

No. 711,496.

W. N. HENSLEY.
CAR COUPLING.

Patented Oct. 21, 1902.

(Model.)

(Application filed May 15, 1902.)

2 Sheets—Sheet 1.

Fig. 1.

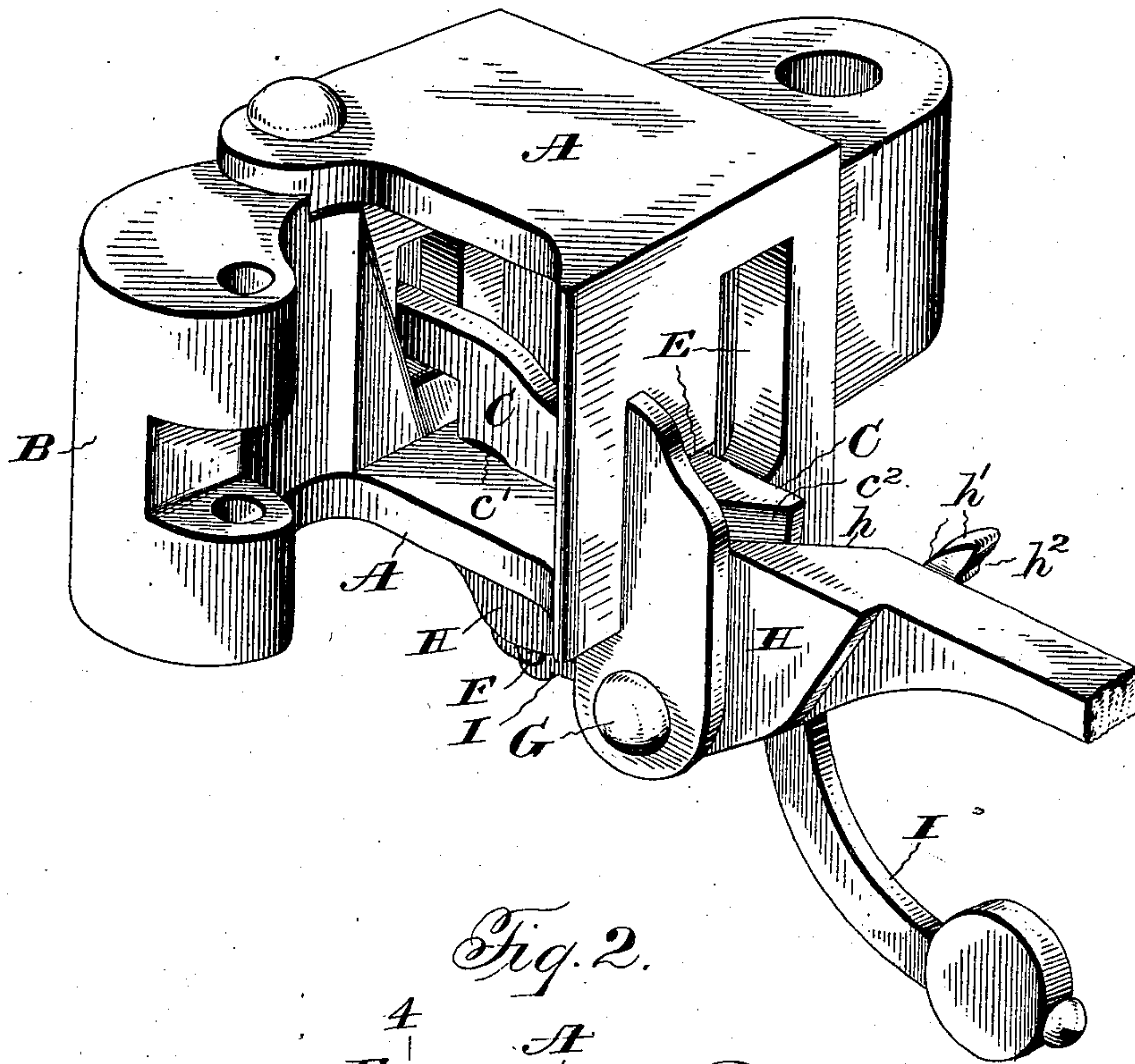
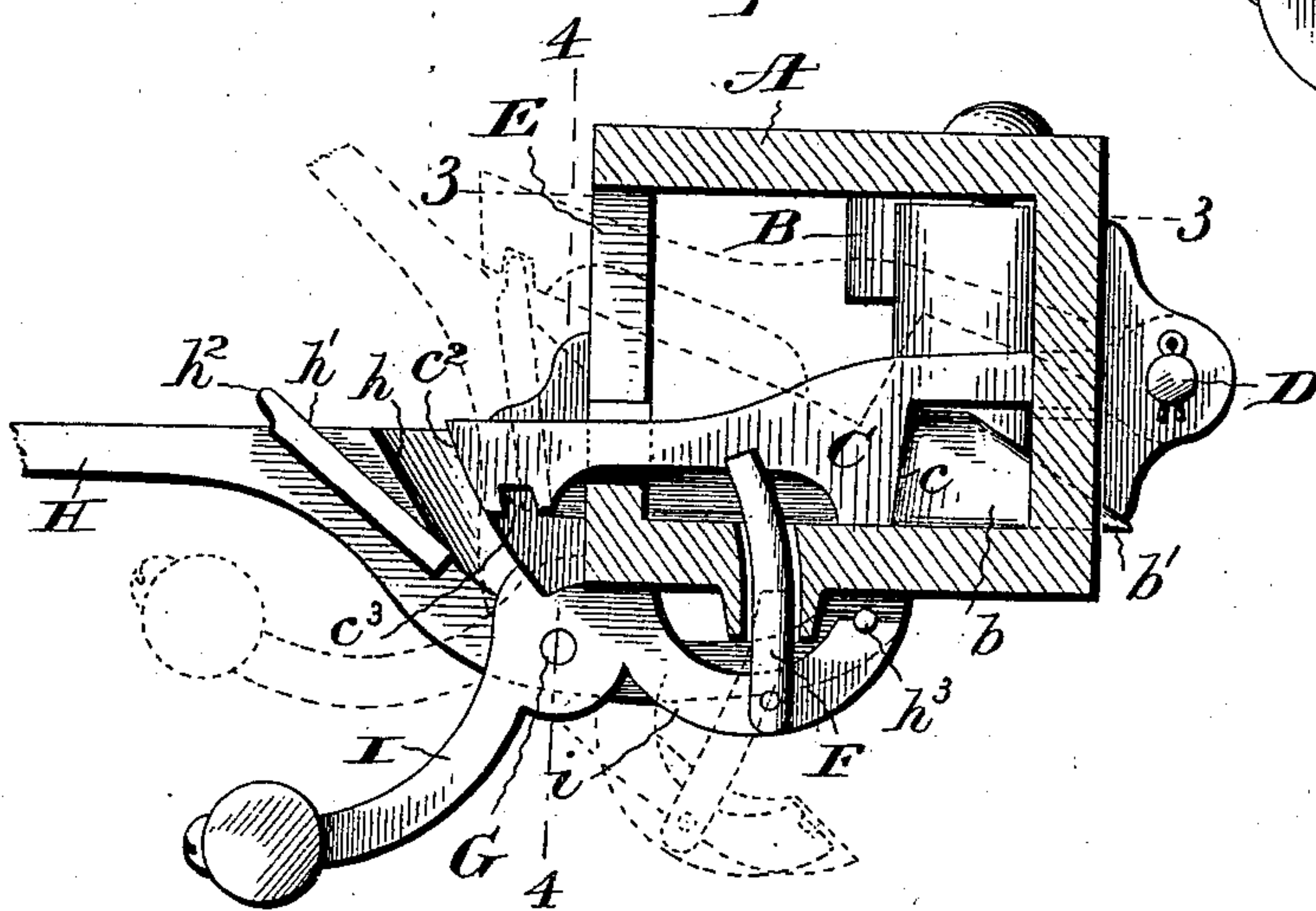


