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Patented Oct. 15, 1901.

W. MARKY.

CAR DOOR.

(Application filed May 18, 1901.)

(No Model.)

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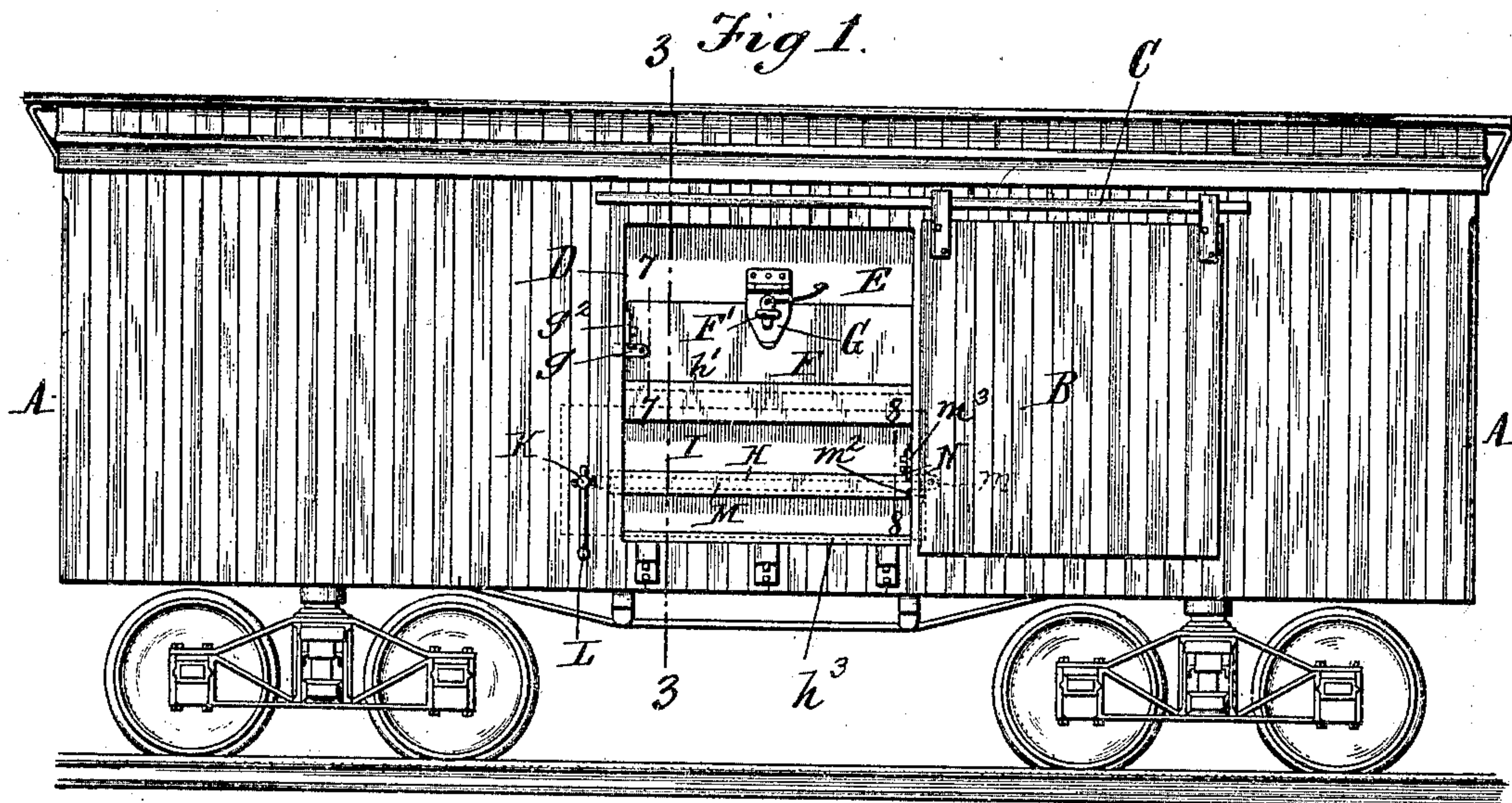
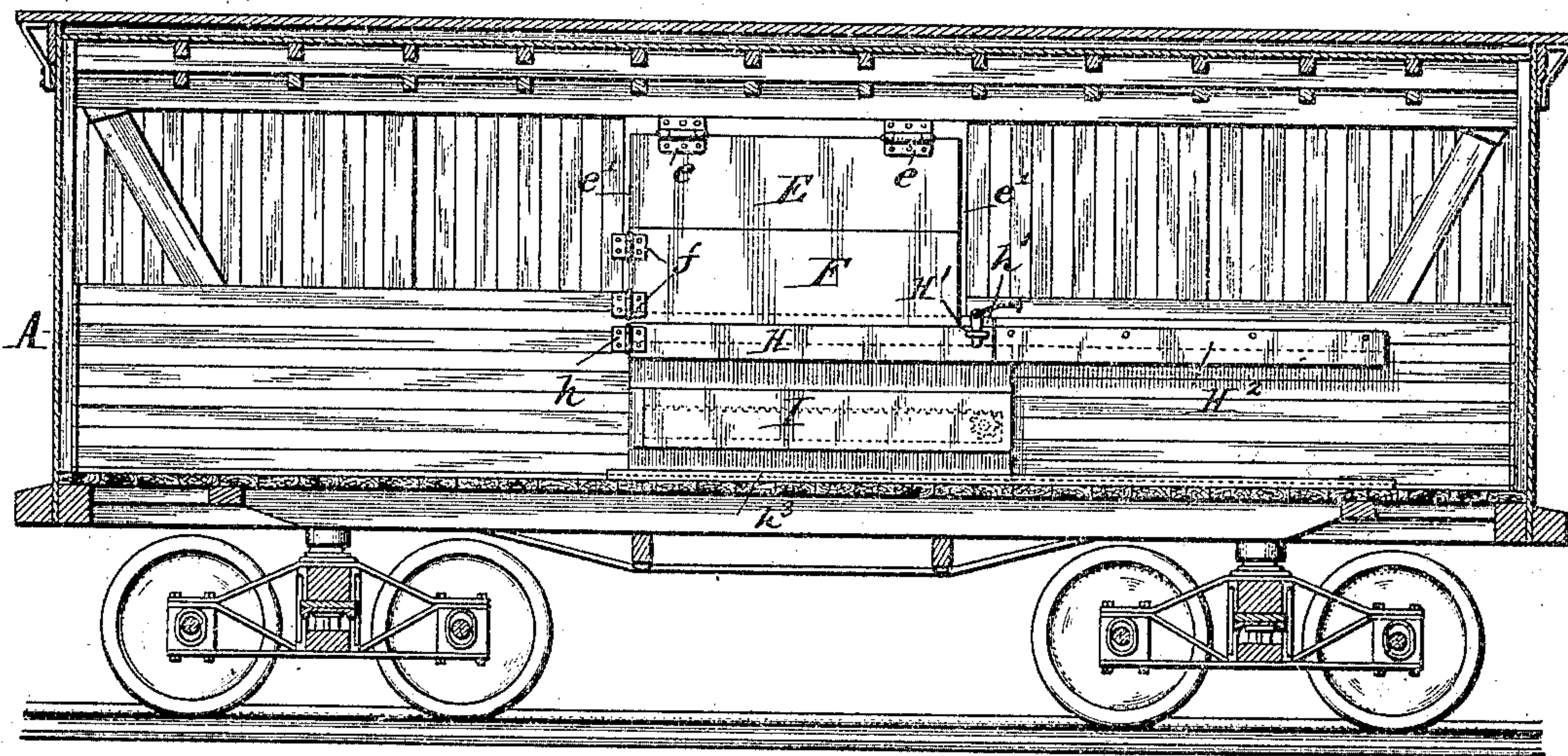


