

No. 689,404.

Patented Dec. 24, 1901.

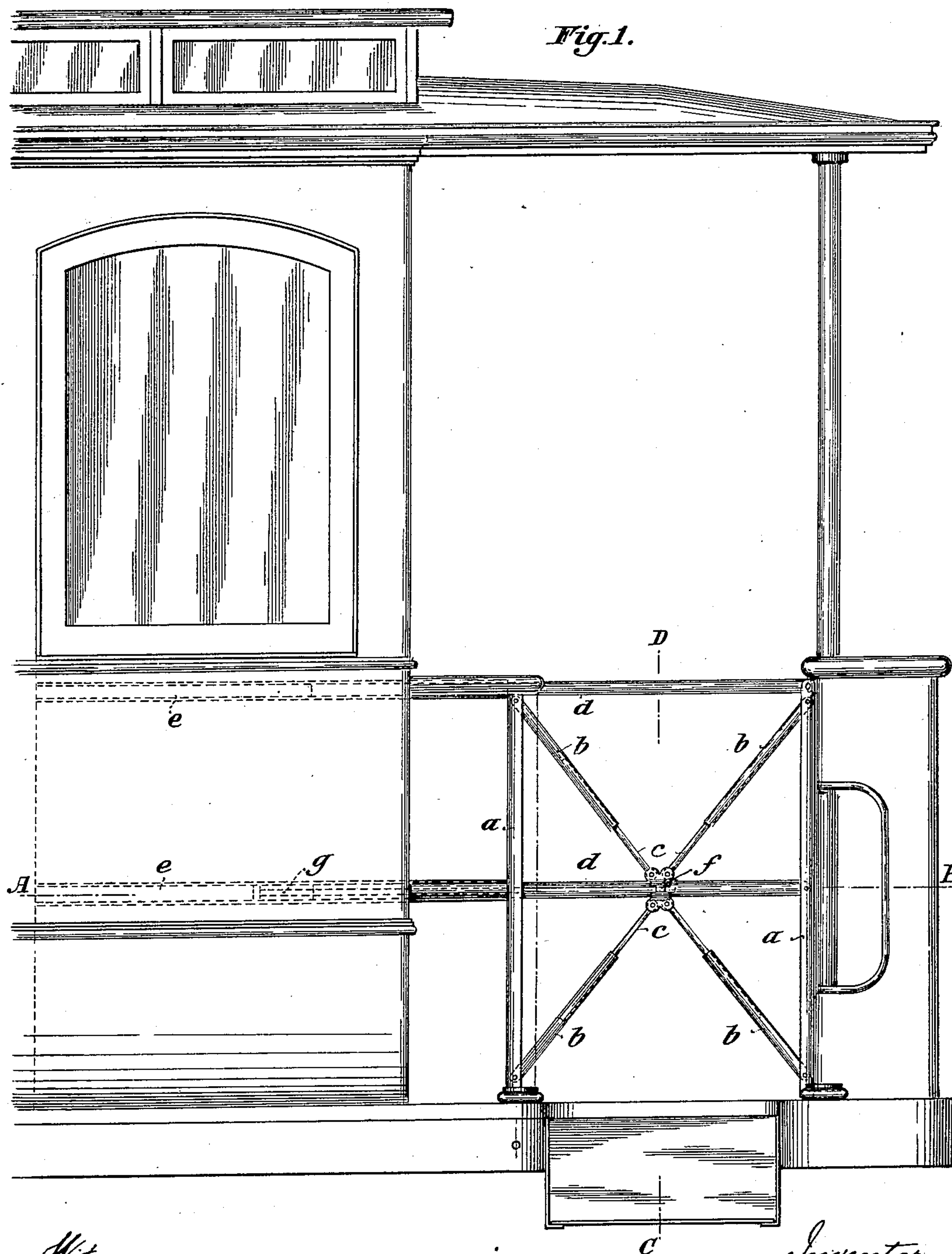
A. MAURER.

