

(No Model.)

2 Sheets—Sheet 1.

T. G. RUFFHEAD.
CAR DOOR FASTENER.

No. 410,807.

Patented Sept. 10, 1889.

Fig. 1.

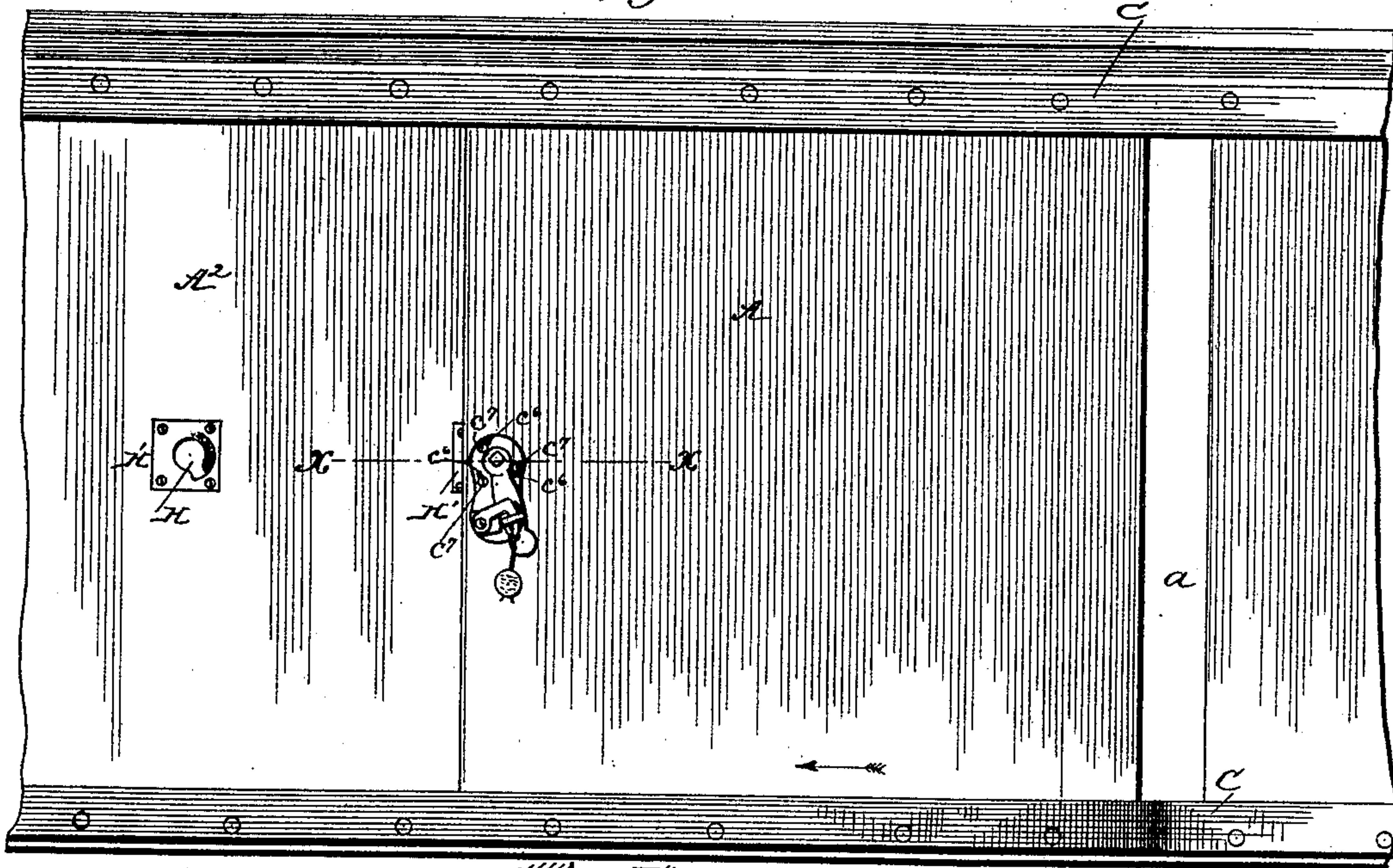


Fig. 1a

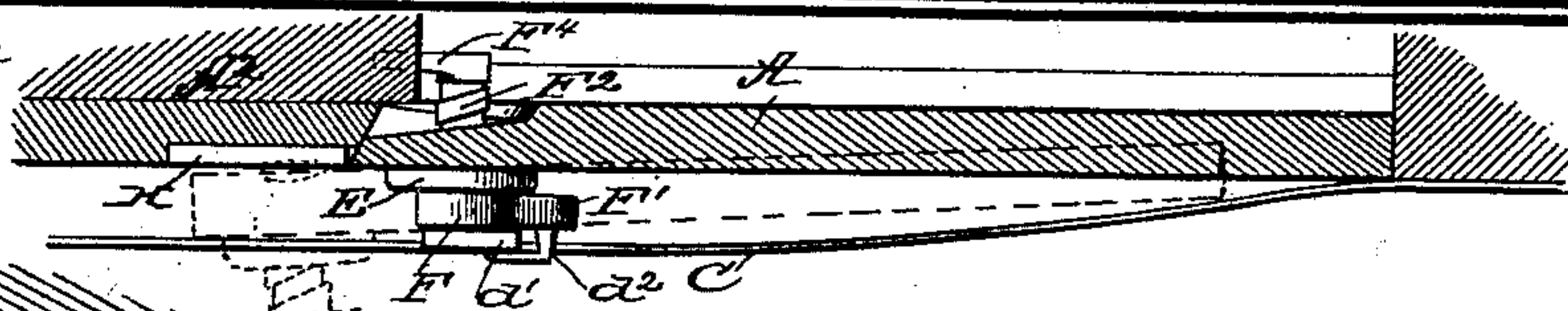


Fig. 2.

