

(No Model.)

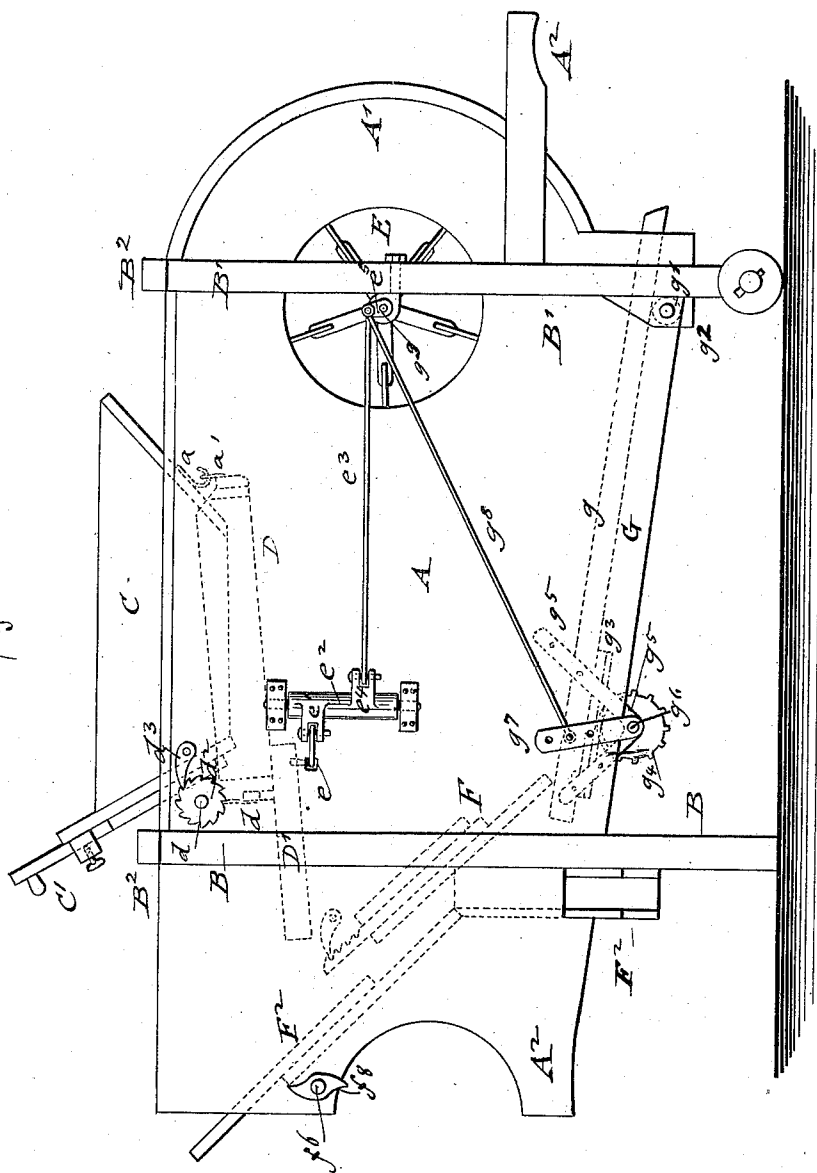
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A. STROTT.
GRAIN WINNOWER.

No. 312,929.

Patented Feb. 24, 1885.

Fig. 1.



WITNESSES:

Otto Risch.
Martin Petry.

INVENTOR

Adam Strott

BY

Loepel & Raegenwer
ATTORNEYS.

