

(No Model.)

J. M. KING.
GRAIN SEPARATOR.

No. 475,779.

Patented May 31, 1892.

Fig. 1

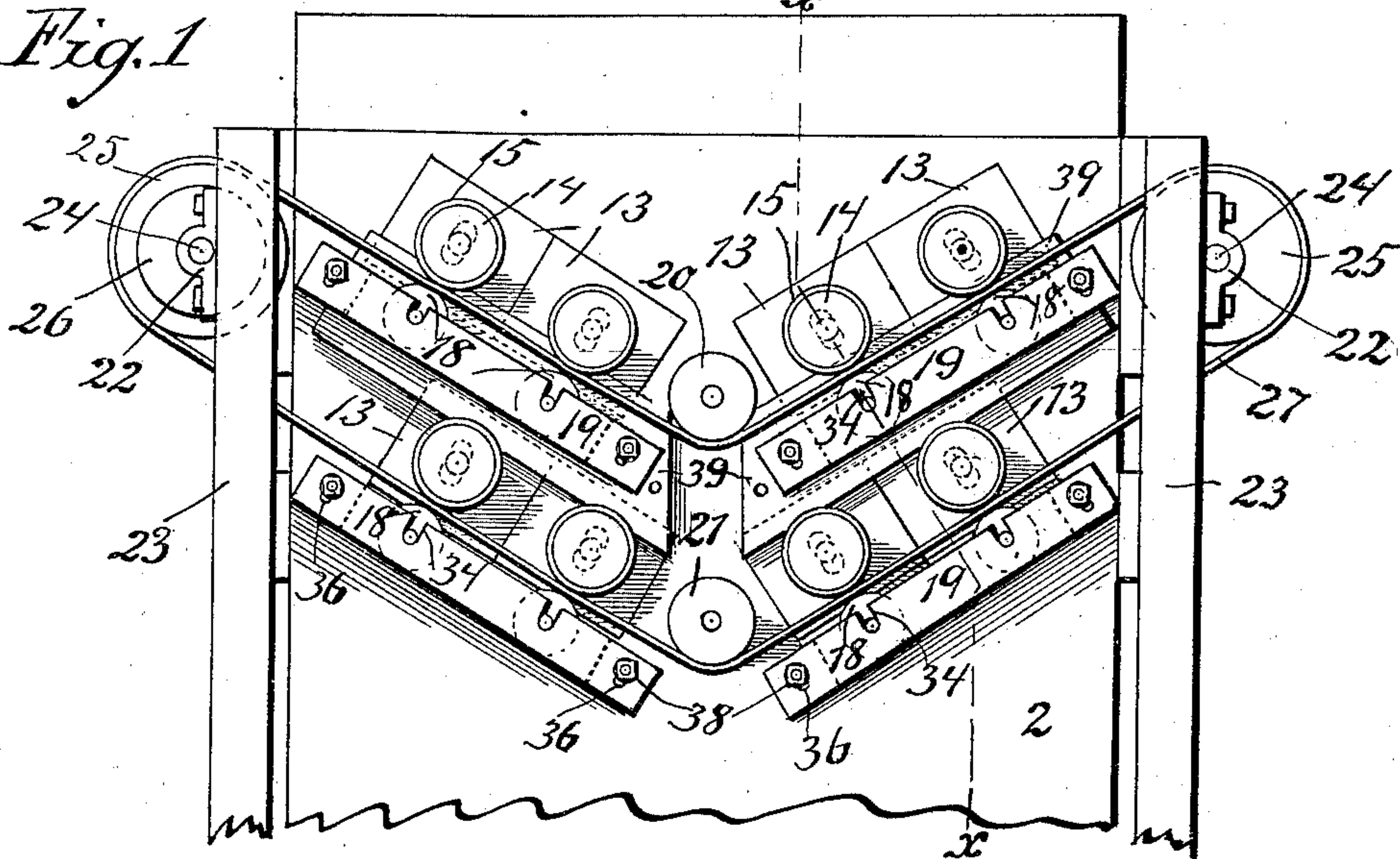


Fig. 2

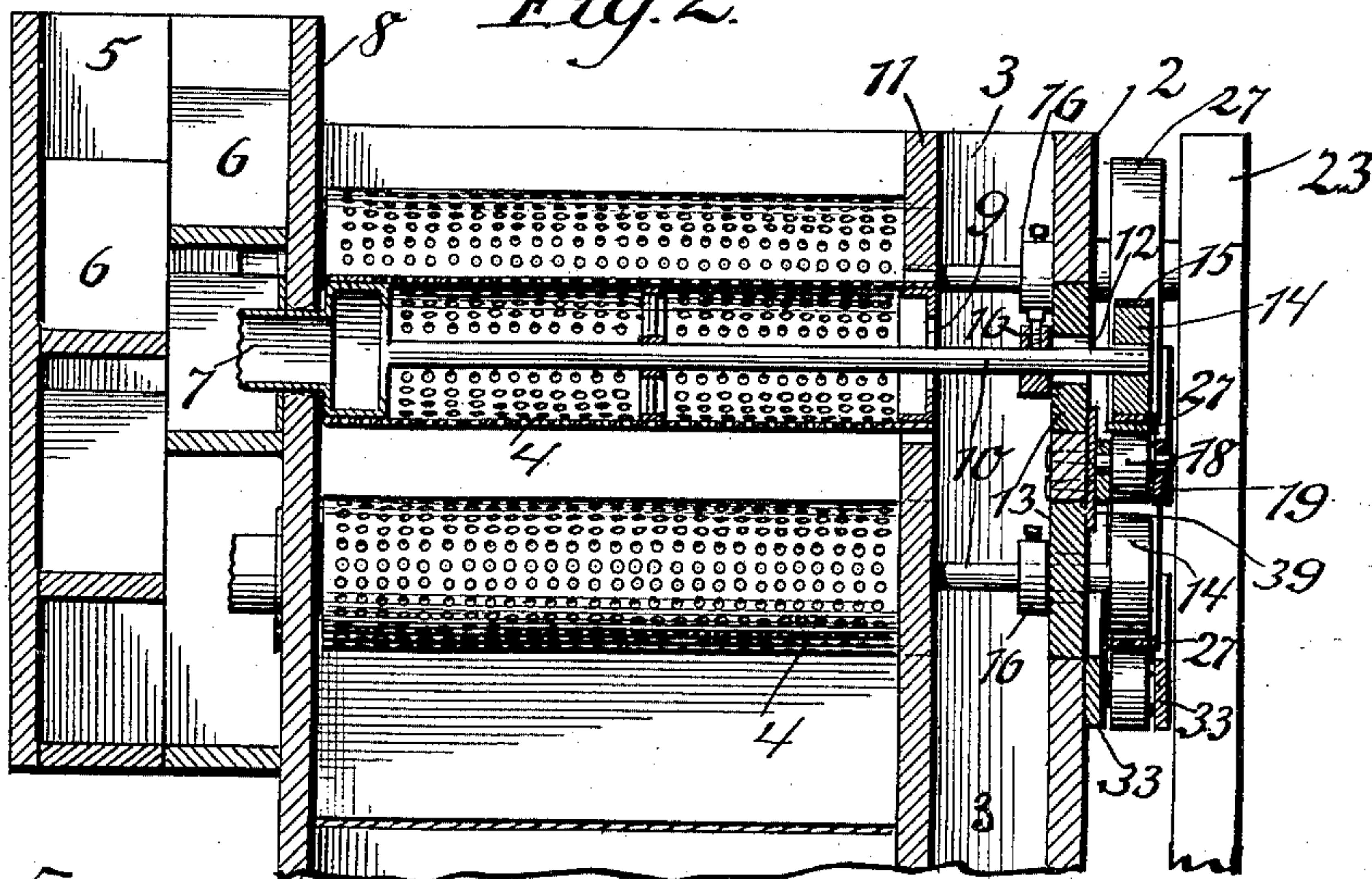


Fig. 5.



Fig. 3.

