2 Sheets—Sheet 1.

H. N. GOODRICH.

Grain Separator.

No. 45,993. Patented Jan. 24, 1865.

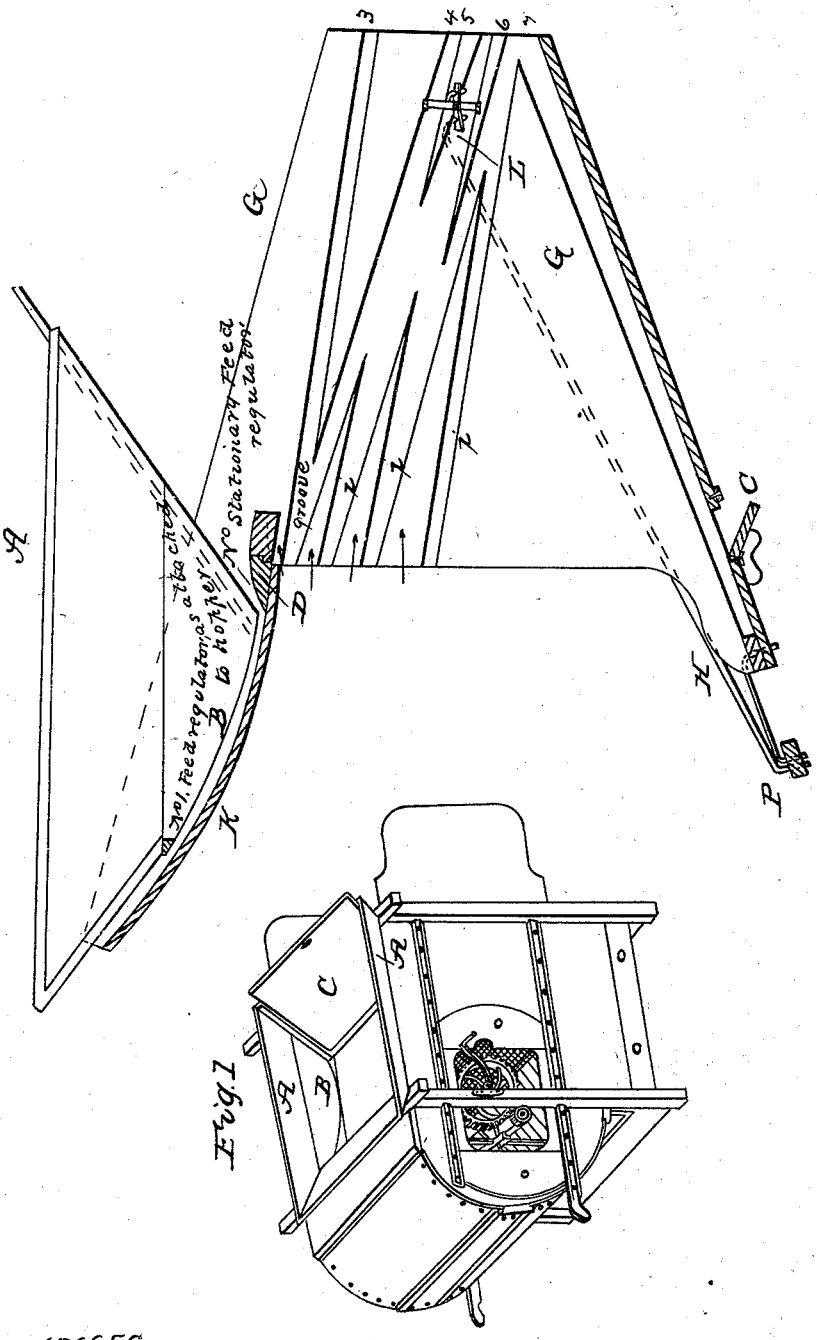

Fig. 1

WITNESSES
Lewis L. Coburn
John Clark

INVENTOR
H. N. Goodrich

2 Sheets—Sheet 2.

