

J. D. WHITSEL.

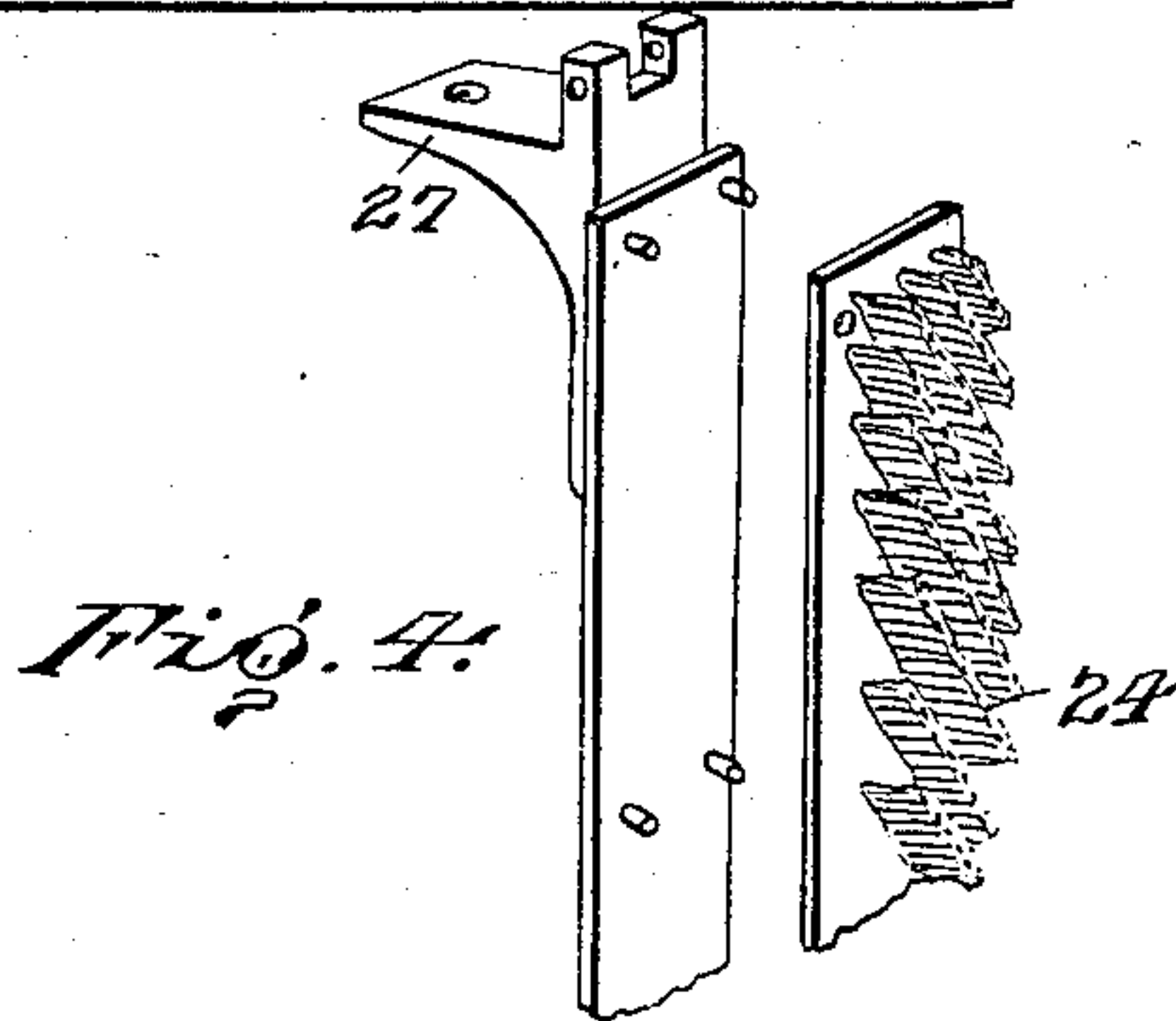