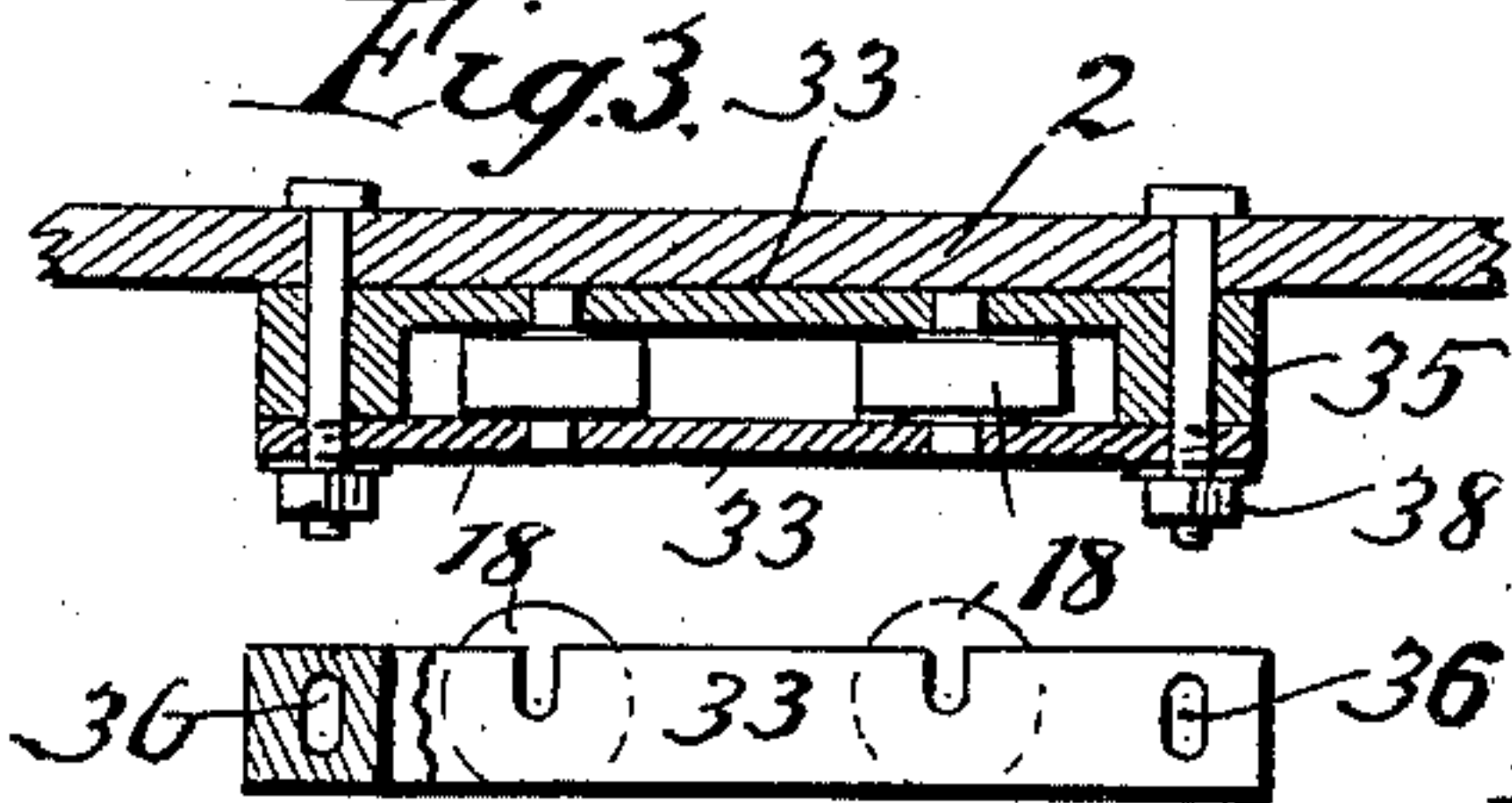


Fig. 4.

James M. King.

By Paul & Merwin attys

Witnesses:

J. Jensen.

C. J. Hawley.

UNITED STATES PATENT OFFICE.

JAMES M. KING, OF ROCHESTER, MINNESOTA.

GRAIN-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 475,779, dated May 31, 1892.

Application filed October 31, 1891. Serial No. 410,475. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. KING, of Rochester, in the county of Olmsted and State of Minnesota, have invented certain Improvements in Grain-Separators, of which the following is a specification.

My invention relates to improvements upon the grain-separating machine upon which a patent of the United States was granted me September 2, 1890, and numbered 435,542; and the object of my invention is to provide simple, inexpensive, and efficient means for driving the rotary screens of said machine.

To this end my invention consists in the combination of the several shafts of the rotary screens with friction-pulleys arranged thereon, carrying-pulleys provided beneath the same, and an endless belt passing between the friction-pulleys and carrying-pulleys thus provided, and means for driving said belt, and in details of construction and combinations, all as hereinafter described, and particularly pointed out in the claims.

My invention will be more readily understood by reference to the accompanying drawings, in which—

Figure 1 is an end view of a machine embodying my invention. Fig. 2 is a vertical section on the line $x x$ of Fig. 1. Figs. 3 and 4 are details of the carrying-wheel boxes, and Fig. 5 shows one of the slotted blocks.