Fig. 2.



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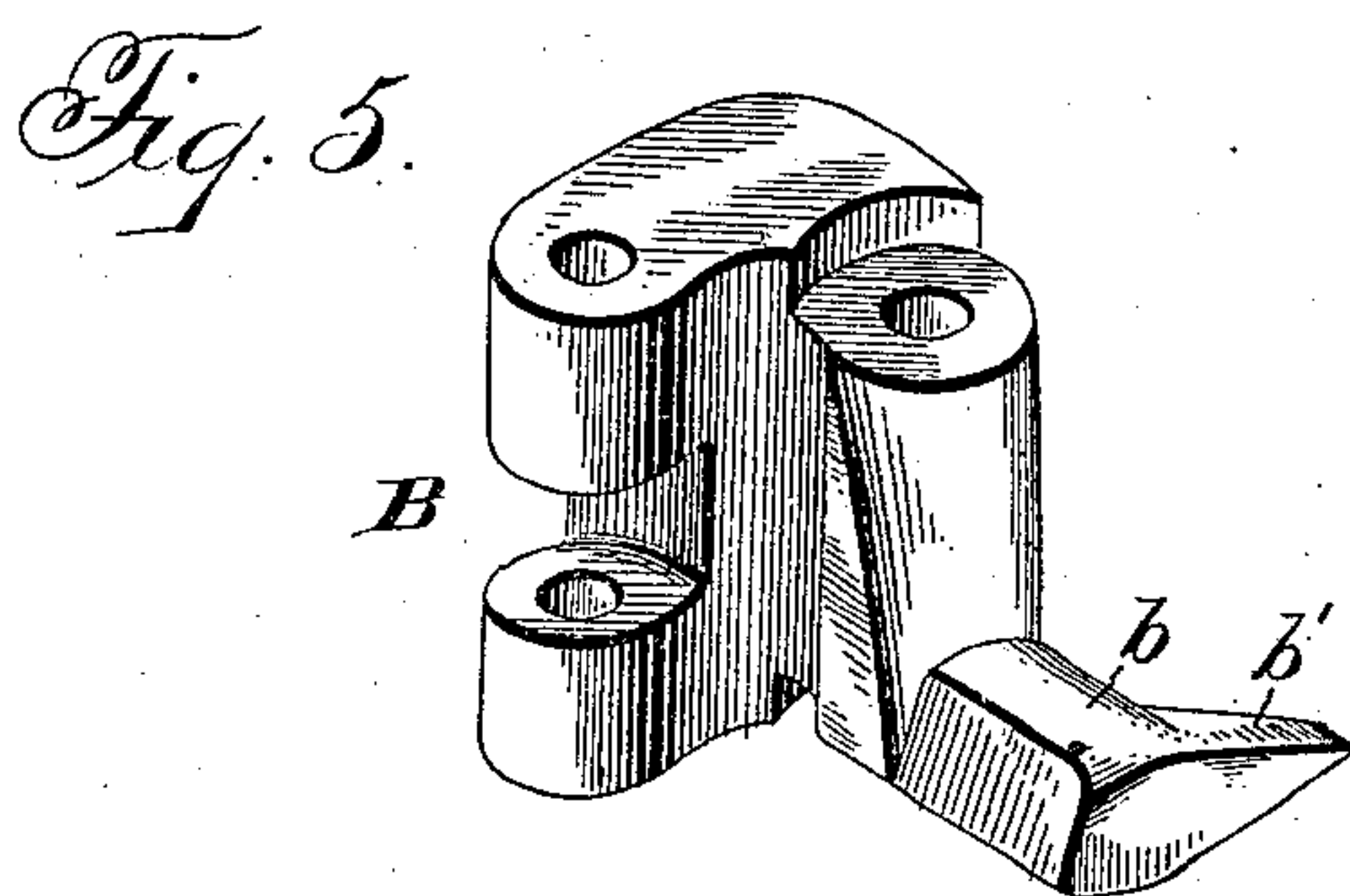
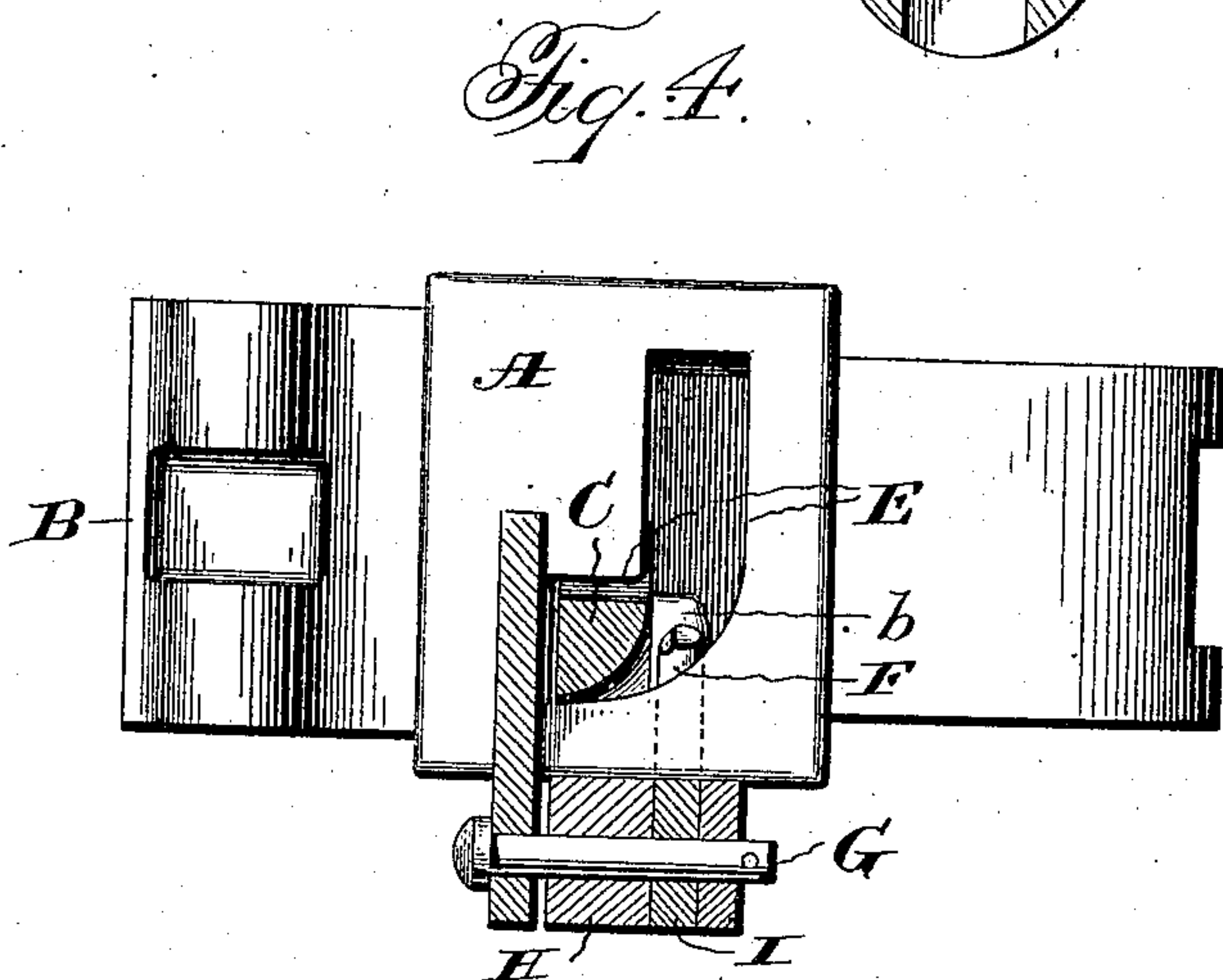