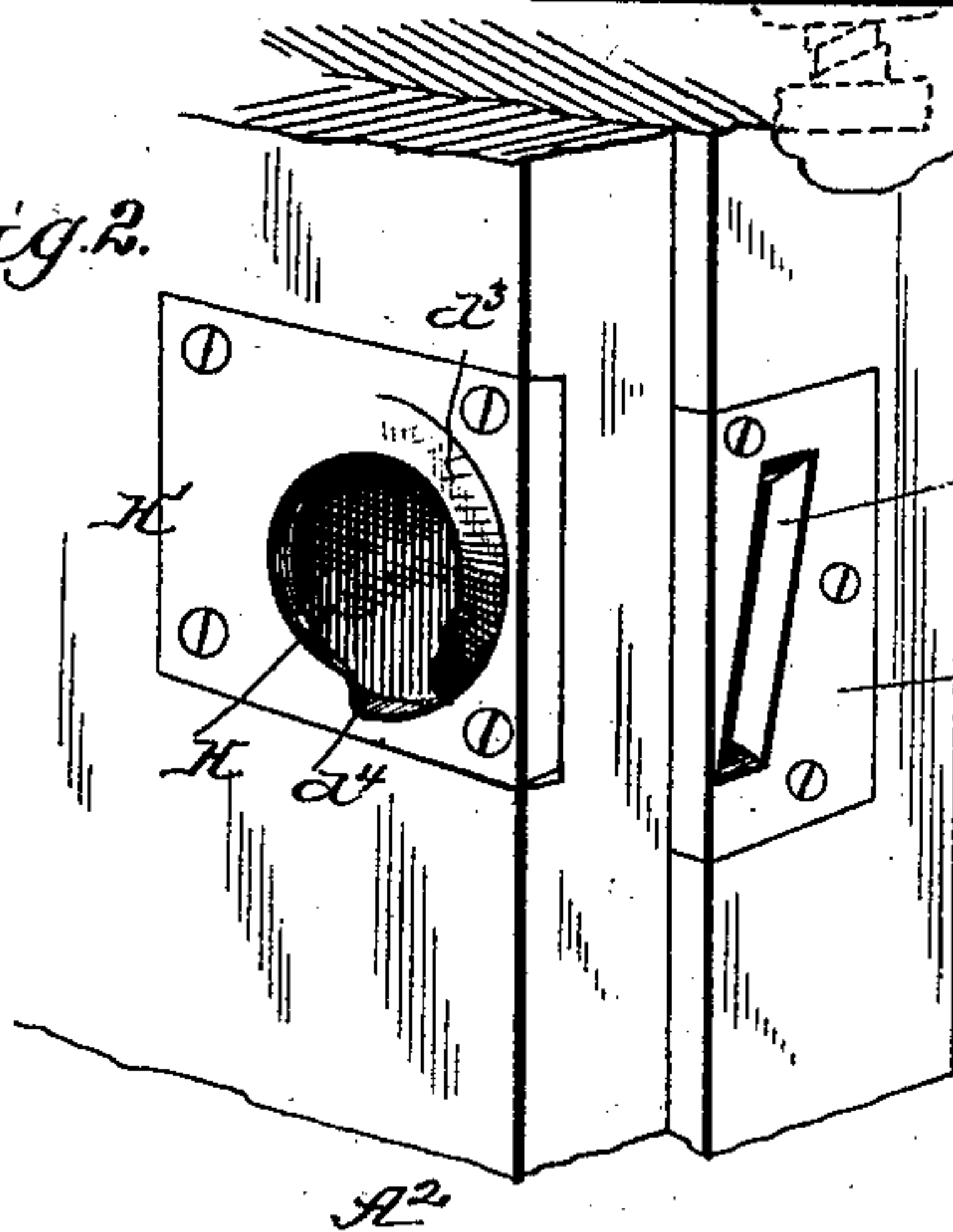


Fig. 3.