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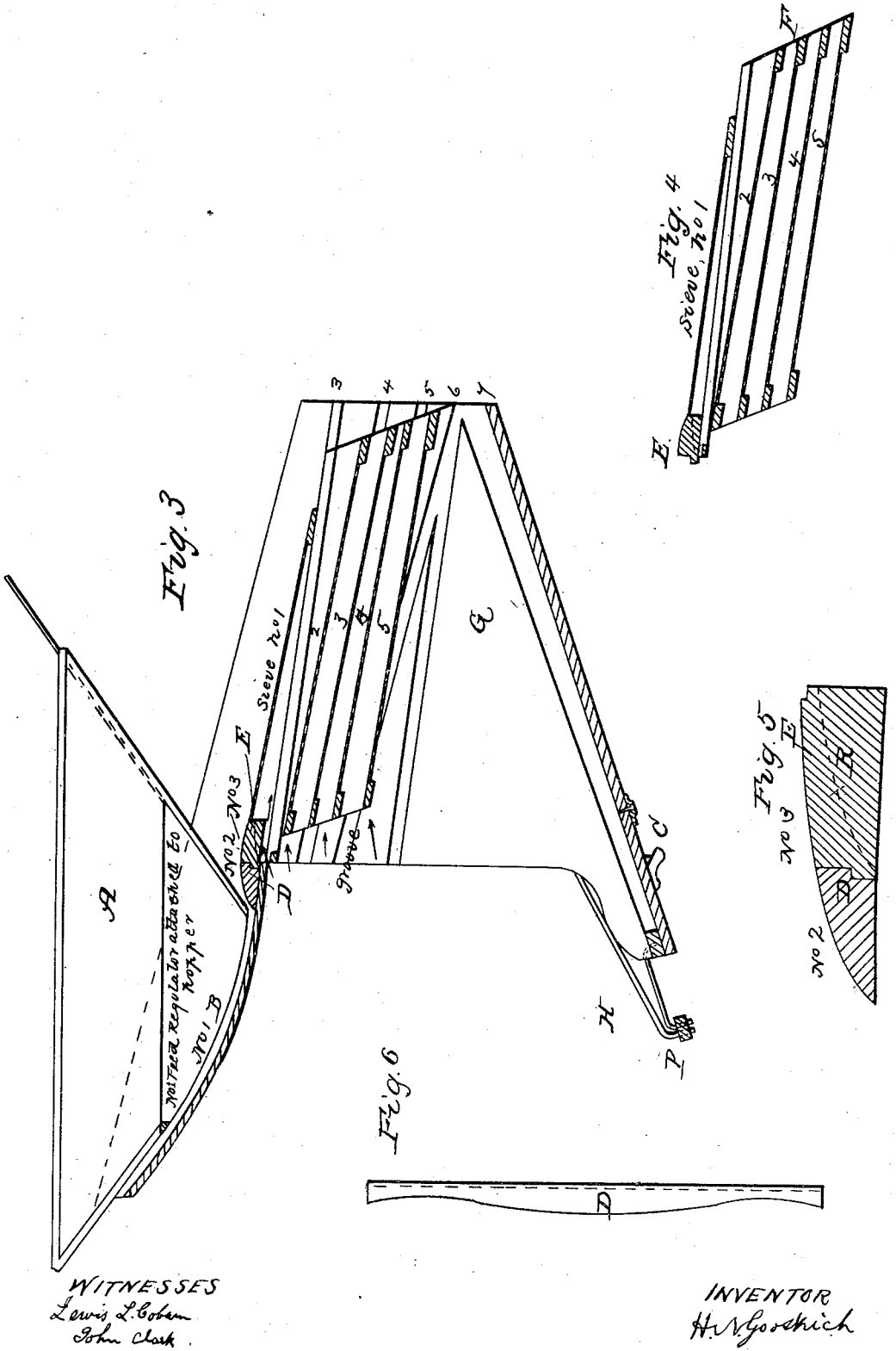

UNITED STATES PATENT OFFICE.

HORACE N. GOODRICH, OF AURORA, ILLINOIS.

IMPROVEMENT IN GRAIN-SEPARATORS.

Specification forming part of Letters Patent No. **45,993**, dated January 24, 1865.

