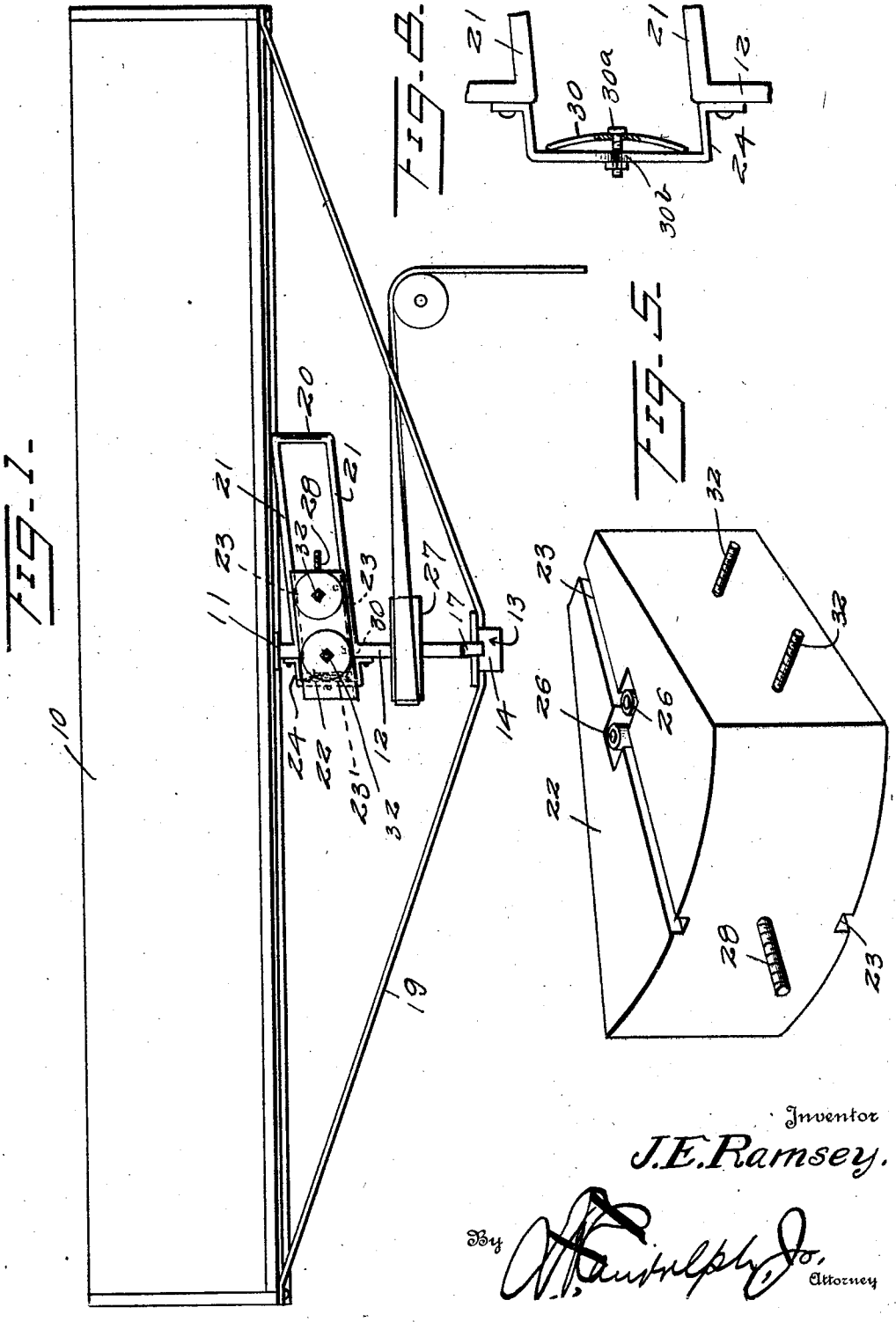
Jan. 8, 1924. 1,480,465

J. E. RAMSEY

GYRATORY FLOUR SIFTER

Filed Sept. 7, 1922 3 Sheets-Sheet 1



Inventor

J.E. Ramsey.

By W. Randolph Jr. Attorney

Jan. 8, 1924. 1,480,465

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GYRATORY FLOUR SIFTER

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Fig. 2.

