

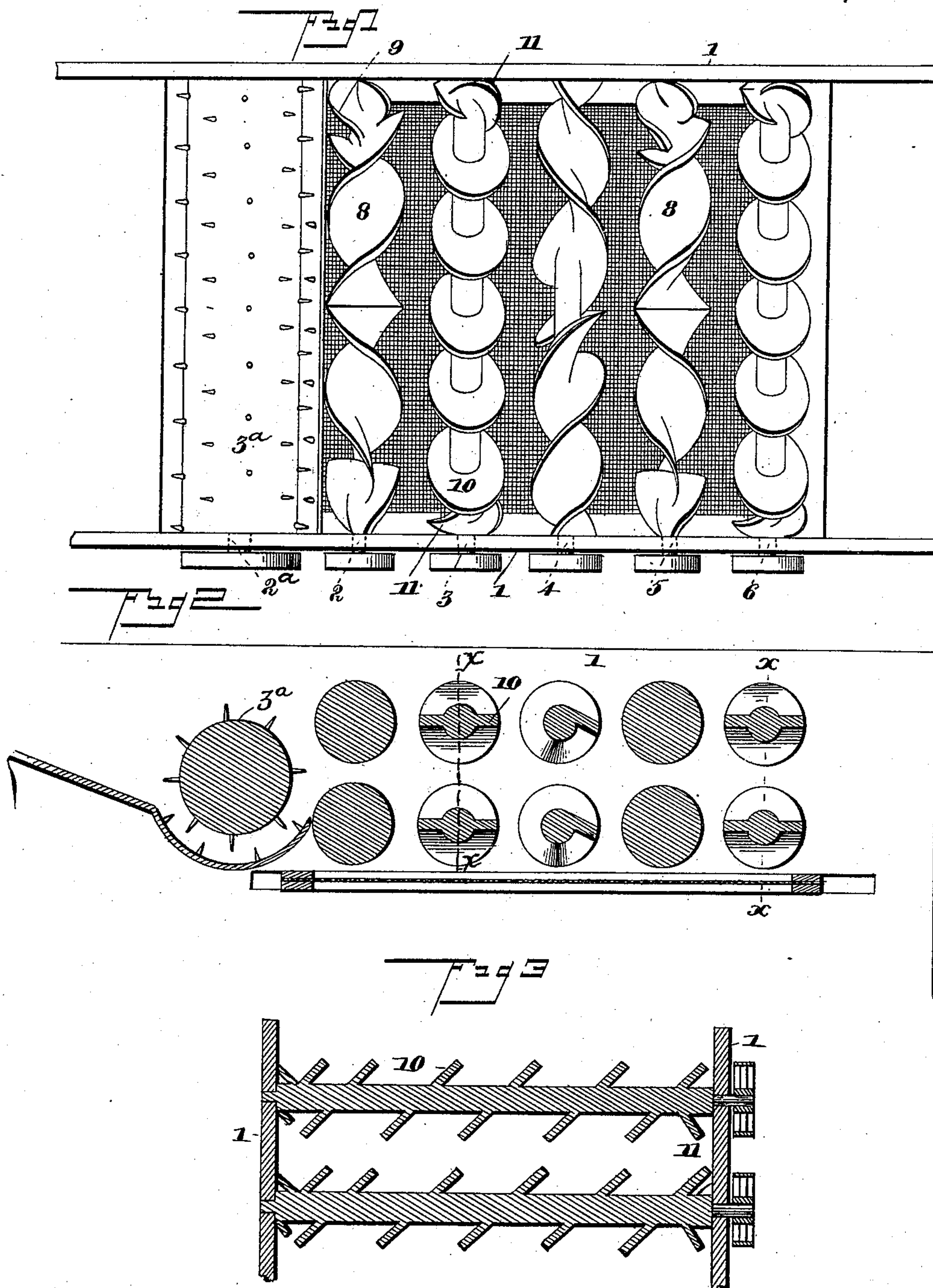
(No Model.)

2 Sheets—Sheet 1.

W. L. GILSON.  
GRAIN SEPARATOR.

No. 429,616.

Patented June 10, 1890.



Witnesses

*John Lurie*  
*Wm. Bagger*

Inventor

*William L. Gilson*

By his Attorneys

*C. A. Snow & Co.*

(No Model.)

