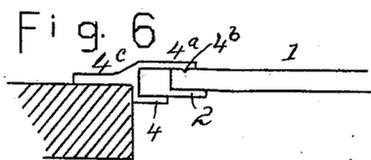
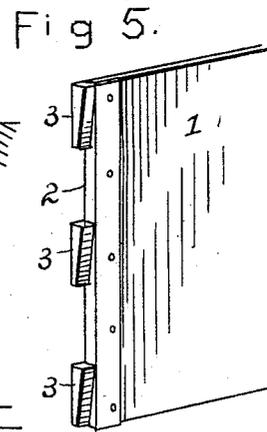
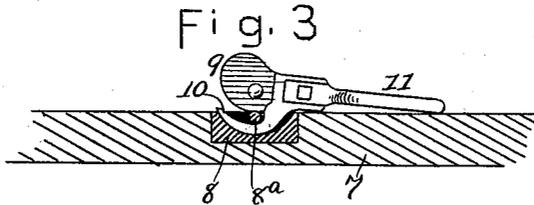
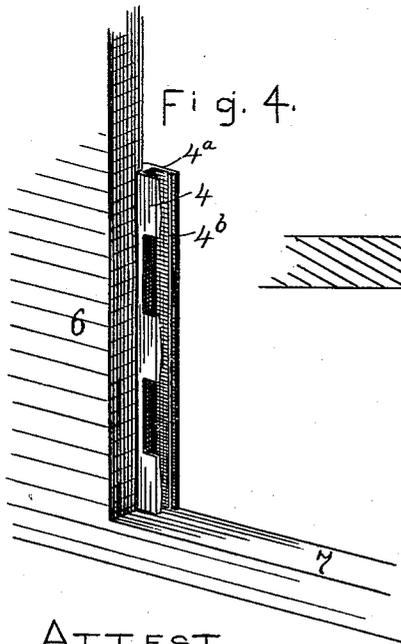
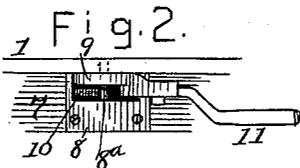
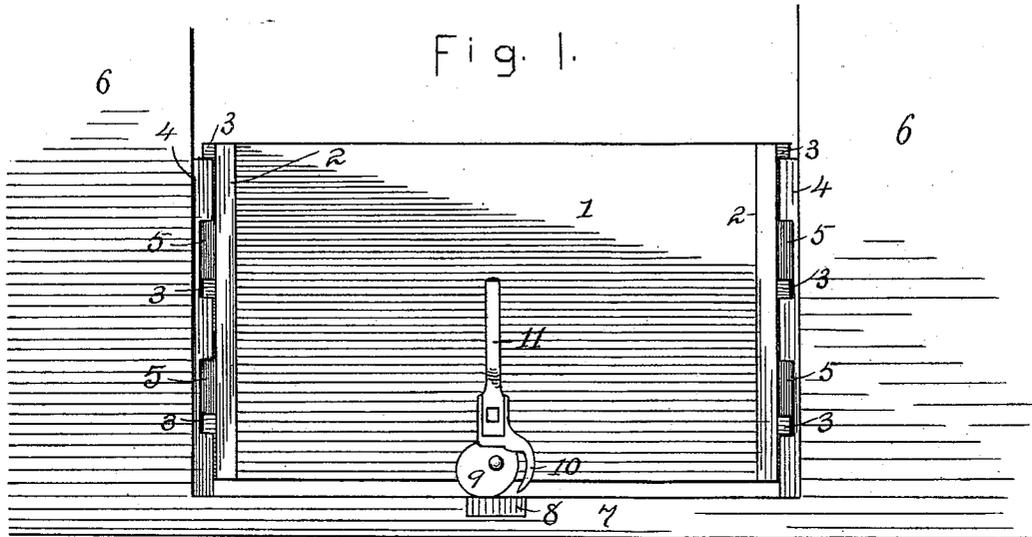


(No Model.)

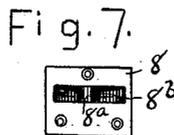
S. W. GROSH.
GRAIN CAR DOOR.

No. 478,748.

Patented July 12, 1892.



ATTEST
Hubert Graham
William Graham



INVENTOR
S. W. GROSH.
by his attorney,
L. P. Graham

UNITED STATES PATENT OFFICE.

