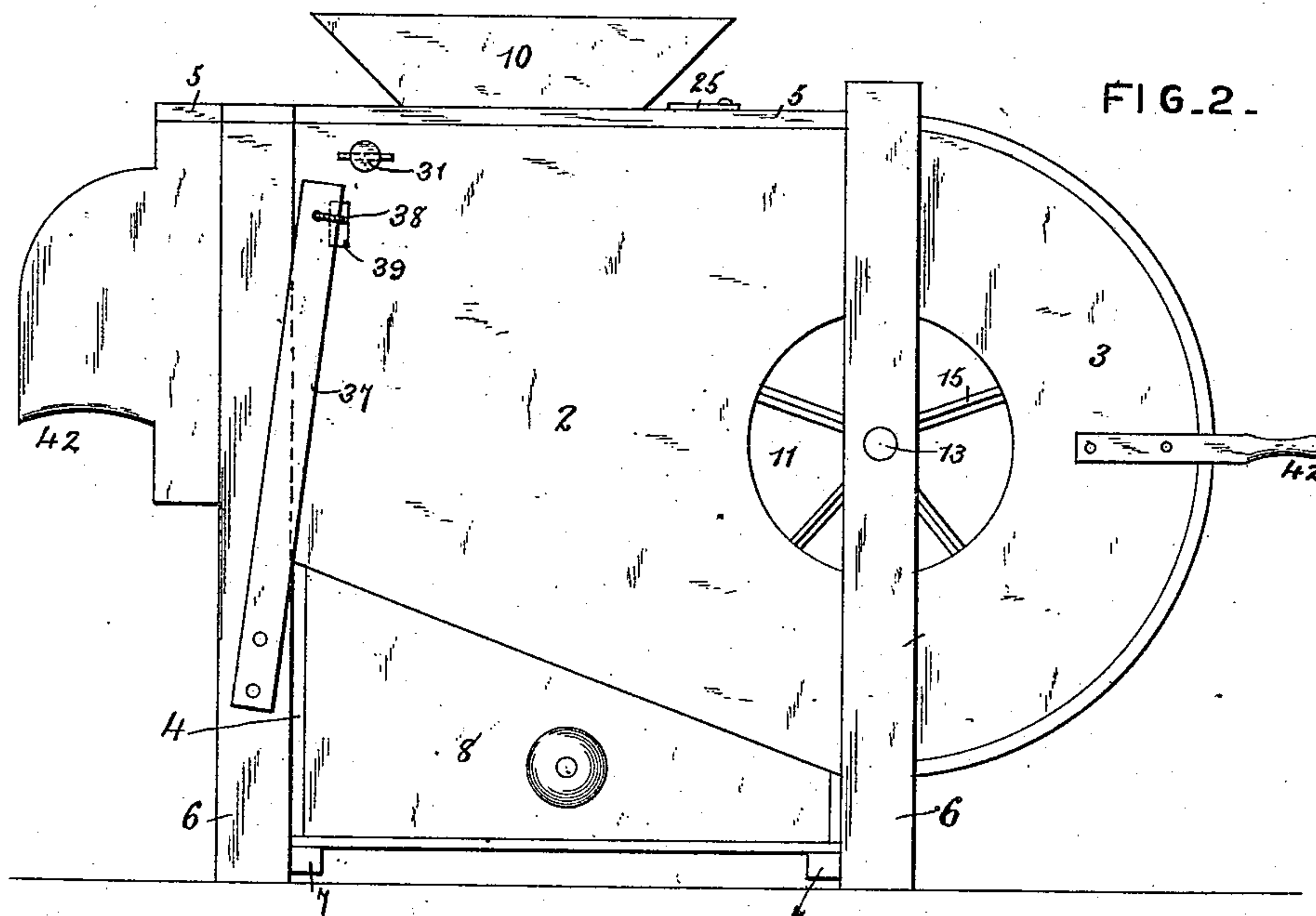
