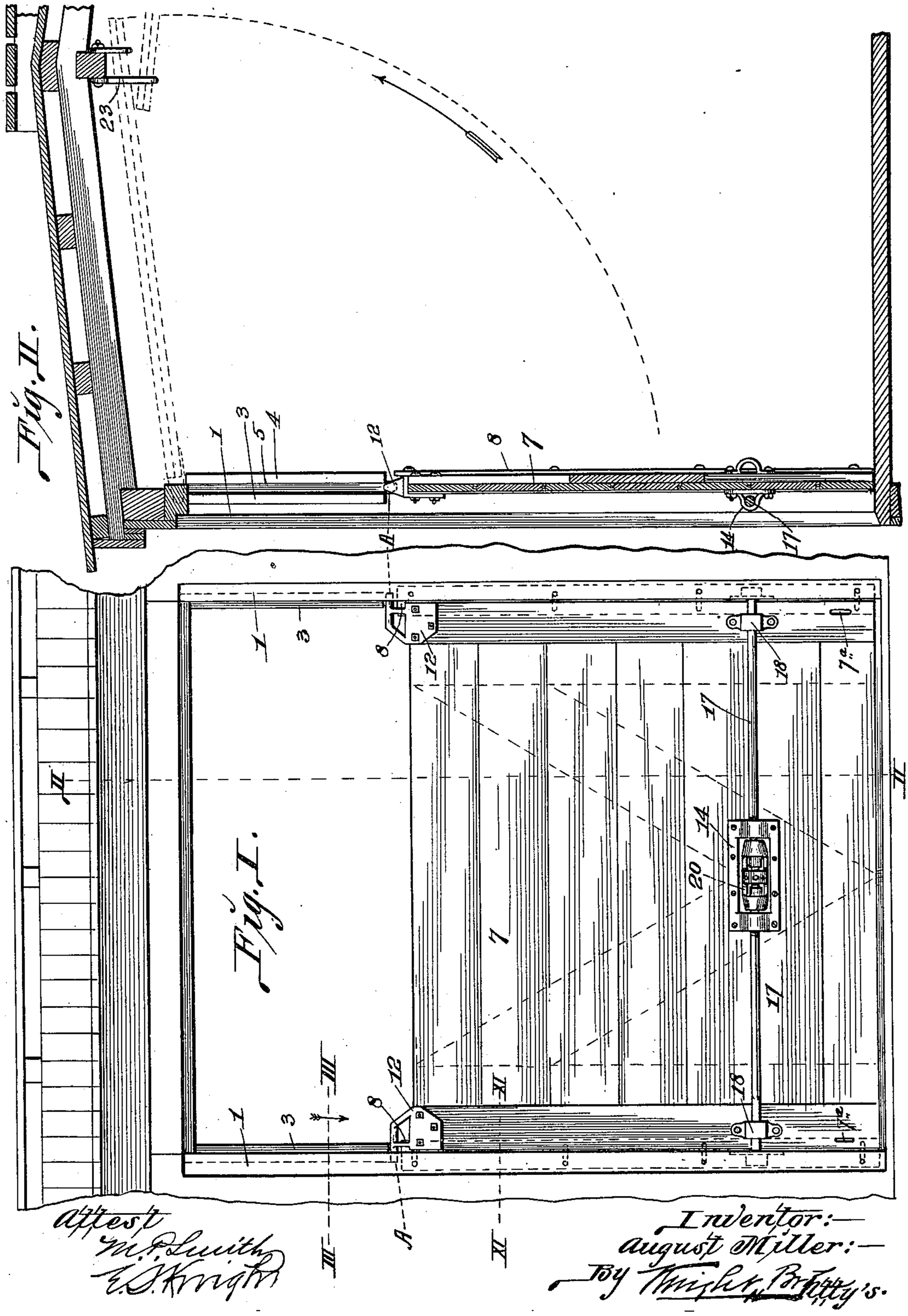
No. 667,097. Patented Jan. 29, 1901.

A. MILLER.

GRAIN CAR DOOR.

(Application filed Feb. 5, 1900.)

(No Model.) 2 Sheets—Sheet 1.



Attest
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E. S. Knight

Inventor:—
August Miller:—
By Wright Brothers.

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Fig. I.