DOOR FOR RAILWAY CARRIAGES.

(Application filed May 8, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:
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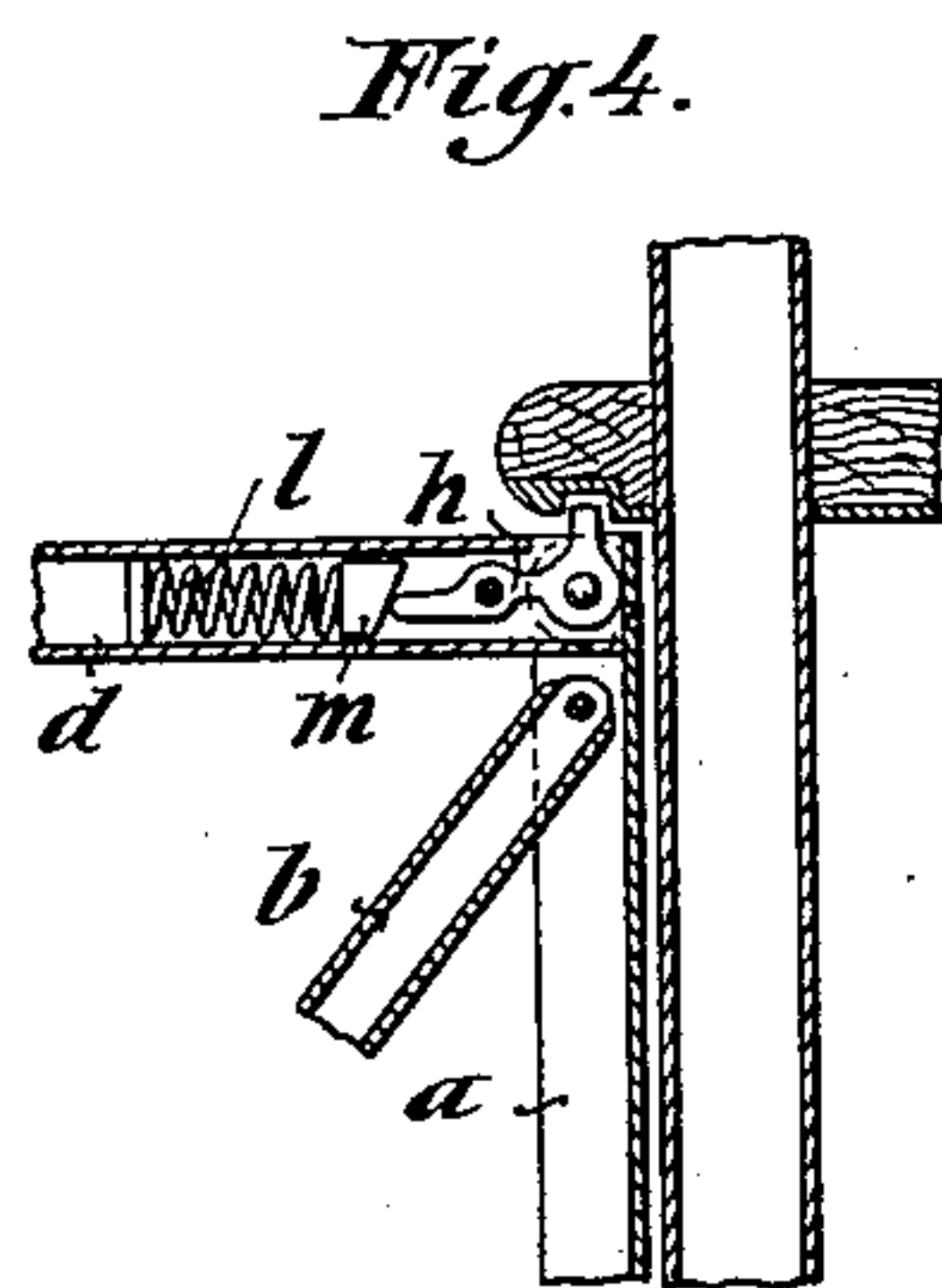
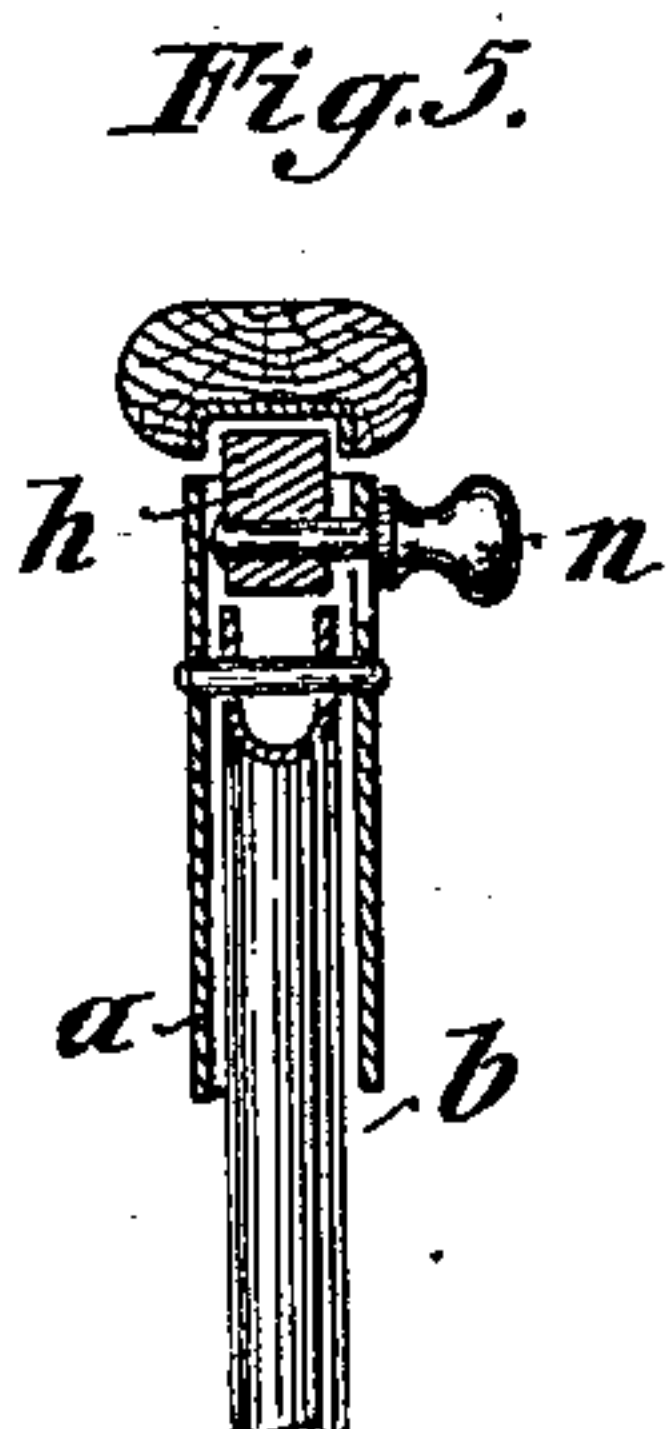
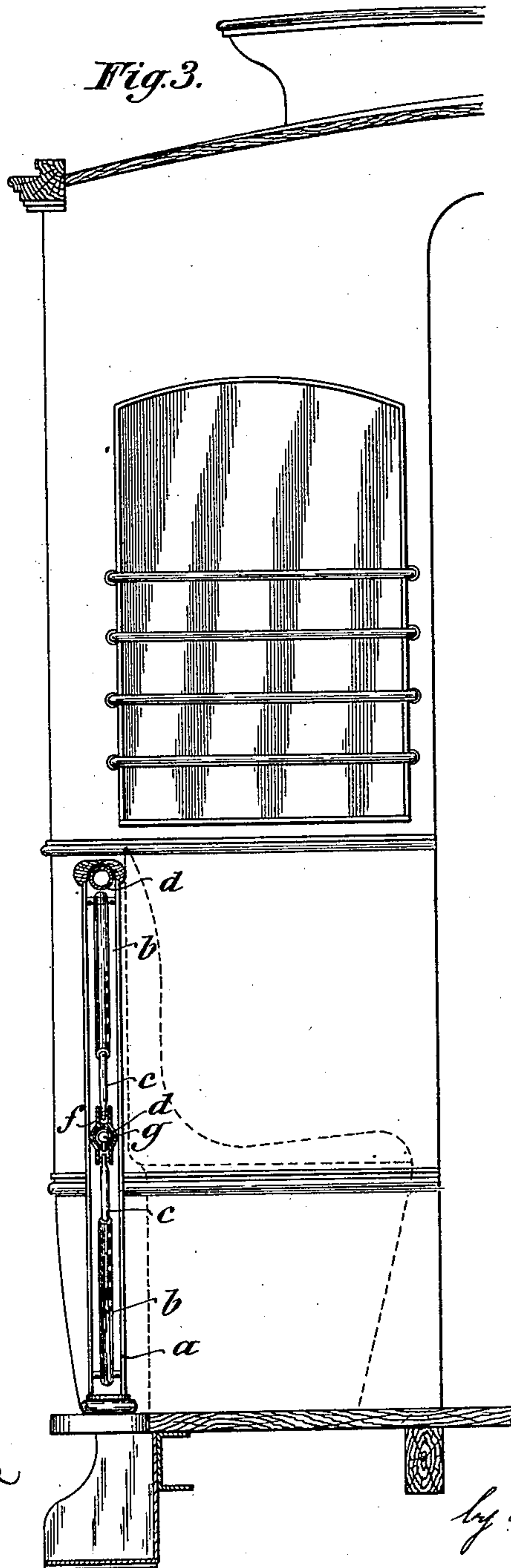
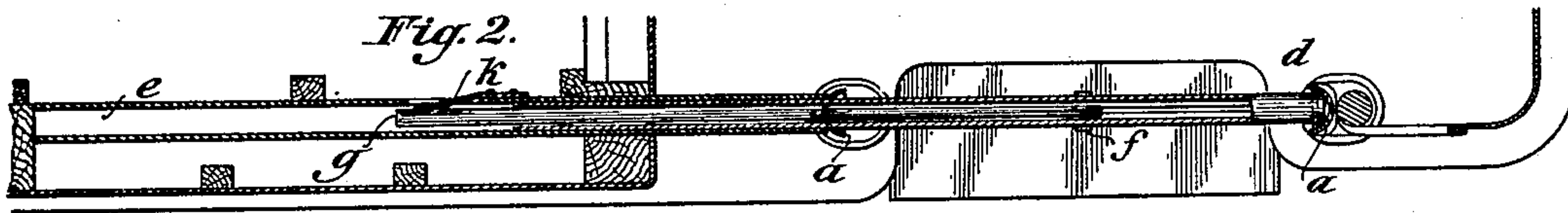
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2 Sheets—Sheet 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

