RAY & LEIGH.

Fanning Mill.

No. 78,008.

Patented May 19, 1868.

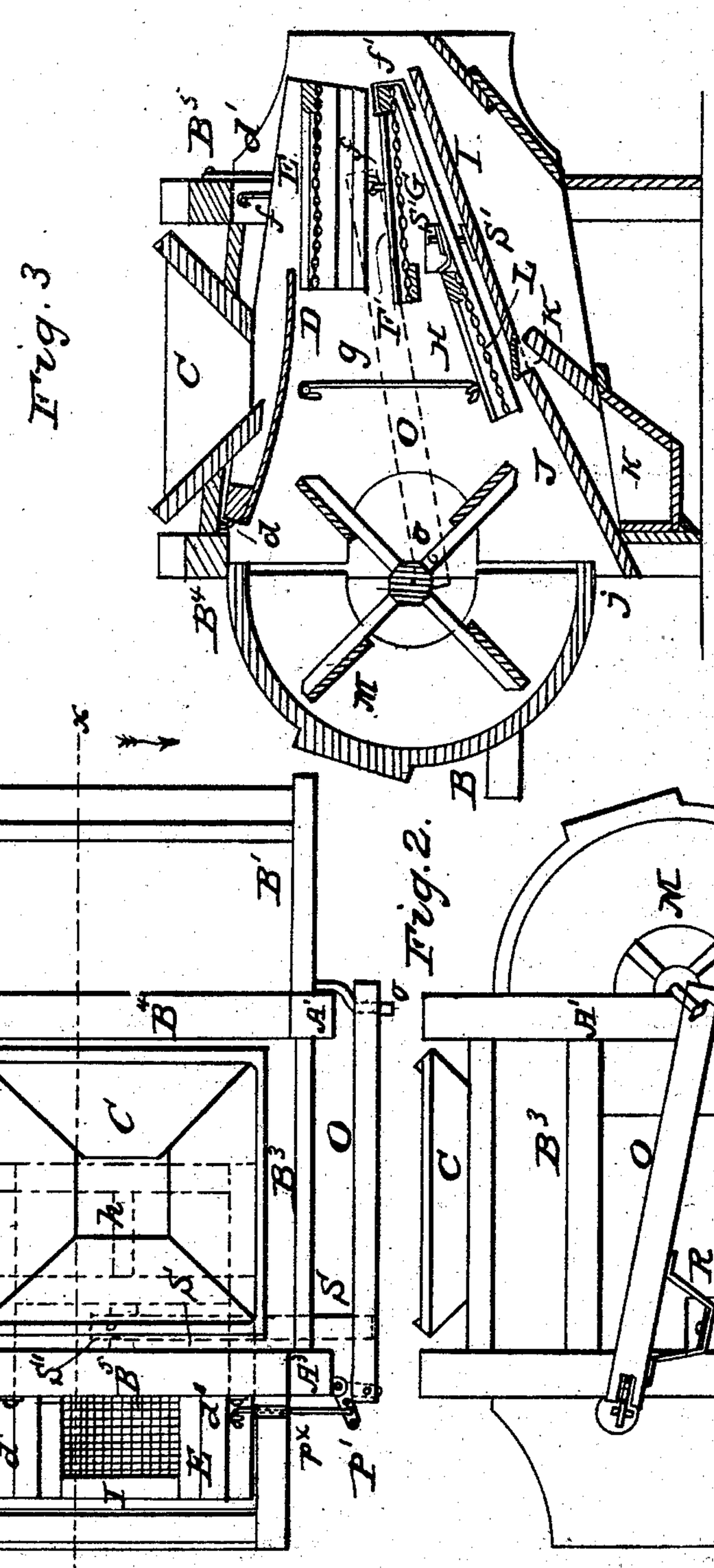

Fig. 3

Fig. 1.

Fig. 2.

Witnesses

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Letters Patent No. 78,008, *dated May* 19, 1868.

IMPROVEMENT IN FANNING-MILLS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that we, WILLIAM C. RAY, of Pleasant Run, in the county of Hunterdon, and State of New Jersey, and GIDEON LEIGH, of Clinton Station, in the county and State aforesaid, have invented certain new and useful Improvements in Fanning-Mills, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which make part of this specification, and in which—

Figure 1 represents a plan or top view of a fanning-mill in which our improvements are embodied,

Figure 2 a view in elevation of one side of the same, and

Figure 3 a vertical longitudinal section through the same at the line *x x* of fig. 1.