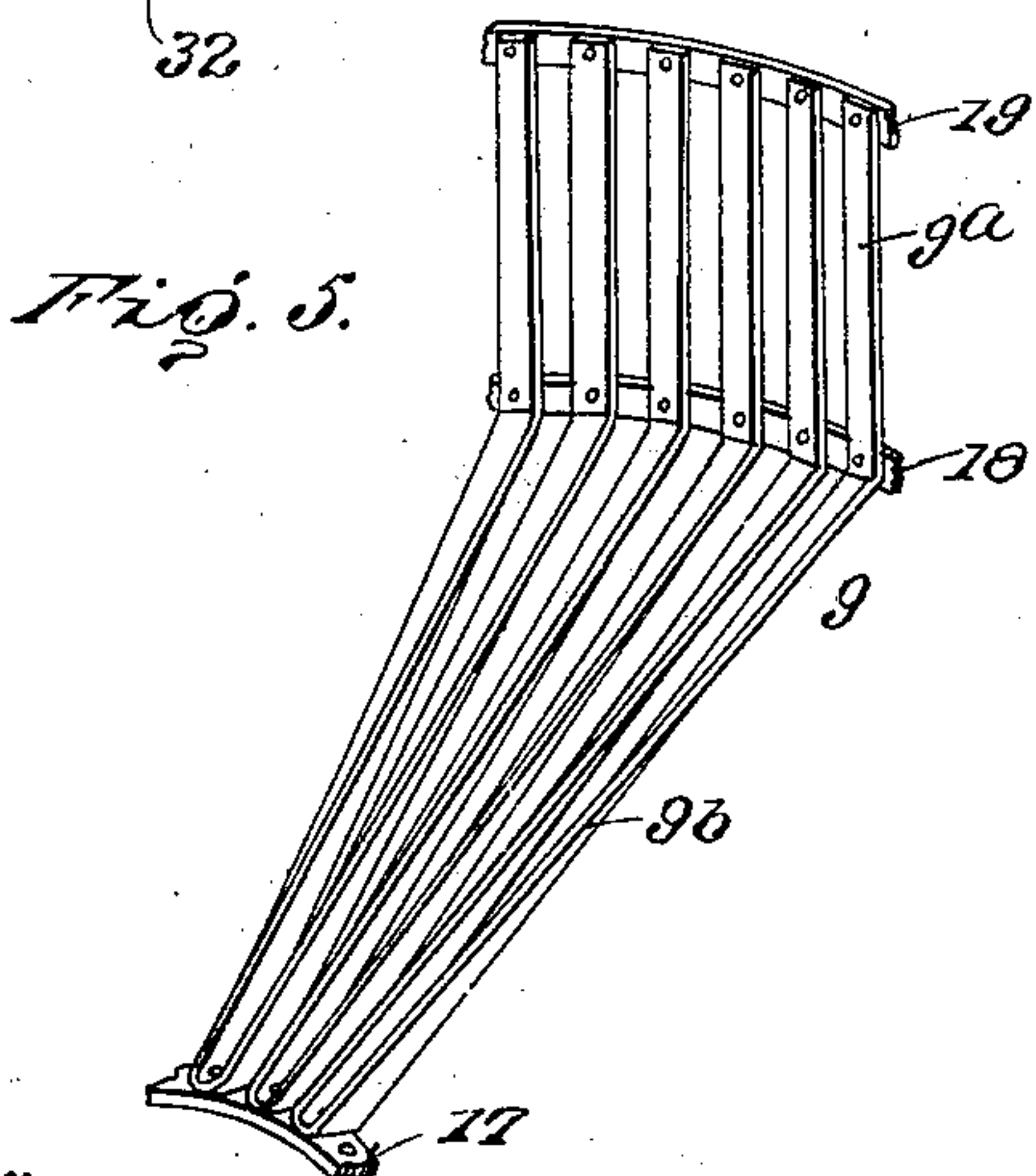