Fig. 2.



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2 Sheets—Sheet 2.

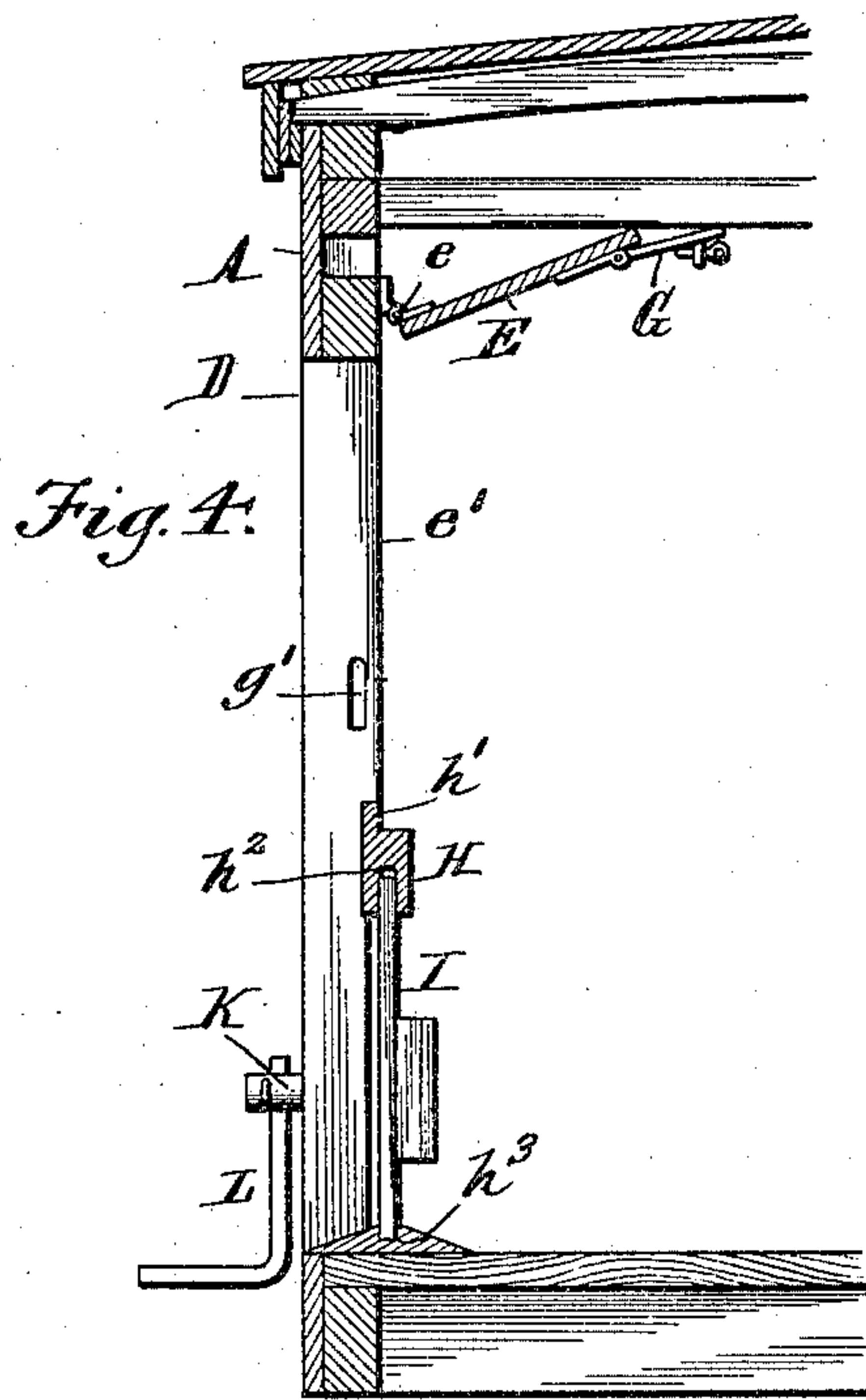
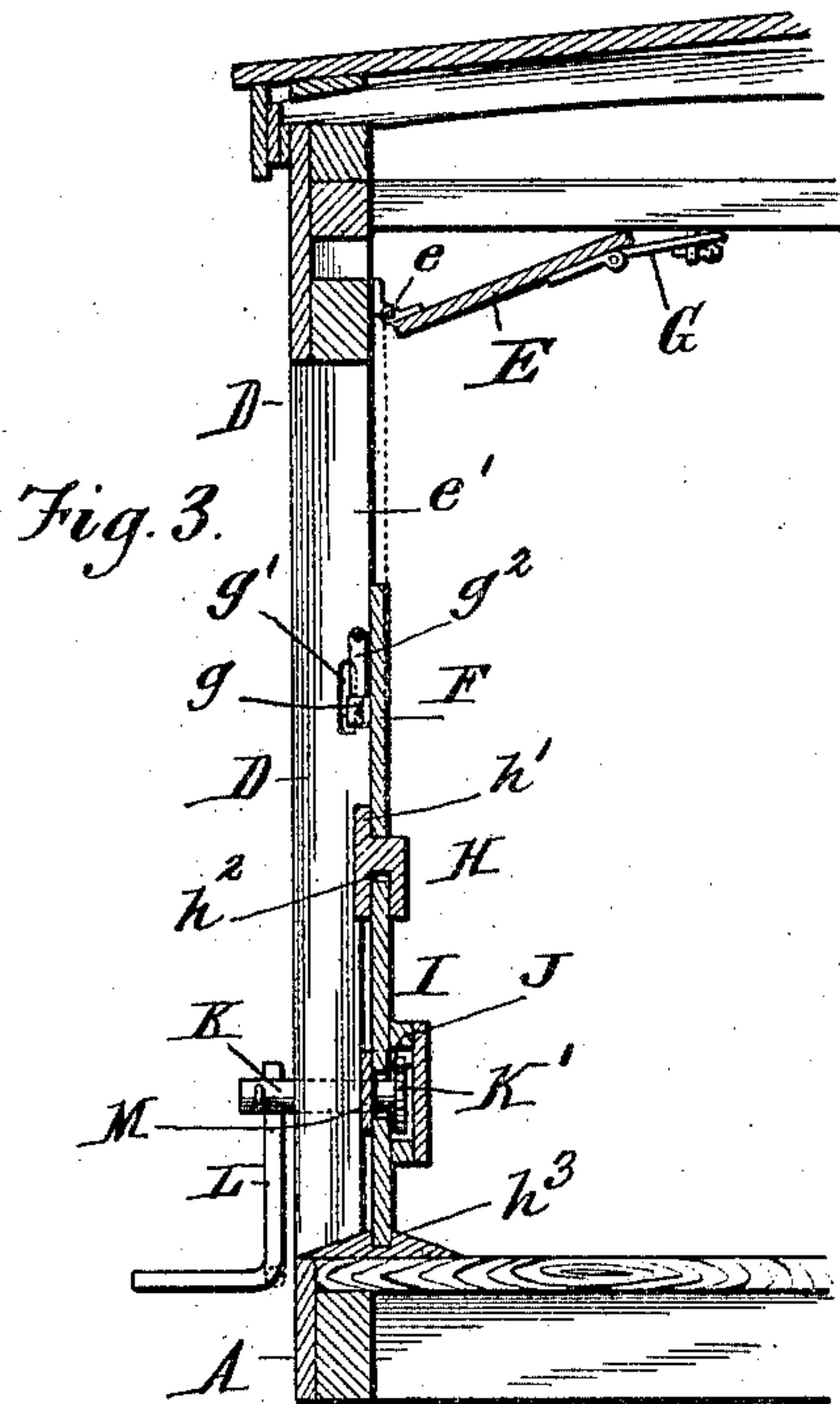