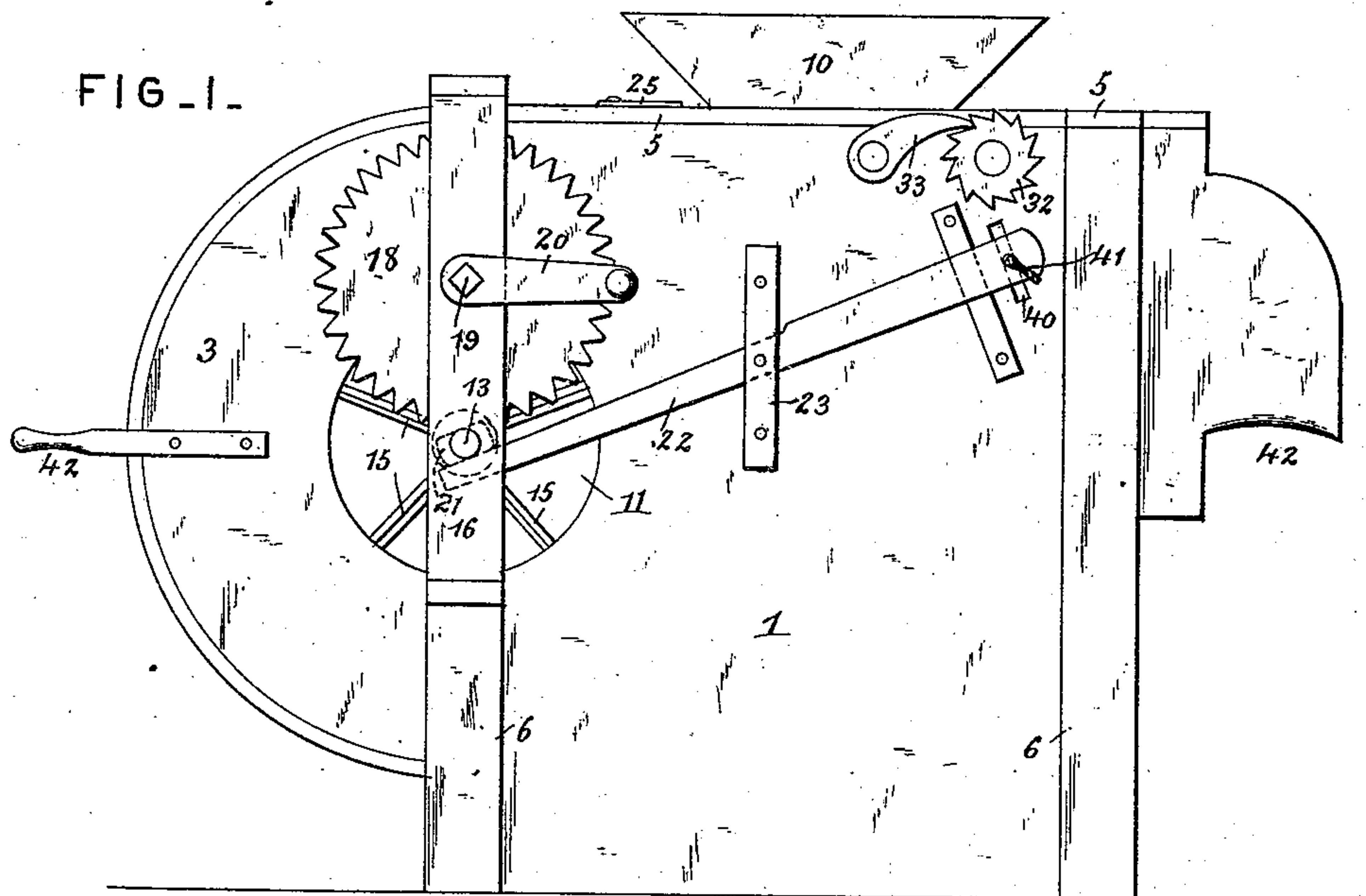
(No Model.)

