R. A. SMITH & G. CHASE.

Grain-Separator.

No. 209,140. Patented Oct. 22, 1878.

Fig. 1.

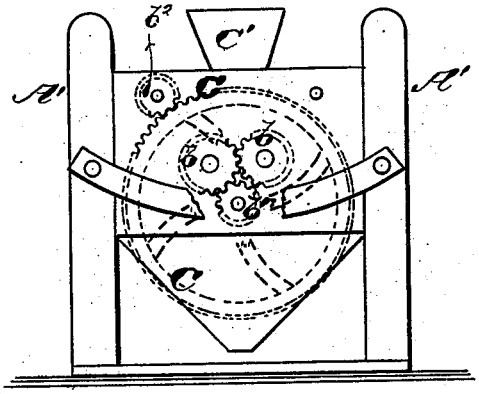


Fig. 2.

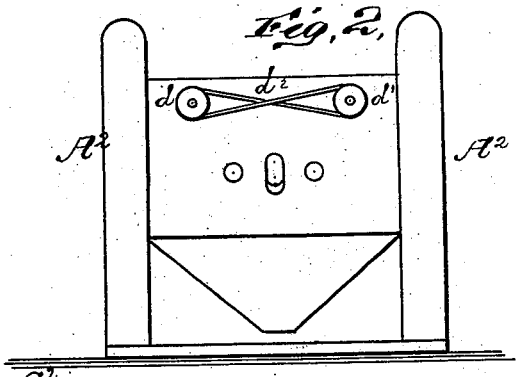


Fig. 3.

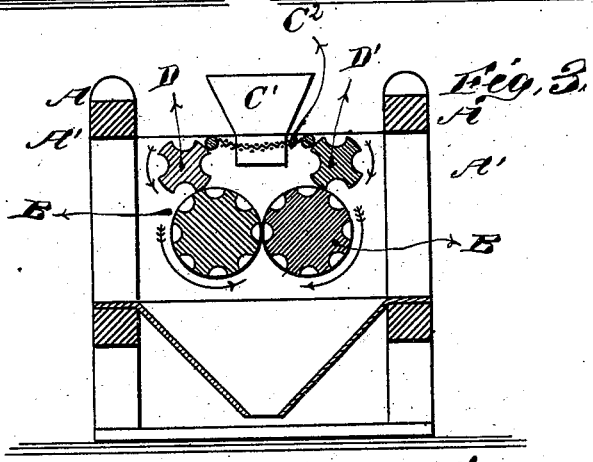
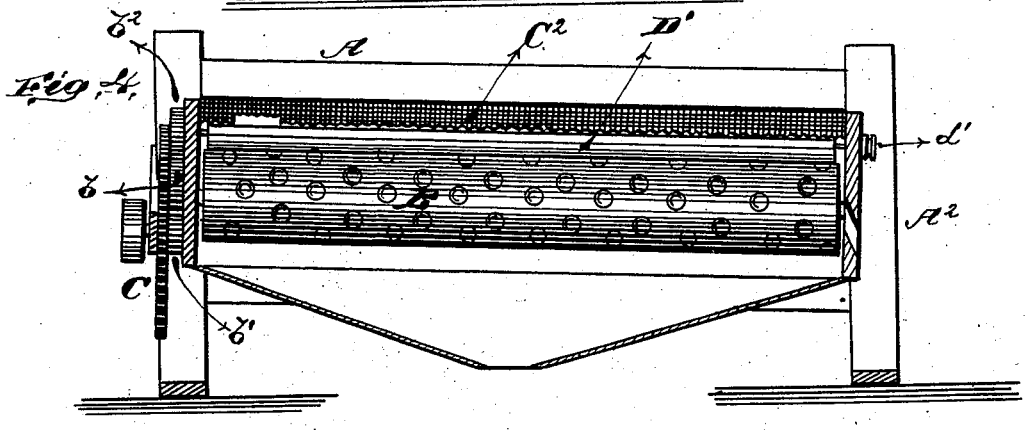


Fig. 4.



