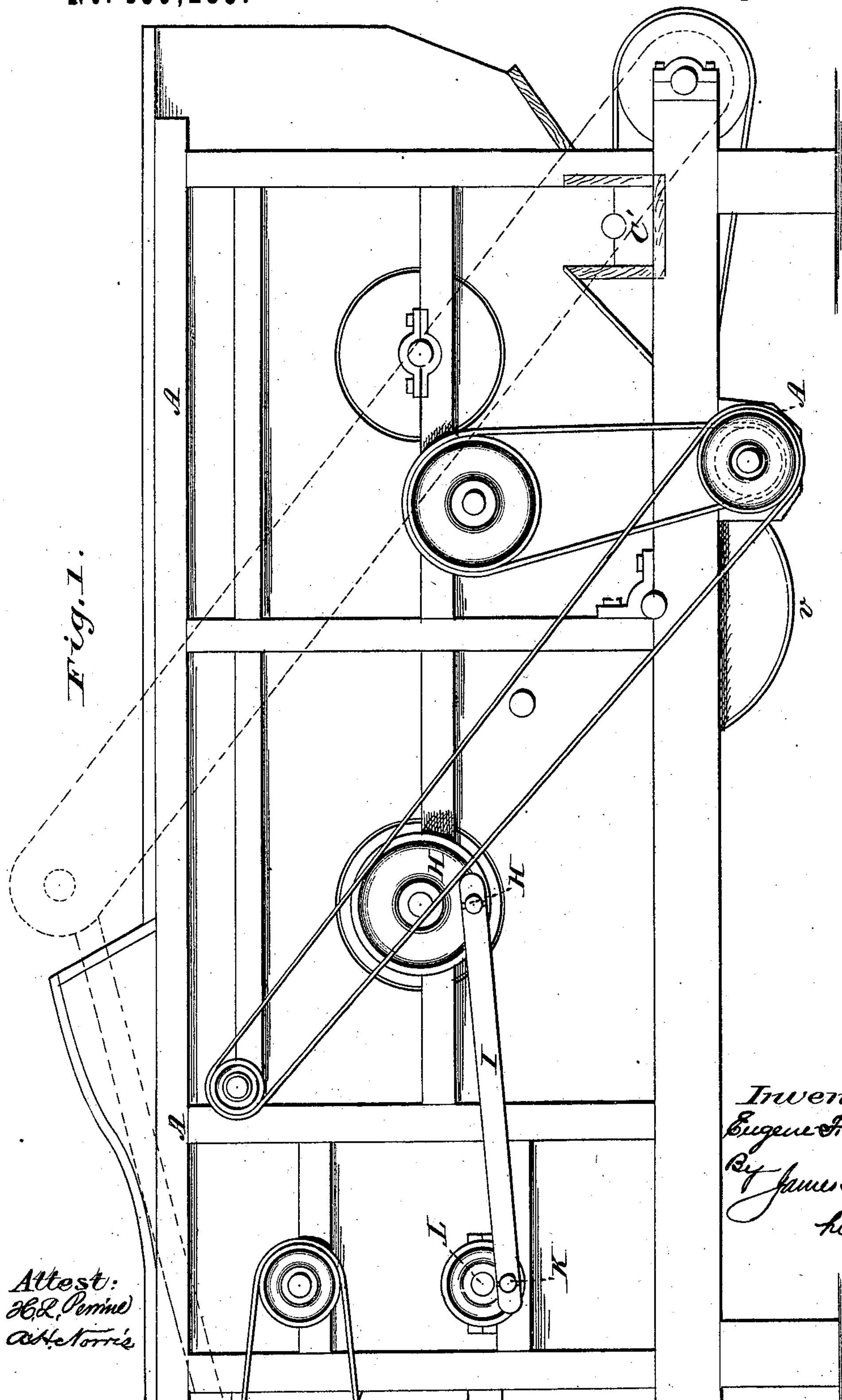
2 Sheets—Sheet 1.

E. F. OSBORNE.

GRAIN-SEPARATOR.

No. 189,255. Patented April 3, 1877.

Fig. 1.



Attest:
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2 Sheets—Sheet 2.

E. F. OSBORNE.

GRAIN-SEPARATOR.