2 Sheets—Sheet 1.

J. PELZER & J. WEREL.
FANNING MILL.

No. 446,365.

Patented Feb. 10, 1891.



Witnesses

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Wm. Bagger

By their Attorneys,

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John Werel

(No Model.)

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FIG. 3.

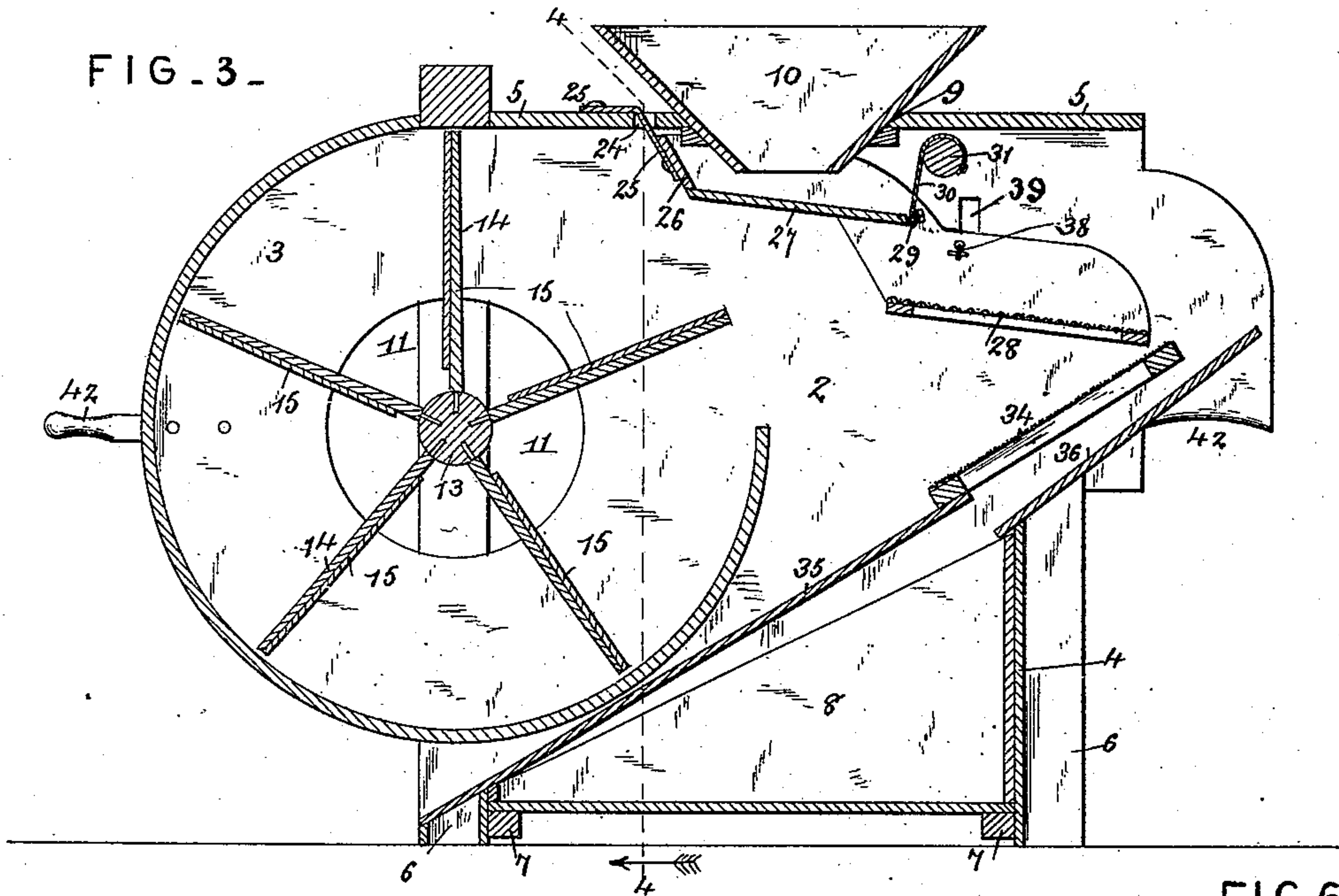


FIG. 4.

