

(No Model.)

2 Sheets—Sheet 1.

E. W. M. HUGHES.
METALLIC DOOR.

No. 420,513.

Patented Feb. 4, 1890.

Fig. 1.

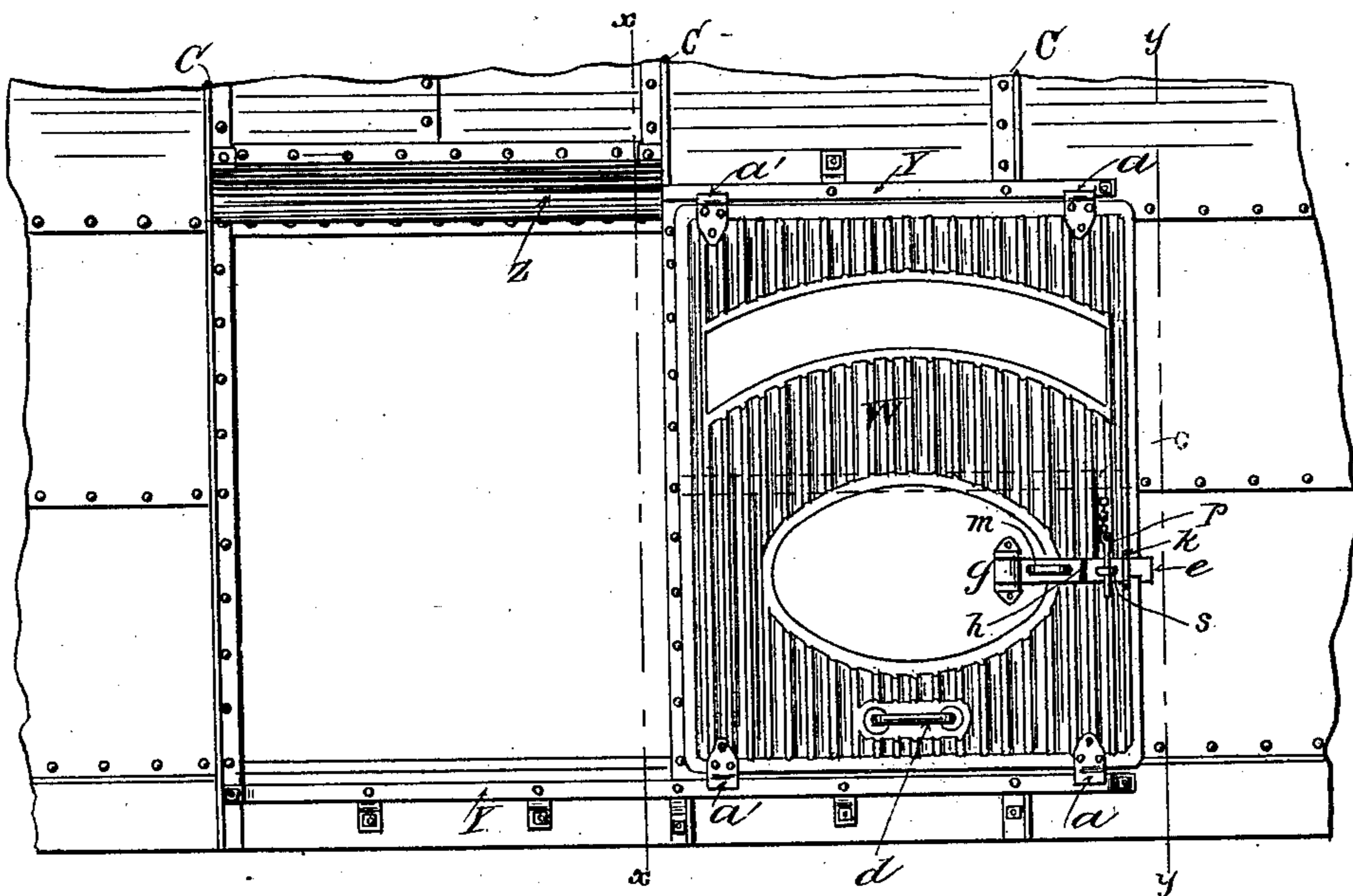


Fig. 4.

