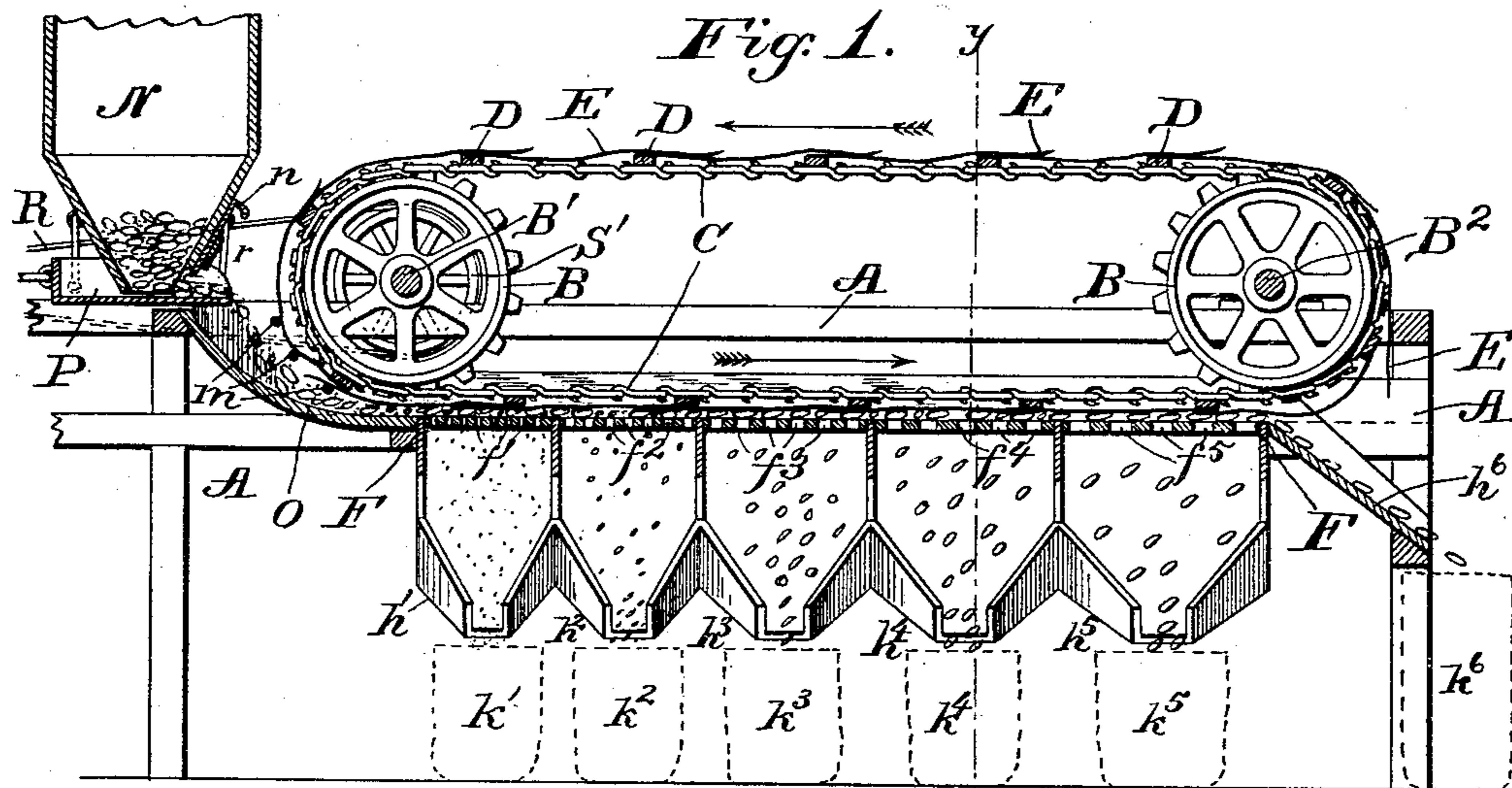


(No Model.)

