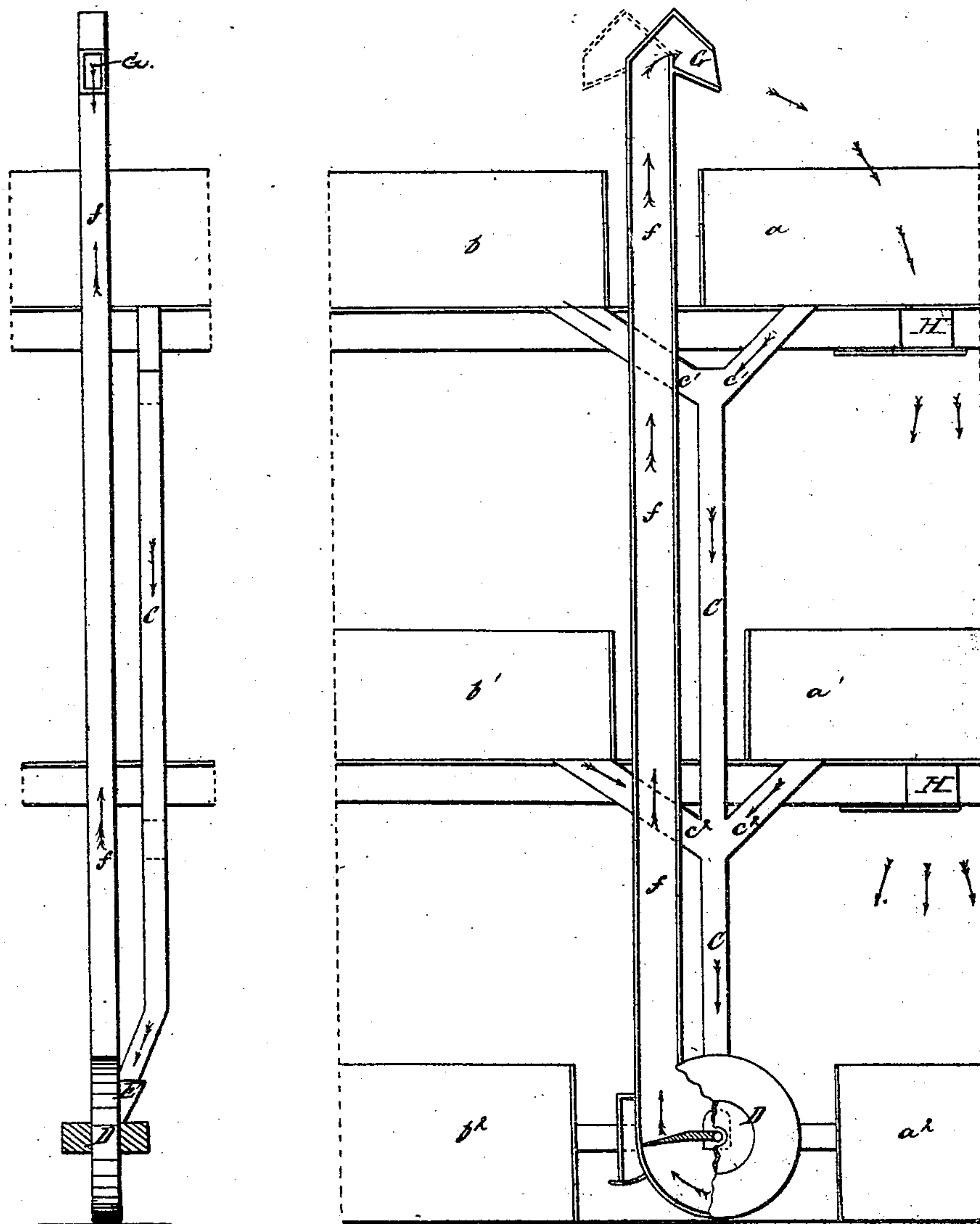


J. & H. Bruckshaw, W. S. Underhill, ^{2 Sheets, Sheet 1.}

Grain Conveyer.

No 33,634.

Patented Nov. 5, 1861.