Our improvements are shown as applied to a portable fanning-mill of ordinary form, the construction of which is so well understood as scarcely to require description.

The mechanism rests on four vertical legs or posts, A A^1 A^2 A^3, connected firmly together by cross-pieces, B B^1 B^2 B^2 B^4 B^5, so as to form a stout frame.

The projecting ends of the frame, B B^1, serve as handles.

The grain is poured into a hopper, C, from which it falls into a shaking-shoe, D, pivoted at *d* to the cross-beam B^4, and suspended at its rear end, by radius bars *d'*, from the cross-beam B^5, in the usual way. The part of the shoe directly beneath the hopper is solid, while the rear part is provided with one or more screens, E. The shaking-shoe is vibrated laterally, by devices hereinafter described.

From the screen E the grain falls on a sieve, F, suspended from the frame by radius bars *f*, and vibrated longitudinally by devices hereinafter described. The sieve F is hinged at its rear end, by leather straps *f'*, to a frame, G, suspended from the frame at its forward end by radius bars *g*. A riddle, H, is attached to the frame G. It will be noted that the screen F, frame G, and riddle H, all vibrate longitudinally, but that, as the screen F is suspended centrally on short radius bars, while the riddle and frame are suspended from long radius bars *g* at one end, the riddle will thus swing through a longer arc than the screen, and the screen F will have a rising and falling or opening and shutting movement, which we have found by experiment peculiarly efficacious in separating the chaff from the grain.

The stuff which passes through the screen F and riddle H falls upon the cant-board I, and drops into the grain-box K, through an opening, *k*, left for that purpose, while the heavy grain, which falls over the end of the riddle H, passes over the inclined bottom-board J, and falls through an opening, *j*. When it is desired to run all the screenings through this latter opening, the opening *k* is closed by a valve-board, L, shown in red in fig. 3.

As the grain falls through the screens and riddles, it is exposed to a blast from a fan, M. This fan has a spur-pinion, *m*, on one end of its shaft, driven by a spur-wheel, N, and shaft *n*, driven by a crank, *n'*, or in any well-known proper way. A crank, *o*, on the other end of the fan-shaft, reciprocates a pitman, O, which vibrates a bell-crank lever, P, connected with the shake-shoe D by a link-rod, *p*, thus shaking the shoe sidewise.

A U-shaped bracket, R, attached to and projecting below the pitman O, has one end of a balance-lever, S, pivoted to it. This lever oscillates horizontally on a vertical pivot, *s*, near its middle, secured to the bottom or cant-board I, while its inner end, *s'*, is pivoted to a central bar, *h*, (shown in red in fig. 1,) of the longitudinally-rocking frame. The lever S plays freely, vertically, on its pins *s s'*.

By the above-described mode of construction, the shaking-shoe D and frame G are vibrated in directions at right angles to each other, by means of a single pitman, O, and the frame G is free to rise and fall as it oscillates, without interfering with the balance-lever, which moves in a horizontal arc.

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

1. The combination, substantially as set forth, of the cranked fan-shaft, the pitman O, the bell-crank lever P, which sustains the rear end of the pitman, the laterally-vibrating shaking-shoe D, the longitudinally-vibrating screen-frame G, and the horizontally-oscillating balance-lever S, for the purposes specified.

2. The combination, substantially as set forth, of a longitudinally-vibrating screen, F, suspended centrally from short radius bars *f*, with a longitudinally-vibrating frame, G, suspended at its forward end by long radius bars *g*, and hinged at its rear end, *f'*, to the screen F, whereby an opening and shutting or rising and falling, as well as a longitudinally-vibrating movement, is imparted to the latter, and the grain thereby thoroughly sifted.

3. The combination, substantially as set forth, with the pitman O, of the depending bracket R, the balance-lever S, and the longitudinally-vibrating frame G, for the purposes set forth.

4. The removable deflecting-board L, arranged and operating as set forth.

In testimony whereof, we have hereunto subscribed our names.

WILLIAM C. RAY,
GIDEON LEIGH.

Witnesses:
R. H. GANO,
FRED'K LUNGER.