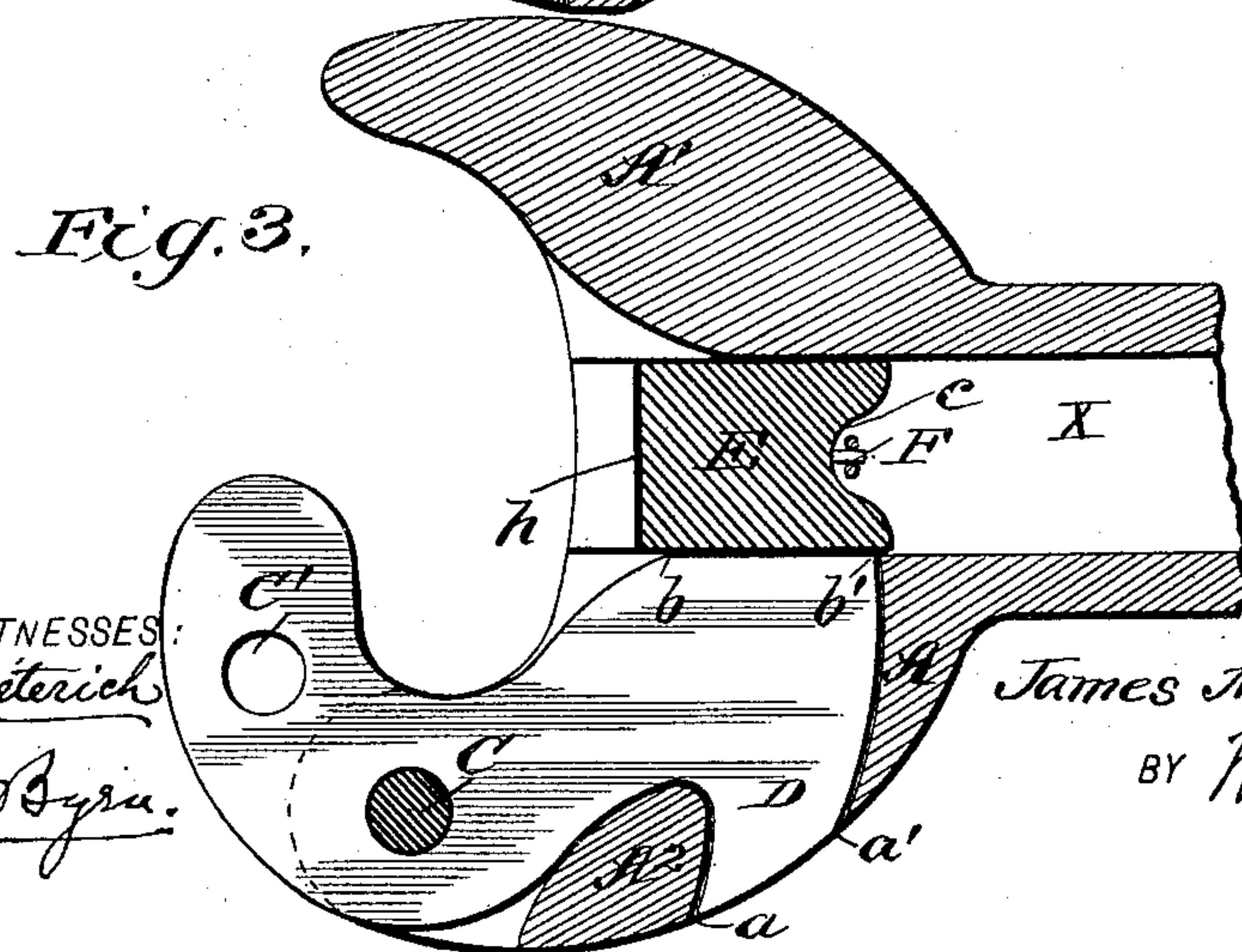
