W. MOSES.

GRAIN MOVER.

No. 52,309. Patented Jan. 30, 1866.

Fig. 1.

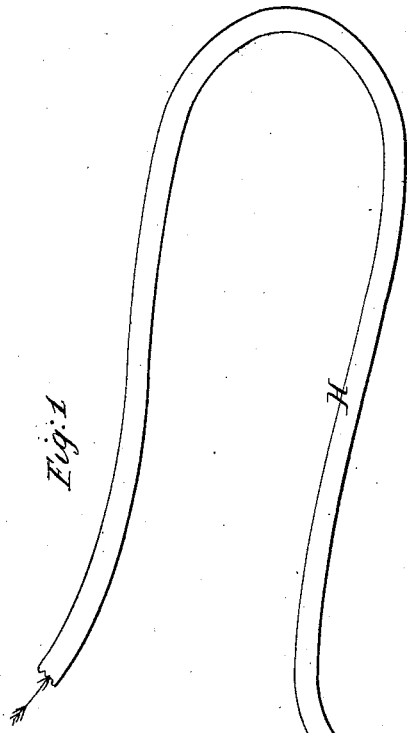
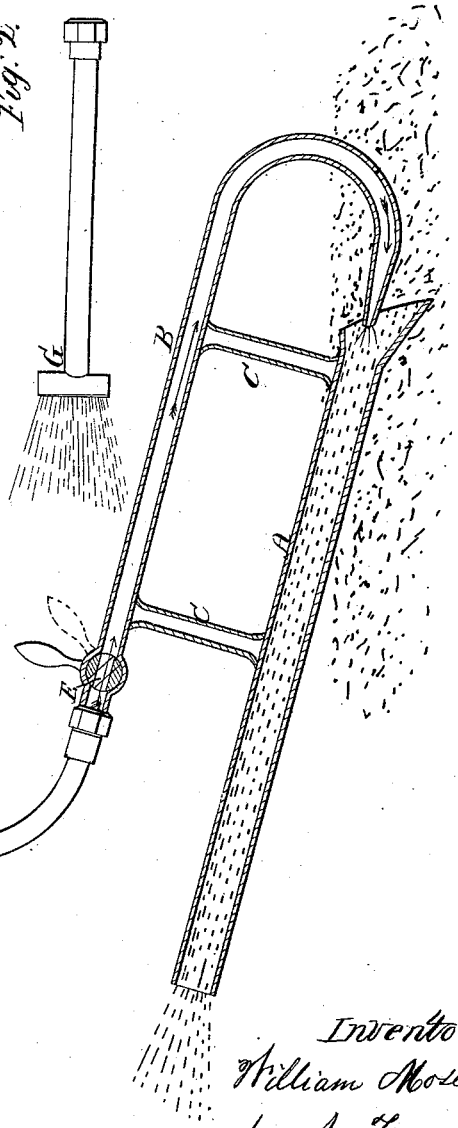


Fig. 2.



Witnesses;

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UNITED STATES PATENT OFFICE.

WILLIAM MOSES, OF BUFFALO, NEW YORK.

IMPROVEMENT IN GRAIN-MOVERS.

Specification forming part of Letters Patent No. **52,309**, dated January 30, 1866.

To all whom it may concern:

Be it known that I, WILLIAM MOSES, of the city of Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Apparatus for Moving and Handling Grain in Bulk; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a view, in elevation, of the apparatus which I employ, the portable portion being shown in section. Fig. 2 is a view of the sweeping-nozzle G, shown detached.

My invention, which I denominate a "portable grain-mover," is designed to supersede the moving of grain by shoveling, by manual labor, in the holds of vessels, in warehouses, and other situations where it is held in bulk; and it consists in the employment of condensed air forced through an eduction-nozzle into a portable section of tubing or other conductor by means of a condensing-pump or other suitable engine, so that the force of the blast, at its discharge, shall convey the grain, into which the receiving end is immersed, or in contact with, through the conductor and discharge it at the opposite end; and, also, connecting said nozzle and conductor with the condensing-pump by means of a flexible hose or tubing, whereby the instrument is made portable and adapted to carrying into any part of the hold of a vessel, while the compressed air is supplied from stationary machinery on the adjoining dock or warehouse or vessel; and, also, in the application of a cock for regulating the force of the discharge to adapt it to heavier or lighter grains; and, further, in the employment of a nozzle specially constructed for sweeping the loose grain along the floor to a place of delivery after the bulk has been removed.

As represented in the drawings, A is a conductor-pipe, preferably made of metal, having one of its ends enlarged to facilitate the entrance of grain.

B is an air-tube, bent so that its discharge-nozzle approaches or enters the mouth of the conductor. This pipe is preferably placed beside the conductor and connected therewith by the stay-rods C C, by which it is rendered compact and portable, but is not necessarily confined to this form, as other arrangements will operate as efficiently, though may be less conveniently used. Connected with the tube B is a flexible hose, H, of leather, india-rubber, or other suitable material, which extends to the pump or engine from which the compressed air is received. A cock, E, is provided, whereby the operator can regulate and control the force of the blast to adapt it to grain of different gravities and insure its most efficient and uniform action.

Its operation is as follows: The air being let on by opening the cock E, the mouth of the conductor A is applied to the surface of the pile or mass of grain, or immersed therein, and the opposite end directed toward the place of delivery, which, in unloading grain in the hold of vessels, would be the position where the leg of a mechanical elevator was introduced through a hatchway. The force of the air discharged from the nozzle of B propels the grain through the conductor with a rapidity proportionate to the pressure of the blast, which may vary from a few ounces to as many pounds pressure as are required for rapid execution.

Its action being continuous and rapid, a larger amount can be passed through a small-sized conductor in a given time than could be moved by a great number of hand-shovelers, while the length of the conductor may be sufficient to convey it over an extent that would require a number of shovelers in line to accomplish.

Its perfect portability enables it to be easily carried into all parts of a vessel and to remove grain from spaces too small to be operated in with a shovel, while by its use the operator is less exposed to the stifling atmosphere of the hold of a vessel and the dust of the grain, the latter being blown from him and the former measurably replaced by air introduced by the pump.

When the bulk of the grain has been withdrawn that which is left scattered on the floor and in corners is swept cleanly to the place of delivery by the use of the sweeping-nozzle G, Fig. 2, which is connected either to the end of the conductor A or to the hose, and applying it near the floor. It is constructed with a long and narrow slot in the transverse head G, by which the air is discharged in a broad sheet, so as to drive loose kernels of grain, dust, &c., before it, leaving the floor cleanly swept.

I do not confine myself to any particular form of pump mechanism to condense the air for this purpose, as there are many kinds which will probably answer equally well, or nearly so.

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

1. The employment of a direct blast of compressed air, in combination with the portable tube A, or its equivalent, for conveying and discharging grain, substantially as set forth.

2. In combination with the air-nozzle B and conductor A, the flexible hose H, whereby the apparatus is rendered portable and independent of the engine which supplies the condensed air, substantially as and for the purposes set forth.

3. In combination with the air-nozzle B and conductor A, the stop-cock E, operating in the manner and for the purposes set forth.

4. The T-formed nozzle G, in combination with the air-pipe B and hose H, operating in the manner and for the purpose set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

WILLIAM MOSES.

Witnesses:
DAVID BELL,
J. FRASER,
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