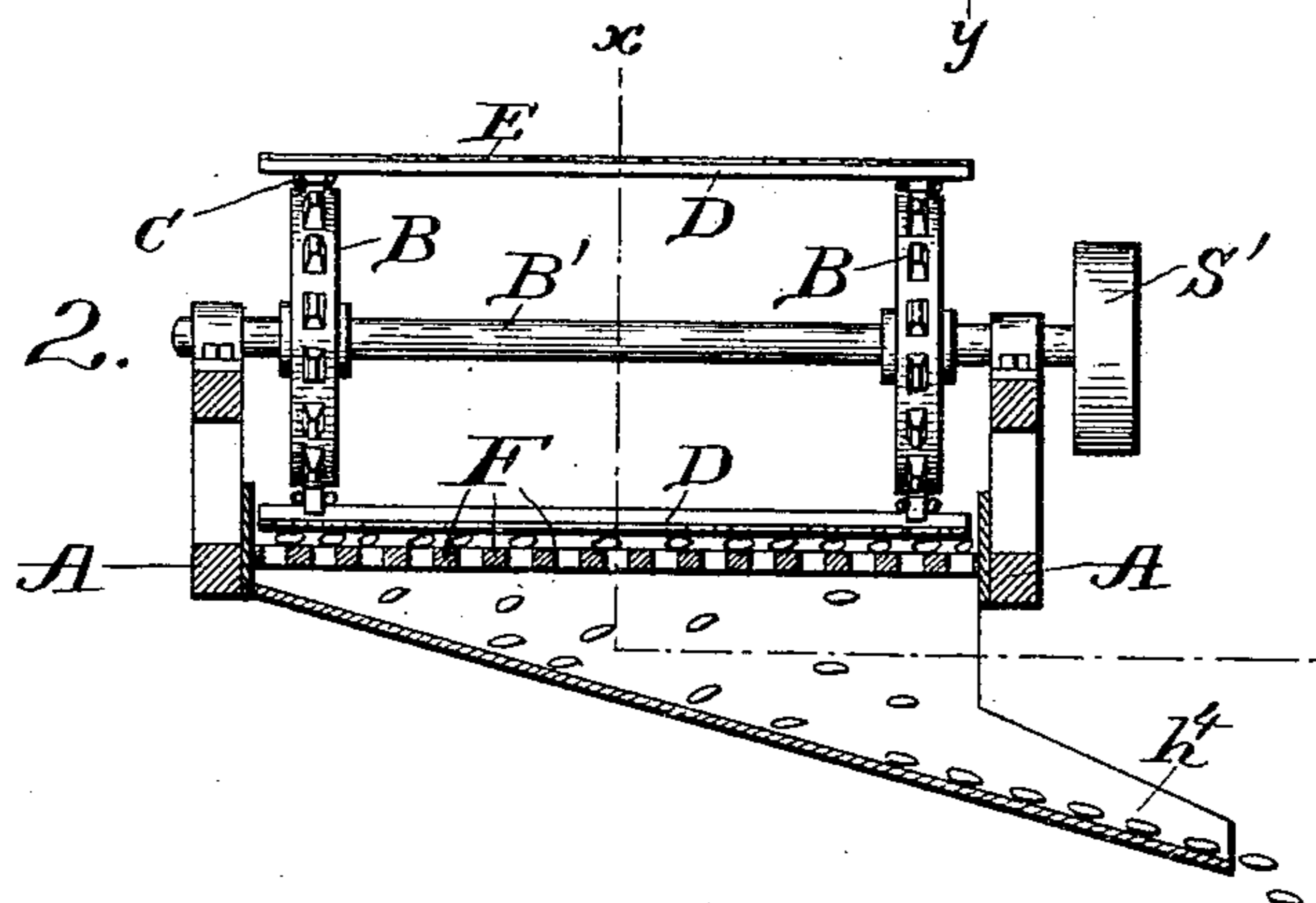
J. MENGE.  
GRAIN SEPARATOR.

No. 481,366.