WITNESSES

E. H. Bates

Robt Ewell

INVENTORS

R. A. Smith.

George Chase.

J. C. Lathrop ATTORNEY.

UNITED STATES PATENT OFFICE.

RODERICK A. SMITH AND GEORGE CHASE, OF SPIRIT LAKE, IOWA.

IMPROVEMENT IN GRAIN-SEPARATORS.

Specification forming part of Letters Patent No. **209,140**, dated October 22, 1878; application filed July 10, 1877.

To all whom it may concern:

Be it known that we, RODERICK A. SMITH and GEORGE CHASE, of Spirit Lake, in the county of Dickinson and State of Iowa, have invented certain new and useful Improvements in Machines for Separating Cockle from Wheat; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The invention consists in certain novel features hereinafter more fully described and explained.

In the accompanying drawing, Figure 1 represents an end view of our improved grain-separator; Fig. 2, an opposite end view; Fig. 3, a transverse sectional view, and Fig. 4 a vertical longitudinal sectional view.

A represents the frame of our improved grain-separator, which is constructed higher at one end than at the other, the frame supporting a hopper, C^1, and screen C^2 thereon, and being inclined for the purpose of allowing a rapid fall to the grain while passing through the machine to the lowest end, A^2.

B B designate two indented cylinders or rollers, placed side by side, and running parallel with, and having the same inclination as, the frame A. At the end of the cylinders or rollers B B are journaled two pinions, *b b*, which engage each other, as shown in Fig. 1. Below said pinions, and meshing therewith, is another pinion, b^1, fixed to a shaft, which carries a large gear-wheel, C. This gear-wheel engages still another pinion, b^2, on the end of one of the fluted rollers D D′. At the other end, A^2, of said fluted rollers D D′ are two pulleys, d d^1, which are connected to each other by a "twisted" or crossed endless belt, d^2, for the purpose of giving the desired rotation to said pulleys.

A screen, C^2, is placed above the revolving indented cylinders B B and on a plane with the fluted rollers D D′, and secured to the frame A by any suitable means, and has for its object to confine the grain in the area of the cylinders, and at the same time to allow the escape of dust arising therefrom.

The operation of our machine is as follows: The grain enters through the hopper at the upper end of the machine, and, upon coming in contact with the indented rollers or cylinders is spread upon them by their outward motion. The indentations are of sufficient size to admit a kernel of cockle, but not of wheat, except as it stands on end. Should any wheat get into the indentations, the fluted rollers, which are geared to run with a rapid motion, will throw it into the center, while the cockle will pass under them into the gatherer below. The wheat will pass down the length of the rollers or cylinders and discharge at the lower end of the machine.

The rollers have an inclination or drop of from one and one-fourth to one and one-half inch to the foot, as the condition of the grain may require.

The advantages peculiar to the use of the fluted rollers instead of brushes are, first, that they present a rigid unbroken line of contact with the wheat-grains, and consequently insure their being knocked back if they project in the least above the surface of the cockle-cylinders; and, secondly, that they are not liable to catch the wheat-grains and throw them over outside the cylinders with the cockle.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The indented cylinders or rollers B B, revolving in opposite directions, in combination with the fluted rollers D D′, which are placed above and revolve in the same direction as cylinders B B, substantially as described.

2. The combination and arrangement of the gear-wheel C, pinions *b b* and b^1 b^2, frame A, having an inclination, A^2, cylinders B B, fluted rollers D D′, and pulleys d d^1 d^2, substantially as and for the purpose set forth.

In testimony that we claim the foregoing as our own we affix our signatures in presence of two witnesses.

RODERICK A. SMITH.
GEORGE CHASE.

Witnesses:
ALBERT W. OSBORNE,
WM. H. BAILY.