

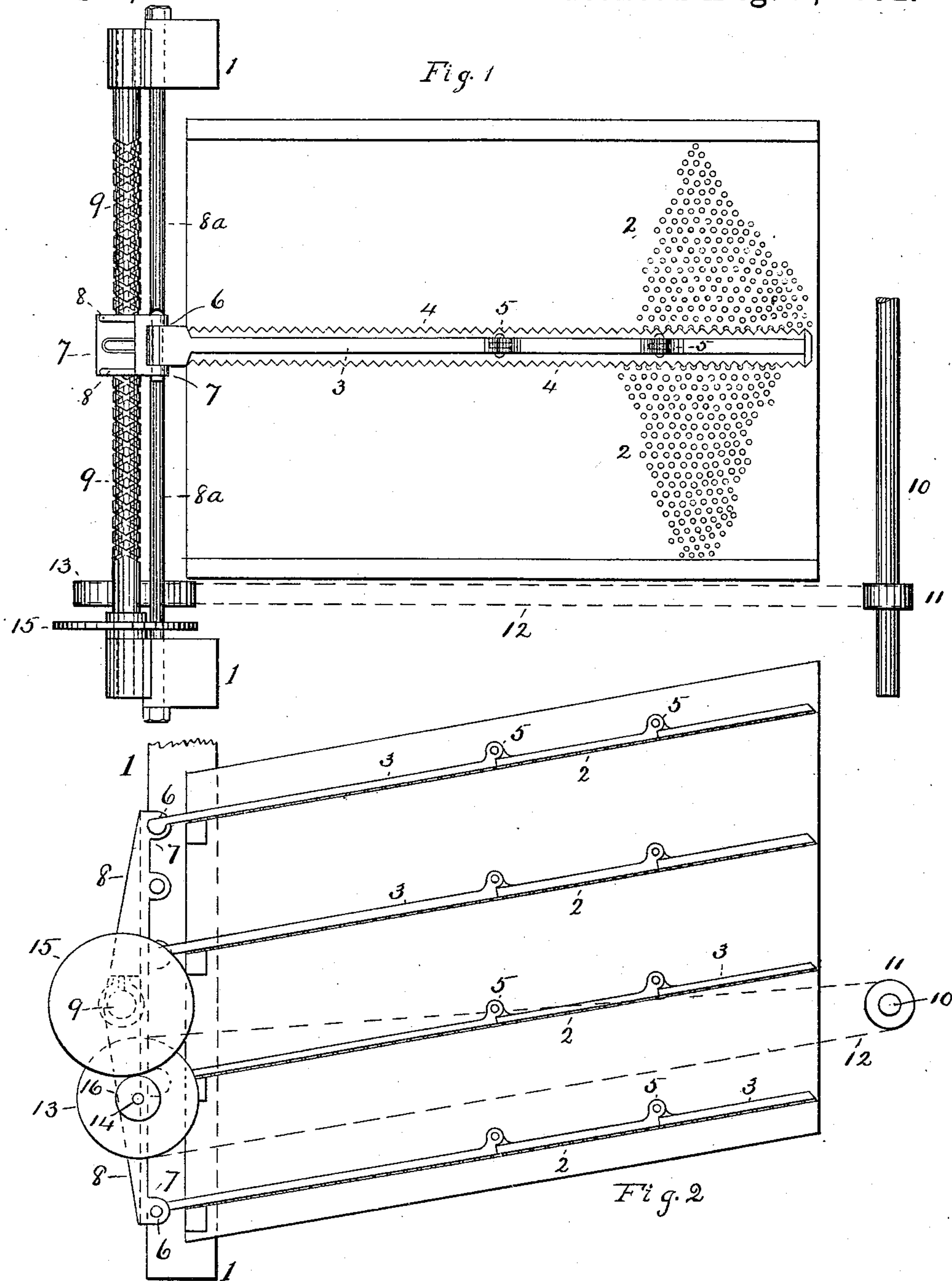
(No Model.)

2 Sheets—Sheet 1.

A. H. KIRK.  
WHEAT SEPARATOR.

No. 479,816.

Patented Aug. 2, 1892.