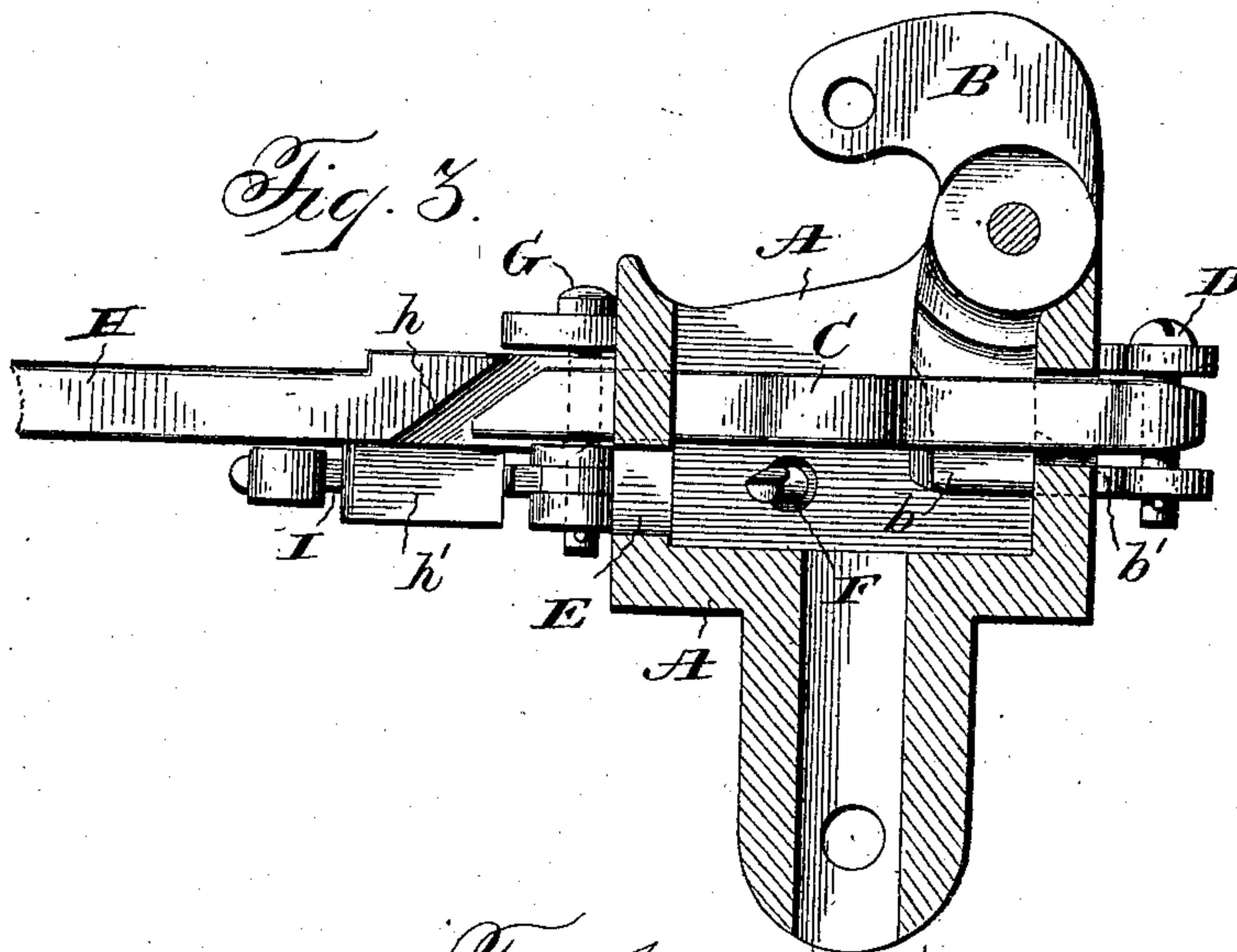
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UNITED STATES PATENT OFFICE.