No. 189,255. Patented April 3, 1877.

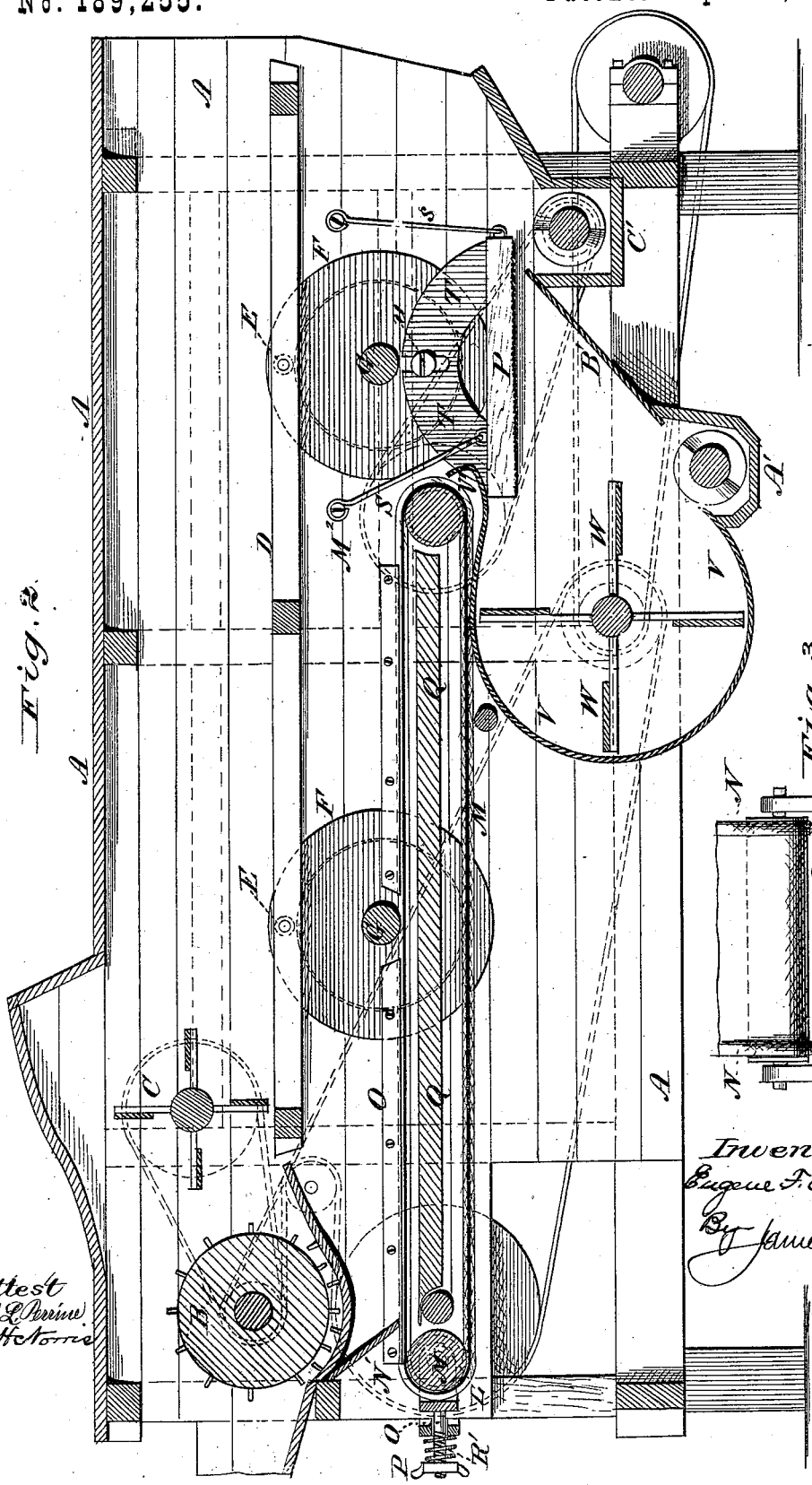

Fig. 2.