Witnesses  
H. J. Bingham  
R. Blume

Inventor  
Alva H. Kirk  
By His Attorney  
P. H. Gunkel

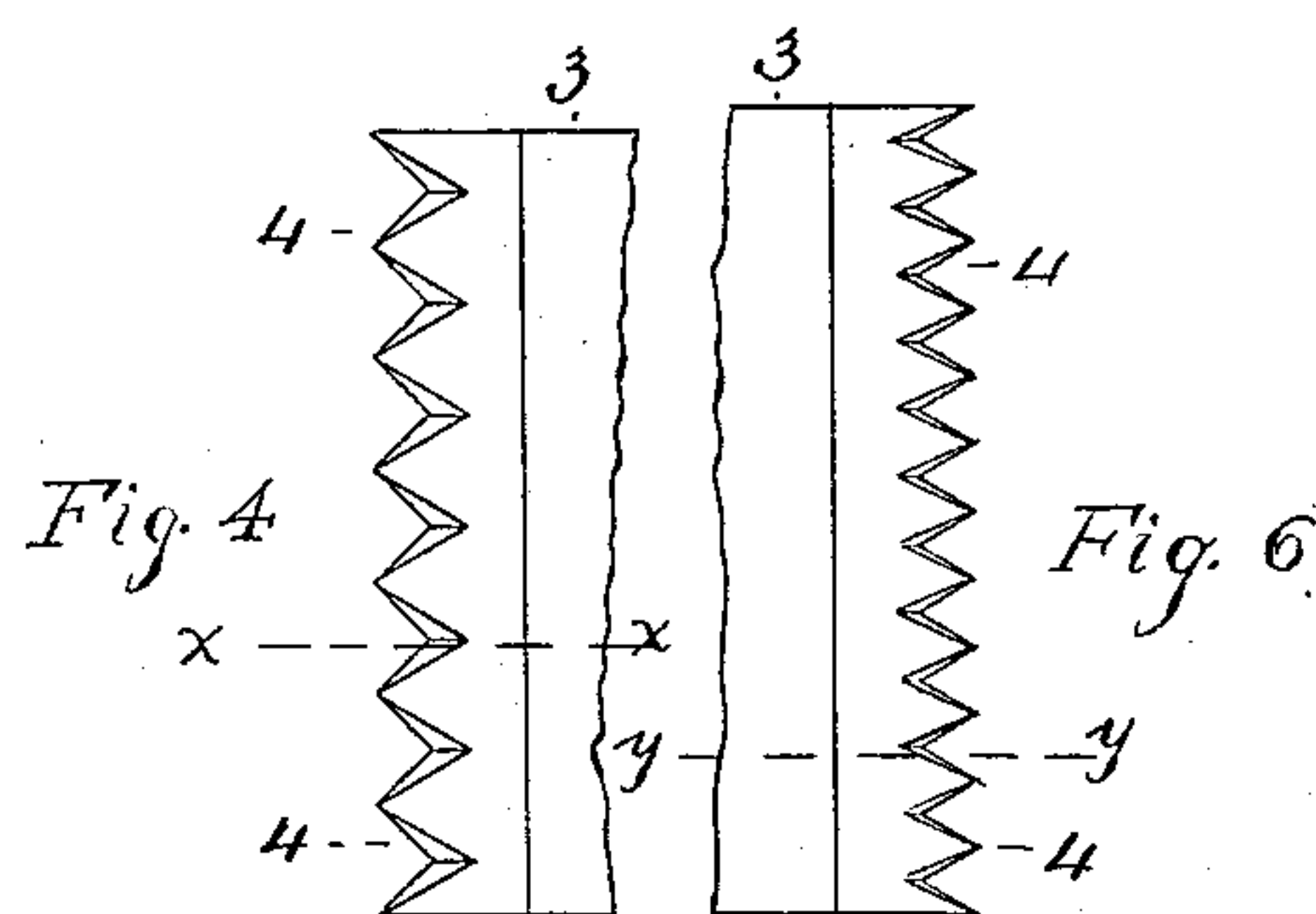