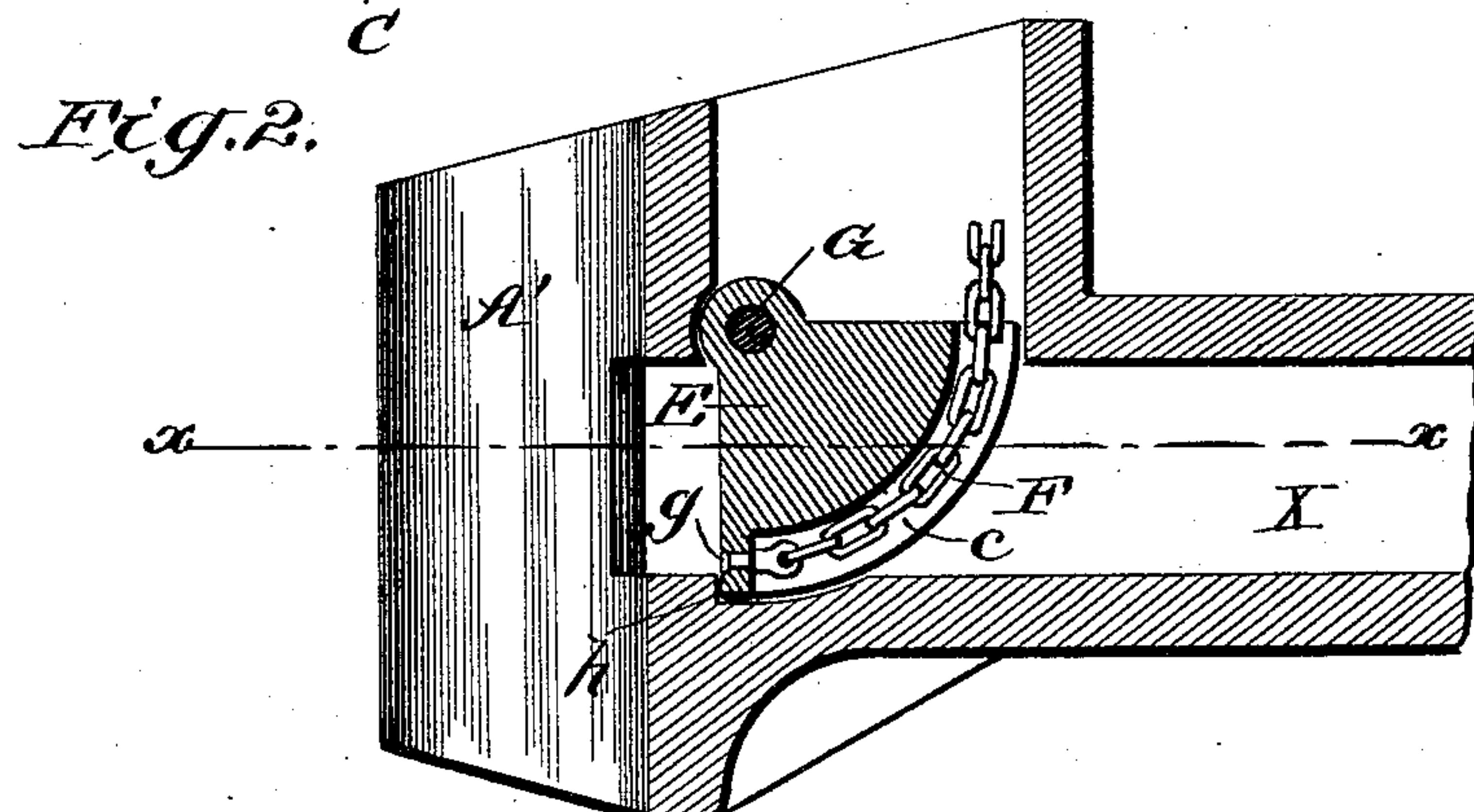