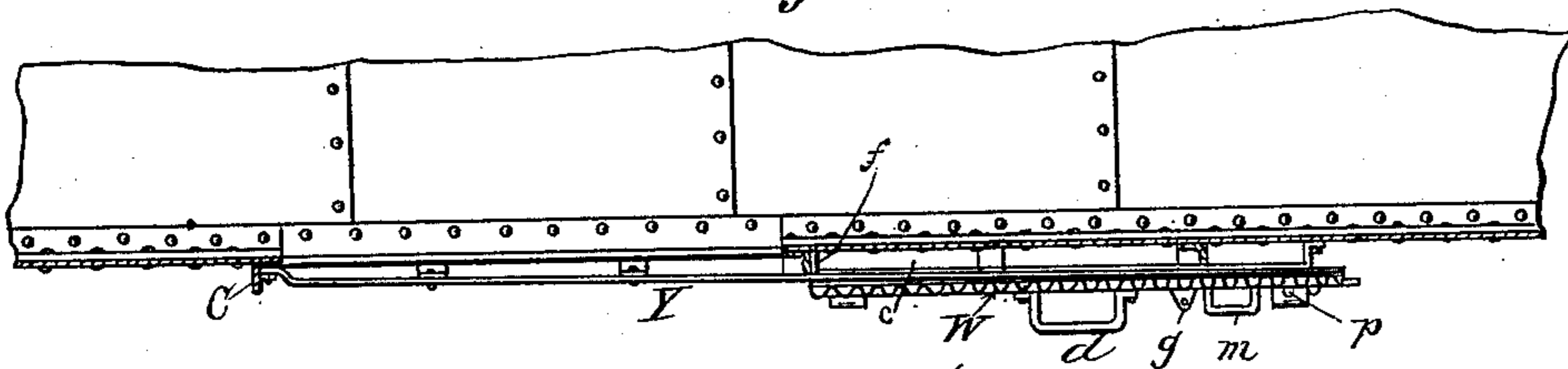
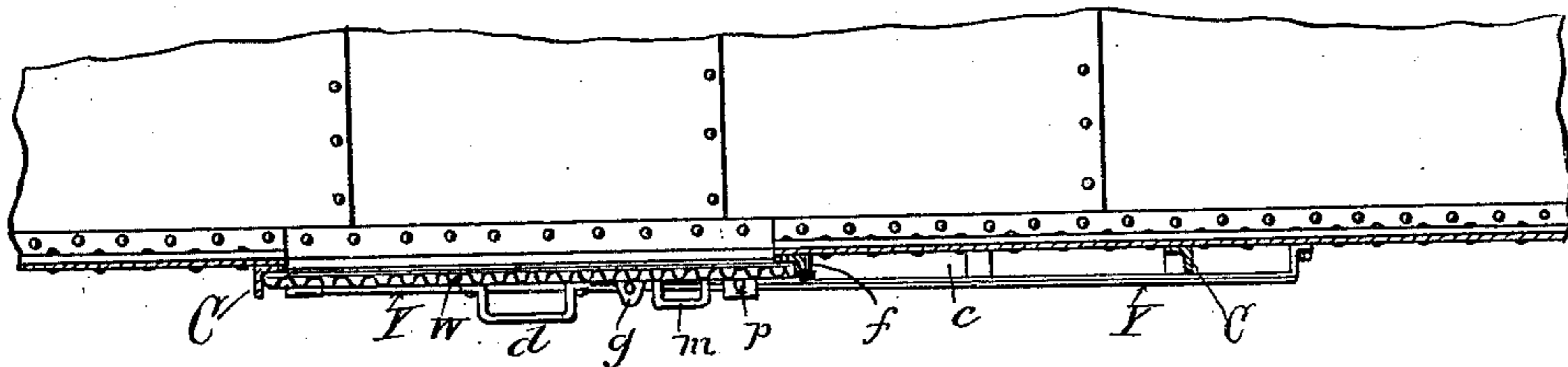


Fig. 5.



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By his Attorney,
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Fig. 6.