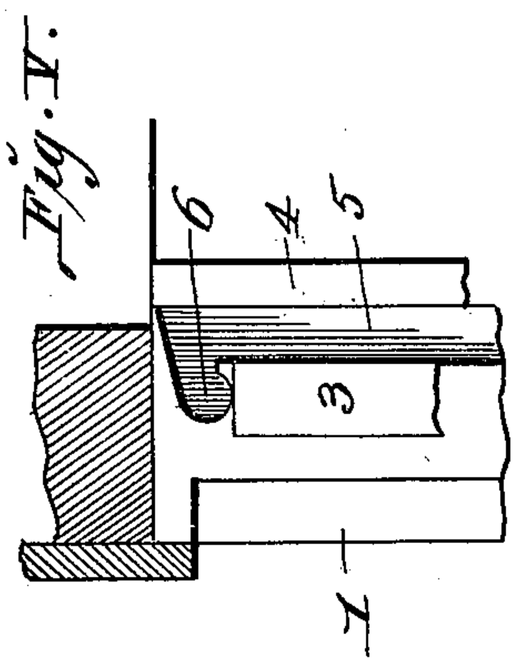

Fig. II.

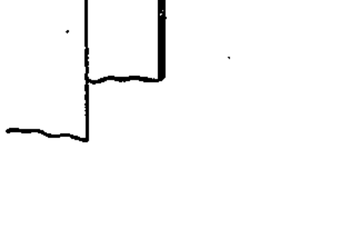

Fig. III.

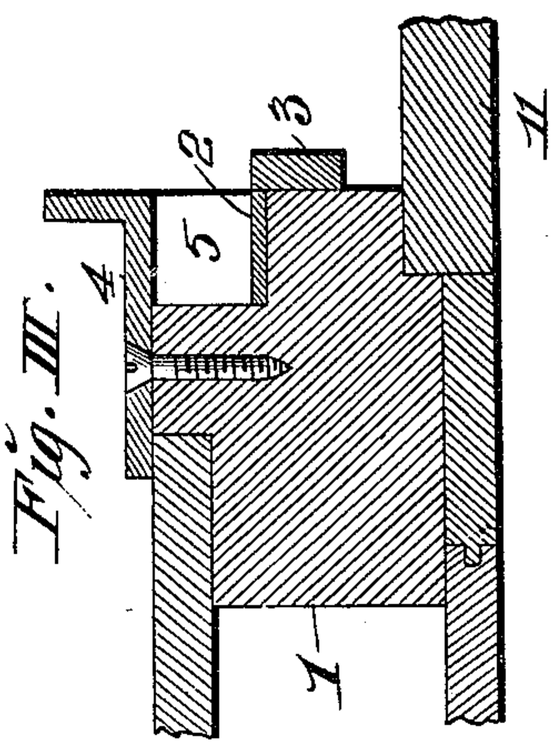

Fig. IV.

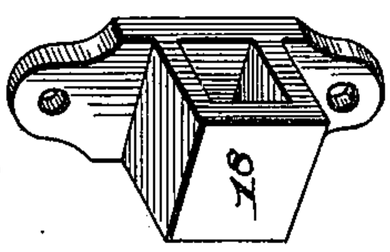

Fig. V.

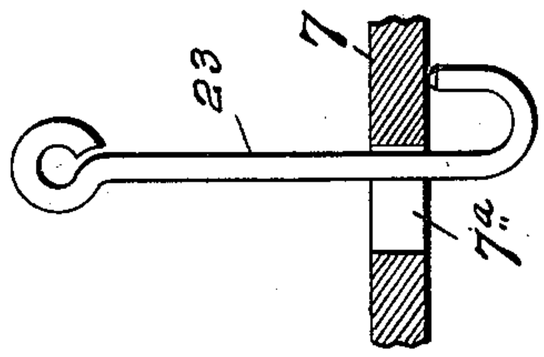

Fig. VI.

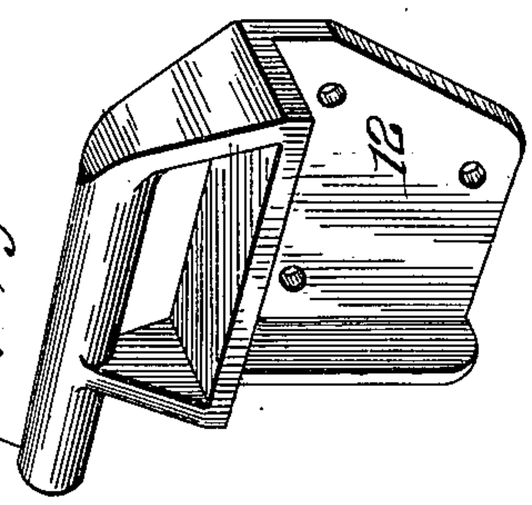

Fig. VII.