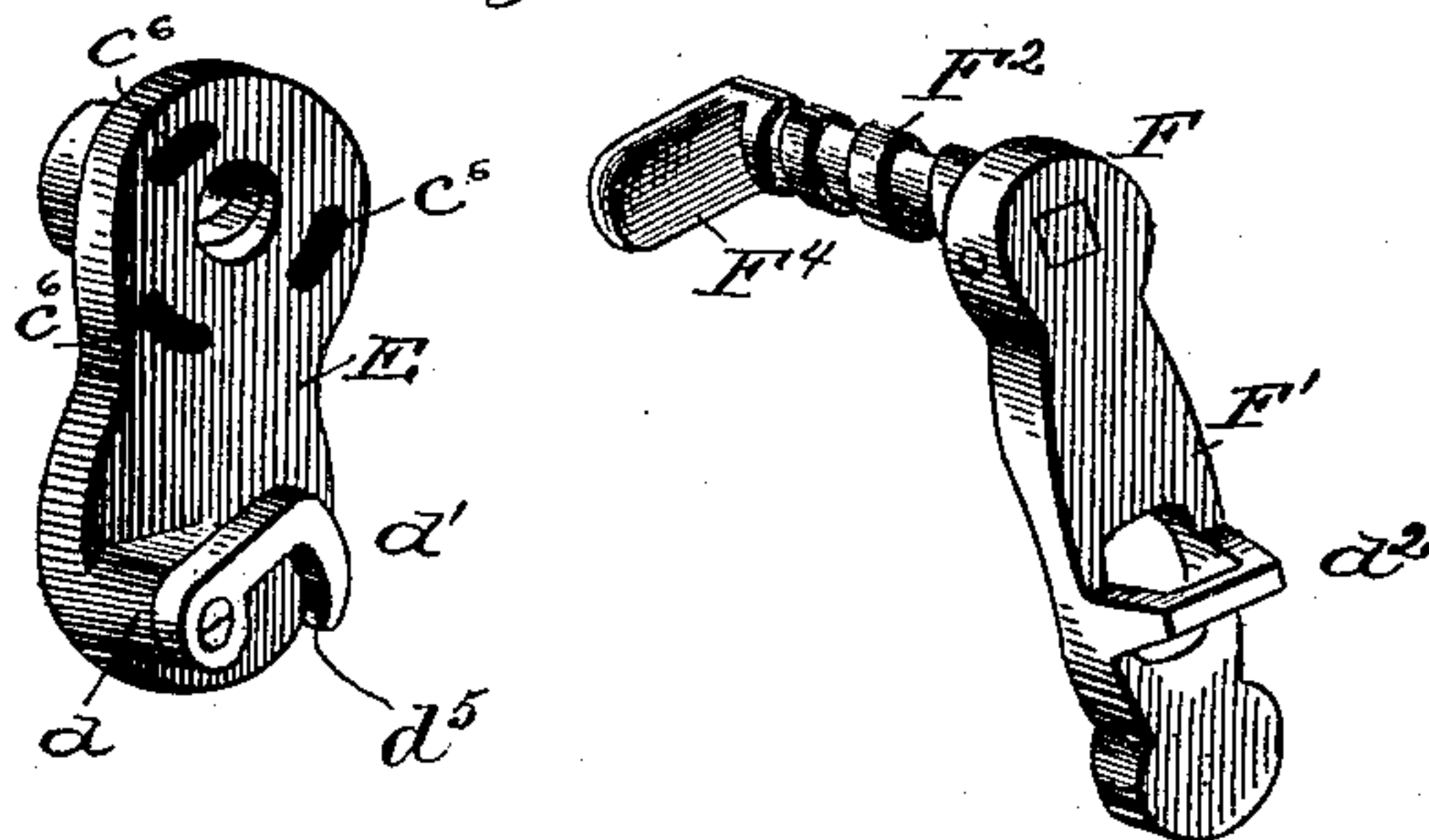
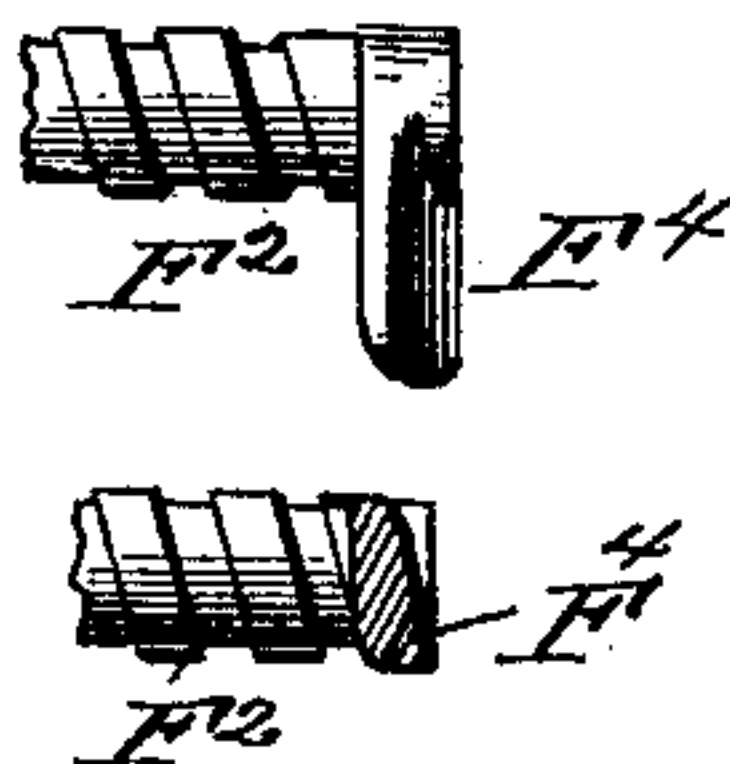


Fig. 4



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ATTORNEYS.

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T. G. RUFFHEAD.
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Fig. 5.