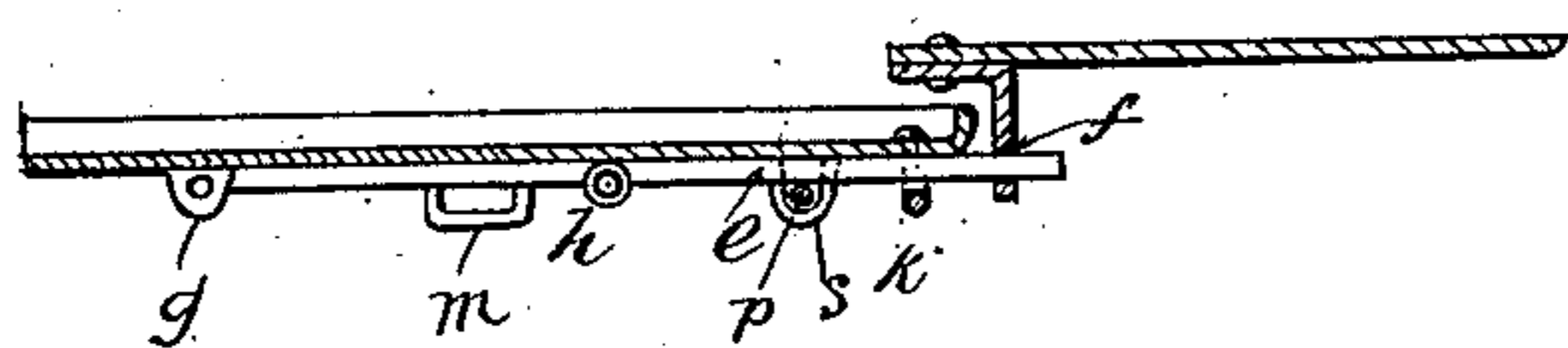


Fig. 2.