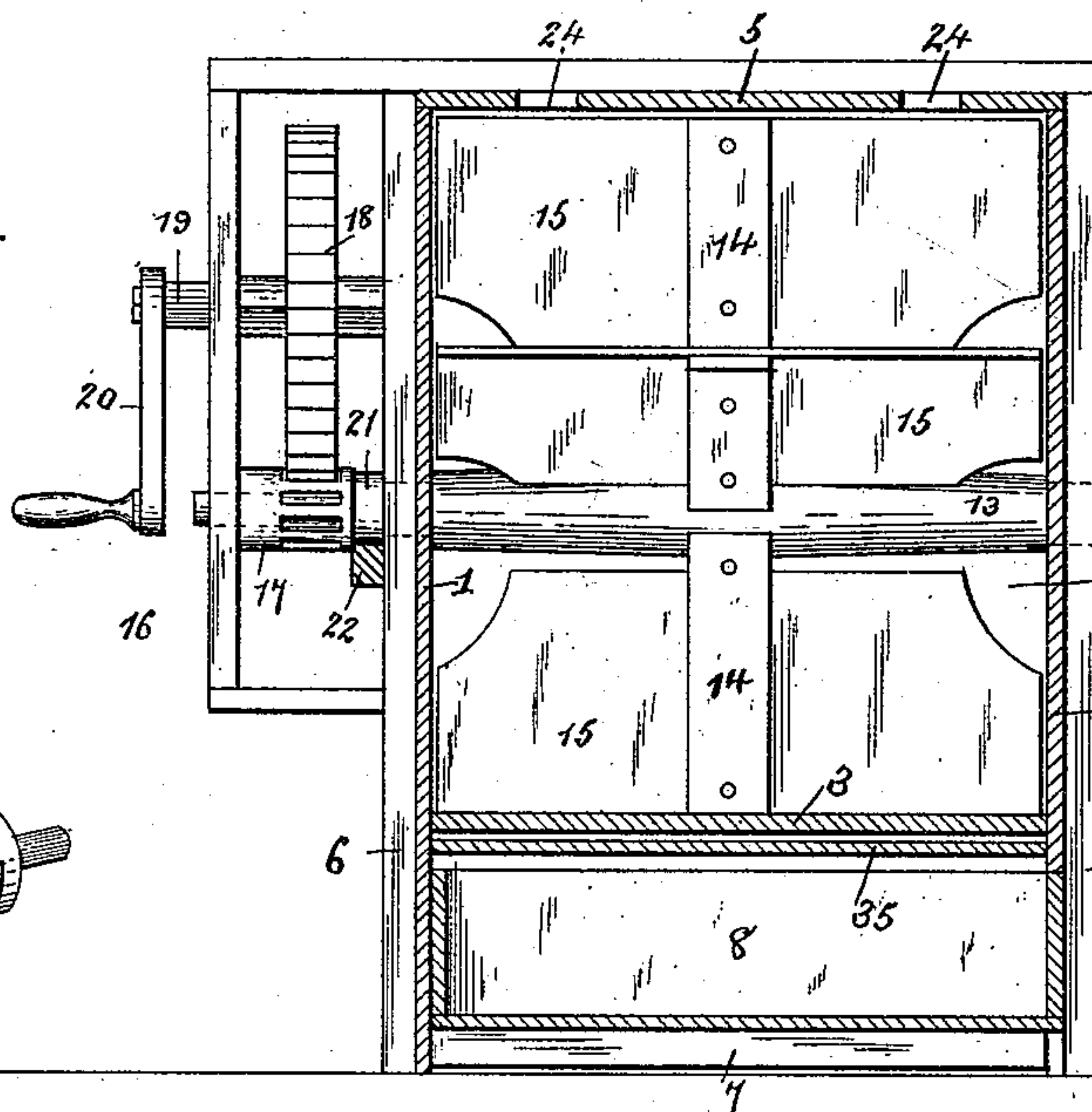


FIG. 5.