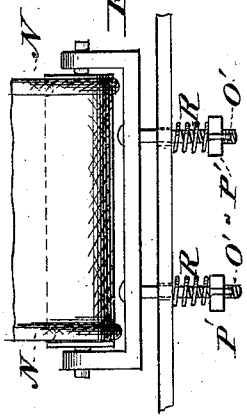

Fig. 3.

Inventor:
Eugene F. Osborne
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Attest
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UNITED STATES PATENT OFFICE.

EUGENE F. OSBORNE, OF ST. PAUL, MINNESOTA, ASSIGNOR TO JOHN H. ELWARD, OF SAME PLACE.

IMPROVEMENT IN GRAIN-SEPARATORS.

Specification forming part of Letters Patent No. **189,255**, dated April 3, 1877; application filed June 28, 1876.

To all whom it may concern:

Be it known that I, EUGENE F. OSBORNE, of St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Thrashing-Machines, of which the following is a specification:

In the drawing, Figure 1 represents a side elevation of my apparatus, and Fig. 2 a central longitudinal section of the same.

The letter A represents the chamber or casing of the machine, B the thrashing-cylinder, and C the beater, constructed in the ordinary manner and driven by suitable belts and pulleys. D represents the reciprocating straw-rack, provided with two pins or projections, E E, on opposite sides, setting in slots in the disks F F, which support and serve to give a reciprocating motion to said straw-rack, said disks being mounted on opposite sides of the transverse rock-shafts G G, one of which carries on its extreme outer end a wheel and crank, H, connected by means of a rod, I, with a wheel and crank, K, on the end of the revolving shaft L, over which one end of the band or traveling-apron M passes. The belt is mounted upon rollers M^1 and M^2, the roller M^1 being mounted in movable bearing-blocks N′, which are attached to the rods O′, the latter passing through the frame of the apparatus and being provided with the screw-nuts P′ and spiral springs R′, by means of which the tension of the belt is automatically adjusted, the wrinkling and catching of the belt obviated, and the even delivery promoted. The said belt M is provided with a welt or rib, N, on each side, and travels at one end over the shaft L, before mentioned, and at the other over a similarly-constructed shaft, L′, both of said shafts passing transversely across the machine, and being journaled in opposite sides thereof. The letter O represents a series of confining-guards, secured to opposite sides of the frame A, on the inside, in such position as to fall or project over the ribs or welts on the traveling band or belt, and confine the grain thereon in such manner that the whole of the grain will be carried forward to the winnowing-sieve P, at the forward end of said belt. The letter Q represents a grain-table, located and supported in any suitable manner just below the upper side of the traveling band or apron, its object being to support the same. The letter P represents the winnowing-sieve, supported by depending straps S at each side, and provided with segmental slotted braces T, in the slots of which set and work the projecting pins U, attached to the disks and the rear rock-shaft, which supports the straw-rack at one end. Below and just in front of the winnowing-sieve is located a fan-chamber *v*, provided with an ordinary rotary fan, W, driven by a pulley at one end, through the medium of a belt, which gives motion to the beater and thrashing-cylinder. The upper part of the fan-case is turned upward and forward, as at *v′*, to form a chute-board or scraper, to receive the grain from the apron M, and guide the same to the winnower-sieve P. The letter A′ represents a transverse trough, provided with a propelling-screw, operated by a pulley and belt, in connection with the other working parts of the apparatus, the object of which is to carry off those portions of the grain falling through the sieve, which are carried down to said trough by the inclined partition B′. The letter C′ represents a similar transverse trough and propelling-screw, located directly under the rear end of the winnowing-sieve, for carrying the grain passing over the end of said sieve to its proper receptacle.

Instead of constructing the endless belt with a canvas bottom, the same may be formed of parallel bands of leather or other flexible material, to which are secured transverse slats or laths at suitable distances apart, the said bands traveling over pulleys located in the same relative position to the bands as the grooved parts of the rollers to the welt on the belt, as above set forth, the bands serving in the place of the welts, to keep the grain on the table, and the slats or laths serving the purpose of carriers to convey the grain along the surface of the table.

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

In combination with the scraper *v′*, the grain-belt M, provided with an automatically-adjustable tension device, substantially as and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of the subscribing witnesses.

E. F. OSBORNE.

Witnesses:

WM. S. MOORE,

L. C. HAUSER.

1,000 words