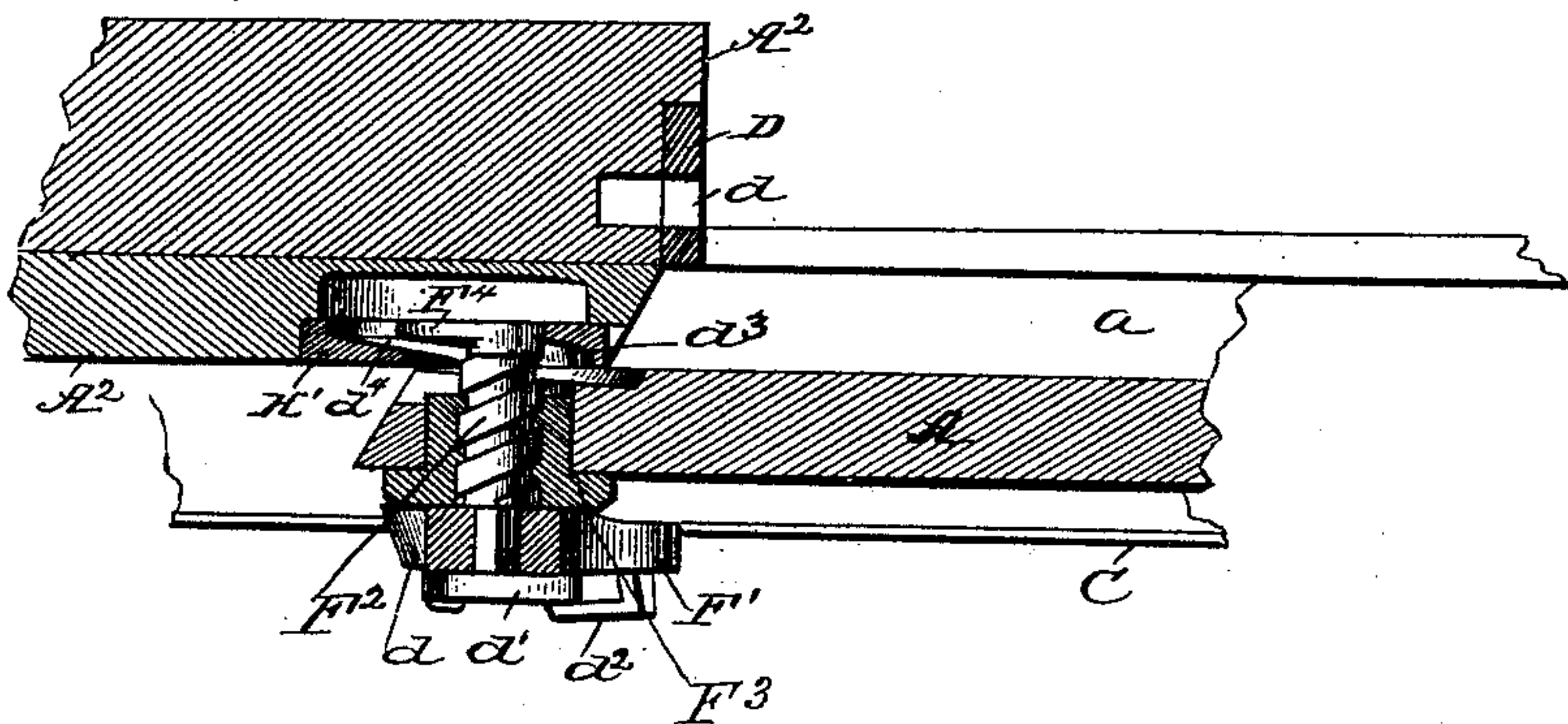


Fig. 6.