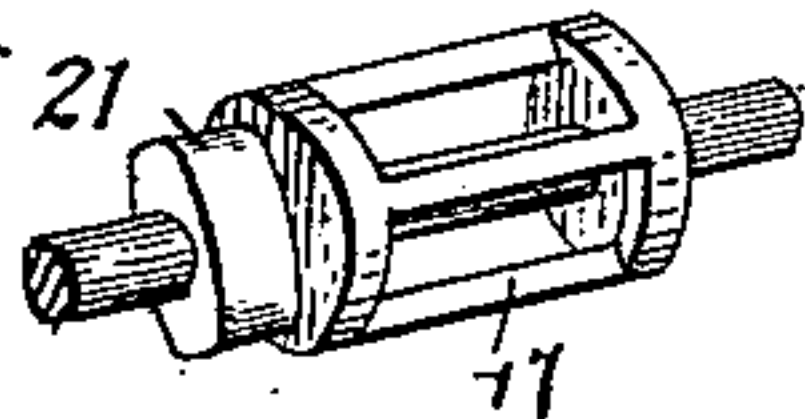
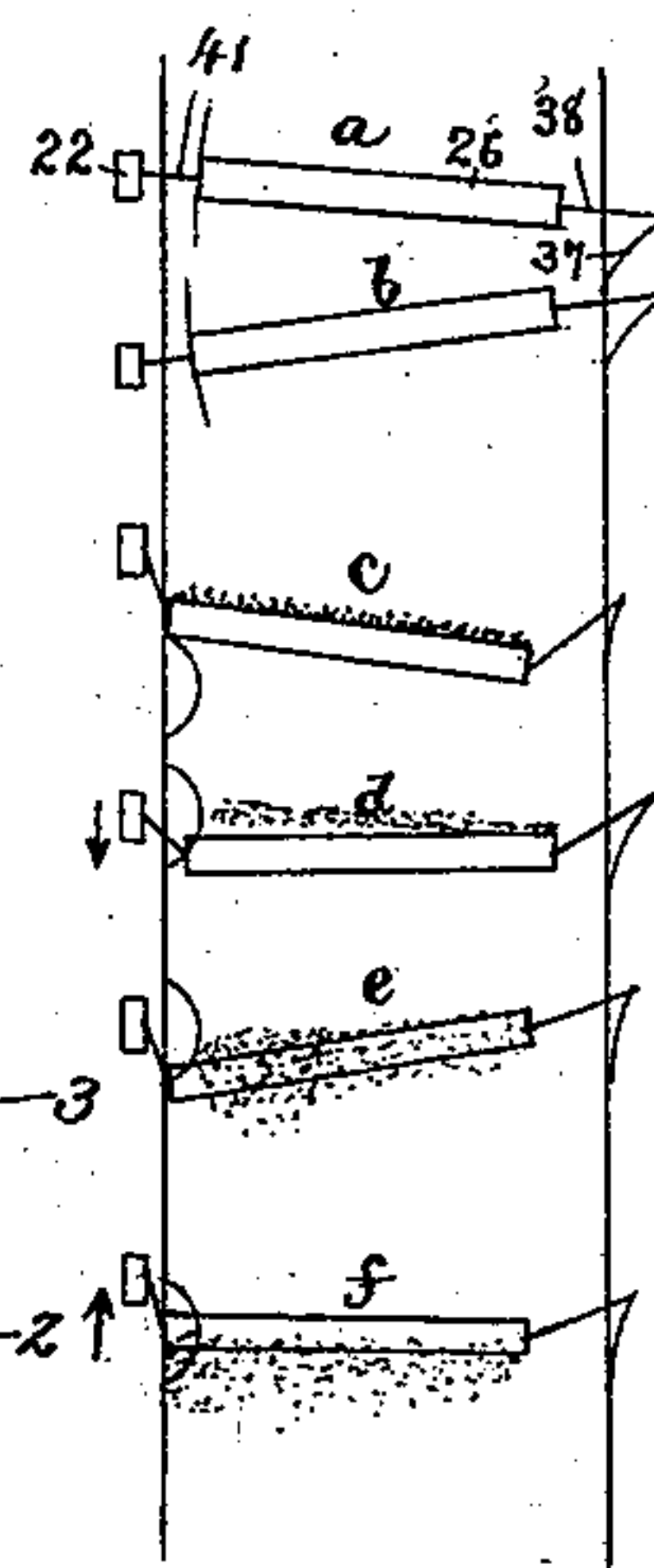


FIG. 6.



