

G. F. CLUFF.
Grain-Car Doors.

No. 151,475.

Patented June 2, 1874.

Fig. 1.

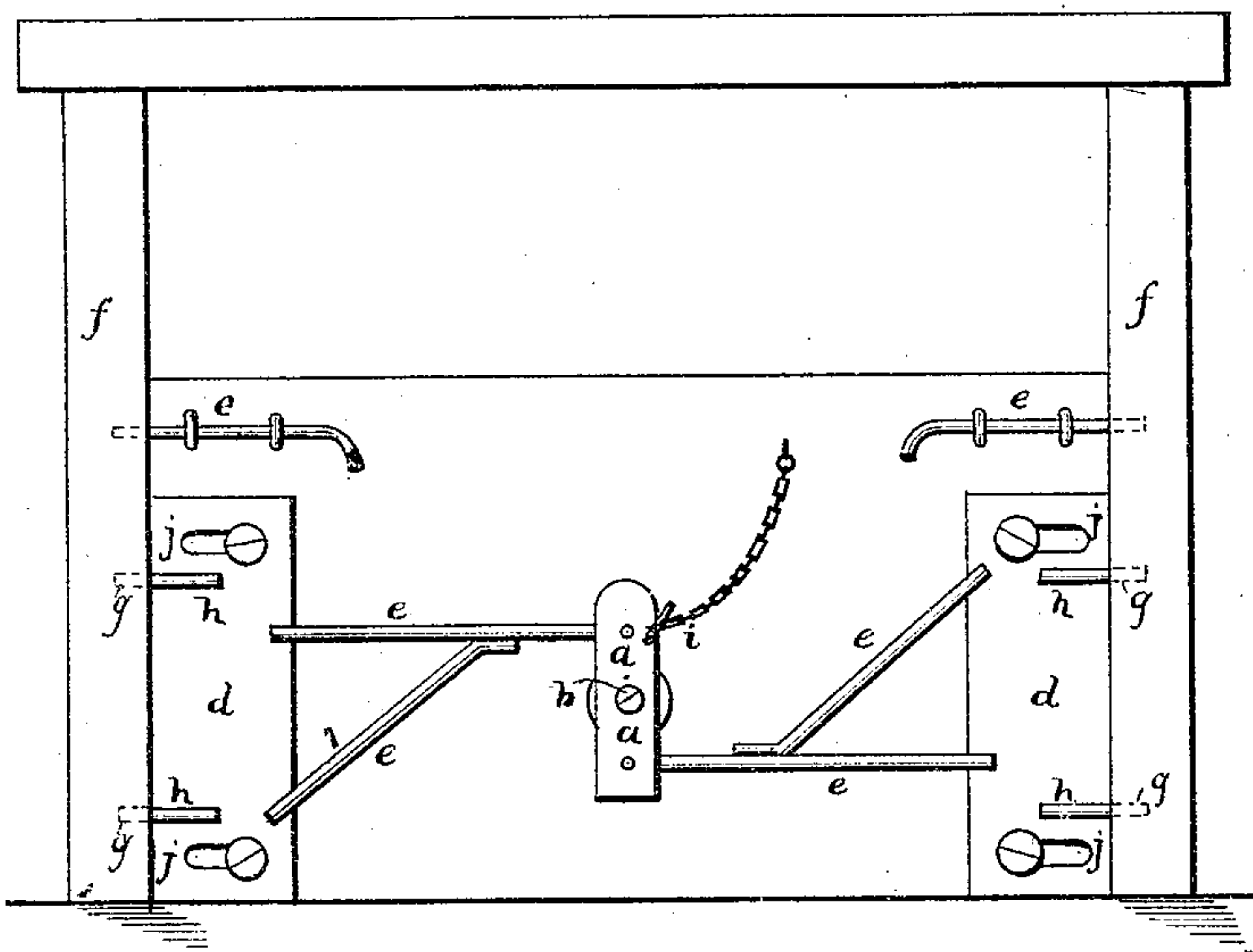
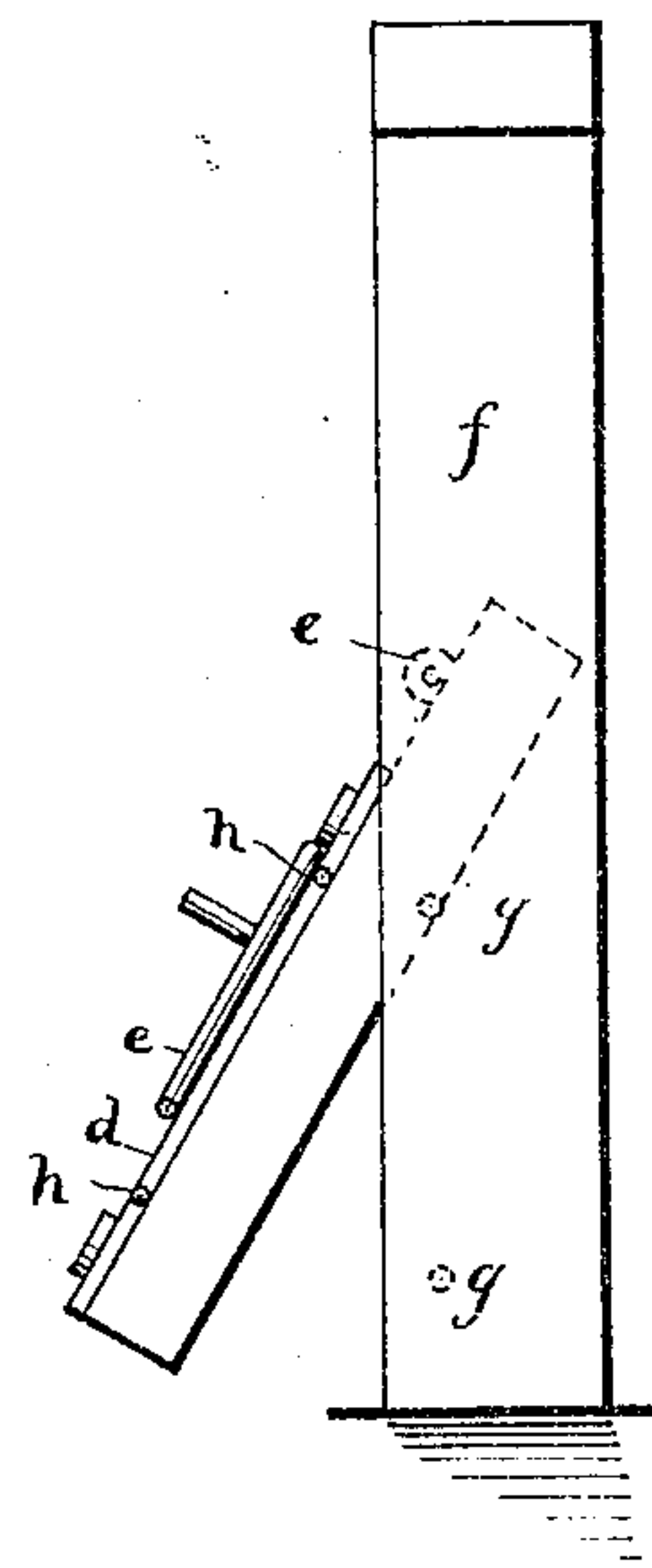