WILLIAM N. HENSLEY, OF COLUMBUS, NEBRASKA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 711,496, dated October 21, 1902.

Application filed May 15, 1902. Serial No. 107,541. (Model.)

To all whom it may concern:

Be it known that I, WILLIAM N. HENSLEY, of Columbus, in the county of Platte and State of Nebraska, have invented a certain new and useful Improvement in Car-Couplers; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

10 Figure 1 is a perspective view of a car-coupler embodying my invention. Fig. 2 is a cross-section of the same. Fig. 3 is a horizontal section on the line 3 3 of Fig. 2. Fig. 4 is a longitudinal section on the line 4 4 of Fig. 2, and Fig. 5 is a detail perspective view of the knuckle.

20 The object of my invention is to provide a car-coupler that will be simple and strong and capable of being operated with ease and perfect safety under all conditions; and to this end my invention consists in the car-coupler having the construction substantially as hereinafter specified and claimed.

25 My invention relates to the twin-jaw type of coupler, and in the drawings, A designates the coupler-head, and B the pivoted jaw or knuckle, of such a coupler. Extending through the head A crosswise thereof is a bar C, pivoted at one end to a pin D, placed between 30 cars on one side of the head, and projecting at its other end through a slot E in the opposite side of the head, which slot has a vertical and a horizontal portion, the horizontal portion being at the lower end thereof and extending forwardly. Near its pivotal end the 35 bar C is notched or cut away on its under side to accommodate an extension *b* of the knuckle B and has a wall or shoulder *c*, adapted to engage said extension when the knuckle is in coupling position, and thereby 40 hold the knuckle in such position. When the bar C is lifted, the knuckle will thereby be freed, so that it may swing for uncoupling. The bar-engaging side of the knuckle extension is slightly inclined in a direction upward and away from the bar-shoulder, so that when 45 the bar has been lifted sufficiently to permit the knuckle to swing outward said inclined side, acting on the under side of the bar, will continue the upward movement thereof by a camming action. Besides having vertical movement on its pivot-pin the bar C has hori-