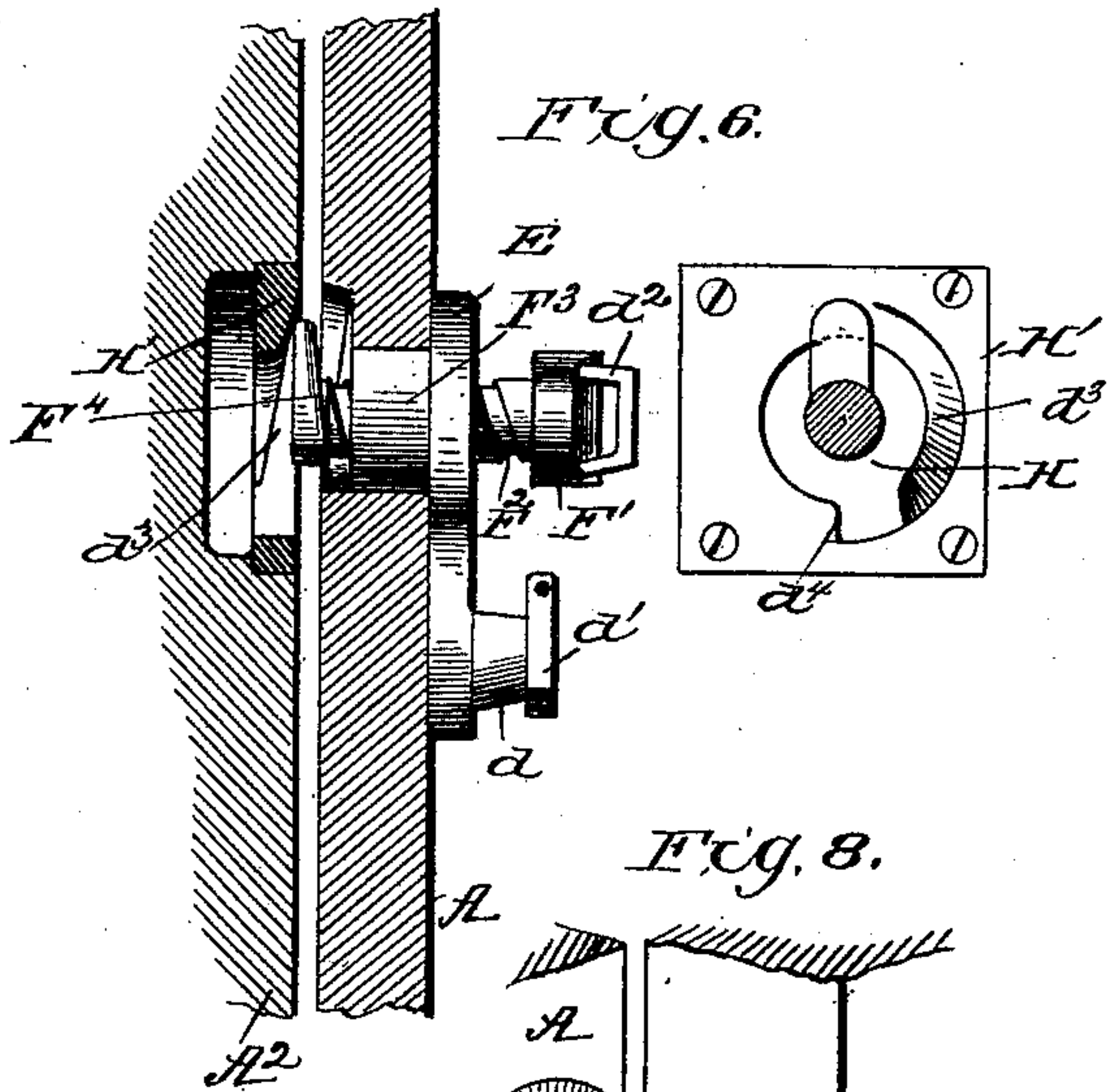


Fig. 8.

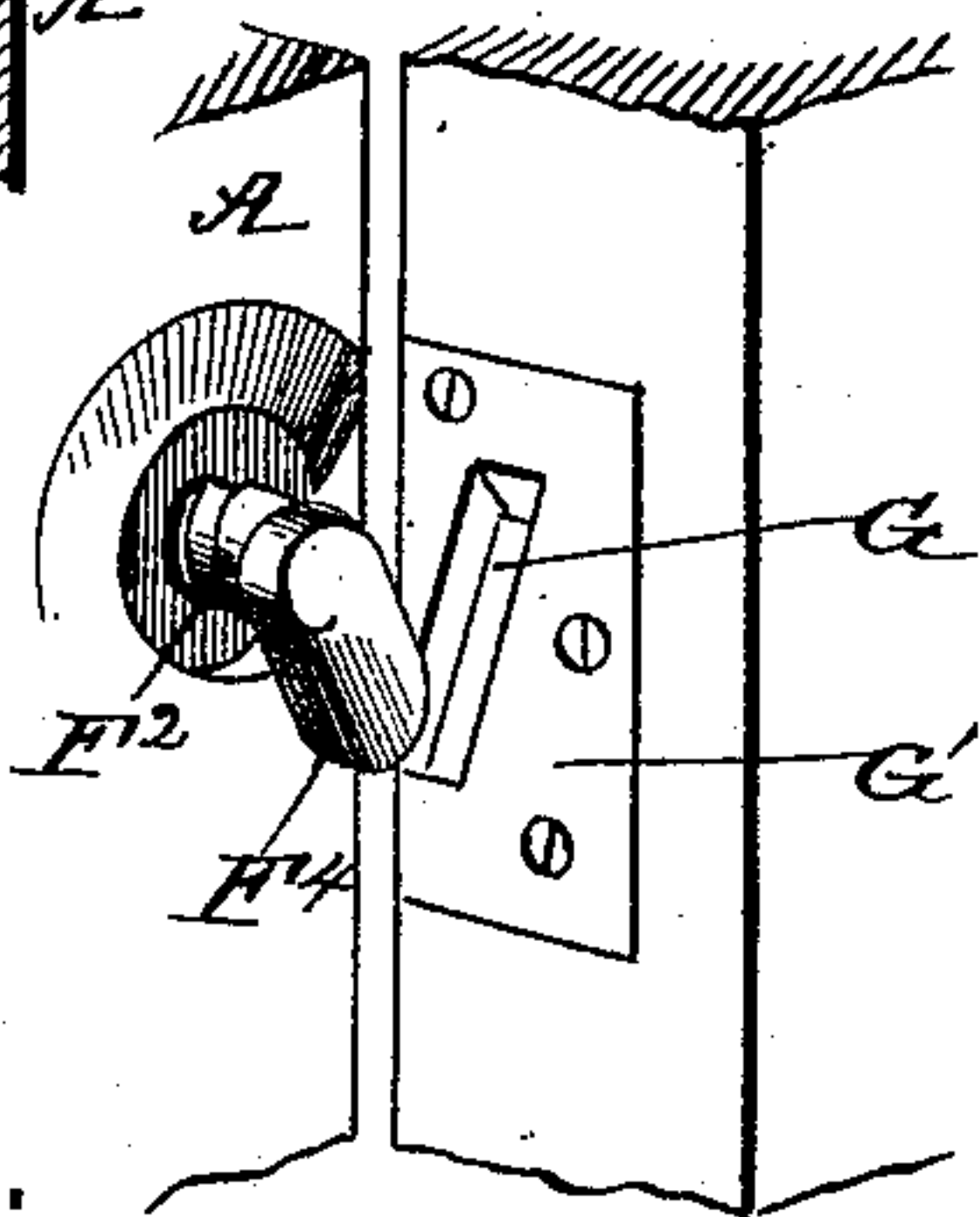


Fig. 9.

