

(No Model.)

C. H. EMERY.
GRAIN CAR DOOR.

No. 437,147.

Patented Sept. 23, 1890.

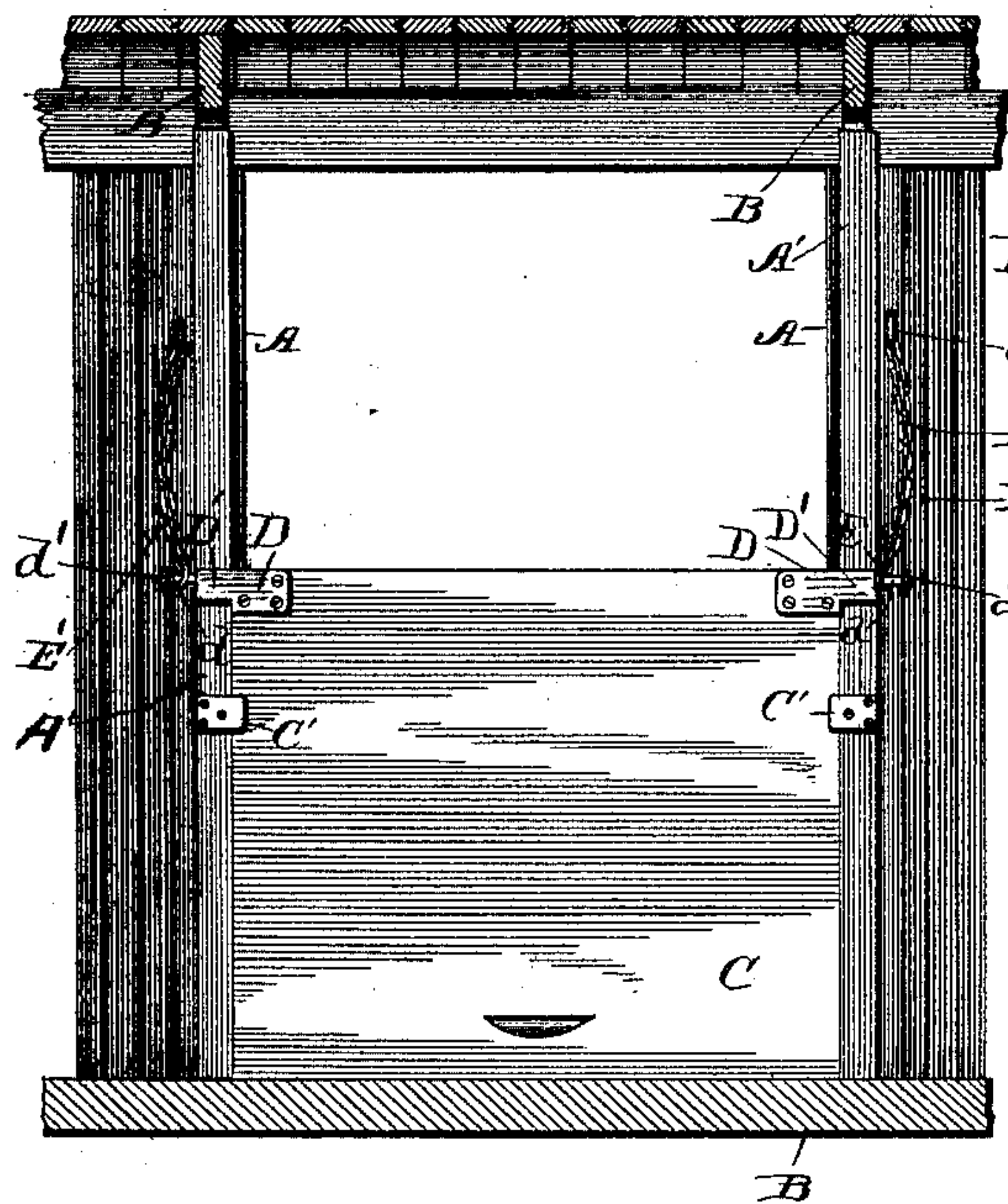


Fig. 1.