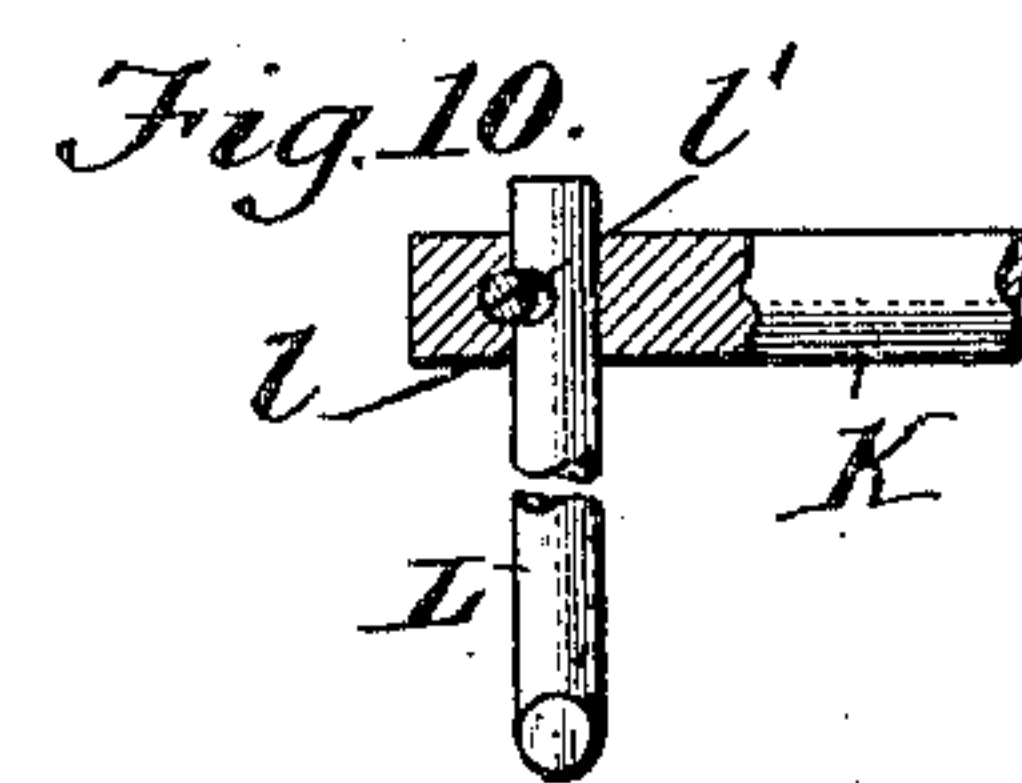
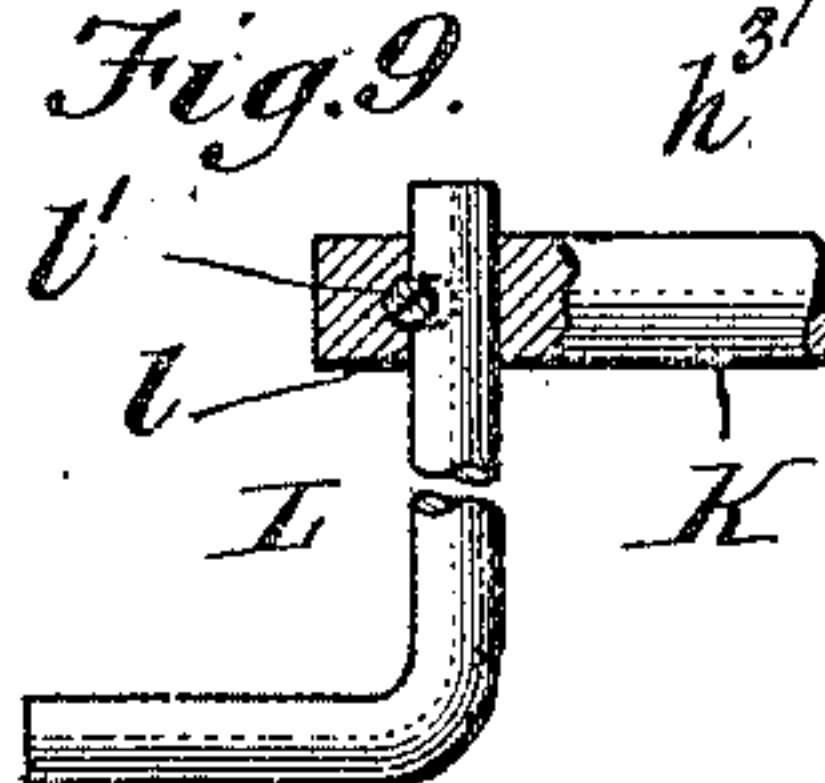