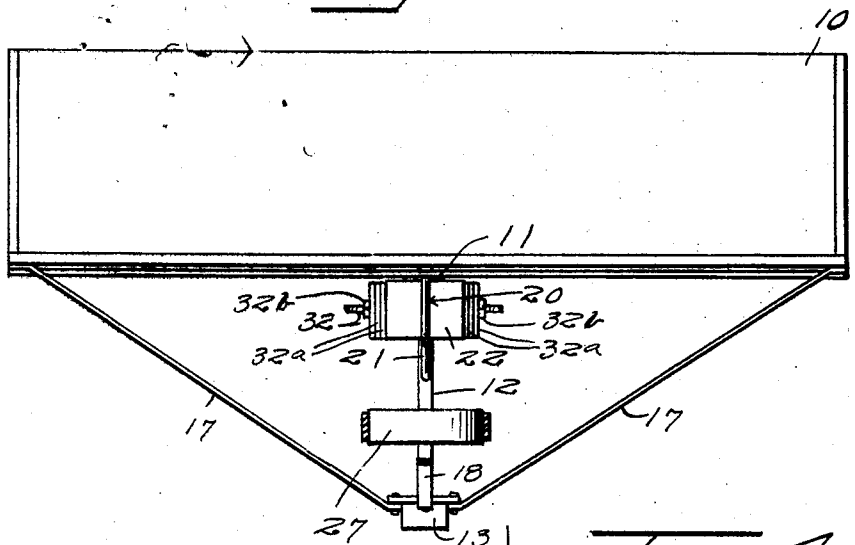


Fig. 4.

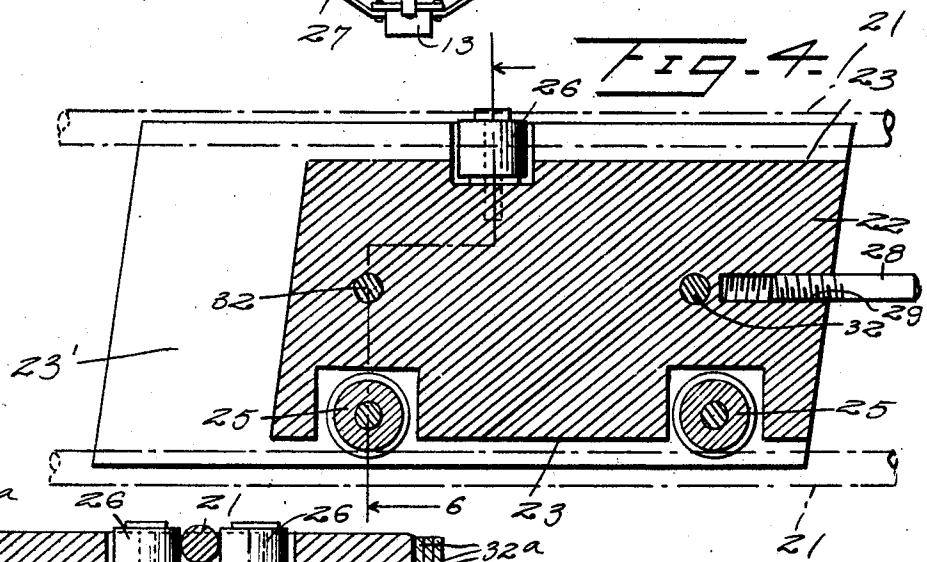
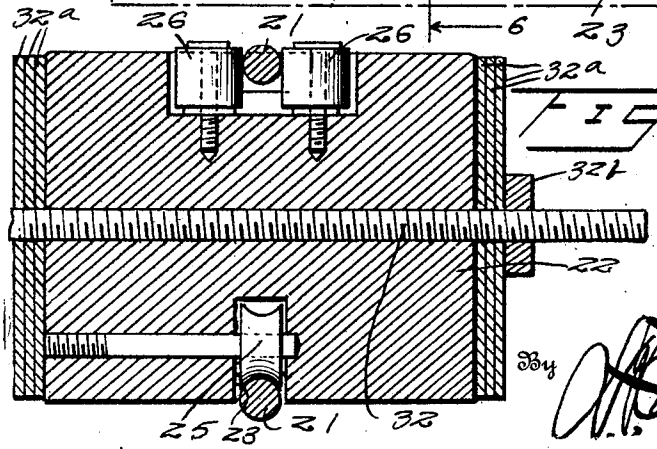


Fig. 6.