To all whom it may concern:

Be it known that I, HORACE N. GOODRICH, of Aurora, in the county of Kane and State of Illinois, have invented a new and useful Improvement in Combined Winnowing-Mill and Grain and Seed Separator; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings and letters and figures marked thereon, which form a part of this specification, and in which—

Figure 1 is a perspective, view of my machine. Fig. 2 is a vertical sectional view through the hopper, and showing the inside of one of the shoes or side boards into which the sieves are put. Fig. 3 is a vertical sectional view through the hopper and gang of sieves as applied in the machine. Fig. 4 is a sectional view of the gang of sieves detached from the machine. Fig. 5 is an end view of the feed-regulators that are used to regulate the grain and seed as it passes from the hopper onto the sieves or screens, and Fig. 6 is a side view of one of said regulators.

The nature of my invention consists in a novel device for regulating the grain as it passes from the hopper onto the screen or sieve; in the arrangement of the grooves in the shoes or sides of the mill, whereby the operator is able to put the screens at any angle of inclination to adapt them to different kinds of work, and also in a novel manner of giving a longitudinal motion to a sieve or screen.

To enable those skilled in the art to manufacture and use my invention, I will proceed to describe the same with particularity.

The same letters of reference refer to the corresponding parts in the different figures.

A represents the hopper, made at the top like any ordinary hopper; but it has no bottom, so that when the grain is thrown into the hopper it strikes on the board K, and said board K, being attached to the shoes G, which have the pivot motion, carries the grain back and forth against the side boards, B, that are put in at the bottom of the hopper A, and fit down quite close to the shake-board K. This agitates the grain and causes it to work forward on the board K under the slide O, in the front of the hopper; but there is a strip, D, which is attached to the front edge of the shake-board K, which checks the grain somewhat, and the peculiar shape of it, as shown in Fig. 6, Drawing No. 2, it being the thickest in the center, where the grain would come down the fastest, causes the grain to pass onto the sieves or screens even and uniform. This construction admits of the slide O being raised high, so that coarse material—as ears of corn, &c.—can pass through without clogging the feed to the machine.

In the shoes G the grooves are cut running into each other in such a manner that the sieves or screens can be put in at any angle of inclination—as, for instance, a sieve put in at groove 4 in front can be run into either the top or next to the top groove at the rear, and a sieve put into groove 5 in front can be run into either of the three upper grooves at the rear, thus changing its inclination to adapt it to different kinds of work without removing it from the shoe G G.

The shaker L has three arms—one by means of which motion is communicated to the shaker in any of the usual methods, another to which the shake-rod is attached that conveys motion to the shoes G G, and the third one the long rod H is attached to. Said rod H extends down between the shoe G and the outside of the machine to the lever P, and causes it to vibrate and convey a longitudinal motion to a sieve or screen in the groove 7, causing it to slide up and down in the grooves in addition to the pivot-shake of the shoes G.

For the separation of oats from wheat I use a gang of sieves, a sectional view of which is shown in Fig. 4, and also as applied in the machine in Fig. 3. Attached to this gang of sieves there is an additional feed-regulator board, E, which fits onto the feed-regulator board D, as shown in Fig. 5. The dotted line R shows how the board is cut out along the center to admit air to be blown up in under the top sieve. Two or more of the sieves in the gang are adjustable.

Having thus fully described my combined winnowing-mill and grain and seed separator, what I claim as my invention, and desire to secure by Letters Patent, is—

1. Providing the hopper with the feed-regulating boards B, substantially as and for the purpose specified.

2. The stationary strip or feed-regulator D, when constructed and operating as and for the purpose set forth.

3. The gang of sieves F, with two or more of the sieves in the gang adjustable, and provided with the feed-regulator E, substantially as and for the purpose herein described.

4. Providing the shoes G with the grooves I, so running into each other that sieve or screen can be changed to different angles of inclination without being removed from the shoes, substantially as and for the purpose set forth.

HORACE N. GOODRICH.

Witnesses:

LEWIS L. COBURN,

JOHN CLARK.