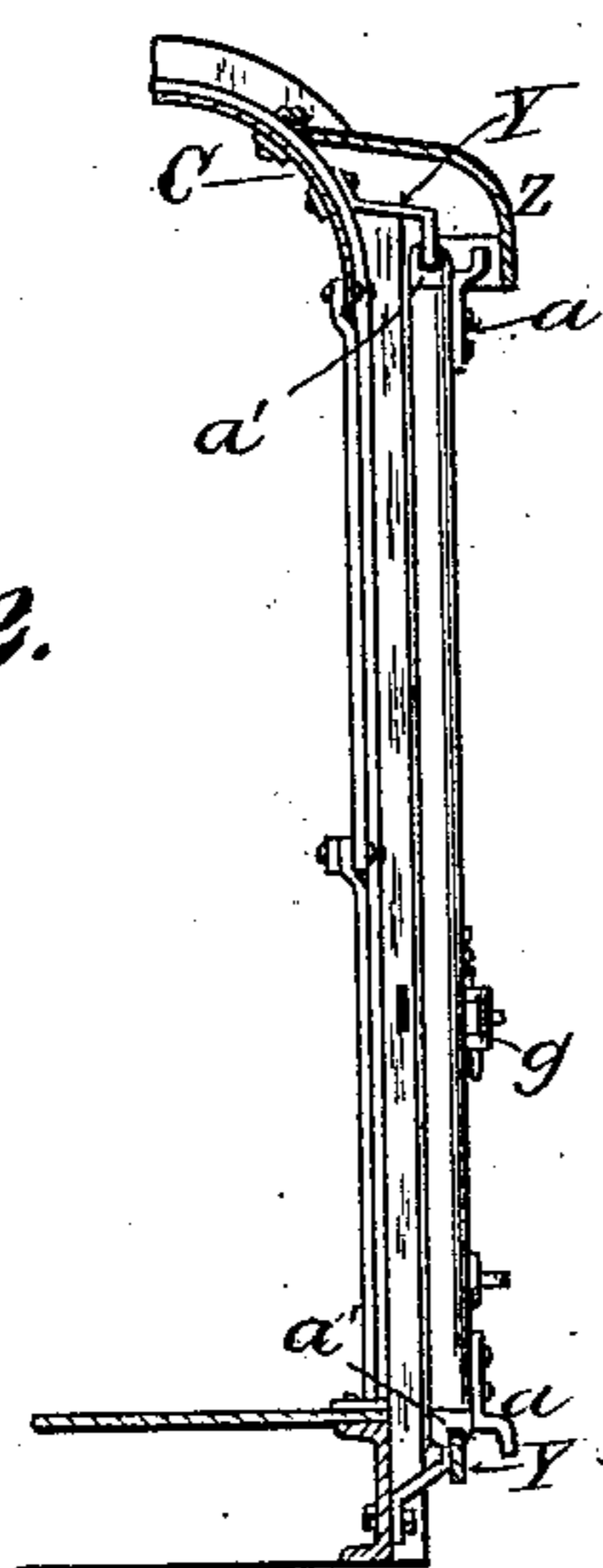
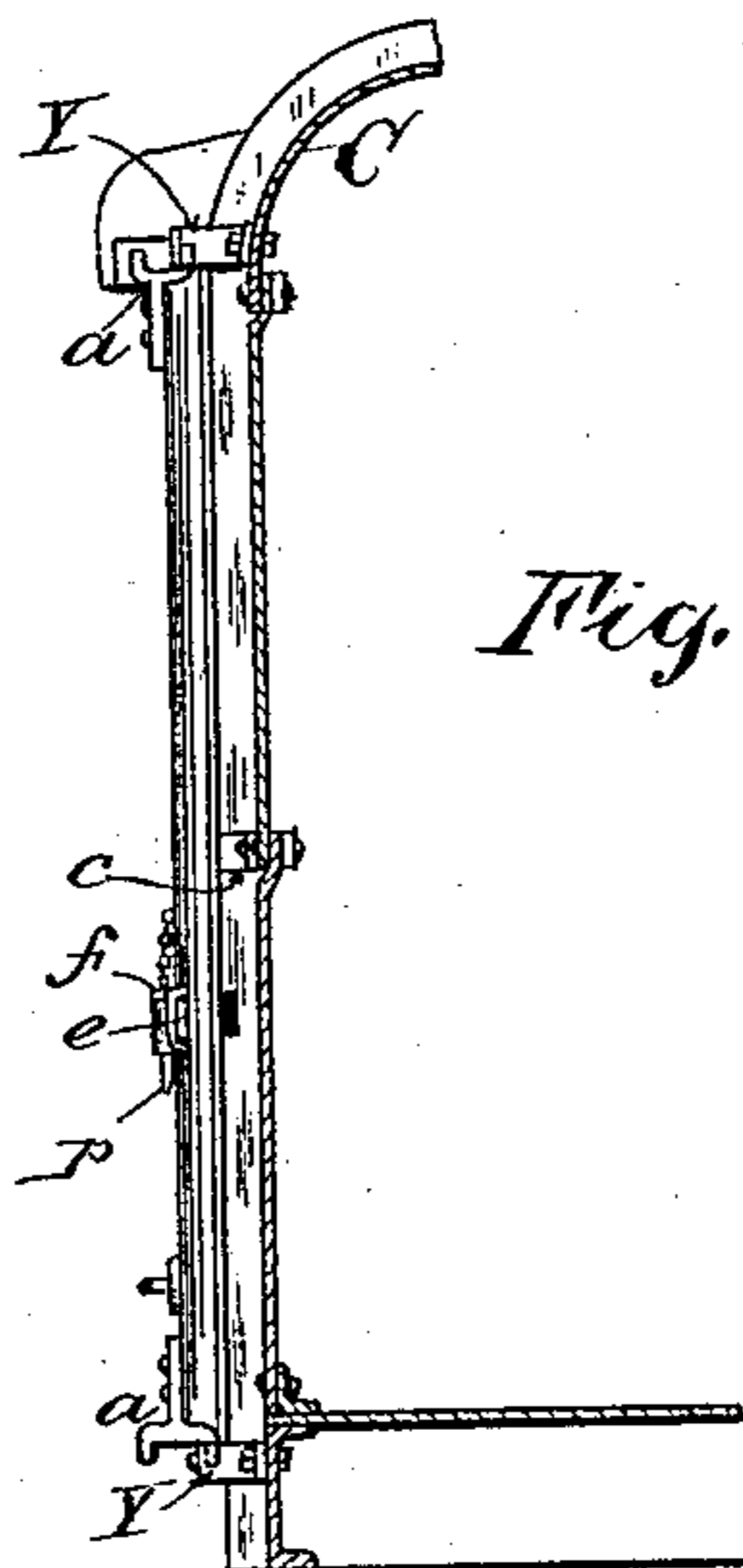


Fig. 3.