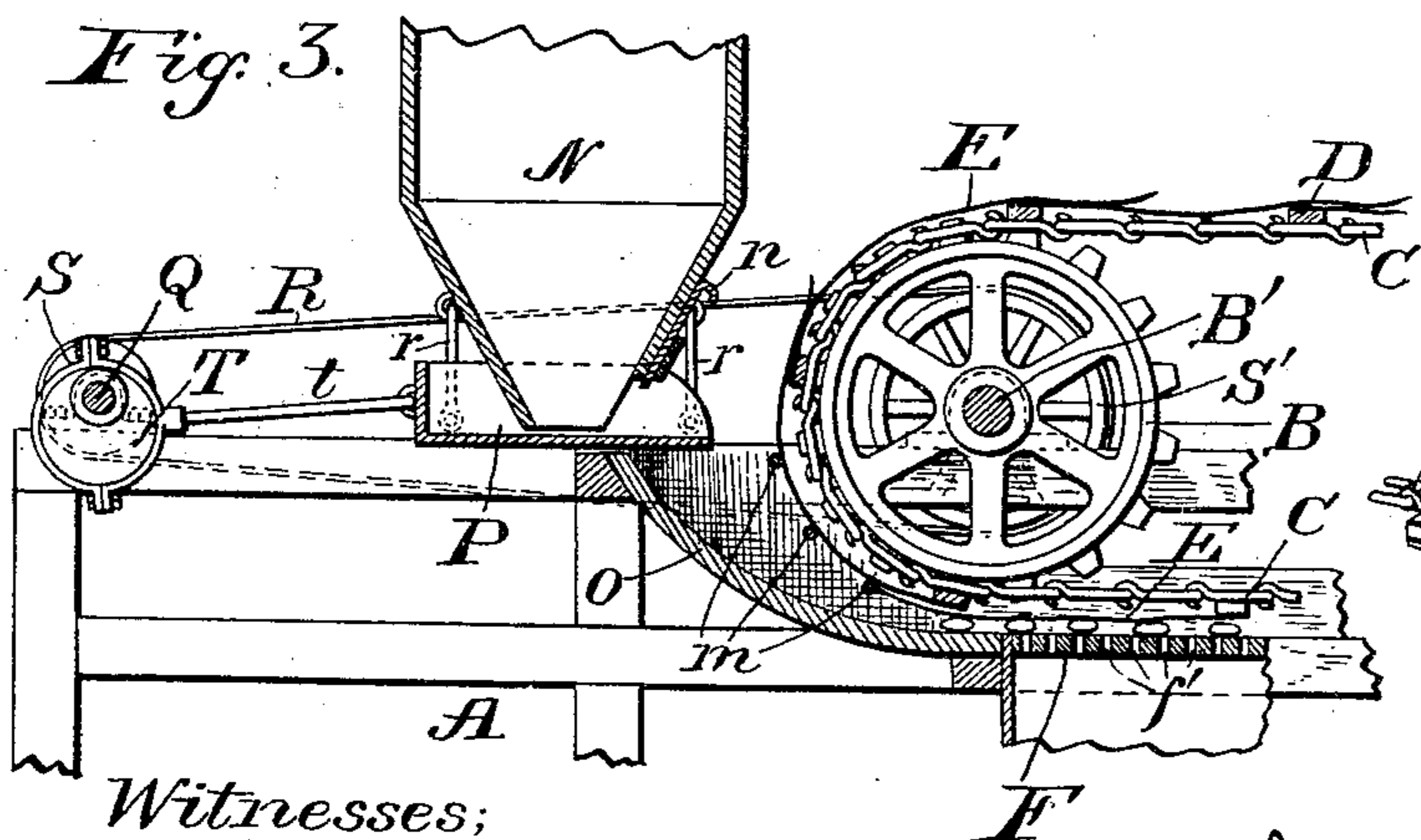
Patented Aug. 23, 1892.



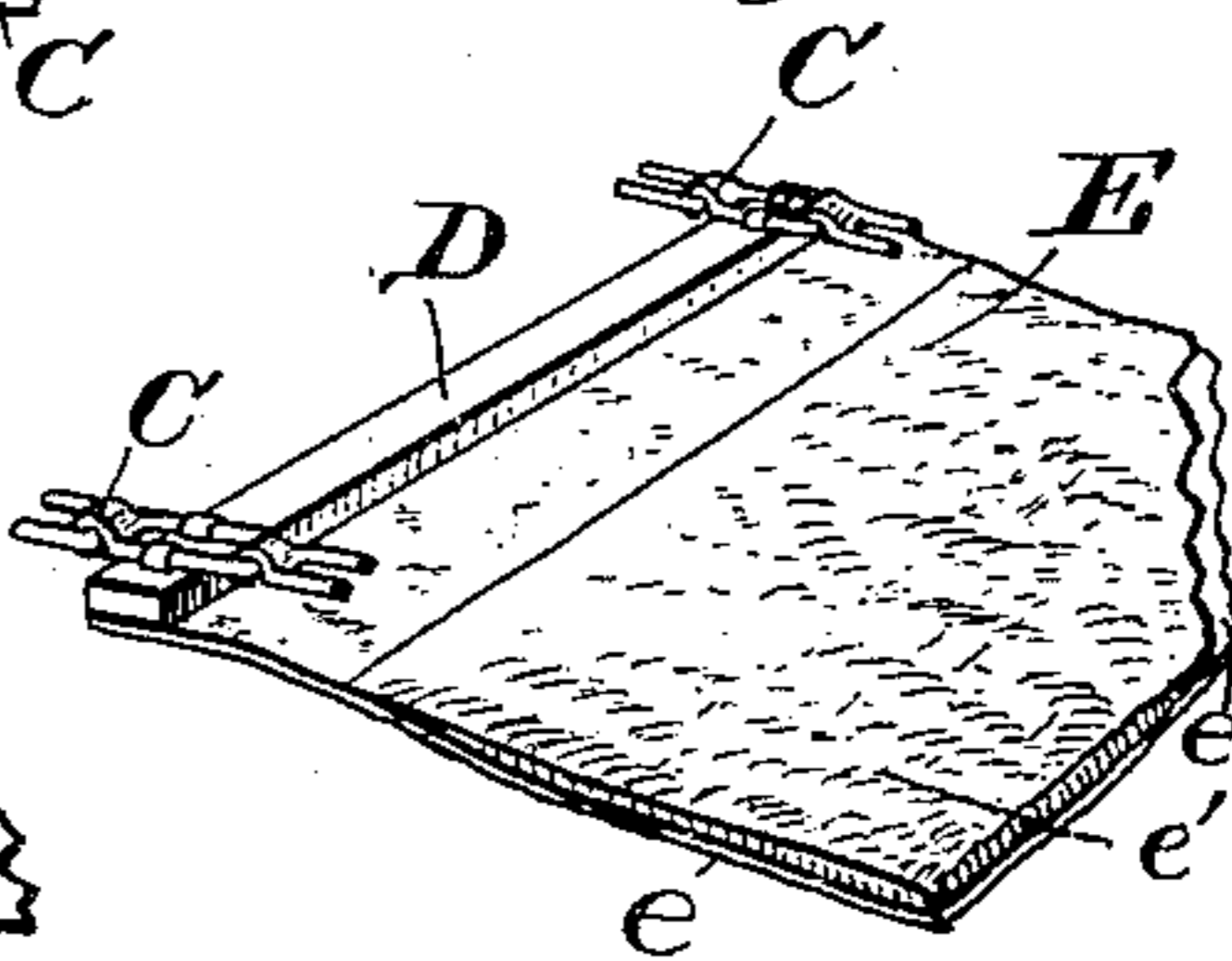
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