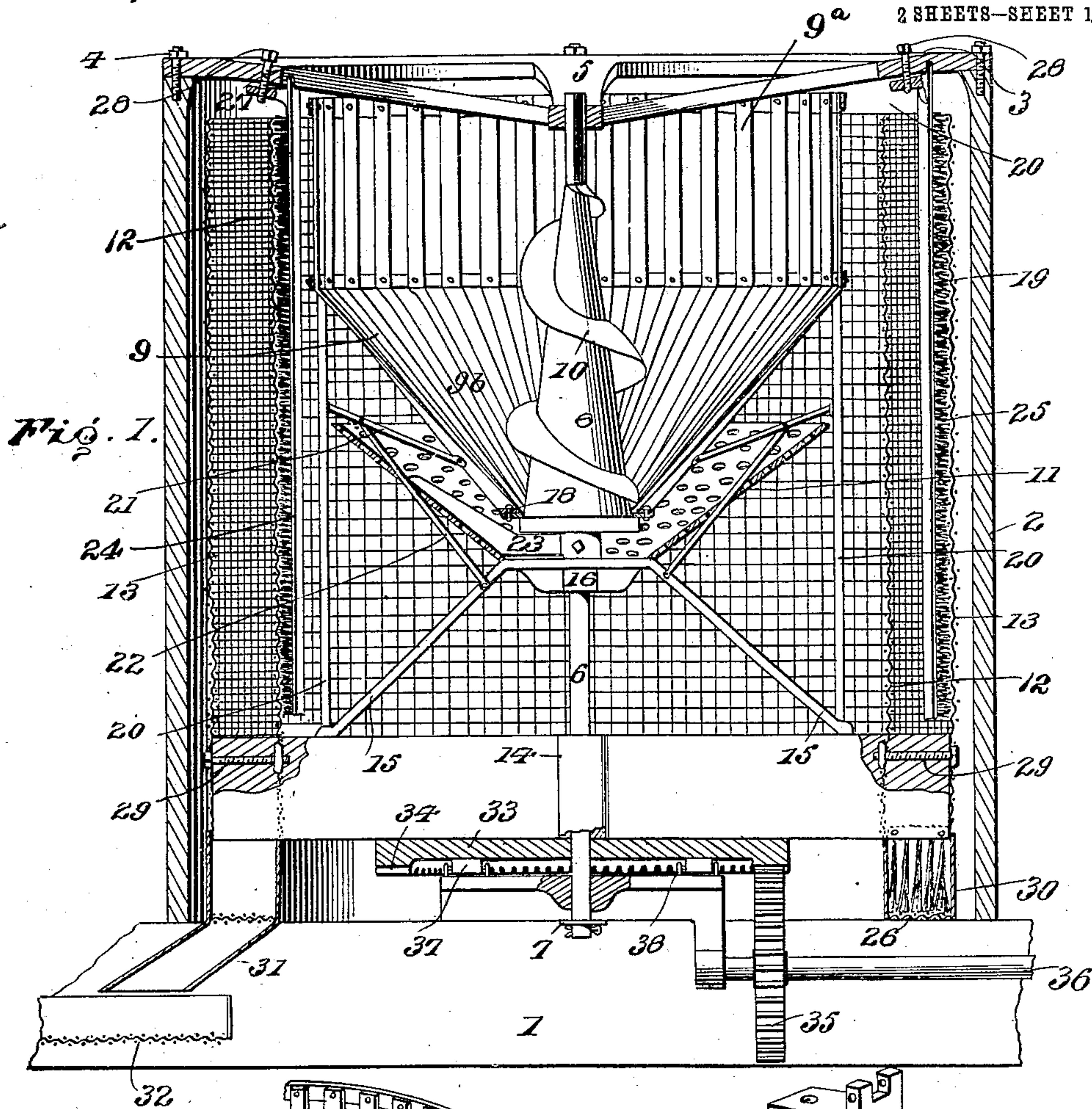
MELON SEEDER.