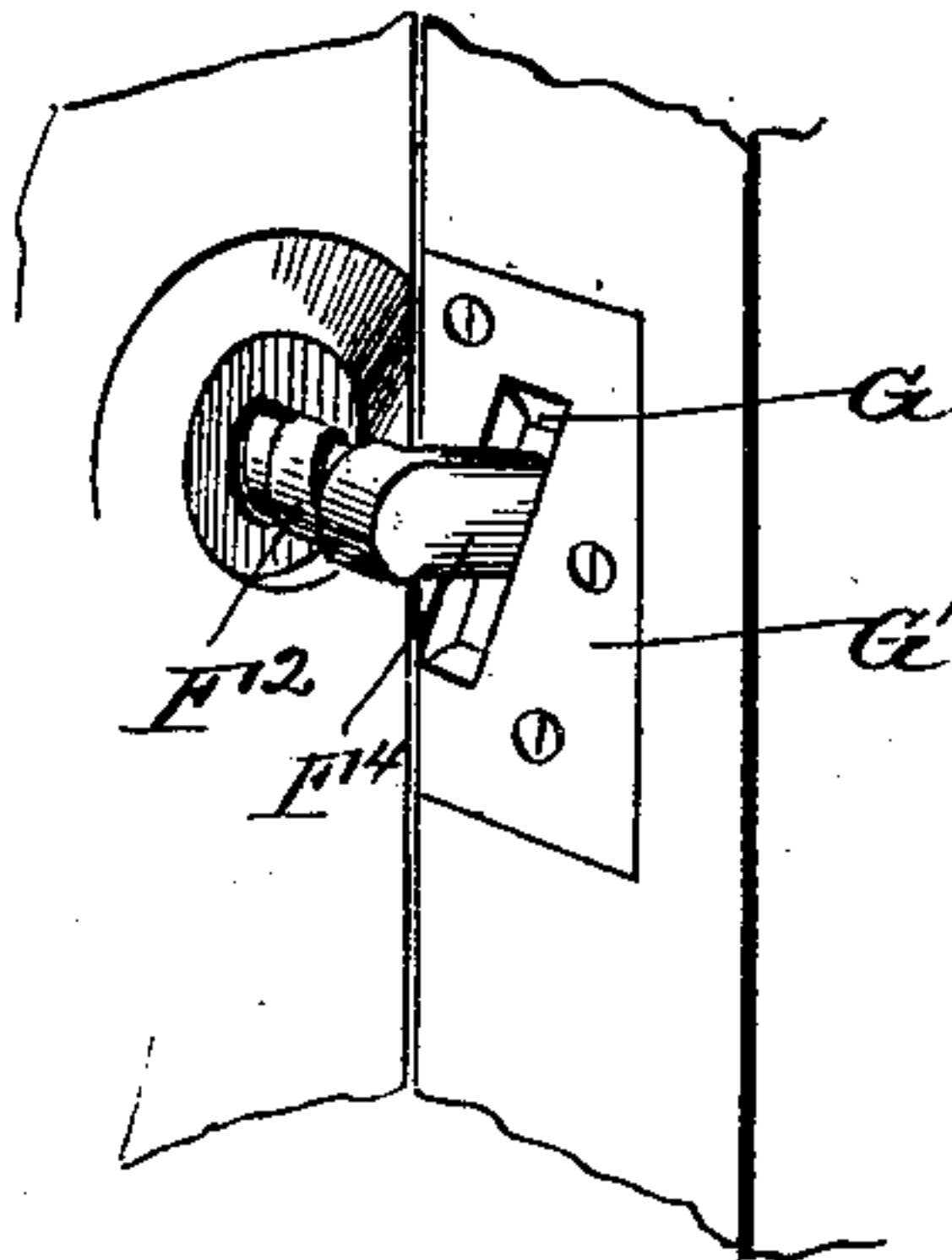
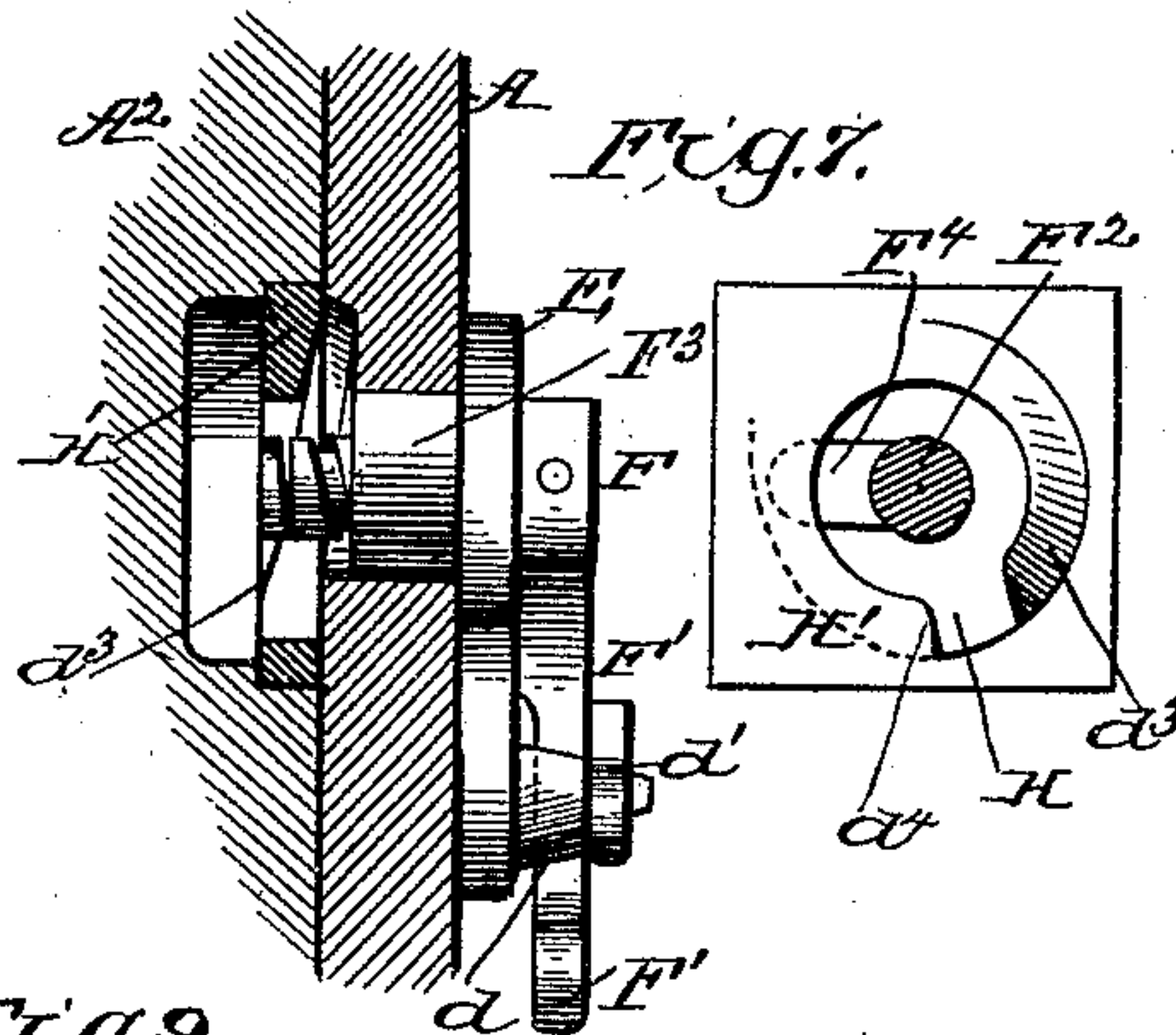


