

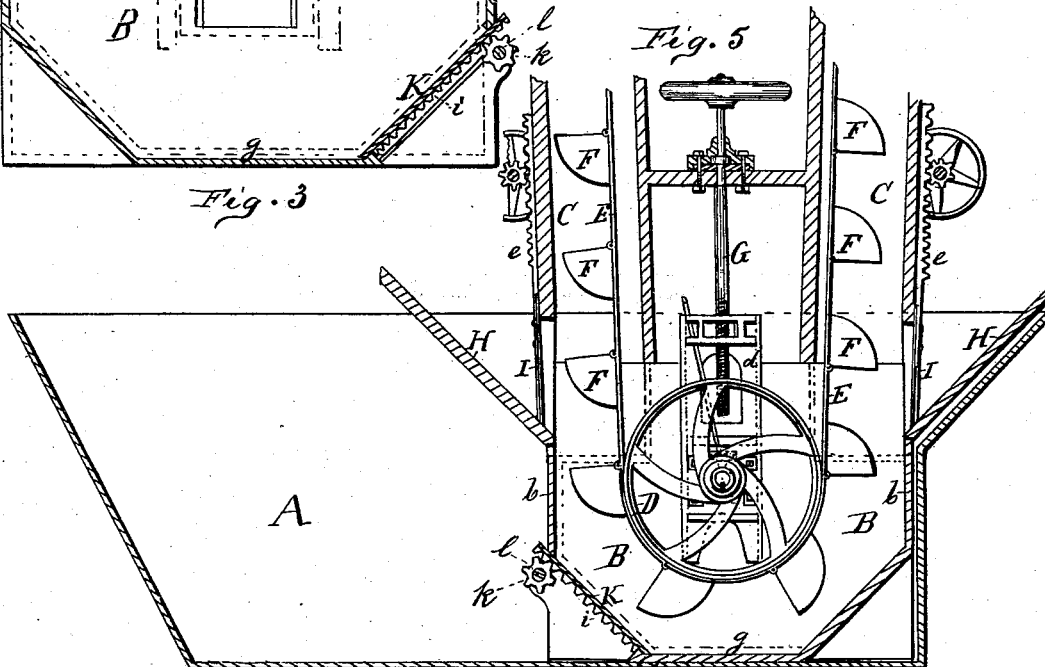
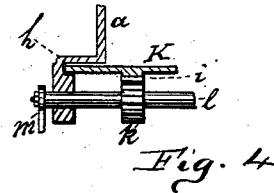
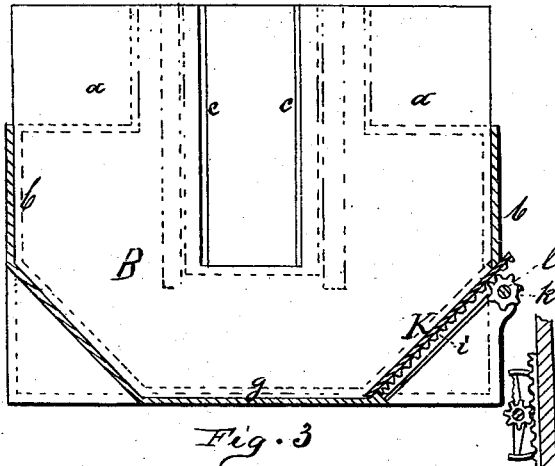
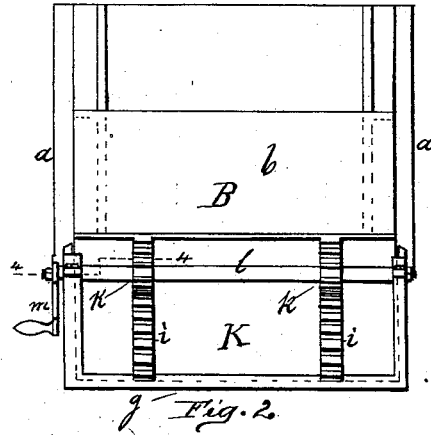
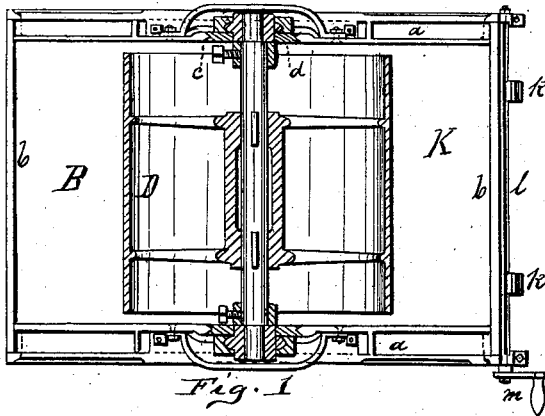
(No Model.)