Witnesses;

Percy C. Bowen.  
John C. Wilson.

Inventor;

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By Whitman & Wilkinson,  
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# UNITED STATES PATENT OFFICE.

JOSEPH MENGE, OF NEW ORLEANS, LOUISIANA.

## GRAIN-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 481,366, dated August 23, 1892.

Application filed April 8, 1892. Serial No. 428,390. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH MENGE, a citizen of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented certain new and useful Improvements in Grain-Separators; 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.

My invention relates to devices for cleaning and separating grain; and it consists of the novel features hereinafter described and claimed.

Reference is had to the accompanying drawings, wherein the same parts are indicated by the same letters.

Figure 1 represents a section of the endless drag and its attachments along the line  $xx$  of Fig. 2. Fig. 2 represents a section along the line  $yy$  of Fig. 1, parts being omitted. Fig. 3 represents the feeding mechanism at one end of the endless drag, and Fig. 4 represents a perspective view of one of the pads or flaps attached to the endless chain and used for dragging the grains along over the graded screens.

A represents any suitable foundation or support, which may be of framework, as shown, or of masonry or castings.

B B represent pairs of sprocket-wheels keyed on the shafts  $B'$  and  $B^2$ , respectively. Into these sprocket-wheels the sprocket-chains C engage, and between these sprocket-chains are secured slats D, to which flaps or pads E are secured. These flaps may be made of cotton, flax, or leather, or other suitable material of suitable weight. I prefer to get the proper weight by using a facing of cotton, flax, or leather  $e$  and a pad of felt  $e'$ , reinforcing the same and lending additional weight and stiffness; but any other weighting and stiffening material may be used in place of felt.

F represents a graduated screen having small holes  $f'$  at one end and holes  $f^2, f^3$ , &c., gradually increasing in diameter toward the other end. Beneath the smallest holes  $f'$  the trough  $h'$  and receptacle  $k'$  are placed. Beneath the next larger holes  $f^2$  the trough  $h^2$  and receptacle  $k^2$  are provided, and so on up to the holes  $f^5$ , trough  $h^5$ , and receptacle  $k^5$ . The holes  $f^5$  are made of somewhat less di-

ameter than the length of the full-sized grain, and beyond the portion of the screen containing these largest holes the chute  $h^6$  and receptacle  $k^6$  are placed. This screen F may be level, as shown, or inclined at an angle.

$m$  are a number of rods or wires stretched across the framework A a few inches clear of the sprocket-chains, and these rods or wires serve to guide the pads or flaps and prevent them from falling down on the chute O after the loose end has gotten in a nearly vertical position.

N represents a hopper open at the bottom, into which the grain to be cleaned and separated is placed, and  $n$  is a gate for controlling the feed.