Fig. 7.



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UNITED STATES PATENT OFFICE.

THOMAS G. RUFFHEAD, OF RENOVO, PENNSYLVANIA.

CAR-DOOR FASTENER.

SPECIFICATION forming part of Letters Patent No. 410,807, dated September 10, 1889.

Application filed July 12, 1888. Serial No. 279,780. (No model.)

To all whom it may concern:

Be it known that I, THOMAS G. RUFFHEAD, of Renovo, in the county of Clinton and State of Pennsylvania, have invented a new and useful Improvement in Car-Door Fasteners, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is an elevation of a portion of the side of a car with my improved fastening applied and securing the door partly open. Fig. 1^a is a horizontal section showing the car-door fully closed in full lines and partly open in dotted lines. Fig. 2 is a detail view of part of the door-jamb and side of the car with keepers or strikes used in locking the door when closed or partly open. Fig. 3 is a perspective view of the fastening taken apart. Fig. 4 is a detail view of the end of the locking-bolt in two positions. Fig. 5 is a sectional view on line *x x*, Fig. 1. Fig. 6 is a partly vertical section through one of the plates *H'*, and showing the projection or cam of the bolt as it is about to engage the said plate, this figure also showing a face view of the plate and the bolt in section. Fig. 7 is a similar view of the same parts with the fastening in its locked position. Fig. 8 is a detail showing the cam or projection on the bolt as it is about to enter the inclined slot in the plate *G'*. Fig. 9 is a similar view showing the nose or cam projection of the bolt in the inclined slot.

The invention relates to fastenings for use on cars the doors of which, when closed, rest in the door-openings flush with the outer side of the car and which to be opened must first be moved outward from said opening at their forward or locking edges and then slid along ways or rails parallel with the side of the car.

The invention will be first described, and then fully pointed out in the claims.

*A*² represents the side of a car; *a*, its door-opening; *C*, the upper and lower rails or ways, which are inclined with respect to the door-opening, as shown in Figs. 1 and 1^a, so as to direct the door *A'* thereinto. This construction of the car forms no part of the present invention, is merely shown to better illustrate the invention, and therefore need not be further explained.