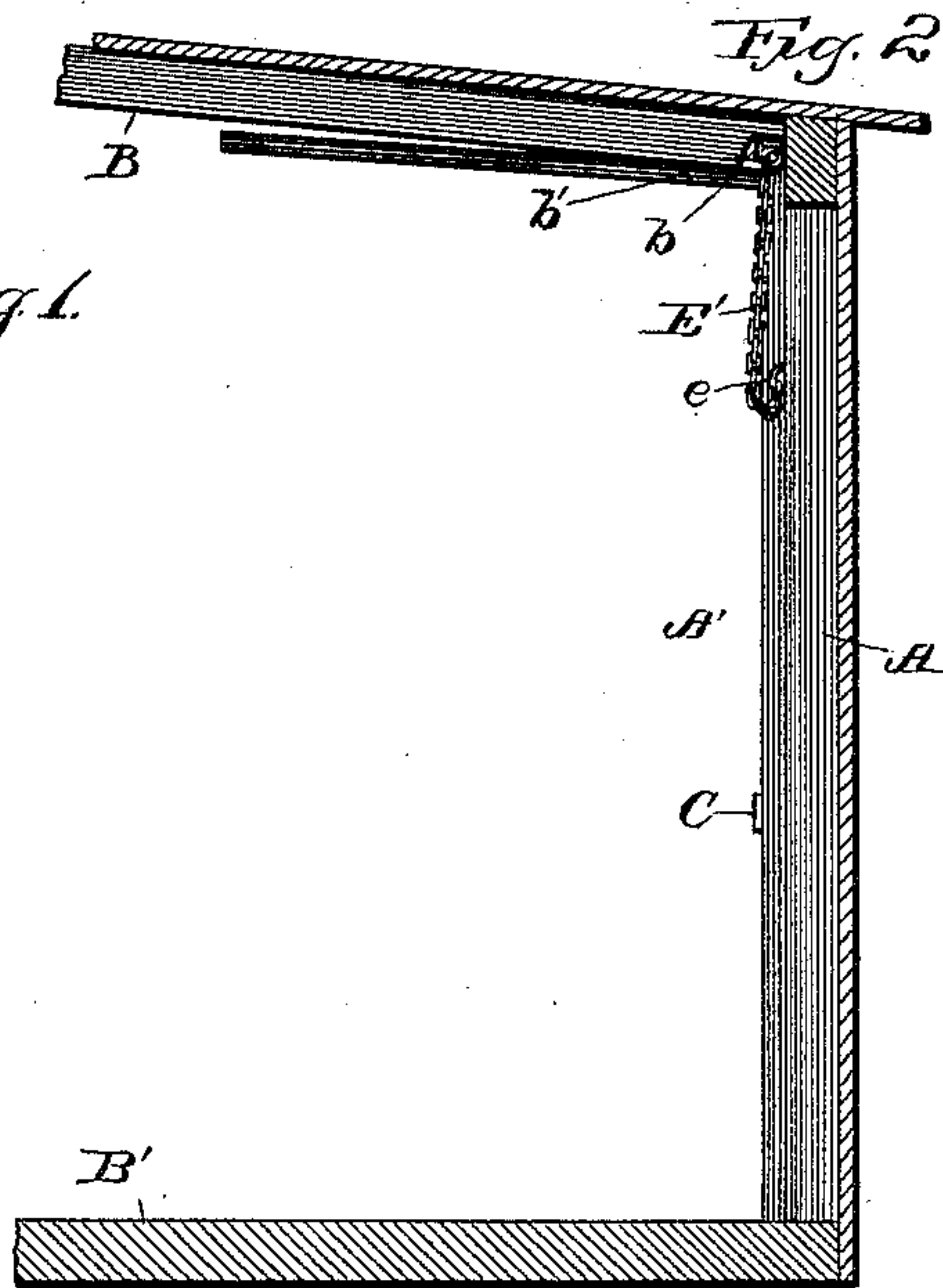


Fig. 2.