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UNITED STATES PATENT OFFICE.

EDWARD WILLIAM MACKENZIE HUGHES, OF CHICAGO, ILLINOIS, ASSIGNOR
TO THE FOX SOLID PRESSED STEEL COMPANY, OF SAME PLACE.

METALLIC DOOR.

SPECIFICATION forming part of Letters Patent No. 420,513, dated February 4, 1890.

Application filed July 18, 1889. Serial No. 317,859. (No model.)

To all whom it may concern:

Be it known that I, EDWARD WILLIAM MACKENZIE HUGHES, of Chicago, Cook county, Illinois, have invented a new and useful
5 Improvement in Metallic Doors, of which the following is a full, true, and exact description, reference being had to the accompanying drawings.

This invention relates to an improvement
10 in metallic doors, and is especially adapted to sliding doors of railroad-cars.

My invention will be readily understood from the accompanying drawings, in which—

Figure 1 represents a vertical elevation;
15 Fig. 2, a cross-section through Fig. 1 on the line *x x*; Fig. 3, a cross-section through Fig. 1 on the line *y y*; Fig. 4, a plan view, partly in section, showing the door open; Fig. 5, the same view showing the door closed, and
20 Fig. 6 a horizontal cross-section through the locking mechanism.

The door itself *W* is of pressed steel, corrugated, and travels upon the rails *Y*, fastened to the side of the car or the carlings,
25 and the door itself is provided with guides or travelers *a a'* upon the upper and lower ends. It may also be provided with a drip plate or cover *Z* to shed the water when the door is closed. The rails *Y* are straight and
30 approach the car more closely at one end than at the other, and extending along the side of the car twice the distance of the width of the door, as clearly shown in Figs. 4 and 5. The guides *a* do not fit the rails closely,
35 but one of the lugs of each extends out beyond the side of the door, so as to allow of lateral play or movement, as clearly indicated in Fig. 3, whereas the guides *a'* fit the rails *Y Y* with reasonable accuracy. An intermediate guide *c* is secured to the side of
40 the car, with its outer surface flush with the outer edge of the carlings, and against which the door *W* loosely rests and is held away from the side of the car, so as to clear it of
45 the vertical carling *C*, as clearly shown in dotted lines in Fig. 1 and in full lines in Figs. 3 and 5. The door is likewise provided with a handle *d*, by which it may be operated.

When the door is closed by sliding along
50 the rails, the free end carrying the lock is closed in against the car by reason of the

play in the guides *a*. It may then be locked by placing the latch *e* in the staple or slotted plate *f*. This bolt is hinged at *g* and likewise at *h*, so that it can be drawn back
55 through the staple *k* by means of the handle *m*, and then shot forward into position through the plate *f*, which holds the door firmly locked, the bolt itself being locked by means of a pin *p*, which passes down through a staple *s* after the bolt has been shot forward,
60 and lies flat against the side of the door.

In opening the door the bolt *e* is first unlocked and withdrawn; then by seizing the handle *d* the lock end of the door can be
65 drawn outward, so as to be slid past the carlings into the position shown in Fig. 1.

It is plain that this door may be applied to any car of suitable construction.

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

1. The combination, with a car, of straight rails extending twice the distance of the width of the door at an angle from the sides of the car, a pressed steel door, and the loose
75 guides at one end allowing of lateral motion of the door at that end, substantially as described.

2. The combination, with a car, of inclined rails and an intermediate guide-piece along
80 the sides thereof, a door on said rails, one end of which may be moved toward or from the side of the car, a lock, and a bolt securing the door after it has been moved inward toward the side of the car, substantially as de-
85 scribed.

3. The combination, with a car, of inclined rails along the sides thereof, a door on said rails, one end of which may be moved toward
90 or from the side of the car, a staple on the side of the car, and a bolt hinged at one end to the door and adapted to engage with the staple at the other end and provided with a hinge intermediate its ends, substantially as
95 described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWARD WILLIAM MACKENZIE HUGHES.

Witnesses:

WM. VOSS,

W. S. HARTWELL.