APPLICATION FILED JAN. 11, 1908.

Patented Apr. 13, 1909.

917,824.

2 SHEETS—SHEET 1.



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Witnesses

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2 SHEETS—SHEET 2.

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Fig. 2

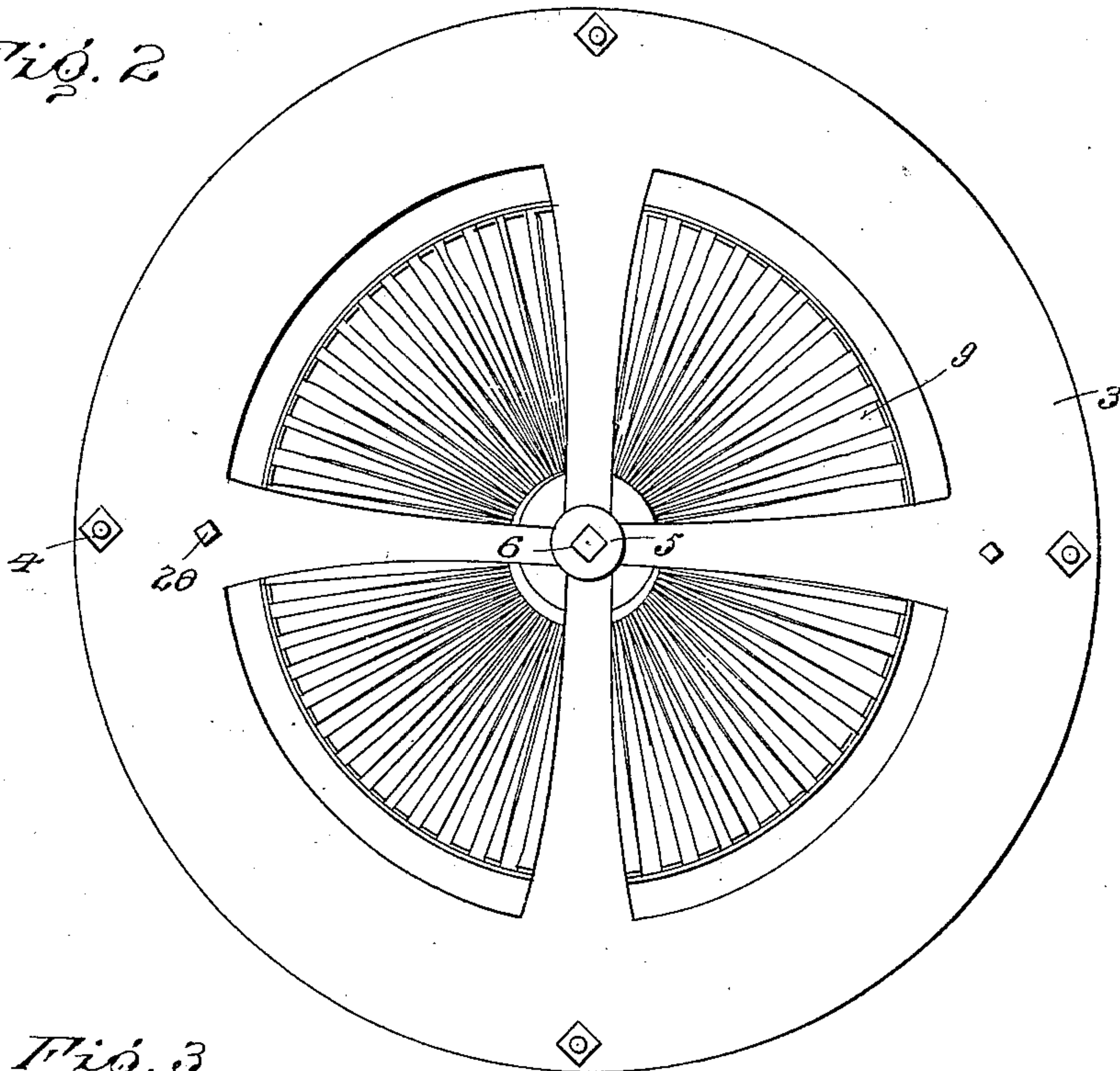
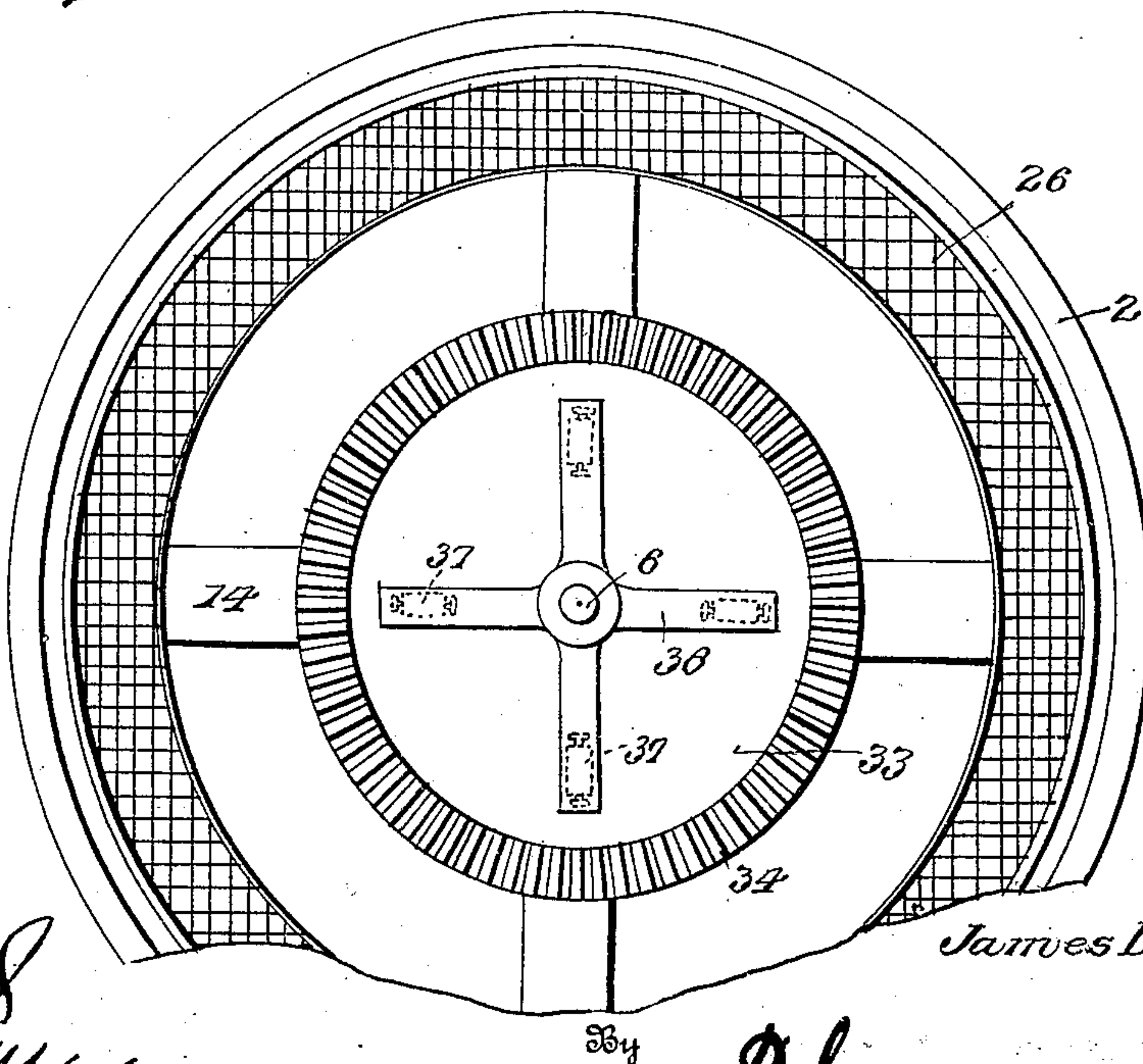