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Fig. 3.

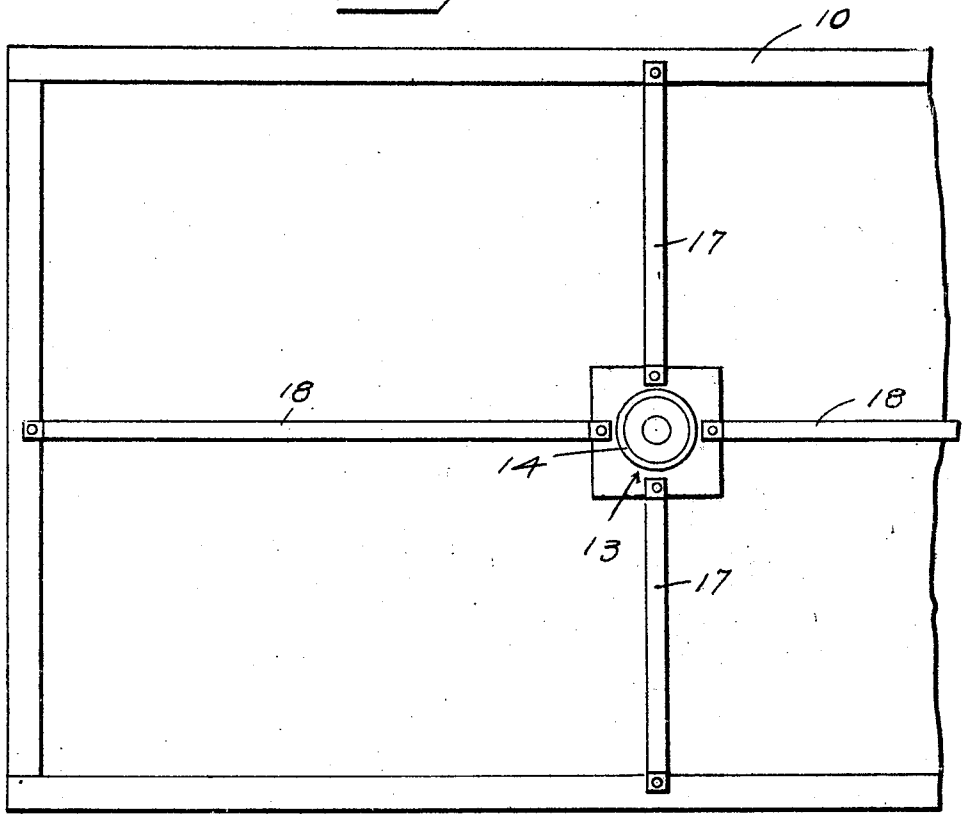
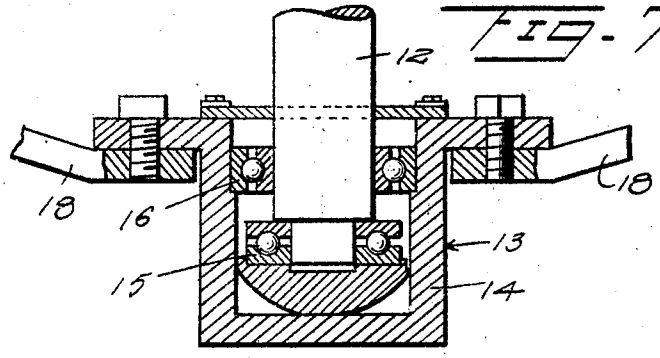


Fig. 7.



Inventor

J. E. Ramsey

By [signature] Attorney

Patented Jan. 8, 1924. 1,480,465

UNITED STATES PATENT OFFICE.

JACOB E. RAMSEY, OF SPOKANE, WASHINGTON.

GYRATORY FLOUR SIFTER.

Application filed September 7, 1922. Serial No. 586,677.