ADOLF MAURER, OF COLOGNE-EHRENFELD, GERMANY.

DOOR FOR RAILWAY-CARRIAGES.

SPECIFICATION forming part of Letters Patent No. 689,404, dated December 24, 1901.

Application filed May 8, 1901. Serial No. 59,216. (No model.)

To all whom it may concern:

Be it known that I, ADOLF MAURER, joiner, a subject of the King of Prussia, German Emperor, residing at Hüttenstrasse 2^B, Cologne-Ehrenfeld, in the Kingdom of Prussia, German Empire, have invented certain new and useful Improvements in Doors for Railway-Carriages; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention has for its object a sliding door or gate for the platform of tram-cars and the like in which the horizontal bars are pushed into tubes which are fixed in or on the sides of the car, while the diagonal struts are capable of sliding one in the other and when the door is collapsed lie together with the vertical bars one upon another.

In the accompanying drawings, Figure 1 is a side view of the closed door; Fig. 2, a section on the line A B of Fig. 1; Fig. 3, a section on the line C D of Fig. 1, while Figs. 4 and 5 are vertical sections of the snap-lock for holding the door fast in its closed position.

The door consists of two cross-bars *d*, which are movable horizontally and are inserted in and guided by tubes *e*. These tubes *e* are attached to the fixed sides A and pass through the corner-pillars of the car up to the next pillar. At their free ends the cross-bars *b* are connected with one another by means of vertical side pieces *a*. On the lower cross-bar *d* a cruciform piece *f* is arranged, in which the pivots of the four bars *c* running to the corners of the door are located. These bars *c* are not directly connected with the corners of the door, but they are mounted in tubes *b*, which are pivotally connected with the side pieces *a* above and below. The side pieces *a* are so formed that when the door is pushed together or collapsed the tubes *b* and rods *c* and also the cruciform piece *f* lie in grooved recesses formed in the side pieces *a*. In order to keep the cruciform piece *f* in the center, which piece consists of a ring having flaps arranged above and below carrying the pivots of the rods *c*, it is attached to the rod *g*, which lies in a tube *e*. The adjustment of this rod at the point at which the link-piece *f* stands in the center between the side pieces *a* is effected by means of

a spring *k*, Fig. 2. This spring or catch *k* is secured to the outside of the tube *e* and projects through a hole in the side of the tube. The rod *g* has a projection on its rear end, which is pushed past the catch or spring when the rod *g* is inserted in the tube *e*. The catch or spring *k* arrests the motion of the rod *g* as it is slid outward, as shown in Fig. 2, and holds the rod *g* stationary when the part *f* is at the middle of the gate. Any other approved catch or stop may be used as the equivalent of the spring *k*.

In order to retain the door in the closed position, a snap-lock is arranged on the upper cross-bar *d*, the construction of which snap-lock is shown in Figs. 4 and 5. It consists of a two-armed lever *h*, one arm of which—namely, an upwardly-bent one—snaps behind a nose or projection situated on a bar of the splash-board or guard-rail and is retained in this position by the action of a spiral spring *l* and a wedge piece *m*.

In order to open the door or gate, a knob *n*, connected with the lever *h*, is depressed, whereby the nose is released. Then the door is pushed back or collapsed until the side parts *a* encounter one another, the tubes *b* finding room in the recesses formed in the same. The door thus appears when in an opened condition as a simple bar and may be used as a handle by the passengers when entering and leaving the car.

What I claim is—

1. The combination, with longitudinal guide-tubes; of a collapsible door comprising side bars, cross-bars which slide in the said tubes, and diagonal members each formed of two parts slidable one within the other and pivotally connected with one of the said cross-bars and with the said side bars, substantially as set forth.

2. The combination, with longitudinal guide-tubes; of a collapsible door comprising side bars, cross-bars which slide in the said tubes, a cruciform piece supported by the cross-bar at the middle part of the door, and diagonal members each formed of two parts being pivoted at one end to the said side bars and at the other end to the said cruciform piece, substantially as set forth.

3. The combination, with longitudinal

guide-tubes; of a collapsible door comprising side bars, cross-bars which slide in the said tubes, a cruciform piece supported by the cross-bar at the middle part of the door, a
5 rod connected to the said cruciform piece and sliding in the cross-bar and guide-tube pertaining to it, a catch for engaging with the said rod and limiting its motion in one direction, and diagonal members each formed of
10 two parts slidable one within the other and

pivoted at one end to the said side bars and at the other end to the said cruciform piece, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ADOLF MAURER.

Witnesses:

CHARLES L. SIMPLE,
KARL SCHMITT.