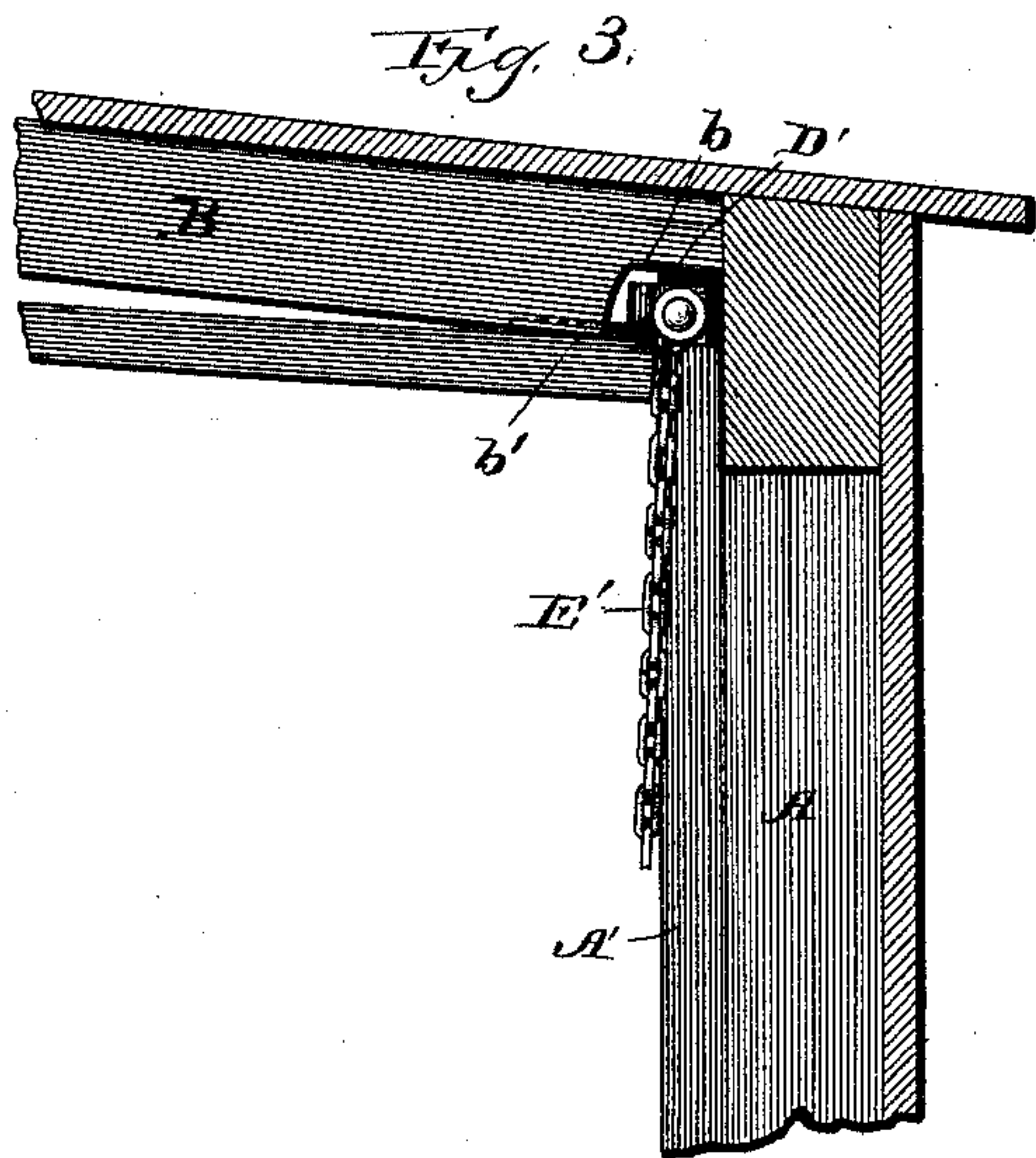


Fig. 3.