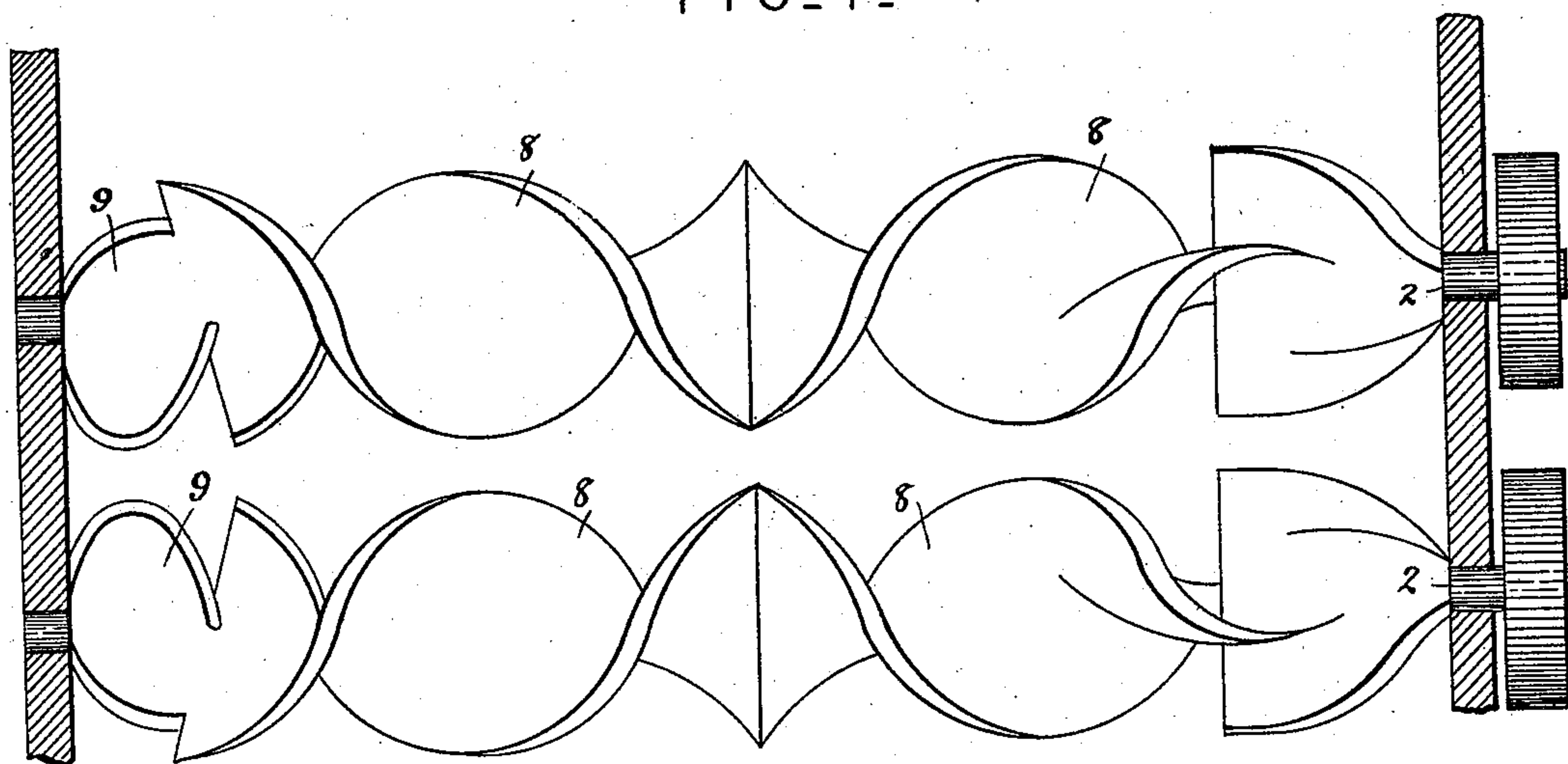
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FIG. 4.



Witnesses

*Jas. H. McLaughlin*  
*Wm. Baggett*

Inventor

*William L. Gilson*

By *his* Attorneys.

*C. A. Snow & Co.*



# UNITED STATES PATENT OFFICE.

WILLIAM LORENZO GILSON, OF MCMINNVILLE, OREGON.

## GRAIN-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 429,616, dated June 10, 1890.

Application filed March 6, 1890. Serial No. 342,856. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM LORENZO GILSON, a citizen of the United States, residing at McMinnville, in the county of Yam Hill and State of Oregon, have invented a new and useful Grain-Separator, of which the following is a specification.

This invention relates to grain-separators, and it may be best described as being in the nature of an improvement on the device for which Letters Patent of the United States No. 390,772 were granted to myself on the 9th day of October, 1888.

The device shown and claimed in the patent to which I have just referred consisted principally in a series of rollers arranged in pairs and some of said rollers provided with spiral flanges and others with inclined ovoid disks for the purpose of conveying the grain and straw from the cylinder and in a rearward direction in the machine, at the same time imparting to the straw thus conveyed a violent vibratory motion, which was found very effective in separating the grain and chaff and permitting the same to drop between the conveying-rollers and onto sieves or screens arranged underneath. In the said patent the separator was described as being provided with three sets or pairs of such rollers of specific construction.