O represents a chute or trough, which may be straight or curved.

P represents a vibrating trough closing the bottom of the hopper N. This is suspended by rods  $p$ , and is vibrated by the rod  $t$  of the eccentric T on the driving-shaft Q.

S is a pulley also on said driving-shaft, and  $S'$  is a pulley on the shaft  $B'$ , to which shaft motion is imparted by means of the belt R.

The operation of the device is as follows: Suppose it be desired, for instance, to separate the whole grains of rice from the broken grains, indigo-seed, bran, dust, and such other foreign matter as may be present. The endless chains being in motion in the direction of the arrows, the mixture to be cleaned and separated is placed in the hopper N and is fed down the chute O in proper quantity by adjusting the gate  $n$ . As the grain passes under the shaft  $B'$  the pads E spread it out in an even layer, and the friction between the bottom of the pads and the grain is sufficient to drag or roll the grain along over the graduated screen F. The finer particles of dust, bran, &c., will fall through the fine holes  $f'$  and be deposited in the receptacle  $k'$ . The larger holes  $f^2$  will allow larger particles to drop through, such as indigo-seed, bits of grain, &c. The holes  $f^3, f^4$ , and  $f^5$  will allow still larger particles to fall through, until finally only the whole grains will be rolled or dragged past the screen and fall into the receptacle  $k^6$ . Should it be desired, the holes  $f^4$  and  $f^5$  may also be made large enough to pass whole grains through. It will be seen that

there can be no choking of the apparatus, as the flap will ride free of any obstruction and no crushing of the grains from undue pressure, nor any fine adjustment required, as the flap lies on the layer of grain and presses it lightly on the screen, at the same time dragging it along. The rolling motion of the grains not only keeps the whole mass well stirred up, thus enabling the smaller particles to fall out readily, but also serves a useful purpose in cleaning and polishing the grains.

While I have described my invention with reference to its adaptability for separating whole grains of rice from the broken grains and small particles of foreign matter, it will be evident that it is applicable to separating oblong grains of any description from less oblong grains or particles, for the oblong grains will roll around or slide along their major axes, the pressure of the pads preventing them from turning over end for end, and the smaller or less oblong grains will drop through. Thus in separating grains of wheat, oats, and garlic mixed together the device will separate the three and allow each to fall into a separate receptacle.

It will be obvious that many modifications might be adopted which could be used without departing from the spirit of my invention.

I claim, broadly, as new—

1. An apparatus for separating oblong grains from shorter grains or smaller particles of foreign matter, comprising a fixed screen having holes of less diameter than the length of the oblong grains and moving flaps adapted to lie upon and drag the mixed grain over said screen, substantially as described.

2. An apparatus for separating oblong grains from shorter grains or small particles of foreign matter, comprising a graded fixed screen having a number of small holes at one end and a number of holes increasing in diameter toward the other end, with suitable receptacles under said holes, and moving flaps adapted to lie upon said grain and to drag it along over said screen, substantially as and for the purposes described.

3. An apparatus for separating oblong grains from shorter grains or small particles of foreign

matter, comprising a fixed screen having holes of less diameter than the length of the oblong grains, and an endless drag of the character described, with flaps adapted to lie upon the mixed grain and to drag it over said screen, substantially as described.

4. In an apparatus of the character described, the combination, with two pairs of sprocket-wheels and means for driving the same, of endless chains meshing in said sprocket-wheels, slats spanning said chains and secured thereto, and pads attached at one end to said slats and free at the other, a screen beneath said pads and adapted to be swept thereby, and means for feeding the grain onto said screen, substantially as described.

5. In an apparatus of the character described, the combination, with two pairs of sprocket-wheels and means for driving the same, of endless chains meshing in said sprocket-wheels, slats spanning said chains and secured thereto, and pads attached at one end to said slats and free at the other, a screen with holes less in diameter than the length of a whole grain beneath said pads and adapted to be swept thereby, and means for feeding the grain onto said screen, substantially as described.

6. In an apparatus of the character described, the combination, with two pairs of sprocket-wheels and means for driving the same, of endless chains meshing in said sprocket-wheels, slats spanning said chains and secured thereto, and pads attached at one end to said slats and free at the other, a graded screen having fine holes toward one end thereof and coarser holes toward the other end thereof, the said holes being all less in diameter than the length of the longest grains to be separated, the said screen being placed beneath the said pads and being swept by them, and means for feeding the grain onto said screen, substantially as described.

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

JOSEPH MENGE.

Witnesses:

F. F. BRADWAY,  
JNO. J. WARD.