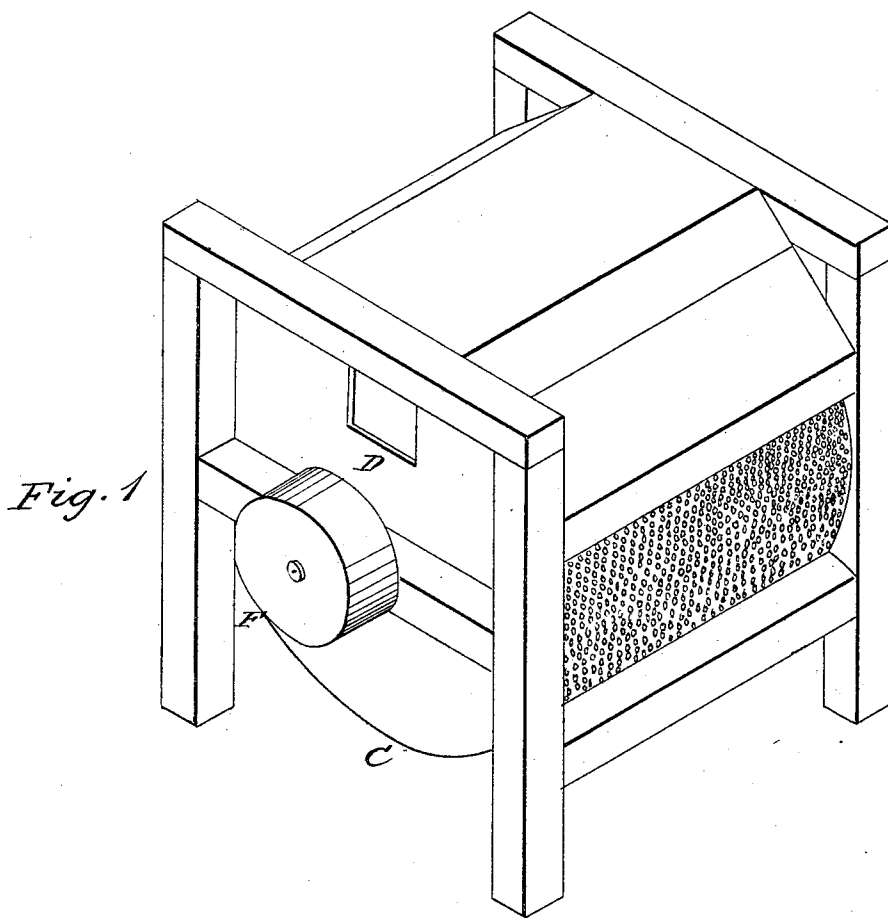


2 Sheets—Sheet 1.

E. RUSSELL.
Grain Cleaner.

No. 111,779.

Patented Feb. 14, 1871.



Witnesses:

D. G. Shilluk
Geo. F. Bolles

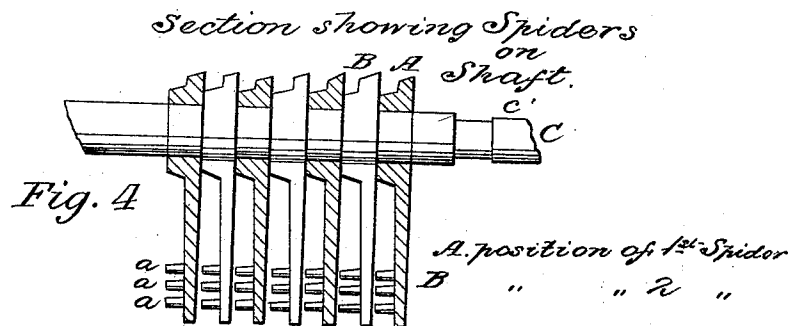
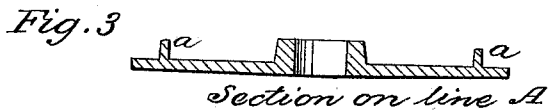
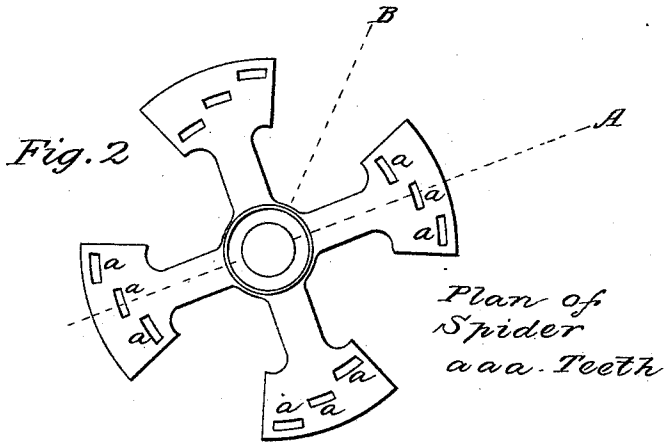
Inventor:

Ephraim Russell

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Witnesses:

D. J. Phillips
Geo. F. Bolles

Inventor:

Ephraim Russell

UNITED STATES PATENT OFFICE.

EPHRAIM RUSSELL, OF MINNEAPOLIS, MINNESOTA.

IMPROVEMENT IN MACHINES FOR CLEANING AND SCOURING WHEAT.

Specification forming part of Letters Patent No. 111,779, dated February 14, 1871.

To all whom it may concern:

Be it known that I, EPHRAIM RUSSELL, of Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Machines for Scouring and Cleansing Wheat, of which the following is an exact description, reference being had to the accompanying drawings and letters of reference marked thereon, which make a part of this specification.

My invention relates to a series of spiders, each having beveled arms and teeth. Such series of spiders are arranged alternately upon a revolving shaft, and in combination with a circular perforated metallic case, within which the spiders, by their revolving motion, accomplish the scouring or cleansing of the wheat while it is passing through the case.

Figure 1 shows the frame in which is set the circular perforated metallic case C, which is covered at the top and sides, the side cover being removed to show the case. At the end is the aperture D, where the wheat is fed by a spout into the scourer, there being also at the opposite end, at the lower circumference of the case, a similar aperture where the grain passes out. Fig. 2 shows the iron spider A, the arms or blades of which are beveled upon one side, as shown, and flat upon the other side, having on their beveled side small iron teeth *a a a*, as shown. Fig. 3 shows a section of the spider along the dotted line in Fig. 2. Fig. 4 represents a series of these spiders arranged upon the revolving shaft E in alternate order—that is, the arms of the first are set opposite the spaces between the arms of the second, those of the second opposite the spaces of the third, and so on, the beveled

sides of all the spiders being in the same direction.

This series of spiders thus constructed and arranged upon the shaft are then inclosed within the perforated metallic case, the shaft passing horizontally through the center, having its bearings in the frame, (shown in Fig. 1.) and being operated by a belt at F. When the wheat passes in at D, the rapid motion of the arms of the first spider, by reason of their being beveled, as shown, will drive the wheat through the opposite spaces in the second spider, and the arms of the second through the spaces of the third, and so on, while at the same time the small teeth *a a a* are rapidly beating the kernels, and counteracting their tendency to clog about the circumference, which the motion of the arms would otherwise produce. Thus the grain is kept in such agitation that by the trituration of the kernels among themselves, as well as by their contact with the spiders and the case, all fibrous substance and other impurities adhering to the kernel are rubbed off and sifted through the case, together with the cockle and other small seeds, and the wheat comes out thoroughly scoured and cleansed.

What I claim as my invention, and desire to secure by Letters Patent, is—

The series of spiders A A, having teeth *a a a*, arranged alternately upon shaft E, in combination with the perforated metallic case C, constructed and arranged to operate in the manner shown.

EPHRAIM RUSSELL.

Witnesses:

D. G. SHILLOCK,
GEO. F. BOLLES.