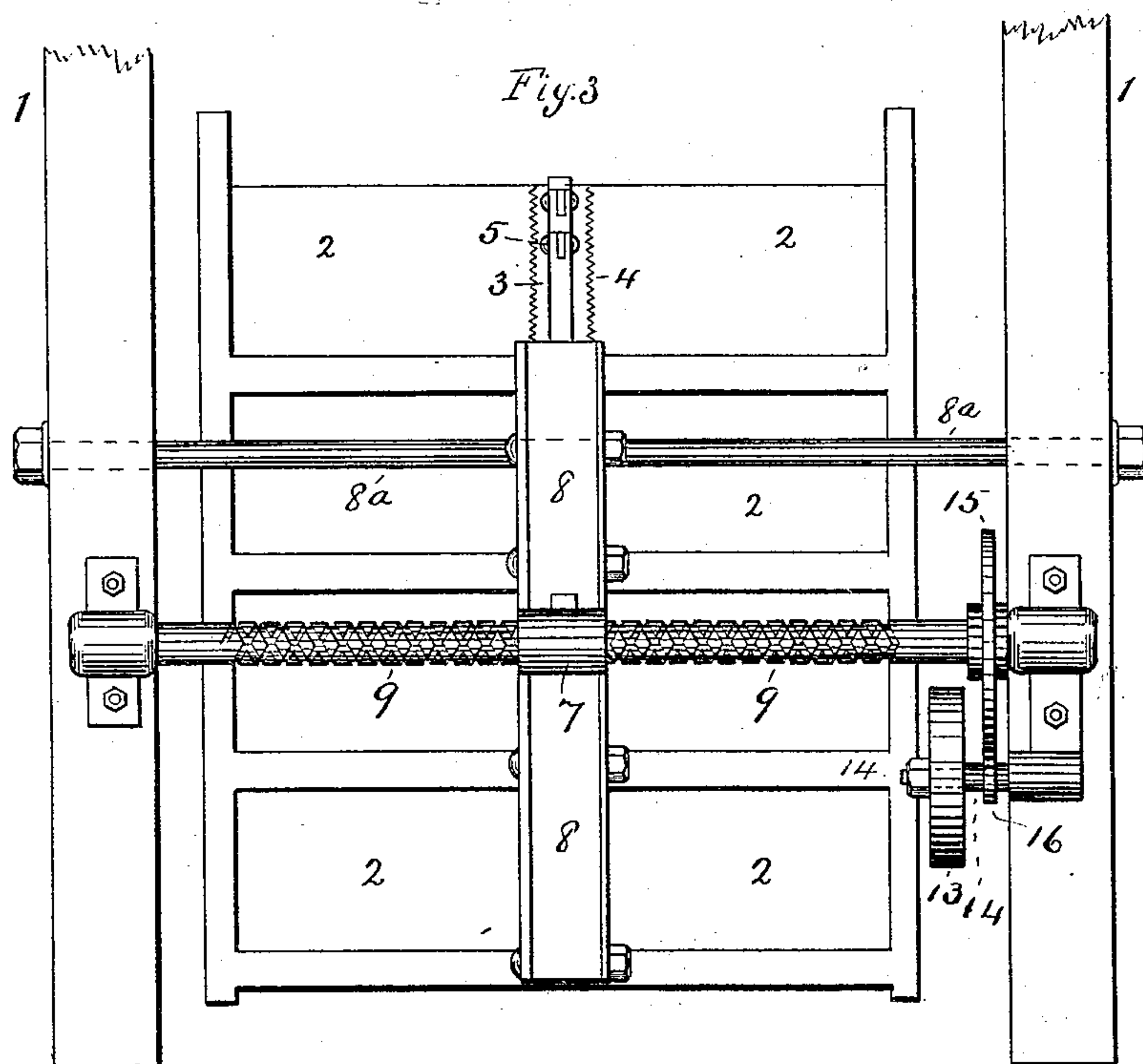
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# UNITED STATES PATENT OFFICE.