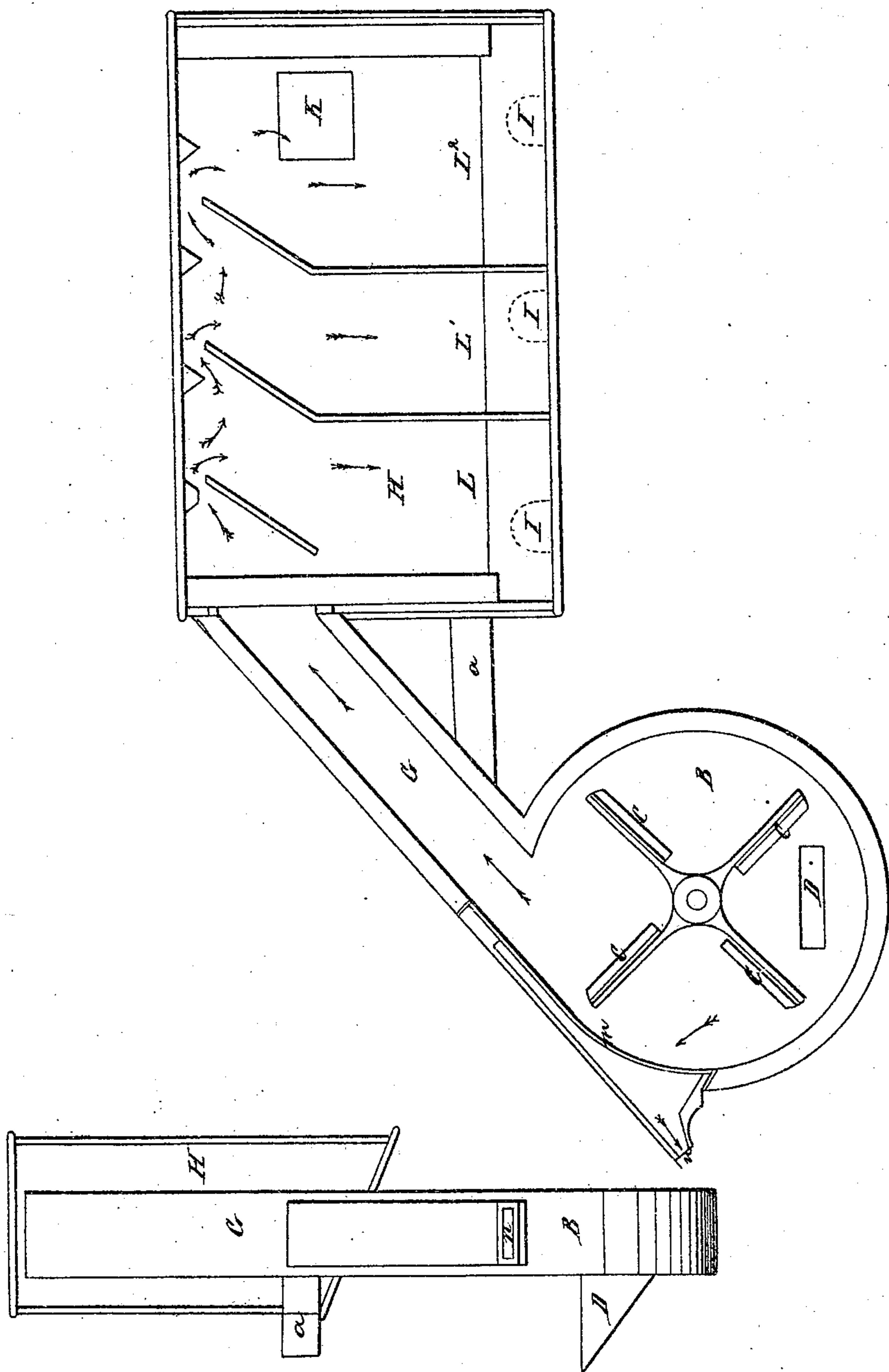


J. & H. Bruckshaw, W. S. Underhill, ^{2 Sheets, Sheet 2.}

Grain Conveyer.

No 33,634.

Patented Nov. 5, 1861.



UNITED STATES PATENT OFFICE.