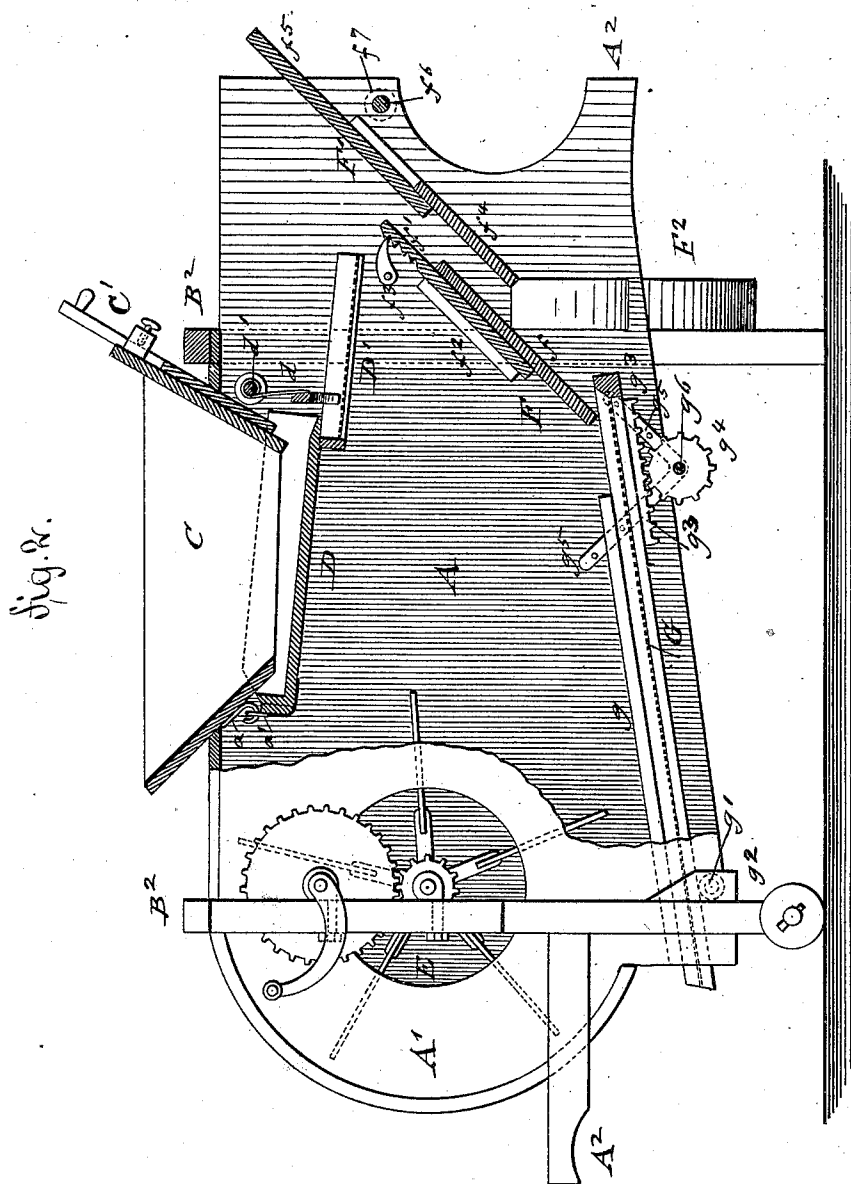
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Otto Risch.
Martin Petry.

INVENTOR

Adam Strott

BY

Capel & Reger.
ATTORNEYS.

(No Model.)

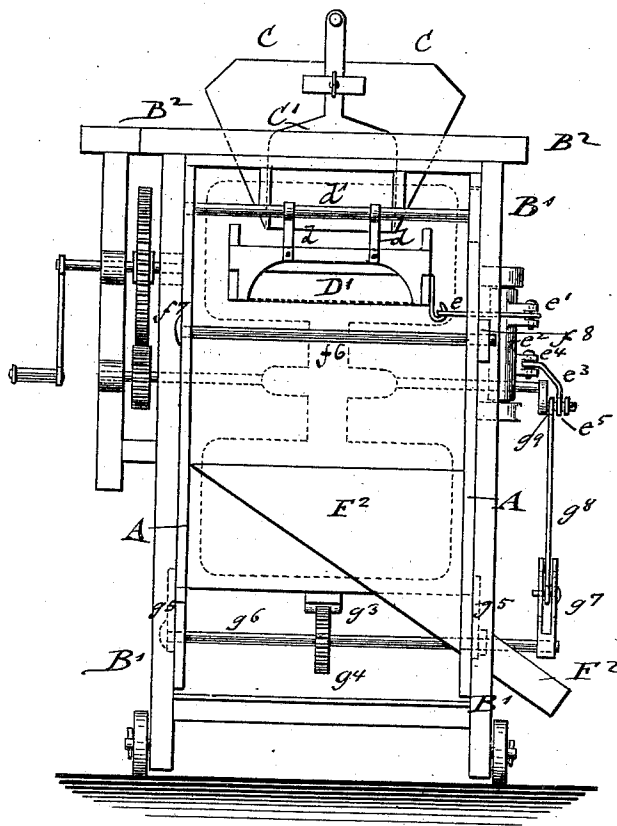
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fig. 3.