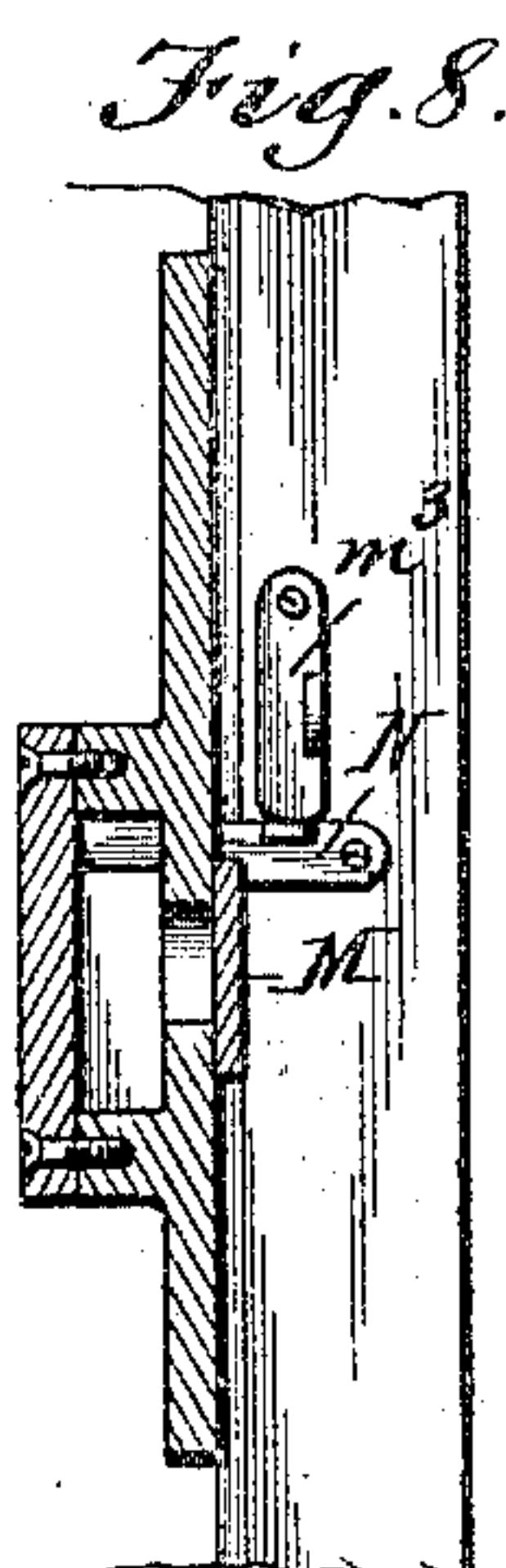
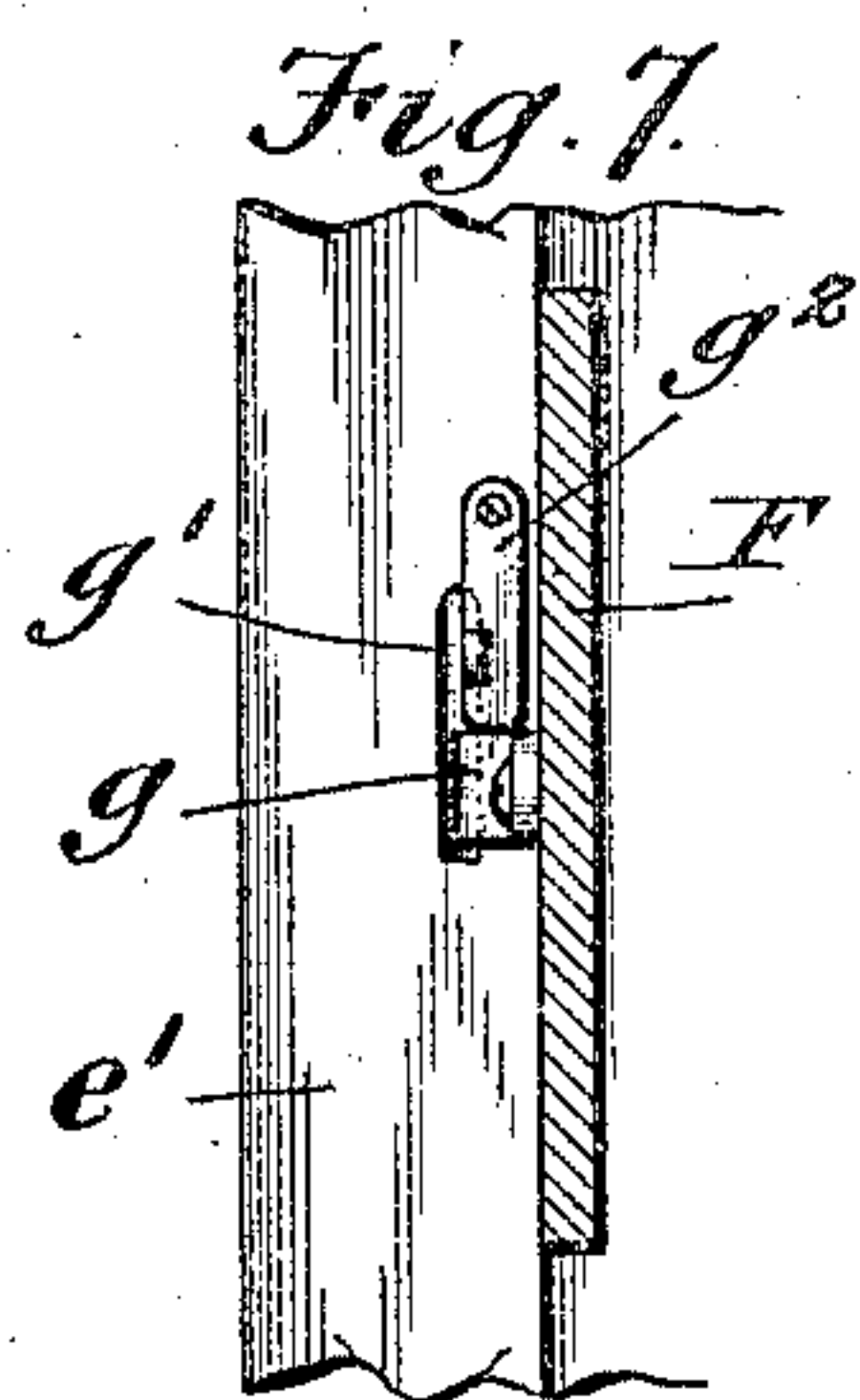