JOHN BRUCKSHAW, OF OAKLEY, HENRY BRUCKSHAW, OF MARKET DRAYTON, AND WILLIAM SCOTT UNDERHILL, OF NEWPORT, ENGLAND.

IMPROVEMENT IN MACHINES FOR ELEVATING GRAIN.

Specification forming part of Letters Patent No. 33,634, dated November 5, 1861.

To all whom it may concern:

Be it known that we, JOHN BRUCKSHAW, of Oakley, in the county of Stafford, and HENRY BRUCKSHAW, of Market Drayton, in the county of Salop, engineers, and WILLIAM SCOTT UNDERHILL, of Newport, in the same county, England, manufacturer, all subjects of Her Britannic Majesty, have invented Improvements in Machinery for Elevating Grain and other Similar Substances; and we do hereby declare that the following is a full and exact description of our said invention—that is to say:

Our invention consists in the employment of a revolving fan for the purpose of elevating or raising grain, and this fan is applicable to thrashing-machines, granaries, corn-mills, warehouses, and for any other like purposes in which grain is required to be raised.

In the drawings, Sheet A represents in section one mode of applying our invention to corn-mills or granaries. Sheet B illustrates its application to thrashing-machines.

We will now proceed to describe the working of our invention first in its application to corn-mills, granaries, warehouses, or other stores in which it may be requisite frequently to shift and separate the grain for the purpose of cleaning it and to prevent overheating.

The drawings, Sheet A, represent sections of a granary of three floors in height, in which a a' a^2 b b' b^2 are the garnerers.

C is a tube running from the top floor to the fan D on the ground-floor and discharging itself into the hopper E . Ducts c' c^2 lead from each garner into the same tube C , thus allowing the contents of each garner to pass through the fan D , or the downtube C may be placed by the side of the uptube f , and the ducts may be dispensed with, traps being provided in the tube C in lieu of the ducts.

The fan may be driven by any suitable power and may be mounted in any way most convenient in the mill.

The drawings represent a portion of the case removed to show the blades. The grain as it is received in the fan from the tube C is by the action of the fan and blasts thrown

violently up a second tube f , of larger sectional area than the tube C , out of the spout G of which tube f it is ejected into the garner a . The port or trap H at the bottom of the garner a being closed, the operation would result in simply removing the grain from the bottom floor to the top one; but if it be desired to fill all the garnerers the ports H H' in the respective garnerers a a' would be opened, when the grain would descend through them into the lowest garner a^2 until that garner was filled. The port H' would then be closed and the garner a' allowed to fill, when the same operation would be repeated for the top garner. The head of the tube f with its spout G is capable of revolving similar to a cowl to admit of its filling garnerers in any position around it, and if a mill or granary contain more than three floors it is only necessary to let the tubes C and f pass through them all, the action of the fan when driven at a high velocity being sufficient to throw the grain to a height considerably greater than that of any ordinary mill or granary.

Sheet B illustrates the application of our invention to a thrashing-machine. a is the main frame of the machine; B , the case of the fan with the fliers or blades C fixed on the fan-shaft E of the first winnowing-machine, or in any other more convenient position. D is a hopper into which the grain is fed by a vibrating spout. The grain being thus supplied to the fan is by the action of the fan thrown violently up against the wire grating m , thus breaking the smut and taking off the "white heads." The smut, being forced through the wire grating m , falls out at the aperture n . The rest of the grain is thrown up the tube G and into a receiver or hopper H . The heavier grain or grain of the best sample falls into the compartment L . The lighter grain, following the direction of the arrows, falls into another compartment L' , the lightest grain being driven into a third compartment L^2 along with the heavier refuse. At the same time the lighter refuse makes its escape through the trap K . From the receiver or hopper H the grain falls through spouts I in

each compartment into sacks, or into a second dressing-machine, if requisite.

Having thus described the nature of our said invention and the manner in which the same is to be performed, we wish it to be understood that, without limiting ourselves to these precise details, that which we claim is—

The elevating or raising grain from one

level to another by means of a blast and fan, as herein more fully set forth and specified.

JOHN BRUCKSHAW.
HENRY BRUCKSHAW.
W. S. UNDERHILL.

Witnesses:

J. M. G. UNDERHILL,
EDWARD J. PAYNE.