Fig. 2.



Witnesses:

James I. Lyndes
Moses Livin

Inventor:

George F. Cluff.

UNITED STATES PATENT OFFICE.

GEORGE F. CLUFF, OF LA CROSSE, WIS., ASSIGNOR OF ONE-HALF HIS RIGHT
TO MOSES LIVERMORE AND MARCUS LIVERMORE, OF SAME PLACE.

IMPROVEMENT IN GRAIN-CAR DOORS.

Specification forming part of Letters Patent No. **151,475**, dated June 2, 1874; application filed
January 16, 1874.

To all whom it may concern:

Be it known that I, GEORGE F. CLUFF, of La Crosse, in the county of La Crosse and State of Wisconsin, have invented a new and useful Improvement in a Grain-Door for Box-Cars; and I do hereby declare that the following is a full, clear, and exact description of the same, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 is a detail vertical sectional view of my improved door. Fig. 2 is an end view, showing the door partly open.

Similar letters of reference indicate corresponding parts.

My invention has for its object to furnish an improved door for grain or box cars, which shall be simple in construction, convenient in use, and adapted for ready adjustment; and it consists in the construction and combination of various parts of machinery, as hereinafter more fully described.

a a is a movable arm, which is secured to the door by a bolt, *b*. *e e* are connecting-rods, which connect the arm *a* to the gates *d d*. *g g* are sockets formed in the door-frame to receive the pins or bars *h h*, which are rigidly connected and protrude from the side of the gates *d d*. When adjusted in these sockets it

forms a lock, which prevents the grain from escaping. *i* is a pin that holds the arm *a* in place when the gates are closed. By removing this pin *i* the arm *a* can be turned on its axis *b*, which causes the gates *d d* to move backward from the door-frames. *j j* are slats in the gates *d d*, through which are passed bolts, which hold the gates firmly to the door, yet allow them to move backward and forward. *e e* are sliding bolts, so that when adjusted into the sockets *f f* of the door-frame form hinges, on which the door may swing out from the bottom.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of the arm *a a*, the gates *d d*, and rods *e e*, substantially as herein shown and described, and for the purpose set forth.

2. A grain-car door hung at its upper corners to the frame, so as to swing outward from the bottom, and provided with the sliding and locking gates *d d*, constructed and combined to operate as specified.

GEORGE F. CLUFF.

Witnesses:

JAMES I. LYNDEN,
MOSES LIVERMORE.