I have found by practice and by experiments that in many grain-separators to which my invention may be successfully applied different numbers of rollers or sets of rollers are required in order to produce the most satisfactory results. I have also discovered that the construction of the said conveying-rollers may be advantageously modified in several particulars.

My present invention therefore consists in certain improvements in the construction and arrangement of parts which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a plan view of a portion of a grain-separator to which my invention has been applied. Fig. 2 is a longitudinal vertical section of the same. Fig. 3 is a vertical transverse section of the same, taken on the line  $x x$  in Fig. 2. Fig. 4 is a

transverse sectional view taken in front of the roller-shafts 2 2, and showing the latter in elevation.

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

1 designates side pieces of the frame, which are provided with bearings for the shaft 2<sup>a</sup> of the cylinder 3<sup>a</sup>. The side pieces 1 1 are also provided with bearings for a series of transverse shafts, (designated, respectively, by 2 2 3 3 4 4 5 5 6 6,) which are arranged in pairs, as shown. Said shafts are extended beyond one of the side pieces, and are provided with band wheels or pulleys adapted to receive motion from an endless belt or band, which is arranged in such a manner as to cause each pair of shafts to rotate in opposite directions, the front sides of the upper shafts moving downwardly and the front sides of the lower shafts upwardly, the object of this motion being to convey material passing between the shafts in a rearward direction in the machine.

The shafts 2 2 are each provided with spiral flanges 8, extending in right and left hand direction from the said shafts, and the flanges upon the upper and lower shafts being coiled in opposite directions. The said spiral flanges are coiled in such a manner as to force the material passing between the rollers outward toward the sides of the frame of the machine. The spiral flanges 8 are discontinued at a short distance from the sides of the frame, and upon the ends of the shafts 2 are mounted oppositely-coiled spirals 9, the tendency of which would be to throw the material in an inward direction.

The shafts 3 3 are provided with inclined ovoid disks 10, which are inclined in a similar direction upon both shafts. At the ends of said shafts adjacent to the inner sides of the frame of the machine are mounted oppositely-inclined disk-sections 11.

The shafts 6 are constructed precisely like the shafts 3, and upon the shafts 4 and 5 are secured or formed spiral flanges substantially like those upon the shafts 2, with the exception that the flanges upon the shafts 4 are coiled in an opposite direction. Each of the shafts is provided at its outer ends adjacent to the inner sides of the frame of the



machine with supplemental spiral flanges coiled oppositely to the flanges, the ends of which they adjoin.

In the carrying out of my invention the  
5 number of the shafts having the spiral flanges or the inclined disks may be increased or decreased, according to the nature of the machine to which the invention is to be applied. The relative order in which the said shafts  
10 are arranged may be altered and modified without departing from the spirit of my invention.

In operation the straw coming from the cylinder of the machine is seized by the first  
15 pair of rollers and carried in a rearward direction and subjected to the action of the successive pairs of rollers. The action of the said rollers will be to impart a violent vibratory motion to the straw, which will result in  
20 separating the grain and chaff, which is permitted to drop upon a screen arranged underneath. The spiral flanges and the inclined disks will intercept any portion of the grain and chaff which the blast from the fan of the  
25 machine might tend to throw back into the straw, and the separation will for this reason be very perfectly and efficiently carried out. The oppositely-coiled flanges and the oppositely-inclined disks upon the ends of the re-  
30 spective shafts will prevent the straw from winding upon the ends of the shafts, as it would otherwise be liable to do. The tendency of the several shafts or rollers will be to throw the straw alternately outward from  
35 and inward toward the center of the machine,

and the agitation to which the straw is subjected will consequently be very short and abrupt, and consequently more effective.

In some machines it will not be found convenient to arrange the rollers in pairs, as  
40 hereinbefore described, and I reserve the right in such cases to arrange the rollers in a single series.

Having thus described my invention, I claim and desire to secure by Letters Patent—  
45

1. In a grain-separating device, the agitating-rollers having spiral flanges coiled oppositely from their central portions and provided at their ends with spiral flange-sections coiled oppositely to the spiral flanges, the  
50 ends of which they adjoin, substantially as set forth.

2. In a grain-separating device, the agitating-shafts having inclined ovoid disks, in combination with the oppositely-inclined  
55 disks mounted at the ends of said shafts.

3. A grain-separating device comprising a series of pairs of shafts having spiral flanges and inclined disks, and provided at their ends with oppositely-coiled spiral flange-sections  
60 and oppositely-inclined disks, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

WILLIAM LORENZO GILSON.

Witnesses:

J. E. MAGERS,

H. D. BARTHOLOMEW.