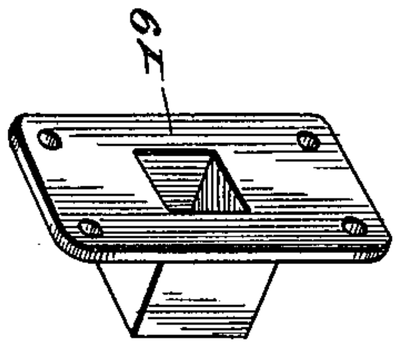

Fig. VIII.

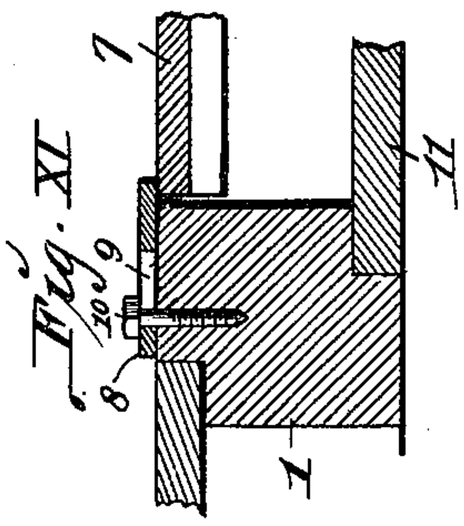

Fig. IX.

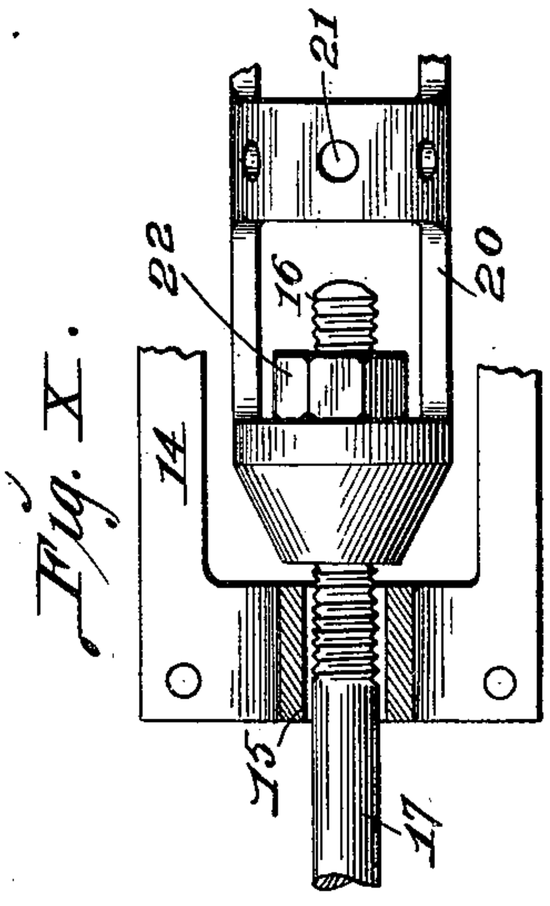

Fig. X.

Fig. XI.

Witnesses:
W. P. Smith
E. L. Knight

Inventor:—
August Miller:
By Wright Bros
Atty's.

UNITED STATES PATENT OFFICE.

AUGUST MILLER, OF ST. LOUIS, MISSOURI, ASSIGNOR TO THE MILLER SUPPLY COMPANY, OF SAME PLACE.

GRAIN-CAR DOOR.

SPECIFICATION forming part of Letters Patent No. 667,097, dated January 29, 1901.

Application filed February 5, 1900. Serial No. 3,967. (No model.)

To all whom it may concern:

Be it known that I, AUGUST MILLER, a citizen of the United States, residing at the city of St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Grain-Car Doors, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to that class of doors used upon grain-cars, the object of the invention being to produce an efficient door of the character named that may be securely held in closed position and be readily opened in an outwardly direction in emptying the grain from the car.

The invention consists in features of novelty hereinafter fully described and claimed.