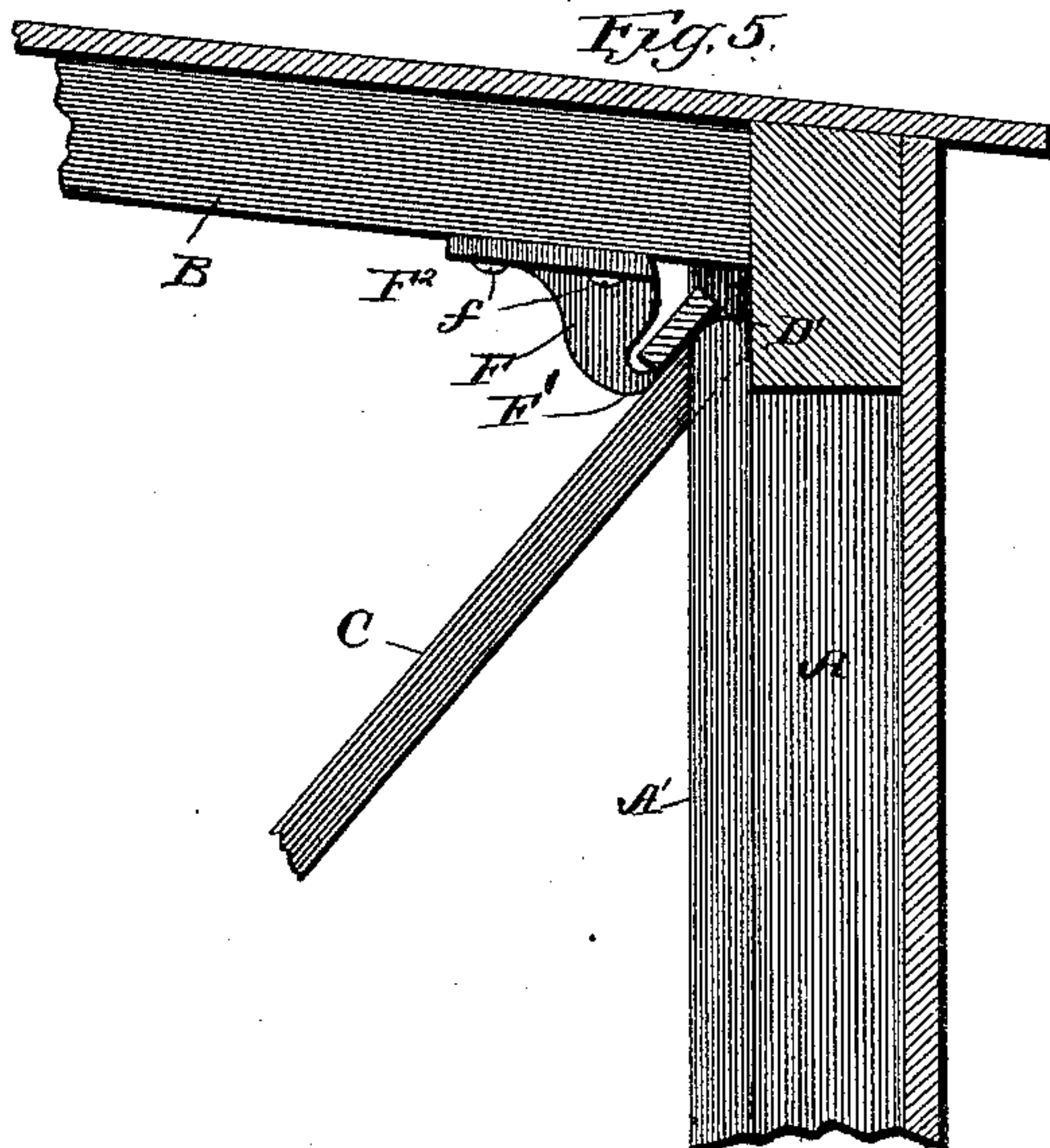


Fig. 5.