zontal movement thereon, for this purpose its connection with the pivot-pin being sufficiently loose, and it being cut away on both 55 sides between the pivot-pin lugs to provide necessary space between the same for such movement. The bar C when in its lowered and knuckle-locking position is held from rising by the upper wall of the horizontal 60 portion of the slot E, which overhangs it, and from moving rearward by a pin F at its rear side, that is movable into and out of bar-engaging position, as hereinafter described.

The knuckle extension has a wedge-shaped 65 prolongation *b'*, which when the knuckle is being swung from an open to a closed position acts on the under side of the bar C and raises the latter to permit the extension *b* to pass into the notch or recess in said bar and 70 into locking engagement with the latter. The front side of the bar C is provided with an inclined surface *c'* for engagement by the inclined upper side of the prolongation.

Pivoted on a pin G, placed in lugs on the 75 side of the coupler-head which has the slot E, is a lever H, having sufficient length to extend from the coupler to the side of the car, so that it may be reached and manipulated by a person with no necessity of going into a 80 place of danger between the cars. Said lever has a rearwardly and forwardly inclined surface *h* to coact when the lever is raised with the forward side of the adjacent end of the bar C, which is preferably provided with an 85 inclined surface *c''* and moves the bar rearward to carry it from the horizontal portion of the slot E into the vertical portion of said slot, so that it may be free to be raised. The lever H has a second inclined surface *h'*, the 90 direction of whose inclination is outward and upward, and it coacts with the adjacent end of the bar C when the lever is raised, and thereby forces the bar C upward in the vertical portion of the slot E. At the upper end 95 of the inclined surface *h'* the lever H has a lug *h''*, with which a notch *c'''* in the under side of the free end of the bar C interlocks when the lever and bar are fully raised and the bar C thereby maintained in a raised po- 100 sition.

Pivoted on the same pin with the lever H is a weighted lever I, that has an extension *i* beneath the coupler-head A, the end of which

is in the path of a laterally-projecting pin or stud h^3 on the lever H, so that when the outer end of the latter is raised said pin or stud will move downward and, engaging the lever extension i , carry said extension downward. When the lever H is moved or permitted to move in the opposite direction, the weight of the lever I will move this extension upward. The bar-locking pin F, passing through an opening in the bottom of the coupler-head A, is attached at its lower end to the extension i of the lever I, and thus through the movements of said lever I the pin F is moved into and out of bar-engaging position. On its rear side the bar C has a surface c^4 , that is inclined downward and forward, which when the bar is moved rearward acts on the upper end of the locking-pin F when it has been partially lowered. Said inclined surface also acts on a rearwardly and upwardly inclined surface that extends from the bottom of the horizontal portion of the slot E to the rear wall of the vertical portion of said slot, so that the bar C when moved rearward will also move upward.

In uncoupling the operation is as follows: The outer end of the lever H is raised, which first, through the engagement of its pin or stud h^3 with the extension i of the lever I, lowers the bar-locking pin F, and then its inclined surface h' , engaging the bar C on its forward side, moves the latter rearward, carrying it from the horizontal portion of the slot E into the vertical portion of said slot. Should there be forward pull or strain on the knuckle B, as soon as the bar C is sufficiently raised to permit the inclined side of the knuckle extension to act upon the under side of said bar the latter will be automatically raised and uncoupling effected without further upward movement of the lever H. Should, however, there be no outward pull upon the knuckle B or a condition of "slack" existing, continued upward movement of the lever H will cause the inclined surface h' to act upon the free end of the bar C and lift the latter sufficiently high to remove all obstruction to an opening swing of the knuckle B, the bar C being locked in such position by the dropping of the notch c^3 into engagement with the lug h^2 of the lever H. The outward swinging of the knuckle can thereafter take place. When the notch of the locking-bar C is in engagement with the lug h of the lever H, the lower portion of the knuckle-locking shoulder c of said bar will be in the path of the knuckle extension b , so that when the knuckle is moved to its open or uncoupled position the inclined side of the extension will strike the locking-bar and raise it sufficiently to disengage it from the lug h^2 on the operating-lever H, thereby permitting the latter to drop and freeing the bar, so that it also can drop. It is not necessary that a condition of slack shall exist to enable an uncoupling operation; but uncoupling can be effected when there is a pull on the train, be-

cause of the great power which can be exerted through the lever H on the locking-bar C. The importance of the ability to uncouple without slacking the train will be evident when it is considered that the time which would be necessary to do this by backing the cars is saved and injury to the cars and their contents from collisions or shocks in backing avoided.