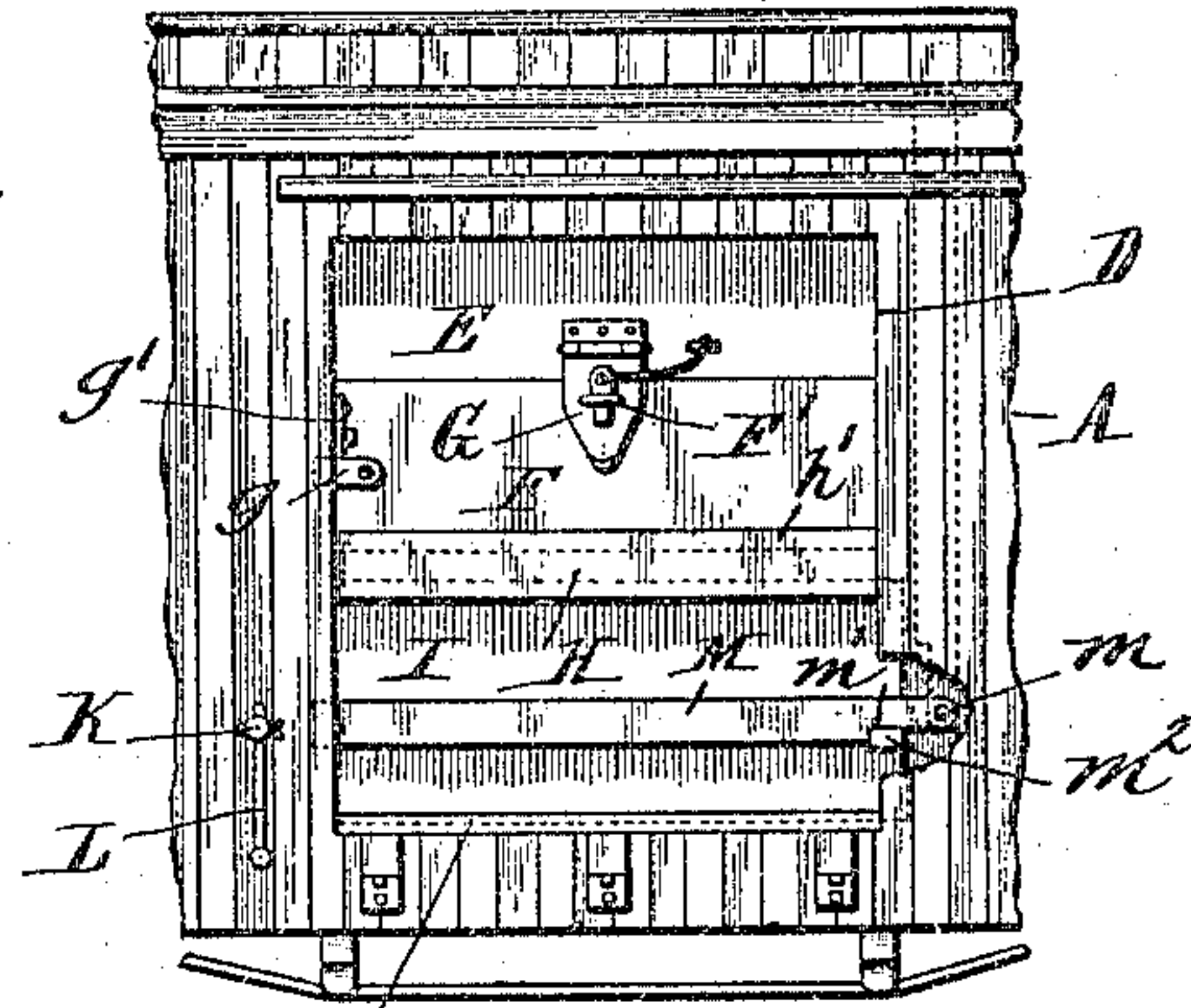
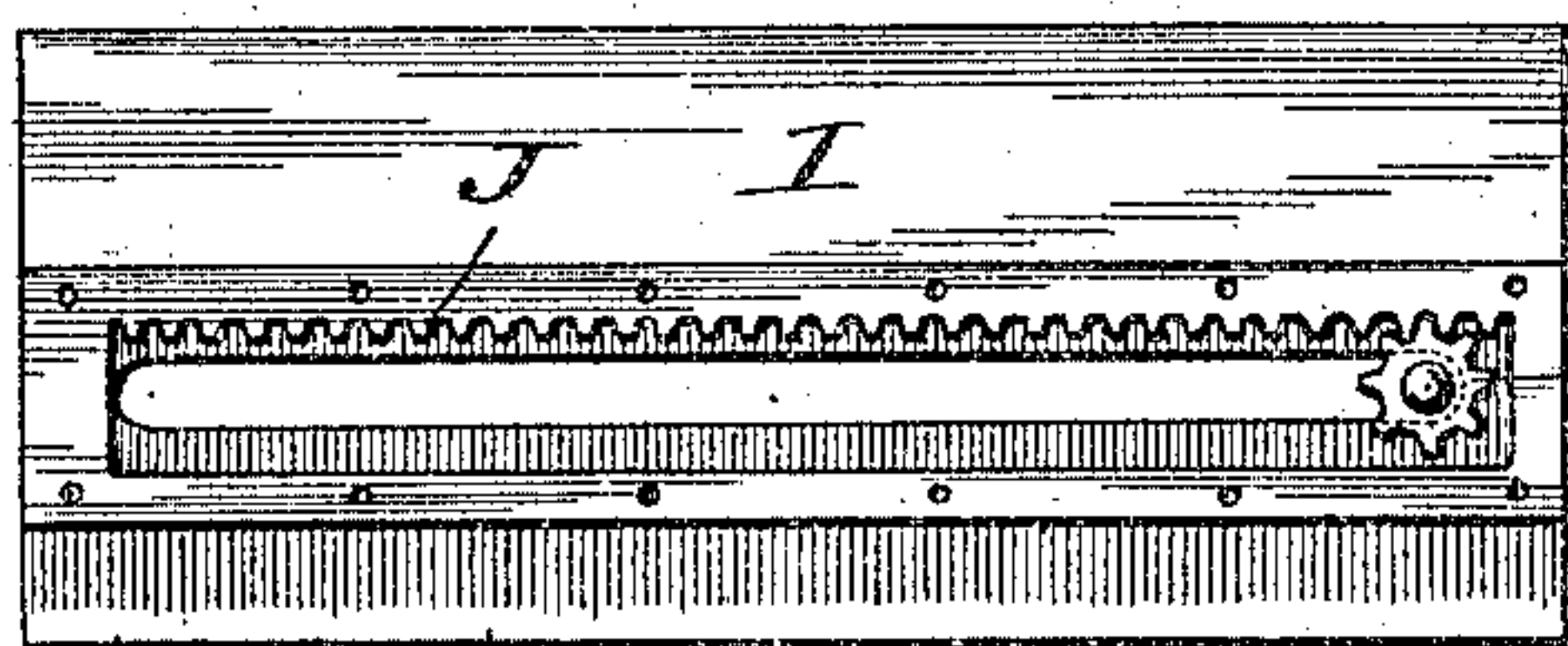