E. ROBERTS & W. H. LOTZ.

GRAIN ELEVATOR.

No. 261,630.

Patented July 25, 1882.



WITNESSES

H. L. Lawlor  
J. W. Kuehagen.

INVENTORS

Elias Roberts  
William H. Lotz  
By Lotz & Dyer  
Attorneys

# UNITED STATES PATENT OFFICE.

ELIAS ROBERTS AND WILLIAM H. LOTZ, OF CHICAGO, ILLINOIS.

## GRAIN-ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 261,630, dated July 25, 1882.

Application filed January 3, 1881. (No model.)

*To all whom it may concern:*

Be it known that we, ELIAS ROBERTS and WILLIAM H. LOTZ, of Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Grain-Elevators, of which the following is a specification.

The object we have in view is to provide means whereby the boots of elevator-legs of grain-elevators can be quickly and conveniently cleared of the grain and any obstructions when the elevators become clogged and have to be stopped for that purpose, so that the elevators can resume work in a short time, and the great delays caused heretofore by the clogging of the elevators (by an excess of grain or by obstructions in the grain) will be avoided.

Our invention consists in the peculiar novel means employed by us for this purpose, as fully hereinafter explained, and pointed out by the claims.

In the accompanying drawings, forming a part hereof, Figure 1 is top view of the elevator-boot, the lower pulley and sliding boxes being in section; Fig. 2, an elevation of the boot from one end; Fig. 3, a vertical longitudinal section of the boot; Fig. 4, a cross-section through one of the guides for the gate in the bottom of the boot; and Fig. 5, a vertical section of the lower end of the elevator, the boot, and tank.

Like letters denote corresponding parts in all the figures.

A is the metal tank, which forms a pit to receive the elevator-boot B, located preferably at one end of the tank, so as to give room for a man to stand in the tank and handle a shovel. The boot is constructed preferably of metal. Its sides *a* project above the end plates, *b*, and have secured to them the timbers of the elevator-leg C. The sides of the boot are also formed to produce guides *c* for the sliding boxes *d* of the lower pulley or drum, D, of the elevator, around which pulley passes the endless belt E, carrying the grain-buckets F. The boxes *d* are adjusted vertically by screws G to secure the even running of the belt and for tightening the same. From the ends *b* of the boot extend upwardly the inclined grain-chutes

H, which receive the grain from the cars and conduct it to the elevator. The openings through which the grain passes into the elevator are closed by adjustable gates I, having racks *e*, and moved by pinions on horizontal hand-shafts. The flow of the grain into the elevator is regulated by adjusting these gates I and changing the size of the grain-openings. When these gates are raised too high and the grain flows into the boot faster than the buckets can carry it off the elevator becomes clogged and the belt will slip on the upper pulley. It also occasionally happens that a stick of wood or some other obstruction gets into the grain and passes with it into the boot, clogging the elevator and tearing the buckets off of the belt, making it necessary to stop the operation of the elevator.

Heretofore the removal of the clogging grain or obstruction has been attended with great inconvenience and delay, and it has sometimes become necessary to raise the lower pulley and belt out of the boot in order to accomplish the removal of the obstruction.

By our invention the bottom *g* of the boot is provided with a gate or door, K, which is preferably a sliding gate of metal, and forms one of the inclined sides of the bottom of the boot. This gate is guided in ways *h*, formed by the side plates, *a*, of the boot, and slides vertically therein, it being provided with two racks, *i*, which engage with pinions *k* on a horizontal shaft, *l*, operated by a hand wheel or crank, *m*, and supported by the extended sides of the boot. Now, when the elevator becomes clogged and its operation is stopped a man goes down into the tank and opens the gate K, whereupon, by reason of the position of such gate, the grain will flow out of the boot into the tank. If there is any other obstruction in the boot, it can then be readily removed and the broken buckets, if any, can be taken out. The elevator will then be started, and the man in the tank will shovel the grain back into the boot until it has all been taken up by the buckets, when he will close the gate K, and the work of the elevator will proceed as before.

The gate K may be hinged or pivoted, in-

stead of being arranged to slide in guides, and when made to slide, as shown, it can be operated by handles secured directly thereto, instead of by the pinions and racks; but we prefer to use the racks and pinions, since by them the gate will be kept parallel with its guides and can be moved with greater speed and less manual labor.

What we claim as our invention is—

10 In a grain-elevator, the combination, with

the gates I for receiving grain, of the tank A and boot B, said boot being provided with a gate or door, K, substantially as and for the purpose described and shown.

ELIAS ROBERTS.  
WILLIAM H. LOTZ.

Witnesses:

F. W. KASEHAGEN,  
OLIVER W. MARBLE.