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UNITED STATES PATENT OFFICE.

JOHN PELZER AND JOHN WEREL, OF HUMBIRD, WISCONSIN.

FANNING-MILL.

SPECIFICATION forming part of Letters Patent No. 446,365, dated February 10, 1891.

Application filed May 24, 1890. Serial No. 353,089. (No model.)

To all whom it may concern:

Be it known that we, JOHN PELZER and JOHN WEREL, citizens of the United States, residing at Humbird, in the county of Clark and State of Wisconsin, have invented a new and useful Fanning-Mill, of which the following is a specification.

This invention relates to fanning-mills; and it has for its object to construct a device of this class which shall be simple, inexpensive, and easily operated.

With these ends in view the invention consists in the improved construction, arrangement, and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, Figure 1 is a side view of our improved fanning-mill. Fig. 2 is a side view taken from the opposite side of the same. Fig. 3 is a longitudinal sectional view. Fig. 4 is a vertical transverse sectional view taken on the line 4 4 in Fig. 3. Fig. 5 is a detail view of the end of the shaft 13, having the double cam 21. Fig. 6 is a diagrammatic elevation of the shoe, showing its movement when empty and when weighted down by grain.

Like numerals of reference indicate like parts in all the figures.

The casing of this fanning-mill comprises the sides 1 and 2, the fan-case 3, and the rear end 4, all of which are suitably constructed and connected by means of suitable braces and by the top pieces 5 and legs or vertical supports 6. Cleats or supports 7 are provided, upon which a drawer 8, inserted through an opening in the side 2 of the casing is supported. The top 5 of the casing has an opening 9, which supports the hopper 10, and the sides of that portion of the casing, which constitutes the fan-case are provided in the usual manner with openings 11 for the admission of air. The openings 11 are bridged by the front legs or uprights 6, which afford bearings for the shaft 13, carrying the fan, which in the present instance is composed of five radial arms 14, mounted equidistantly in the shaft 13 and each carrying a wing or leaf 15. The side 1 of the casing is provided with a supplemental frame 16, forming bearings for an extension of the fan-shaft 13, which is provided with a pinion 17, meshing with a spur-

wheel 18, which is mounted upon a shaft 19, journaled in suitable bearings in the frame 16 and in the adjacent leg 6. The shaft 19 is provided at its outer end with a crank 20, by means of which it may be conveniently turned.

The pinion 17, which in the drawings hereto annexed has been shown as being in the nature of a skeleton wheel, is provided at its inner end with a double cam 21, which engages one end of a lever 22, which is pivoted in a suitable bracket or bearing 23, attached to the side 1 of the casing. The function of this lever will be presently more fully described.

The top of the casing is provided directly in front of the hopper 10 with slots 24. Straps 25, which are secured to the upper side of the top 5 of the casing, are extended through the slots 24, and to the said straps is attached the front end of the screen-frame 26. The latter is provided directly below the hopper with an inclined floor 27, and below and in rear of said floor it has a sieve 28. The rear end of the floor 27 has a stud 29, which is connected by a cord 30 with a shaft 31, which is journaled transversely in the sides of the casing, and which is provided at one end with a ratchet-wheel 32, engaging the pawl 33, which is pivoted to the side of the casing. It will be seen that by turning the shaft 31 the screen-frame may be adjusted to any desired inclination and retained at such adjustment by the engagement of the ratchet-wheel 32 with the pawl 33.