WITNESSES:
Martin Petry,
Otto Risch,

INVENTOR
Adam Strott
BY
Geipel & Raegen
ATTORNEYS.

UNITED STATES PATENT OFFICE.

ADAM STROTT, OF NEW BRUNSWICK, NEW JERSEY.

GRAIN-WINNOWER.

SPECIFICATION forming part of Letters Patent No. 312,929, dated February 24, 1885.

Application filed June 18, 1884. (No model.)

To all whom it may concern:

Be it known that I, ADAM STROTT, of New Brunswick, in the State of New Jersey, have invented certain new and useful Improvements in Grain-Winnowers, of which the following is a specification.

This invention has reference to certain improvements in grain winnowers or machines for separating grain from chaff, seeds, and other like impurities; and the invention consists of a grain-winnower embodying certain details of construction, which will be described hereinafter, and finally be pointed out in the claim.

In the accompanying drawings, Figure 1 represents a side elevation; Fig. 2, a side elevation of the opposite side of the machine, partly in vertical longitudinal section; and Fig. 3 is an end elevation of the machine.

Similar letters of reference indicate corresponding parts.

A in the drawings represents the main frame or casing of my improved grain-winnower, and B B' the uprights which supports the same. The uprights B B' are connected at the top and bottom by transverse brace-pieces B². A hopper, C, is located at the top of the casing A and provided at one side with an adjustable slide, C', for regulating the supply of grain to the machine.

Below the hopper C is suspended an inclined bottom, D, that has upright walls at the sides and rear end, and a tapering front edge, to which latter is rigidly applied a screen, D', that forms an extension of the conveying-bottom D. The screen D' is suspended by straps *d* from a transverse shaft, *d'*, the straps being made longer or shorter by being wound up or unwound from the shaft *d'*, which is retained in position by a ratchet-wheel, *d²*, and pawl *d³*, arranged at the outside of the supporting-casing A. The rear end of the bottom D is suspended by hooks *a* and eyes *a'* from the lower part of the hopper C, as shown in Fig. 2. By the adjustable straps *d* the screen D' can be adjusted to a greater or smaller inclination according to the quality and speed of the grain to be passed over the same. The screen D' receives laterally-oscillating motion from a curved rod, *e*, attached

thereto, which rod passes to the outside of the casing A, and is hinged to a short crank, *e'*, of a vertical shaft, *e²*, that is supported in bearings attached to the outside of the casing, as shown in Fig. 1. A second connecting-rod, *e³*, extends from a crank, *e⁴*, on the shaft *e²*, to a short crank, *e⁵*, on the shaft of a ventilating-fan, E, that is arranged in a semicircular portion, A', at one end of the casing A. The grain drops from the laterally-oscillating screen D' onto an inclined conveying-board, F, which consists of a fixed part, *f*, and an adjustable part, *f'*, which latter is guided between the fixed part *f* and guide-strips *f²*, so that it can be adjusted higher or lower, as required. The adjustable board *f'* is provided at its upper end, and at one side thereof, with teeth which are engaged by a check-pawl, *f³*.