Fig. 3



Witnesses

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# UNITED STATES PATENT OFFICE.

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## MELON-SEEDER.

No. 917,824.

Specification of Letters Patent.

Patented April 13, 1909.

Application filed January 11, 1908. Serial No. 410,400.

*To all whom it may concern:*

Be it known that I, JAMES D. WHITSEL, citizen of the United States, residing at Liberal, in the county of Seward and State of Kansas, have invented certain new and useful Improvements in Melon-Seeders, of which the following is a specification.

The present invention relates to a novel device for removing the seeds from melons and the like, and aims to provide a mechanism for this purpose which is entirely automatic in its action and operates in an efficient manner to produce the desired result.

A further object of the invention is to design a seed-extracting device which is simple and inexpensive in its construction and which is so formed as to enable the screens to be removed and replaced, thereby permitting the device to be employed in connection with various types of melons.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction and the means for effecting the result, reference is to be had to the following description and accompanying drawings, in which:—

Figure 1 is a longitudinal sectional view through a melon-seeder embodying the invention; Fig. 2 is a top plan view of the same; Fig. 3 is a bottom plan view of the seeder, the supporting beams being removed; Fig. 4 is a detail view of one of the brushes, portions being broken away; and, Fig. 5 is a detail view of a portion of the hopper.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The seed-extracting mechanism may be mounted upon any suitable form of support and in the present instance is shown as carried by a pair of parallel and longitudinal beams 1. Mounted upon these beams 1 is an upright cylindrical casing 2 which is preferably formed of sheet metal and is provided at its upper end with a cover 3, the said cover being held removably in position by means of the bolts 4 and being formed with a spider having an angular socket 5 at its central portion, the said socket loosely receiving the upper end of a vertical shaft or standard 6. This standard is held against rotation and the lower end thereof is en-

gaged by a transverse bar 7 connecting the longitudinal beams 1. Rigid with this vertical standard 6 is a conical crushing member 8 which coöperates with a rotary hopper 9 in a manner which will be hereinafter more fully described to cut up the melons into small particles. Projecting laterally from the conical crushing member 8 is a helical flange 10 which is designed to feed the melons within the rotating hopper 9. Rotatably mounted within the outer casing 2 and journaled upon the upright shaft or standard 6 is a frame carrying the hopper 9 and also carrying a pan 11 receiving the material passing through the hopper and discharging it against a primary cylindrical screen 12 which separates the coarse particles from the finer particles, the final separation of the seeds being accomplished by a secondary cylindrical screen 13 surrounding the primary screen 12 and having a finer mesh than the same.

More specifically describing the rotary frame it will be observed that the base thereof is composed of a pair of intersecting cross bars 14, supporting members 15 being provided which project upwardly from the cross bars and carry a bearing member 16 engaging the vertical shaft 6.

The rotary hopper 9 comprises an upper cylindrical portion 9<sup>a</sup> and a lower inverted conical portion 9<sup>b</sup> surrounding the conical crushing member 8 and coöperating therewith to crush the melons within the hopper. The sides of the hopper are formed of a plurality of metallic strips which are doubled upon themselves at an intermediate point, the doubled portions of the strips being secured to a lower ring 17 from which the strips incline outwardly and upwardly until they meet an intermediate ring 18 to which they are secured, the strips extending vertically upward from the intermediate ring and having their extremities secured to an upper ring 19 of a size corresponding to that of the intermediate ring. Attention may be here directed to the fact that the inclined portions of the strips constituting the conical portion of the hopper are twisted at an angle of ninety degrees, the melons being designed to pass through the strips after being crushed in the required manner. For the purpose of supporting the hopper a number of vertical brace members 20 are utilized which extend upwardly from the cross bars 14. Coöperating



with these vertical braces 20 are the diagonal braces 21 and 22, the former engaging the conical portion of the hopper while the latter engage the supporting members 15.

5 Mounted upon the rotary frame immediately under the hopper 9 is a pan 11, the said pan having a perforate formation and the sides thereof being flared outwardly, the bottom of the pan resting upon the supporting  
10 members 15. An agitator arm 23 operates within the pan, the said arm being rigid with the vertical shaft or standard 6 so as to remain stationary as the pan revolves. This agitator tends to force the material in the  
15 pan outwardly and coöperates with the centrifugal force to force the material within the pan toward the periphery thereof.

It will thus be apparent that the melons are fed into the hopper and that after being  
20 crushed to the required extent by means of the conical crushing member 8 and the helical flange 10 thereon they pass into the pan 11. From this pan the particles of melon are discharged against a primary cylindrical screen  
25 12 of a comparatively large mesh. Bearing against the interior of the cylindrical primary screen 12 is a brush 24 pendent from the cover 3, the smaller portions of the melon including the seed passing through the pri-  
30 mary screen while the chunks and rind are gradually carried down to the bottom by means of the brush 24 where they are dropped between the longitudinal beams 1 of the support. The smaller portions of the melon  
35 after passing through the primary screen are brought into contact with the secondary screen 13 which has a comparatively fine mesh, the said secondary screen being engaged by a brush 25 similar to the brush 24  
40 and also pendent from the cover 3. This brush tends to grind the pulp and melon particles through the secondary screen, the seeds dropping into an annular trough 25.