Below the screen-frame, or, as it is sometimes termed, the "shoe" 26, is arranged the inclined bottom, which is composed of a screen 34 and a lower solid portion 35, inclining from the tail end to the front end of the casing and passing under the fan-casing, so that the cleaned grain may pass out under the said fan-casing at the front end of the machine. Under the screen 34 at the tail end of the machine is arranged a downwardly and forwardly inclined bottom board 36, which conveys the lighter grain into the drawer 8.

All the above features are old and well known, and are merely shown and described in order to bring out the general construction of a fanning-mill, to which our improvements are applicable. The latter will now be described.

Suitably attached to one of the legs at the side 2 of the casing is a spring 37, the upper end of which is connected by a cord or chain 38 with one side of the shoe or screen-frame 26, the cord 38 passing through a slot 39 in the side of the casing. The opposite side of the casing is provided with a slot 40, through which extends a cord or chain 41, which connects the side of the shoe with one end of the lever 22.

The operation of the device is as follows: The grain which is to be cleaned is fed into the hopper 10, which may be provided with suitable means for regulating the passage of the grain into the casing. A rotary motion is communicated to the fan-shaft by the mechanism herein described, and the cam projections 21 upon the pinion 17 will engage the lever 22, which, in conjunction with the spring 37, will serve to impart a vibrating motion to the shoe, whereby the grain is shaken down, first onto the screen 28 and thence onto the screen 34, being meanwhile exposed to the blast of air from the fan, whereby the dust, chaff, and lighter impurities are blown out through the tail end of the machine. The heavy grain passes from the screen 34 onto the inclined plane 35, over which it escapes under the fan-case at the front end of the machine. The inferior grain passes over the inclined plane 36 and into the drawer 8. The casing of the machine is provided with handles 42, by means of which it may be readily carried from place to place.

The vibrating motion above mentioned is somewhat peculiar, and the devices for producing it form the essential features of the present invention. The upper end of the lever 22 is raised periodically as its lower end is depressed by the cam 21, and as the shoe 26 is connected by a cord 41 at one side with said upper end that side of the shoe will rise therewith. The other side of the shoe is, however, connected by a cord 38 with the spring 37, whose end does not rise and fall. Hence the motion imparted to the shoe will be different at the different sides thereof, the lever side moving considerable and the spring side but little, the spring holding the shoe in a practically straight line between the cords, as seen at *a* and *b* in Fig. 6; but when grain

is fed through the hopper onto the shoe the motion thereof changes considerably. The weight of the grain bears the shoe downward, the spring yields, and the lever edge of the shoe rests against the casing, as seen at *c* in Fig. 6. As the lever descends the shoe drops, so that the full weight of the grain thereon is not resting on the shoe, and hence the spring is permitted to draw the shoe slightly away from the casing, as seen at *d*. The downward motion of the lever now ceasing, gravity carries the shoe downward and it swings again against the casing, as seen at *e*, the spring yielding to permit this, and when the lever rises the lever edge of the shoe will slide upwardly in contact with the casing, as seen at *f*. Thus the shoe has a movement in the arc of a circle when it is not weighted down by grain, but under such circumstances it moves through a D-shaped figure, striking the case sharply at one time and rubbing against it as it rises, so as to cause it to jiggle or tremble and properly feed the grain.

Having thus described our invention, what we claim, and desire to secure by Letters Patent of the United States, is—

1. In a fanning-mill, the combination, with a shoe within the casing, a spring carried by said casing, and a cord connecting said spring with one edge of the shoe, of a fan, a lever driven from said fan and moving vertically, and a cord connecting said lever with the other edge of the shoe, all substantially as described.

2. In a fanning-mill, the combination, with a shoe within the casing, a spring carried by said casing, and a cord connecting said spring with one edge of the shoe, of a rotary fan having a cam on its shaft, a centrally-pivoted lever whose lower end is struck by said cam, and a cord connecting the upper end of said lever with the other edge of the shoe, all substantially as hereinbefore described.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in presence of two witnesses.

JOHN PELZER.
JOHN WEREL.

Witnesses:

JUL. C. HAHN,
J. H. TRAVIS.