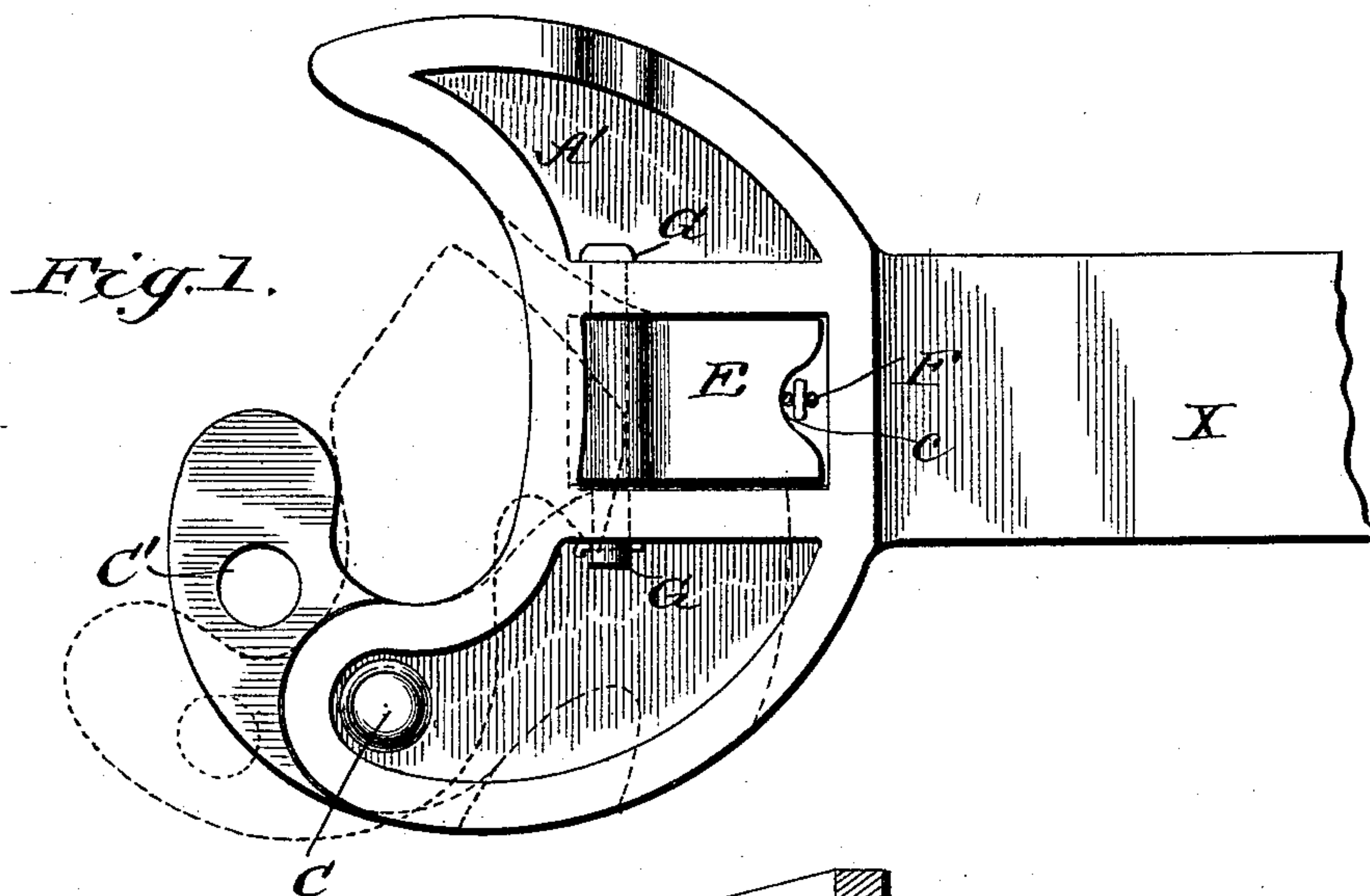