It will be seen that my coupler is very simple in construction, easy of operation, it can be operated with perfect freedom from danger to life and limb, without possibility of damage to the cars or their contents, and with economy of time.

Having thus described my invention, what I claim is—

1. In a car-coupler, the combination of a jaw, a locking-bar therefor mounted to have compound motion, means to restrain it from one of its motions, and means to move it from the restraining means preliminary to its having its other motion.

2. In a car-coupler, the combination of a jaw, a locking-bar therefor, movable in a direction that intersects the direction of movement of the jaw, means for restraining it from such movement, and an operating-lever having a cam for disengaging it from the restraining means and moving it to free the jaw therefrom.

3. In a car-coupler, the combination of a jaw, a locking-bar therefor, movable vertically and laterally, means to restrain it from vertical movement, and an operating-lever having a cam-surface that acts on the bar.

4. In a car-coupler, the combination of a coupler-head, and a locking-bar pivoted to the coupler-head to move in directions at an angle to each other and passing through a slot therein having portions at an angle to each other, the bar when in one portion of the slot being restrained from movement in the direction in which it is permitted to move when in the other portion of the slot.

5. In a car-coupler, the combination of a coupler-head, a jaw, a locking-bar pivoted to the coupler-head and passing through a slot therein having portions at an angle to each other, the bar when in one portion of the slot being restrained from movement in a direction in which it is permitted to move when in the other portion of the slot, and a cam-lever for moving said bar.

6. In a car-coupler, the combination of a jaw, a locking-bar mounted to have compound motion, and with two cam-surfaces that successively act on said bar to impart both motions to the bar.

7. In a car-coupler, the combination of a jaw, a locking-bar mounted to have compound motion, means to restrain it from both of said motions, and a lever to free it from both of the restraining means.

8. In a car-coupler, the combination of a jaw, a locking-bar, a lever for moving the same, and a cam-surface on the jaw to actu-

ate the bar after it has been partially moved by the lever.

5 9. In a car-coupler, the combination of a jaw, a locking-bar, means for interlocking with it for positively securing it in a position to release the jaw, and jaw-actuated means to free the locking-bar.

10 10. In a car-coupler, the combination of a jaw, a jaw-locking bar, means for securing it in position to release the jaw, and a part carried by the jaw that engages the bar to release it.

15 11. In a car-coupler the combination of a jaw, a pivoted locking-bar that moves vertically and has a part that engages the jaw to hold the jaw, means for holding the locking-bar in a raised position to release the jaw, with the jaw-engaging part of the locking-bar in the path of a part carried by the jaw
20 that engages the bar to release said bar.

12. In a car-coupler, the combination of a jaw, a locking-bar, having a notch and shoulder to coact with the jaw, and an operating-lever having a bar-engaging surface.

25 13. In a car-coupler, the combination of a jaw, a locking-bar having a notch and shoulder to coact with the jaw, and an operating-

lever having bar-engaging surfaces that act in succession on the bar to move it in different directions.

30 14. In a car-coupler, the combination of a jaw, a locking-bar, a pin movable into and out of position to engage the bar, a bar-operating lever, and a pin-actuating lever, the latter being operated by the bar-operating
35 lever.

15. In a car-coupler, the combination of a coupler-head, a jaw, a locking-bar pivoted to the head and extending through a slot in the head that has vertical and horizontal portions, 40 and a lever having two surfaces that act in succession on the bar.

16. In a car-coupler, the combination of a jaw, a locking-bar, and a lever having an inclined bar-engaging surface at the end of 45 which is a bar-locking lug.

In testimony whereof I have hereunto subscribed my name, in presence of witnesses, this 15th day of April, 1902.

WM. N. HENSLEY.

Witnesses:

WM. O'BRIEN,
G. W. PHILLIPS.