As shown in the drawings, my machine is the same in all respects as the machine shown and described in Patent No. 435,542, with the exception of the outer wall 2 of the discharge-trunk 3 and the parts arranged in connection therewith. Four rotary screens 4 are arranged on each side of the machine. Obviously any number may be so arranged. These screens 4 are supported in inclined banks, so that they occupy the least possible space, while in no way interfering with one another. These banks slant in toward the center, as indicated by the position of the pulleys on the end of the machine. (See Fig. 1.)

5 represents the feed-hopper, having the inclined and alternately-arranged shelves 6.

The hollow journals 7 of the screens extend into the feed-hopper through the walls 8 thereof, and the grain enters the rotary sieve through the same and passes out through the opening 9 in the other end of the sieve. Each

rotary screen-shaft 10 extends through the wall 11 and through a slot 12, provided in a block 13, secured in the wall 2. On the end of each shaft I provide an iron pulley 14, having a rubber periphery 15. Longitudinal play of the shaft is prevented by a collar 16, arranged on the inside of the wall 2 and on the shaft.

As shown, the blocks 13 are secured in rectangular openings in the wall 2 of the machine by the inclined plates 39 lapping over the edges of the blocks. The slots in these blocks extend at right angles to a line drawn through the centers of the shafts in the same bank. In line with and beneath the iron pulleys I provide the carriers 18, arranged in the boxes 19, which are made adjustable. In the middle of the end wall I provide the larger idlers 20 and 21 to give the belt the proper direction. These idlers are arranged one above the other and are in line with the several banks of screens.

On the sides of the machine and supported in bearings 22, arranged on the carrier-post 23, I provide the driving-shafts 24, and on these large pulleys 25. On one drive-shaft is a pulley 26, over which the main driving-belt passes. The diameters of these large pulleys 25 are about equal to the distance between the banks of screens, and the belt 27 extends over the same and between iron pulleys 14, having the rubber periphery, and their carrier-pulleys 18. The middle of each side or leg of the belt passes under the idler 20 21, so that the belt passes tangentially between the rows of pulleys 14 and 18.

It will be seen that the weight of the iron pulleys and the end of the screen, added to the weight of the grain in the screen, presses the rubber-band periphery of each pulley 14 firmly down upon the belt, which, being entirely supported by the carrier, drives the screens as effectually as a gear. The carrier-pulley boxes 19 are made up of the two inclined side boards or bars 33, provided with the slots 34 to receive the short shafts of the carrier-pulleys and fastened together at the end by the blocks 35. The slots 36 are provided in such ends, so that by loosening the nuts 38 of the bolts passing therethrough the box may be adjusted up or down to press the idlers more or less firmly into contact with the

belt. The blocks 13 may be secured in the end of the machine in any suitable way, and upon being removed leave an opening therein large enough to allow the rotary screen to be
5 drawn out endwise with the shaft and its other attachment.

It is obvious that instead of arranging the screens in the banks, as shown, they may be arranged in horizontal tiers, in which case the
10 belt would extend straight across the end of the machine and the idlers 20 and 21 would be dispensed with.

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

1. The combination, with an endless belt, of pulleys for driving, idlers or carriers arranged for said belt to rest upon, screen-shafts arranged above the same, and weighted pul-
20 leys thereon bearing upon said belt and driven thereby, substantially as and for the purpose specified.

2. The combination, in a grain-separating machine, of rotary sieves with shafts attached,
25 supporting-walls and bearings for said shafts, large pulleys 25, a belt 27, arranged upon the same, means for driving said belt, pulleys arranged on said shafts and bearing upon said belt, and carrier-pulleys arranged under the

same, and said belt passing between said car- 30 riers and shaft-pulleys, substantially as described.

3. The combination, in a grain-separating machine, of rotary screens and the shafts thereof provided with pulleys, with the walls 35 of said machine, slotted blocks wherein the shafts are supported, pulleys 25, the belt 27, and carriers 18, arranged under said shaft-pulleys and adjustably arranged with respect to the same, substantially as described. 40

4. The combination, with the rotary screen and the shafts thereof, of the walls of the machine, large rectangular openings therein, the blocks 13, secured in said openings and provided with slotted bearings for said shafts, 45 large pulleys 25, means for driving the same, a belt 27, passing over the same, idlers 20 and 21, carrier-boxes 19 and carriers arranged therein, and iron pulleys 14, provided with rubber tires 15 and arranged above said carriers 50 18, said boxes being adjustable, substantially as described.

In testimony whereof I have hereunto set my hand this 26th day of October, 1891.

JAMES M. KING.

In presence of—

JOHN EDGAR,

C. W. STREETER.