More specifically describing the brushes 24  
45 and 25 it will be observed that the upper ends thereof are pivotally connected to the cover 3 and are provided with lateral arms 27 engaged by adjusting nuts 28 by means of which the brushes can be swung outwardly  
50 toward the respective screens and caused to bear against the same with the required degree of pressure. Attention may also be directed to the bolts 29 which hold the cylindrical screens in position, since by removing  
55 these bolts together with the cover 3 and brushes attached thereto, the cylindrical screen members can be removed and screens of a different mesh substituted therefor, thereby enabling the machine to be readily  
60 adapted for use in connection with melons of various types.

A brush 30 preferably formed of a number of spring steel strips is carried by the base of the revolving frame and operates within the  
65 collecting trough 26 which is stationary. By

this means the seeds falling within the trough are carried around to the discharge spout 31 leading from one side of the trough, the said discharge spout delivering the seeds into a  
70 drying tray 32, the said drying tray being preferably in the nature of a shallow box with a bottom of wire mesh. The seed collecting trough 26 is also preferably formed with a perforated bottom through which any particles of the melon which may have been car-  
75 ried down with the seed are discharged.

Located at the bottom of the rotary frame and secured to the cross bars 14 at the intersection thereof is a circular plate 33 provided at its periphery with a rack 34 meshing with  
80 a pinion 35 upon a shaft 36 designed to receive power from any suitable source. This circular plate 33 engages and rests upon roller bearings 37 journaled in arms radiating from a supporting plate 38. It will thus be ap-  
85 parent that the rotary frame carrying the hopper 9, pan 11, primary screen 12 and secondary screen 13 is supported in such a manner as to rotate freely about a vertical axis and that the desired rotation can be brought  
90 about by applying power to the shaft 36.

From the foregoing description it will be readily apparent that in the operation of the device the melons are fed into the rotary  
95 hopper where they are subjected to the action of the conical crushing member 8 and the helical flange 10 carried thereby until they have been broken up to the required degree of fineness to admit of their passing between the bars constituting the sides of the  
100 hopper.

At this point it is desired to call attention to the fact that it is important for the proper operation of the seeder that the melons be crushed instead of cut up into pieces,  
105 since in the former instance the seeds are loosened within the pulp of the melon and partially separated therefrom, while when the melon is merely cut into pieces the seed and pulp are much more difficult to separate  
110 from each other. The helical flange 10 merely serves to feed the melons downward within the rapidly rotated hopper and is preferably formed so as to not cut the melons, although this is optional with the user.  
115 After passing through the hopper the particles of melon are collected in the pan 11 and subjected to the action of the agitator arm 23. From this pan 11 the particles of melon are discharged against the primary screen,  
120 the finer particles including the seed passing through the said screen while the coarser particles are gradually carried down by means of a brush 24. In a somewhat similar manner the finer particles which pass through the  
125 primary screen are acted upon by the brush 25 in conjunction with the secondary screen, the pulp being forced through the secondary screen while the seeds drop into the annular trough 26 within which they are collected.  
130



The brush 30 then engages the seeds and carries them around within the trough until they pass through the discharge spout 31 into the drying tray 32.

5 The two brushes 24 and 25 are so constructed and have the bristles thereon so located as to gradually carry the melon particles downwardly, this being necessary since the rotary motion of the screens would otherwise tend to prevent the proper downward movement of the melon particles.

Having thus described the invention, what is claimed as new is:

1. In a seed separator, the combination of  
15 a rotary frame, means carried by the rotary frame for separating the seed from the pulp, a hopper carried by the rotary frame, a stationary crushing member cooperating with the hopper, and means for receiving the pulp and seeds from the hopper and delivering them to the separating means.

2. In a seed separator, the combination of a rotary frame, means carried by the rotary frame for separating the seeds from the pulp,  
25 a hopper carried by the rotary frame, a stationary crushing member cooperating with the hopper, a helical flange upon the crushing member, and means for receiving the pulp and seeds from the hopper and delivering them to the separating means.