SILAS W. GROSH, OF DECATUR, ILLINOIS.

GRAIN-CAR DOOR.

SPECIFICATION forming part of Letters Patent No. 478,748, dated July 12, 1892.

Application filed November 3, 1891. Serial No. 410,762. (No model.)

To all whom it may concern:

Be it known that I, SILAS W. GROSH, of Decatur, in the county of Macon and State of Illinois, have invented certain new and useful
5 Improvements in Grain-Car Doors, of which the following is a specification.

The object of this invention is to provide a strong, durable, and comparatively cheap grain-door, which may be easily secured in
10 position in a car and which may be opened with little effort and without danger of breakage.

To this end the invention consists in the details of construction and combination of
15 parts hereinafter set forth and claimed.

In the drawings accompanying and forming a part of this specification, Figure 1 is a front elevation of a door and the grooved ways in which it is held, a fragment of a car
20 being shown in connection and the door being slightly raised. Fig. 2 is a plan of the lever used to fasten the door and to give it initial opening movement. Fig. 3 is a side
25 elevation of the lever, showing the lock-block with which it co-operates in cross-section. Fig. 4 is a perspective representation of a grooved way, showing the relation of the same
30 to the car-door opening. Fig. 5 is a perspective representation of an end of the door. Fig. 6 is a plan outline of a grooved way and the contiguous part of the door. Fig. 7 is a
35 plan of the lock-block.

The door 1 has cleats 2, preferably of metal, and each cleat has a set of wedge-like pro-
40 jections 3. The grooved ways each comprise an outer wall 4, having recesses 5, adapted to admit the projections 3 of the door, an inner wall 4^a, having ledge 4^b, and the plate 4^c, (seen only in Fig. 6,) by means of which the
45 way is secured to the car. Sides of the car are shown at 6, and a sill thereof at 7.

At 8 is seen a lock-block, which is let into and secured to the car-sill and which has the concave groove 8^b and the lock-pin 8^a cross-
50 ing the groove. The externally-eccentric cam 9 connects pivotally with the door at the bottom edge thereof and it bears against a plane part of the surface of the lock-block. The internally-eccentric lock-finger 10 is in-
tegrant with or rigidly secured to the cam 9,

but in a different vertical plane, and it is adapted to engage the lock-pin 8^a, as seen in Fig. 3. Handle 11 is secured to the cam and finger, and it provides means for operating
55 the same.

The door is placed in position by passing
60 the projections 3 through recesses 5, lowering the door by hand to the position seen in Fig. 1, and then swinging the lock-lever to the position seen in Fig. 3. The door is thus
65 drawn in close contact with the sill and is also forced against ledges 4^b, the action of the eccentric lock-finger on the pin effecting the first result and the wedge-shaped projections
70 aiding in the latter. When it is desired to open the door, the operation is reversed. The action of the cam on the sill enables the door to be raised until the wedges are loose or
"started," after which it is an easy matter to raise the door until the projections and
75 the recesses coincide and then remove it entirely.

When the finger is in the recess, it secures the bottom of the door against the bulging tendency of the contents of the car, as is evi-
80 dent from Fig. 2 of the drawings.

I claim—

1. A door for grain-cars, having a set of wedge-like projections, grooved ways con-
85 nected with the sides of the door-opening and having recesses adapted to receive the projections of the door, and a lever pivoted on the door at the lower edge thereof and hav-
ing an eccentric bearing adapted to the sill, as set forth.

2. A door for grain-cars, having a set of wedge-like projections, grooved ways con-
90 nected with the sides of the door and having recesses adapted to receive the projections of the door, and a lever connected pivotally with the door at the lower edge thereof and having an opening eccentric cam and a closing eccentric finger, as set forth.

3. The combination of a door-opening, a door adapted to be moved vertically therein,
95 a recess in the door-sill at or near the center thereof, such recess having a transverse pin or bearing, a raising-cam on the lower edge of the door, a cam-finger adapted to enter the recess and engage the pin, and a lever
100

to operate the cams, whereby the throw of the
lever in one direction will tend to open the
door and the opposite throw will cause the
finger to enter the recess and engage the pin,
5 thereby locking the door closed and securing
it against the bulging tendency of the con-
tents of the car.

In testimony whereof I sign my name in the
presence of two subscribing witnesses.

SILAS W. GROSH.

Witnesses:

BARTON S. TYLER,
FRANK M. PRATT.