Fig. 5.

Fig. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM MARKY, OF SLOAN, NEW YORK.

CAR-DOOR.

SPECIFICATION forming part of Letters Patent No. 684,517, dated October 15, 1901.

Application filed May 18, 1901. Serial No. 60,807. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM MARKY, a citizen of the United States, residing at Sloan, in the county of Erie and State of New York, have invented certain new and useful Improvements in Car-Doors, of which the following is a specification.

This invention relates to an improved car-door, such as are used on cars loaded with grain, coal, or any other small loose freight usually shipped in box-cars.

The object of this invention is the production of a door which is operative in sections, simple in construction, capable of withstanding severe strains, and which is readily manipulated.

Another object is the production of a door which when the proper sections are opened offer superior facilities in loading the car with lumber.

A still further object is to so connect the sections together that no grain can pass out between the same when the car vibrates and the sections move toward and from each other.

I attain these objects by the novel construction, arrangement, and combination of parts set forth in the claims and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a box-car, showing the outer door open and my improved inner door applied thereto. Fig. 2 is a longitudinal section through the car, showing the manner in which my inner door is applied to the inside of the car. Fig. 3 is a vertical section taken on line 3 3, Fig. 1, showing the vertically-swinging section of the door in its elevated or open position. Fig. 4 is a similar view showing the lower sliding section and the horizontally-swinging section in an open position. Fig. 5 is a detached side view of the lower sliding section of the door, the plate which covers the gear-rack being removed. Fig. 6 is a fragmentary elevation of a portion of the car, showing the manner in which the sliding section of the door is locked. Fig. 7 is a vertical section taken on line 7 7, Fig. 1, illustrating the fastening device for the horizontally-swinging section. Fig. 8 is a vertical section taken on line 8 8, Fig. 1, showing the manner of locking the sliding section of the door. Fig. 9 is a detached fragmentary

sectional view of the crank used in operating the sliding door, showing it in position ready for use. Fig. 10 is a similar view showing the position of the same when not in use.

Referring now to the drawings, like letters of reference refer to like parts in the several figures.

The letter A designates the car-body, B the outer door, which is suspended on a track C in the ordinary manner and which is capable of being moved horizontally thereon.

D is the doorway or opening.