3. In a seed separator, the combination of a rotary frame, means carried by the rotary frame for separating the seeds from the pulp, a hopper carried by the rotary frame, a stationary crushing member cooperating with the hopper, a helical flange upon the crushing member, and a rotary pan for receiving the pulp and seeds from the hopper and delivering them to the separating means.

4. In a seed separator, the combination of a rotary frame, means carried by the rotary frame for separating the seeds from the pulp, a hopper carried by the rotary frame, a stationary crushing member cooperating with the hopper, a helical flange upon the crushing member, a pan carried by the rotary frame and receiving the pulp and seeds from the hopper, and a stationary arm cooperating with the pan to deliver the seeds and  
50 pulp to the separating means.

5. In a seed separator, the combination of a support, a stationary shaft carried by the support, a rotary frame journaled upon the stationary shaft, means carried by the rotary frame for separating the seeds from the pulp,  
55 a hopper carried by the rotary frame, a crushing member mounted upon the stationary shaft for cooperation with the hopper, a pan carried by the rotary frame for receiving the pulp and seeds from the hopper, and an arm rigid with the stationary shaft and cooperating with the pan to deliver the seeds and pulp to the separating means.

6. In a seed separator, the combination of

a support, a stationary shaft mounted upon the support, a rotary frame journaled upon the stationary shaft, a cylindrical screen carried by the rotary frame, a hopper carried by the rotary frame, a crushing member rigid with the stationary shaft and cooperating with the hopper, a pan carried by the rotary frame, an arm rigid with the stationary shaft and cooperating with the pan to discharge the seeds and pulp against the screen, and means for collecting the seeds separated by the screen.

7. In a seed separator, the combination of a rotary frame, a cylindrical screen carried by the rotary frame, a stationary brush cooperating with the screen, a hopper carried by the rotary frame, a crushing member cooperating with the hopper, and means for receiving the seeds and pulp from the hopper and delivering them to the screen.

8. In a seed separator, the combination of a rotary frame, a primary cylindrical screen carried by the frame, a secondary cylindrical screen carried by the frame in cooperative relation to the primary screen, a stationary brush bearing against each of the screens, a hopper carried by the rotary frame, a crushing member cooperating with the hopper, means for receiving the seeds and pulp from the hopper and delivering them to the primary screen, the seeds passing through the said screen, and means for collecting the seeds separated by the secondary screen.

9. In a melon seeder, the combination of a frame, a screen carried by the frame, a hopper carried by the frame, means cooperating with the hopper to break up the melon, a rotary tray receiving the melon from the hopper and delivering it to the screen, and means for collecting the seeds discharged by the screen.

10. In a melon seeder, the combination of a screen, a hopper, means cooperating with the hopper to break up the melon, a rotary pan receiving the melon from the hopper and feeding it to the screen, an agitator operating within the rotary tray, and means for collecting the seeds discharged by the screen.

11. In a melon seeder, the combination of a rotary frame, a hopper mounted upon the frame, a screen mounted upon the frame, means cooperating with the hopper to break up the melon, means for delivering the melon from the hopper to the screen, means for collecting the seeds from the screen, a plate applied to the rotary frame and formed with a rack, a supporting plate having rollers journaled therein and engaging the before mentioned plate upon the rotary frame, and a pinion cooperating with the rack to rotate the frame.

12. In a melon seeder, the combination of a support, a casing carried by the support, a cover for the casing, a shaft engaged by the cover and support, a rotary frame journaled



upon the shaft, a hopper carried by the rotary frame, a screen carried by the rotary frame, a brush carried by the cover and engaging the screen, means coöperating with  
 5 the hopper to break up the melon, means for delivering the melon from the hopper to the screen, and means for collecting the seeds discharged by the screen.

13. In a seed separator, the combination  
 10 of a rotary frame, a primary cylindrical screen carried by the rotary frame, a secondary cylindrical screen carried by the rotary frame in coöperative relation with the primary screen, means for delivering seed and

pulp to the primary screen, the seed passing 15 through the said screen, a stationary annular trough for collecting the seed separated by the secondary screen, a discharge pipe for the trough, and a brush member carried by the rotary frame and operating within the trough 20 to bring the seeds to the discharge spout.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES D. WHITSEL. [L. S.]

Witnesses:

E. J. THAYER,  
 OTTO L. DE VOLK.