Figure I is a front elevation of the exterior of a door constructed in accordance with my invention shown applied to a car and closed. Fig. II is a vertical sectional view taken on the line II II, Fig. I, through my improved door and part of the car to which it is applied. Fig. III is an enlarged horizontal sectional view taken on the line III III, Fig. I, through one of the door-posts and adjacent parts. Fig. IV is an enlarged view of the upper end of one of the door-posts and adjacent parts, partly in section. Fig. V is an enlarged detail edge view of the upper end of one of the door-posts. Fig. VI is a detail perspective view of one of the door guide or pivot plates. Fig. VII is a detail view of one of the ceiling-door-supporting hooks. Fig. VIII is a front perspective view of one of the keepers in which the door-locking bolts are mounted. Fig. IX is a rear perspective view of one of the locking-bolt-receiving sockets. Fig. X is an enlarged detail view of fragments of one of the locking-bolts, the turnbuckle applied thereto, and the bolt-holding frame. Fig. XI is an enlarged cross-sectional view taken on the line XI XI, Fig. I, through one of the door-posts and adjacent parts.

1 designates the door-posts of a car, each of which is provided with a rabbet at the rear or inner corner, and to which are applied facing-strips 2 and 3 and an angle-bar 4. Said facing-strips 2 and 3 and angle-bars form the walls of grooves 5 (see Fig. III) in the door-posts that terminate at A. (See Figs. I and II.) At the upper end of each door-post, communicating with the groove 5, is a socket 6, the purpose of which will hereinafter appear.

7 designates the door, the side edges of which are in close proximity to the edges of the door-posts when closed, with just sufficient clearance to permit of the door swinging freely outwardly or inwardly.

8 are guard-strips located upon the inner sides of the door-posts 1. (See Figs. I, II, and XI.) The strips are adjustably secured to the posts by screws 10, passing through the transverse slots 9 in the strips, (see Fig. XI,) and they are adapted to be projected past the side edges of the door to close the interstices between said edges and the door-posts and prevent the escape of grain therethrough.

11 designates an outer flush door that forms no part of my invention.

12 designates plates secured to the upper corners of the door provided with stems 13, that are arranged in the grooves 5 and which form pivots upon which the door is swung, the stems seating at the bottom of the grooves 5 for support. The stems 5 also ride in the grooves 5 in elevating the door to suspend it from the car-ceiling in the common manner.

14 designates a frame attached to the door 7, at its exterior, provided with pockets 15, in which the threaded ends 16 of locking-bolts 17 are contained. The locking-bolts 17 are squared at their outer ends (see Fig. I) and are supported in keepers 18.

19 designates socket-plates (see Fig. IX and dotted lines in Fig. I) seated in the door-posts 1 in line with the locking-bolts 17. These socket-plates are adapted to receive the squared outer ends of the locking-bolts to hold the door in closed position.

20 designates a turnbuckle having screw-threaded connection with the threaded ends 16 of the locking-bolts and provided with openings 21, adapted to receive an implement by which the buckle may be turned to move the locking-bolts inwardly or outwardly into or out of the socket-plates 19. On the threaded end of each locking-bolt is a jam-nut 22, by which the bolts may be held with relation to the turnbuckle, so that they may be moved in unison in inserting or with-

drawing their squared ends from the socket-plates 19.

When the door is to be secured in closed position, it is swung into the vertical position seen in Figs. I and II, and the turn-buckle 20 is turned to throw the locking-bolts 17 outwardly, so that their squared ends enter into the socket-plates 19 to hold the door firmly closed. In opening the door it is only necessary to reverse the operation of the turn-buckle, thereby withdrawing the locking-bolts from engagement in the sockets, when the door may swing freely outwardly, pivoting on the stems 13 of the plates 12, supported at the bottoms of the grooves 5.

When it is desired to hang the door out of obstruction of the doorway, it is only necessary to raise it vertically and the guide-stems 13 will travel in the grooves 5 until they reach the upper end thereof and are thrown into the sockets 6. The lower edge of the door is then swung upwardly to the ceiling, as seen in dotted lines in Fig. II, where it is engaged by hooks 23, pivoted to the roof-frame, said hooks passing through slots 7ª in the car-door, as seen in Fig. VII.

I claim as my invention—

A grain-car door comprising door-posts each having a vertical rabbet at the inner corner and a socket at the upper end of the rabbet, the facing-strips secured at the outer part of the rabbet at right angles to each other and the angle-bars secured at the inner part of the rabbet and providing a groove between them leading to the socket, a door, plates each having a pivot-stem and secured to the upper corners of the door, the adjustable guard-strips having horizontal slots, and lapping the ends of the door, screws extending through the slots whereby the guard-strips are secured to the door-posts, and means for fastening the door.

AUGUST MILLER.

In presence of—
E. S. KNIGHT,
N. V. ALEXANDER.