(No Model.)

J. M. ELLIOTT, Jr.
CAR COUPLING.

No. 483,047.

Patented Sept. 20, 1892.



WITNESSES:
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UNITED STATES PATENT OFFICE.

JAMES M. ELLIOTT, JR., OF GADSDEN, ALABAMA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 483,047, dated September 20, 1892.

Application filed January 20, 1892. Serial No. 418,707. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. ELLIOTT, JR., residing at Gadsden, Etowah county, and State of Alabama, have invented a new and useful Improvement in Car-Couplers, of which the following is a specification.

My invention relates to car-couplings of that class known as the "Janney" type, in which a knuckle or coupling-hook is fulcrumed about a vertical axis in one side of the draw-head and is adapted to co-operate with and engage a similar knuckle on the opposite draw-bar.

My improvement consists in the peculiar construction and arrangement of the rear portion of the knuckle and the draw-bar and the means for locking the said knuckle in closed position, as will be hereinafter fully described.

Figure 1 is a plan view of the draw-bar. Fig. 2 is a vertical central longitudinal section, and Fig. 3 is a horizontal section taken on line $x x$ of Fig. 2.

In the drawings, X represents the draw-bar, whose head is formed with a solid jaw A' and a chambered jaw A. The chambered jaw A is formed with a horizontal recess, within which is pivoted or fulcrumed upon pin C the knuckle or coupling-hook B. This knuckle is formed with a large rear extension, whose straight face $b b'$ when the knuckle is closed comes into alignment with the inside wall of the central channel-way or throat of the draw-bar. The rear end of this knuckle has an outward turn to form a hook or tongue D, which extends out to the outer edge of the draw-head, the latter being provided with a hole at $a a'$ to allow the end of the tongue to be accessible from the exterior. The front or concave face of the hook or tongue D embraces when the knuckle is closed the solid abutment A^2 , forming an integral part of the metal of the draw-head, so that when the draft strain comes upon the coupling the front surface of the tongue D finds a bearing against the abutment A^2 and not only relieves the pin C of wear and strain, but even if the pin C becomes broken or damaged forms a connection that still holds the cars coupled, allowing the train to be drawn to its destination. The same construction

also gives relief to the pin in backing. The curved line $a' b'$ where the rear edge of the knuckle and tongue meet the draw-head is not struck from the center of the pin C; but the point a' is nearer the center C than the point b' is. This causes the tongue D to be forced up into solid contact with the metal of the draw-head when the knuckle is closed, and when the knuckle is opened the rear edge $b' a'$ at once begins to free itself from contact with the draw-head.

C' is an extra pin-hole in the end of the knuckle to accommodate an ordinary pin-and-link connection when the adjacent car is equipped only with the old form of draw-head.

In the front part of the throat of the draw-bar there is hung on the middle line a locking-tumbler E, which swings in a vertical plane, whose office is to drop in front of the face $b b'$ of the knuckle and lock the latter when closed or be lifted at will and allow the knuckle to be thrown out into the dotted position when uncoupled. This locking-tumbler is made quadrant-shaped, or the quarter of a circle, and is hung at its upper and front end upon a horizontal axial bolt G, held in the metal of the draw-head. The rear and lower face of this tumbler is formed with a central channel or groove c , in which lies a chain F, by which the tumbler is manipulated. This chain is secured at its lower end to an eyebolt g , riveted to the lower front edge of the tumbler at the point where the groove terminates, and said chain passes around the curved surface of the tumbler, within its groove, and extends up through the draw-bar to a convenient point for the use of the trainmen.

In locating the axial bolt G, upon which the tumbler is hung, said bolt is placed a little above the top of the channel-way in the draw-bar, so that the weight of the tumbler will all be below its pivot, and when the tumbler is lifted the front edge of the tumbler will rise above the top of the channel-way and be entirely out of the way of the knuckle extension, which is then free to swing outwardly across the channel-way. When the tumbler descends again, its lower edge strikes against and is arrested by a shoulder h , formed in

the bottom of the channel-way, which shoulder prevents the tumbler from moving too far outwardly.