To all whom it may concern:

Be it known that I, JACOB E. RAMSEY, a citizen of the United States, residing at Spokane, in the county of Spokane and State of Washington, have invented certain new and useful Improvements in a Gyratory Flour Sifter; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of the invention is to provide simple and efficient means for producing the gyratory movement or vibration of a flour sifter or screen such as are used in flour mills for the grading of the product, and particularly to provide a device for the purpose indicated whereby simplicity of mounting and uniformity in operation and result may be attained; and with these objects in view the invention consists in a construction, combination and relation of parts of which a preferred embodiment is shown in the accompanying drawings, wherein:

Figures 1 and 2 are side and end views and

Figure 3 is an inverted plan view of a sifter provided with a vibrating mechanism constructed in accordance with the invention,

Figure 4 is a detail enlarged vertical sectional view of the vibrating mechanism,

Figure 5 is a detail view in perspective of the oscillatory weight member of the apparatus.

Figure 6 is a section on the line 6—6 of Figure 4,

Figure 7 is a detail sectional view of the lower bearing structure, and

Figure 8 is a detail view illustrating the construction and application of the weight cushioning element.

The sifter box 10 is provided at its bottom and in the center with a bearing 11 for the upper end of a spindle 12 of which the lower end is mounted in a foot bearing 13 of the thrust type consisting of a cup 14 in which are arranged the anti-friction thrust and lateral bearing elements 15 and 16. This foot bearing is connected with the bottom of the box by the lateral braces 17 and a longitudinal brace 18.

The spindle 12 carries a guide 20 consisting in the illustrated construction of a laterally bowed portion or guide loop having parallel sides 21 between which operates a vibrating weight 22 having grooves 23 in its upper and lower surfaces to receive the arms of the guide loop. These arms are preferably provided with webs 23 which may either be let into the arms or formed integral therewith, the former construction being illustrated, and the inner and lower end of the weight being recessed as indicated at 23 for the reception of a retaining element 24 of looped form attached to the spindle. This construction permits of the return of the weight when the apparatus is not in operation to a position with its center of gravity but slightly offset from the axis of rotation of the sifter box. Mounted in the bottom of the weight and within the guide groove thereof, for contact with the guide upon which the weight slides are anti-frictional bearing rollers 25, and mounted at opposite sides of the upper groove for contact with the side surfaces of the upper guide represented by the upper side of the loop 20 are the axially upright anti-frictional rollers 26 to minimize the frictional resistance offered to the outward movement of the weight in its guide due to centrifugal action. The guide as indicated is inclined upwardly at an angle toward its outer end so that when the rotation of the spindle, which may be effected by any suitable means and power conveyed thereto for example through the drive pulley 27, is checked, the weight will return to the neutral or approximately central position indicated in Figure 1. As the spindle is rotated the weight moves outwardly to a greater or less extent depending upon the speed of movement or rate of rotation, and this outward movement is limited by a stop pin 28 threaded or otherwise adjustably fitted in a socket 29 in the outer end of the weight for terminal contact with the end of the looped guide. Also a cushioning spring 30 is carried by the limiting element 24 to contact with the weight 22 to break the shock upon the apparatus incident to return of the weight to its neutral position. Spring 30 is arcuate and fastened in place by a bolt 30^a passing and slidable through an enlarged or swelled portion 30^b of element 24. Motion may be communicated to the pulley 27 by means of a belt 31 or the equivalent thereof.

Furthermore transverse bolts 32 are preferably carried by the weight 22 to provide

for the attachment of auxiliary or supplemental weights such as relatively thin disks 32^a when required, said bolts in the construction illustrated being arranged to extend laterally from the weight 22 near the inner and outer ends thereof, and have nuts 32^b to fasten disks 32^a in place.

Having thus fully described the invention, what I claim is:—

In combination with a sifter box, a vibrating apparatus having a revoluble spindle arranged in substantially perpendicular relation with and seated at one end upon the bottom of the box, a foot bearing for the other end of said shaft, said foot bearing connected by braces with the bottom of the box, an eccentric weight carried by said spindle, the spindle being provided with a looped offset forming a radial guide which is inclined upward toward its outer end for directing the movement of the weight toward and from the axis of rotation, the spindle being provided with a looped retaining member for limiting the inward movement of the weight, the weight being provided at its inner end with a recess adapted the receive said loop, the looped retaining member and recess cooperating to permit said weight to project to both sides of the axis of rotation when said weight is in normal position, and a cushioning spring carried by said looped retaining member and adapted to contact with the weight when in normal position.

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

JACOB E. RAMSEY.

Witnesses:

EMMA G. WADE,

GEO. C. WADE.