The inner door is formed of an upper vertically-swinging section E, which is hinged to the header of the door-opening by means of hinges e, and it is somewhat longer than the width of the door-opening, so that it bears against the inner faces of the door-jamb e' when in its closed position. A horizontally-swinging section F is located below the section E, and it is secured by means of hinges f to the jamb e' on one side of the door-opening. Secured to the lower central portion of the vertically-swinging section E is a hasp G, which passes over a staple F', formed on the said horizontally-swinging section, a wedge-key being preferably used to lock them both together. Any suitable arrangement for locking the free end of the section F to the other door-jamb may be provided; but the preferred embodiment I have shown by the locking-catch g, which is pivotally secured to the section and made to enter a vertical groove g', arranged in the face of the door-jamb, in which position it is held by a keeper g², pivoted to said jamb and arranged to bear against the upper edge of the catch g.

H designates a guide-bar hinged at one end to the door-jamb directly below the section F by means of a hinge h, and it is fastened at its opposite end by a staple secured to the door-jamb and passing through an opening or slot H', formed in the free end of the guide-bar, a wedge-key being provided to enter the eye of the staple, said guide-bar being arranged to swing horizontally, but under ordinary circumstances to remain closed. Arranged in line with the horizontally-swinging guide-bar H is a fixed or stationary guide H², secured to the inner side of the car-body and arranged to form a continuation of the guide-

bar H. The latter has an upwardly-projecting flange h' , which overlaps the lower end of the section F, and it is also provided with a guideway h^2 in its under side in which, with
 5 the guide H^2 and the guide h^3 , secured to the floor of the car, the lower sliding section I is guided. By this construction of the guideway the sections may move on or within each other when the car vibrates without allowing
 10 the loss of any grain whatever. The section I is slidable longitudinally of the car and has a rack-bar J formed or secured thereon. An operating-shaft K passes through the wall of the car near the door-opening and through a
 15 longitudinal slot or way formed in the sliding section and is provided at its inner end with a gear-wheel K' , which meshes with the said rack-bar and which on turning opens or closes the sliding section, depending on the
 20 direction in which the operating-shaft is turned. To the outer free end of the operating-shaft a handle L is secured, the preferred connection of the handle to the shaft being by passing the handle through an open-
 25 ing l in the shaft and securing the two together by means of a split key l' . During transportation or when not in use the handle may be turned parallel with the side of the car, and thus prevent protruding parts.
 30 To lock the sliding section of the door and to close the longitudinal slot or way formed therein, I provide a locking-bar M, which is pivoted at one end to the inside of the car, as shown at m . A short distance from its piv-
 35 oted end the locking-bar is provided with an offset m' , which is adapted to swing in rear of an outwardly-projecting lug or ear m^2 , formed on one end of the sliding section, so as to lock the same. This locking-bar is held
 40 in this position by a pivotal catch N, which engages its free end and which is held in its position against the locking-bar by a keeper m^3 bearing against the upper edge of the same. In filling the car with grain, coal, or
 45 any other like freight all sections, except the upper vertically-swinging one, are closed, the opening of the upper section affording sufficient space to allow the grain or coal chute, as the case may be, to be placed
 50 therein. In unloading a car the lower sliding section is opened first. This allows sufficient grain or freight to escape to permit of convenient handling of the same. In some instances, such as when using cars for bulky
 55 freight, it is desirable to open all the sections of the door and also the guide-bar in which the upper edge of the lower or sliding section travels when closing or opening the same,

while in loading a car with lumber all sections should be opened and the guide-bar 60 closed. In this instance the guide-bar acts as a convenient rest or support on which to swing and shift the lumber.

Having thus described my invention, what I claim is—

1. A car-door comprising an upper vertically-swinging section, a lower laterally-sliding section, and an intermediate horizontally-swinging section, substantially as set forth. 65

2. A car-door comprising an upper vertically-swinging section, a horizontally-swinging section directly below the same, a guide-bar having a flange which overlaps said horizontally-swinging section, and a laterally-sliding section below said guide-bar in which 70 it is guided, substantially as set forth. 75

3. The combination with the door-opening, of a guide-bar having an upwardly-projecting flange on its upper face and a guideway on its under side, a sliding-door section held 80 to slide in said guideway, and a swinging-door section which the said upwardly-projecting flange is adapted to overlap, substantially as set forth.

4. The combination with the car, of a sliding car-door having a gear-rack arranged lengthwise thereon and having an outwardly-projecting lug at its one end, an operating-shaft having a handle and passing through the car, a gear-wheel secured to said shaft 90 and meshing with the said gear-rack, a locking-bar pivoted to the car and having an offset adapted to engage the said outwardly-projecting lug, and means for locking the free end of said bar, substantially as set forth. 95

5. The combination with the door-opening, of an upwardly-opening door-section hinged to the header of said opening, a horizontally-swinging door-section hinged to one jamb of said opening, means for securing said first- 100 mentioned section to the second-mentioned section when both are closed, means for locking the horizontally-swinging section to the other jamb of the opening, a guide-bar which overlaps the lower edge of the said horizon- 105 tally-swinging section and which has a guideway formed on its under side, a laterally-sliding section below said guide-bar which is guided in said guideway, and means for locking said sliding section when closed, substan- 110 tially as set forth.

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Witnesses:

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