To the car-door *A* is applied upon its outside near the rear edge a plate or bracket *E*, which is provided with curved slots *c*⁶ *c*⁶, through which are passed screws or bolts *c*⁷ *c*⁷, entering and securing to the car-door the bracket or plate. The slots *c*⁶ *c*⁶ are so arranged that they form arcs of a circle having for its center the pivot of the latch, the purpose of which will appear farther on. The screws or bolts *c*⁷ *c*⁷ are inserted through the slots *c*⁶ *c*⁶, at the extreme right-hand ends thereof, in applying the bracket or plate *E* to the car-door.

F is a latch, which consists of a lever *F'*, the pivot of which consists of a preferably broad-threaded screw *F*², working in an internally-screw-threaded sleeve or barrel *F*³, projecting from the inner side of plate or bracket *E* and set in the car-door *A*. The extreme inner end of the screw or pivot *F*² is provided with a cam arm or projection *F*⁴, which, when the car-door is closed, is received in an oblique socket *G*, made in a casting or plate *G'*, screwed or otherwise suitably fastened to and let into the door-jamb. This cam or projection *F*⁴ has its faces oblique to the length of the screw, (see Fig. 4,) so that it will correspond with the incline of the socket *G* and properly enter the socket *H'*, to be presently described.

The plate or bracket *E* is provided upon its front side near the lower end with a block-like projection or offset *d*, against one end of which normally rests the lever *F'* of the latch, while upon the front side of said projection or offset is pivoted a hook *d'*, having engagement with a keeper or eye *d*² of the lever to secure the lever against accidental displacement or turning.

H *H* are two other sockets or ears, which are made in plates *H'* and have somewhat the form of the human ear, each being spirally flanged at the entrance to its tapering cavity *d*⁴, as at *d*³. The lower end of the flange *d*³ is diagonally opposite to the lower end of the tapering cavity *d*⁴, which is formed in the inner face of the plate *H'*. These sockets or ears are applied or fastened to the car upon its outside at points opposite which the door is moved or slid, and so as to be in alignment with the cam arm or projection *F*⁴ of the latch

F to permit of the engagement of the latch and ears or sockets when the door is partially opened or wholly opened.

It is desirable, as is well understood, to secure the door partially open, among other purposes to ventilate the car, especially as is required in the shipment of fruit or other perishable goods.

The latch, after securing the door and being locked, is sealed, to prevent tampering therewith, in the usual manner, provision for which is made by the formation of an aperture d^5 in the beak of the hook d .

In operation it will be seen that, the door being closed, by turning the lever F' to the right, causing it to describe a complete circle, the cam arm or projection of the latch will enter the socket in the door-jamb and draw inward upon the door, and thus, in addition to securing the door, remove the pressure or strain from the door shoes or bearings and rails, as heretofore experienced. In case of the wearing away or shrinkage of the door, which would prevent the proper engagement of the cam arm or projection of the latch with the door-jamb socket, the bracket or plate E is moved to the right, so as to bring the opposite ends of the slots c^6 c^6 from those above mentioned against the screws or bolts c^7 c^7 , thus enabling the screw or pivot of the latch-lever to have the required engagement with the screw-threaded sleeve or barrel to effect the securing of the door. In opening the door the latch-lever is of course turned in a reverse direction from its aforesaid movement, withdrawing the cam arm or projection from the door-jamb slot. The door can now be moved outward at its locking edge, as shown in dotted lines in Fig. 1^a, and then slid to its open position. If, however, it is not required to secure the door as aforesaid, it may be secured partially open for the ventilation of the car by moving the door so as to align the latch with the required one of the ears or sockets H , and then giving the latch-lever, as above described, a full turn, interlocking the ear or socket and the pivot cam arm or projection.

Having thus fully described my invention,

what I claim, and desire to secure by Letters Patent, is—

1. In a car-door fastener, the screw-threaded bolt having a projection at its inner end, the faces of which are oblique to its length, in combination with a socket the walls of which are inclined or tapered, substantially as set forth.

2. In a car-door fastening, the latch consisting of a lever the pivot of which is a screw having a cam arm or projection, in combination with a plate or bracket having an internally-screw-threaded sleeve or barrel and curved bolt or screw receiving slots, and an oblique door-jamb socket, substantially as specified.

3. A fastener for locking car-doors in a fully-closed or partially-open position, comprising the screw-threaded socket, the rotary screw turning therein and having an inclined projection at its inner end, the jamb-plate G , having an oblique slot, and the plate H , for the side of the car, having a tapering cavity d^4 , spirally flanged, as at d^3 , substantially as set forth.

4. In a car-door fastening, the latch consisting of the lever the pivot of which is a screw having a cam arm or projection, in combination with a plate or bracket having an internally-screw-threaded sleeve or barrel and provided with a hook taking into or engaging with a keeper or eye upon the latch-lever and adapted to be sealed, and an oblique socket, substantially as specified.

5. The combination of the latch consisting of the lever the pivot of which is a screw carrying a cam arm or projection, the plate or bracket provided with curved slots which receive screws or bolts and with an offset or projection, the hook pivoted to said offset or projection and engaging with an eye or keeper upon the latch-lever, and the oblique door-jamb socket receiving said cam arm or projection, substantially as set forth.

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Witnesses:

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CHAS. PAVORD.