Parallel to, and at some distance from the inclined board F, is arranged a second inclined board, F', that extends to a greater height than the board F, and which is also composed of a fixed part, *f⁴*, and adjustable part *f⁵*. The second inclined board, F', is tightly clamped between the side walls of the supporting-casing A by means of a transverse rod, *f⁶*, which has a head, *f⁷*, at one end and a winged screw-nut, *f⁸*, at the opposite end. The screw-nut *f⁸* on being screwed up on the rod *f⁶* draws the side walls close together and holds the adjustable part *f⁵* reliably in the position to which it has been adjusted. The second board, F', communicates with a laterally-inclined discharge-spout, F², that terminates at one side of the casing and conveys the grain into a suitable receptacle.

At the lower edge of the inclined board F is arranged a second inclined shaking screen, G, which is guided along fixed side strips, *g g*, and supported at its lower end on a transverse anti-friction roller, *g'*, the shaft of which is supported in brackets *g²* of the uprights B'. The upper end of the screen G rests by a central rack-bar, *g³*, on a pinion, *g⁴*, of a transverse shaft, *g⁵*, which turns in bearings of angular straps *g⁶*, attached to the side walls of the casing A. To the outer end of the shaft *g⁵* is keyed a crank, *g⁷*, to holes of which the connecting-rod *g⁸* is adjustably attached. The rod *g⁸* connects with a short crank, *g⁹*, on the

shaft of the fan E, as shown in Fig. 1. The shaft g^6 and its pinion g^4 receive rotary reciprocating motion from the fan-shaft, and impart, consequently, by the rack-bar g^3 , a longitudinally-reciprocating motion to the screen G. The lower end of the reciprocating screen G discharges the grain at the end of the machine into a suitable receptacle. The fan receives rotary motion from a hand-crank and gear-wheel transmission, as shown in Figs. 2 and 3. The grain, which is conveyed from the hopper C to the first shaking-screen, D', is exposed to the current of air generated by the fan as it drops from the screen, so that the chaff, seeds, and other impurities are separated therefrom and blown off at the open end of the machine, which is located opposite to the closed end where the fan is located. By adjusting the screen D' higher or lower, the speed by which the grain passes over the same is regulated according to the quality of the same. The heavier grain, which passes through and over the screen, is conducted along the inclined board F to the second screen, G, at the bottom of the machine, while the lighter grain, that is carried along by the current of air, is blown against the upwardly-extended board F', and passed down along the same to the lateral discharge-spout F². The inner inclined board, F, serves to separate the heavier from the lighter grain. When the heaviest kind of grain, which is preferably used for seeding, is desired to be separated, the inclined board F is adjusted to its lowermost position by the check-pawl and rack.

The machine is provided at both ends with handles A² for being readily lifted, and at the lower end of the uprights B' with rollers, which latter facilitate the moving of the machine from place to place.

The advantages of my improved grain-winnower are that the construction is simple and comparatively inexpensive; that it can be readily adjusted so as to separate the different kinds and qualities of grain from the chaff and like impurities, and that the machine works quickly and reliably and without loss of grain.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The herein-described grain-winnower, comprising the casing, the hopper, the inclined bottom D, hinged to said hopper, the adjustable shaking screen D', the lower screen, G, provided with a rack near one end, the anti-friction roller g' , supporting the opposite end of said screen, the inclined adjustable board F, leading from the lower end of said screen D' to the upper end of said screen G, the blower E, the shaft of which is provided with two cranks, the vertical crank-shaft e^2 , connected to the upper screen, D', the transverse shaft g^6 , supporting one end of the lower screen, and provided with a pinion, g^4 , which takes into the rack thereof, the slotted arm g^7 , attached to said transverse shaft, and the pitmen connecting, respectively, said vertical crank-shaft e^2 and said slotted arm g^7 with the cranks of the blower-shaft, whereby, simultaneously, laterally-reciprocating motion is imparted to said upper screen, D', and vertically-reciprocating motion to said lower screen, G, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

AD. STROTT.

Witnesses:

C. W. KENT,
JAMES H. VAN CLEEF.