ALVA H. KIRK, OF FERGUS FALLS, MINNESOTA.

## WHEAT-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 479,816, dated August 2, 1892.

Application filed July 28, 1891. Serial No. 400,974. (No model.)

*To all whom it may concern:*

Be it known that I, ALVA H. KIRK, a citizen of the United States, residing at Fergus Falls, in the county of Otter Tail and State of Minnesota, have invented certain new and useful Improvements in Wheat-Separators, of which the following is a specification.

My invention relates to machines used for separating impurities from wheat; and its object is to provide a practical device for removing obstructions from the upper surface of the sieves, and it will be hereinafter fully described, and pointed out in the claims.

My improvement is illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of a sieve of a wheat-separator provided with my improvement. Fig. 2 is a vertical longitudinal section of a separating-machine having a nest of sieves provided with my improvement. Fig. 3 is an end elevation of the portion of the machine illustrated in Fig. 2. Fig. 4 is a detail of a portion of the cleaning device. Fig. 5 is a transverse section of the same on the line  $xx$  of Fig. 4. Fig. 6 shows a modification of the device, and Fig. 7 is a transverse section of the same on the line  $yy$  of Fig. 6.

In said drawings, 1 designates the frame-pieces of the machine, and 2 the sieves, which preferably are made of perforated sheet metal. The machine selected for illustration is similar to those manufactured by the Bernard & Lees Manufacturing Co., which are well known and the operation of which is well understood by those familiar with the art. The sieves in the machine selected are arranged to be reciprocated longitudinally by mechanism, not shown, but well known to those familiar with such machines.

The cleaning device consists of a bar 3, preferably provided with teeth or serrations 4 and made of wood or any desired material. This bar 3 may be a continuous one extending across the sieve from end to end or side to side, or it may be hinged at suitable points, as indicated at 5, in order that it may adjust itself to any irregularities in the surface of the sieve. This bar is hinged, as at 6, to a carrier 7, which in case of the use of several sieves arranged in vertical series, as shown in the drawings, may be a standard 8, and in that case each of the bars is similarly hinged in suitable position

to the standard to be actuated thereby to perform its functions. The carrier 7 is formed as a part of or connected with a sleeve upon a screw-shaft 9, that has right and left threads by means of which as the shaft is rotated continuously in one direction the carrier is made to travel forth and back within the prescribed limits in the well-known manner. The standard may be guided in its reciprocations by means of a transverse rod 8<sup>a</sup>, that is bolted to the frame-pieces. Thus the cleaners are made to reciprocate on the surface of the sieves from side to side or at right angles to the flow of the grain.

The screw-shaft 9 may be operated in any convenient way. As illustrated, it is operated by means of the eccentric-shaft 10 of the separator, on which is provided a pulley 11, from which a belt (shown by dotted lines 12) passes over a pulley 13 on a short shaft or stud 14, and on the shaft 9 is firmly fixed a gear 15, which meshes with a pinion 16 on the stud 14. Rotation of the pulley 13, as will be obvious, will cause the gears to rotate the screw 9, and thus cause reciprocation of the carrier and the cleaners connected to it.

In the operation of a machine of this character it is found that short sticks, large kernels of the grain, and other matter fed onto the sieves with the wheat lodge in the perforations and clog them, so that the efficiency of the sieves is reduced to the extent to which the perforations are thus clogged, and in this way it frequently happens that a portion of the wheat which should pass through the perforations is carried over the sieves and passes off with the tailings. By the use of devices of the character of my improvement this difficulty is obviated, for by the sweeping of the surface of the sieves at suitable intervals by the cleaning device the perforations are freed from such obstructions, and the sieves are thus rendered capable of efficient service. Experience has demonstrated that a plain bar so reciprocated may be made to serve a useful purpose; but if provided with serrations its efficiency is increased, and it is preferable that the serrations have their upper surface beveled, as indicated in Figs. 4 and 6. It is desirable, of course, that the cleaners be made to reciprocate over the sieves at right angles to the flow of the grain, and whether the sieves

have what is known as an "end shake" or "side shake" the cleaning devices can readily be adapted to make their movements at right angles to the flow of the grain.

5 Having described my invention, what I claim is—

1. The combination, with a screening medium, of a cleaning device arranged to sweep its surface and consisting of a bar having its  
10 sides beveled and serrated, substantially as set forth.

2. The combination, with a reciprocating screening medium, of a cleaning device for sweeping its surface, and consisting of a bar  
15 rigid laterally and yielding vertically and having serrated beveled sides, substantially as set forth.

3. In a grain-cleaning machine, the combination, with a shaking screening medium, of a cleaning device consisting of a bar having  
20 its under surface smooth and its sides serrated, and means for reciprocating it on such medium, substantially as set forth.

4. In a grain-cleaning machine, the combination, with a shaking screening medium, of  
25 a cleaning device consisting of a laterally-reciprocating bar composed of hinged sections having their under surface smooth and their sides serrated, substantially as set forth.

ALVA H. KIRK.

Witnesses:

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E. T. NELSON.