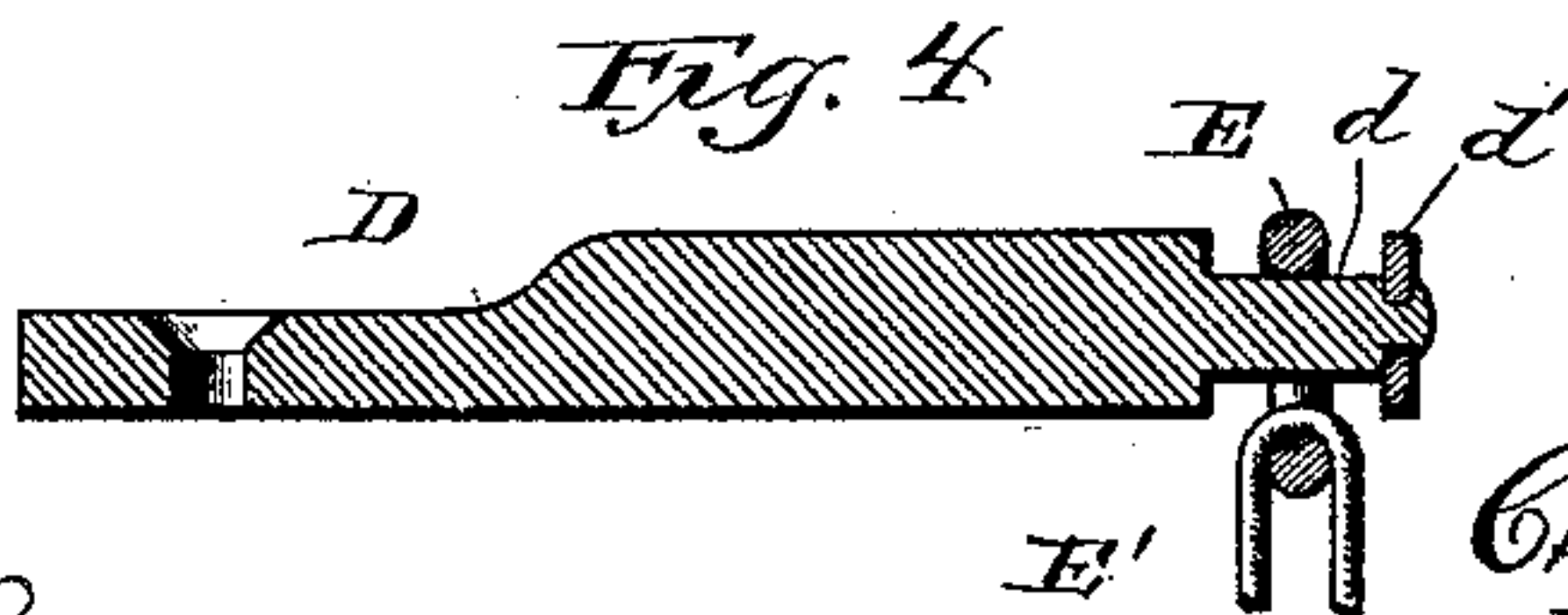


Fig. 4.

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UNITED STATES PATENT OFFICE.

CHARLES H. EMERY, OF CHICAGO, ILLINOIS.

GRAIN-CAR DOOR.

SPECIFICATION forming part of Letters Patent No. 437,147, dated September 23, 1890.

Application filed April 30, 1890. Serial No. 350,106. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. EMERY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Grain-Car Doors, of which the following is a specification.

My invention relates to that class of car-doors adapted to close the openings upon the sides of the car a portion of the way upward from the floor of the car to the roof thereof and to retain or hold within the car grain loosely placed therein.

The purpose of this invention is to obtain a door of the character described, easily manipulated in the proper working thereof, of small cost in its initial construction, not liable to get out of order, and not readily detached from the car.

I have illustrated my invention by the drawings accompanying and forming a part of this specification, in which—

Figure 1 is a front elevation of the grain-car door and of the jamb-posts of the door of the car viewed from the inside of the car, with the door in position for putting the grain into the car; Fig. 2, an end elevation of the door raised against the carlings of the car, with a side elevation of one of the jamb-posts of the car; Fig. 3, an enlarged elevation of the door and adjacent parts; Fig. 4, a longitudinal sectional view of a metal clip forming a guide, pivot, and support secured to the door; and Fig. 5, an enlarged view of the door in end elevation, partially raised into position against the carlings of the car, with an additional metal piece illustrated as secured to the under face of the carling, thereby forming a more complete embodiment of the invention than is contained in Figs. 1, 2, and 3 of the drawings.

Like letters refer to like parts throughout the several views.

A are the jamb-posts of the door. These jamb-posts may be rabbeted, thereby forming a guide, against which the door may be vertically slid, or such rabbeting may be, in effect, produced by securing on the inner face of the jamb-posts the rabbet-plate A'.

B B are the carlings of the car. Carlings B B are cut away at *b* in substantially the

manner indicated in Figs. 2 and 3, obtaining thereby vertical face *b'*, against which, in the manner hereinafter described, the metal clip, secured to the inner face of the grain-car door C, at the upper corners thereof, come in contact.

C is the grain-car door.

C' C' are clips secured to the jamb-posts of the door or to the rabbet-plate A'. When the door is in position to have grain put in the car, the clips C' C' hold the door against the jamb-posts in the ordinary manner such clips are designed to operate.