In making use of my invention it will be understood that both cars are equipped alike, and in coupling the knuckles are thrown out into the dotted position of Fig. 3 and the tumblers are lifted and sustained upon the upperside of the rear extension of the knuckle. As soon as the cars are brought together the impact throws both knuckles around into the position shown in full lines, and the tumbler E, dropping behind the faces *b b'* of the knuckle, at once locks them in the closed position, with their outer ends interlocked.

In defining my invention with greater clearness I would state that I am aware that it is not new to lock the pivoted knuckle by a vertically-swinging latch, as shown in Patent No. 438,697. My invention is distinctive with reference to this construction in that the locking-face *b b'* of the knuckle is brought to the line of the central channel-way and the tumbler E is placed centrally in the draw-bar. A very broad, strong, and substantial bearing is thus secured between the face *b b'* and the tumbler, which gives great security and strength and is well adapted to resist wear and rough usage without becoming broken, damaged, or rendered inoperative in any way. Furthermore, the central groove *e* and the connection of the operating-chain to the lower and front end is an important feature in that this by a sort of pulley action causes a uniform leverage to be exerted upon the tumbler in lifting it, which leverage is as great at the end of the movement as it is at the start, thus enabling the trainmen to lift with certainty the tumbler even if the parts be under strain and cramped by frictional contact.

I am also aware that it is not new to form an outturned hook on the rear end of the knuckle that is adapted to fit in a projecting pocket and grasp the metal of the draw-bar, as shown in Patent No. 416,187. My invention is distinctive in the fact that the draw-head has no projecting pocket and the tongue D extends entirely through the draw-head. This involves no deviation from the standard shape of draw-head and prevents the socket which receives the tongue from becoming filled and obstructed with mud, snow, or ice, which would defeat the operation of the coupler, and if at any time the tongue D should become stuck or cramped in its socket, so that it does not start out readily, its outer end, being exposed, is easily accessible, and a blow with a hammer upon its exposed end will afford instant dislodgment and clearance.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The draw-head chambered horizontally to receive the knuckle and having back of the knuckle-pin an opening which passes laterally and entirely through the draw-head and curves at its outside toward the front, in combination with a vertically-pivoted knuckle having at its rear end a lateral hook passing through said opening, curved forwardly at its outer end, and hugging the solid metal in front, substantially as shown and described.

2. The combination of the draw-bar having a central channel or throat and a horizontal chambered head, a locking-tumbler placed in the middle line of the draw-bar and filling the throat when locked, a horizontal axis for said tumbler arranged at the forward end of the same, and a knuckle or coupling-hook, pivoted upon a vertical axis in the draw-head and having its rear end extended to form the broad bearing *b b'* against the tumbler at a point in rear of its axis, substantially as shown and described.

3. The combination, with the draw-head and the knuckle or coupling-hook, of the tumbler having a horizontal axial pin or bolt at its upper front end and an operating-chain connected to the lower front side of the tumbler and passing rearwardly and upwardly around the same, substantially as shown and described.

4. The combination, with the draw-head and knuckle, of the quadrant-shaped tumbler E, having its lower and rear surfaces curved and grooved, a horizontal axial pin or bolt at its upper and front end, and an operating-chain passing down in said groove and connected to the lower front end of the tumbler, substantially as shown and described.

5. The combination, with the draw-head and knuckle, of the pivoted quadrant-shaped tumbler E, having its lower and rear surface grooved to a point near its front face, the eyebolt *g*, secured in the tumbler at the end of the groove, and the chain connected to the eyebolt and extending rearwardly and upwardly, substantially as shown and described.

6. The combination, with the draw-head having chambered jaw, central channel-way or throat, and a shoulder *h* at the front end of the throat, of knuckle B, pivoted upon a vertical axis in the draw-head and having an extended and abutting face *b b'*, the quadrant-shaped tumbler E, filling the front end of the throat and pivoted to play vertically therein, and the operating-chain F, connected to the lower front end of the tumbler, substantially as shown and described.

JAMES M. ELLIOTT, JR.

Witnesses:

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J. H. HARDEN.