D' is a portion of metal clip D extending beyond the sides of the door and coming against or in front of the rabbet-plate A', and *d* is a still further extension of clip D, rounded in suitable manner to have placed thereon ring E. Ring E forms the last link of chain E'. The ring E is secured on part *d* of metal clip D by washer *d'*. The other end of chain E' is secured to the jamb-post A by the ordinary staple *e*.

F is a casting having a horizontal web coming in contact with the under surface of the carlings of the car, and through this horizontal web the bolts or screws *f f* are passed in securing the casting to the carlings, and also having a vertical web the front edge of which (lettered F²) has substantially the same functions as has edge *b'* of cut-away portion *b* of the carling B.

F' is a hook on metal casting F.

By comparison of Figs. 3 and 5 it will be observed that by the use of the vertical web in casting F the cutting of the carling B is avoided, and, further, that there is obtained thereby hook F', which is below the top of the rabbet-plate A', and is adapted to engage with the lower edge of portion D' of the clip D when the lower portion of the door has been brought inward over the clip C' in the turning of the door upward against the under face of the carling B, and to the extent of obtaining this hook F' this metal piece F, in combination with the constructions illustrated in Figs. 1, 2, and 3 of the drawings, is a more complete embodiment of the invention than is contained in such constructions so illustrated in Figs. 1, 2, and 3 of the drawings. Metal casting F is required, as the hook, to

be of sufficient strength and without too great bulk, must be of metal, and cannot therefore be cut in the carlings B B. It will be observed that the hook F' is below the top of the rabbet-plate A', and that that portion of the vertical face F² of the vertical web of casting F which is above the top of the rabbet-plate A' is or may be of practically the same shape as face b' of the cut-out portion b of carling B, and will serve to force the part D' of the clip D over and onto the top of the rabbet-plate A' in the same manner as does edge b'.

The operation of the invention is: To raise the door C from the position illustrated in Fig. 1 into the position illustrated in Figs. 2 and 3 such door is slid upward in the rabbeting of the jamb-posts until the lower edge of the door can be swung inward over the clips C' C'. When the door is in position so that it can be thus swung inward, portion D' of clip D is above the top of the rabbeted plate A'. As the door is swung inward at the lower portion and over the clips C' C', part D' of clips D is forced backward over the step formed by the top of the rabbet-plate A' by the lower edge of such part D' coming against the vertical face b' of carling B or against F² of vertical web of casting F. The top of rabbet-plate A' thus forms a support for the upper and inner edge of the door C when such door is raised into the position illustrated in Figs. 2 and 3.

Having thus described my invention, its construction, and operation, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The combination of a grain-car door having metal clips on the inner face at the upper edge thereof secured thereto, such metal clips extending beyond the sides of the door and beyond rabbet-plates secured on the jamb-posts of the door, with chains secured to such clips and to the jamb-posts, and vertical faces

on the under side of the carlings of the car and opposite the upper end of the rabbet-plates on the jamb-post, whereby when the door is slid upward so that the portion of the clip secured on the door which extends beyond the sides of the door and in front of the rabbet-plate on the jamb-posts is back of the vertical face on the under side of the carling the extension of such metal clip is forced over and upon the step formed by the top end of the rabbet-plate when the door is turned inward and upward against the carlings, substantially as described.

2. The combination of a grain-car door having secured thereto at its upper inner edge metal clips which extend beyond the side of the door and beyond rabbet-plates secured on the jamb-posts of the door, with vertical faces on the under side of the carlings of the car opposite the top end of the rabbet-plates, and a hook at the lower edge of such vertical face, whereby when that portion of the clips which extends beyond the sides of the door and in front of the rabbet-plate is back of the vertical face on the under side of the carlings and above such hook when the door is turned inward and upward against the carlings such extension of the clips is forced over and upon the step formed by the top end of the rabbet-plate, substantially as described.

3. The combination of the grain-car door C, jamb-posts A, rabbeting-plate A', secured thereon, metal clips C' C', secured to the face of rabbet-plate A', metal clips D, secured to the upper inner part of door C, chain E, secured to clip D and to the jamb-posts of the door, and a vertical face on the under side of the carlings of the car above the top end of rabbet-plate A', all substantially as described.

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