

No. 609,818.

Patented Aug. 30, 1898.

P. E. LAW.
CAR FENDER.

(Application filed Oct. 14, 1897.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1

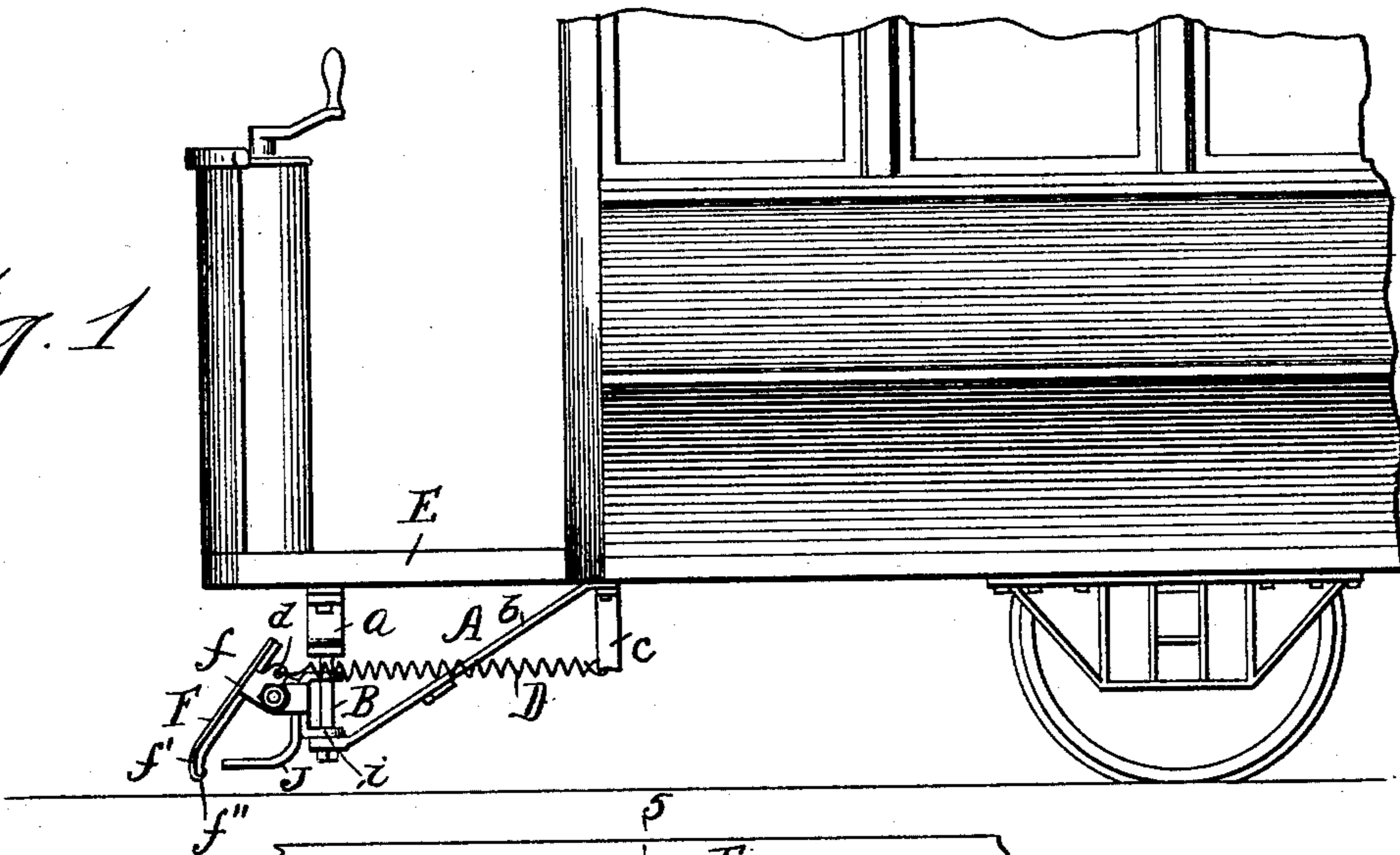


Fig. 2

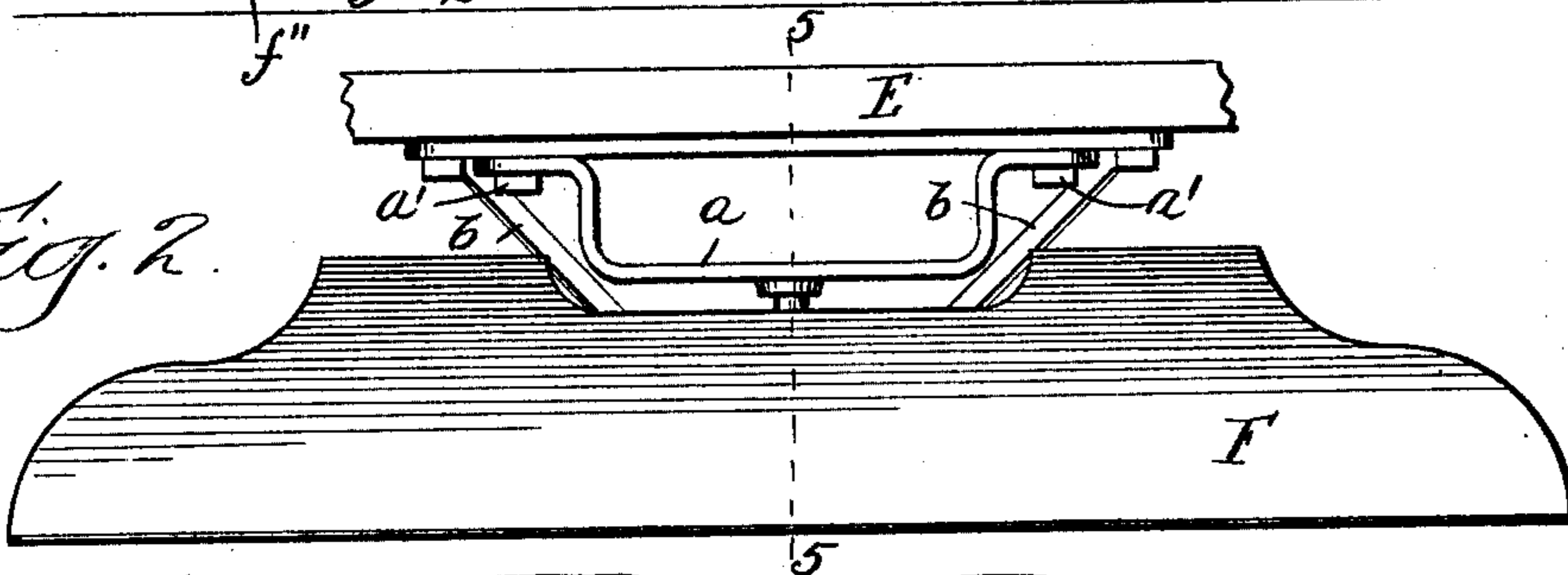
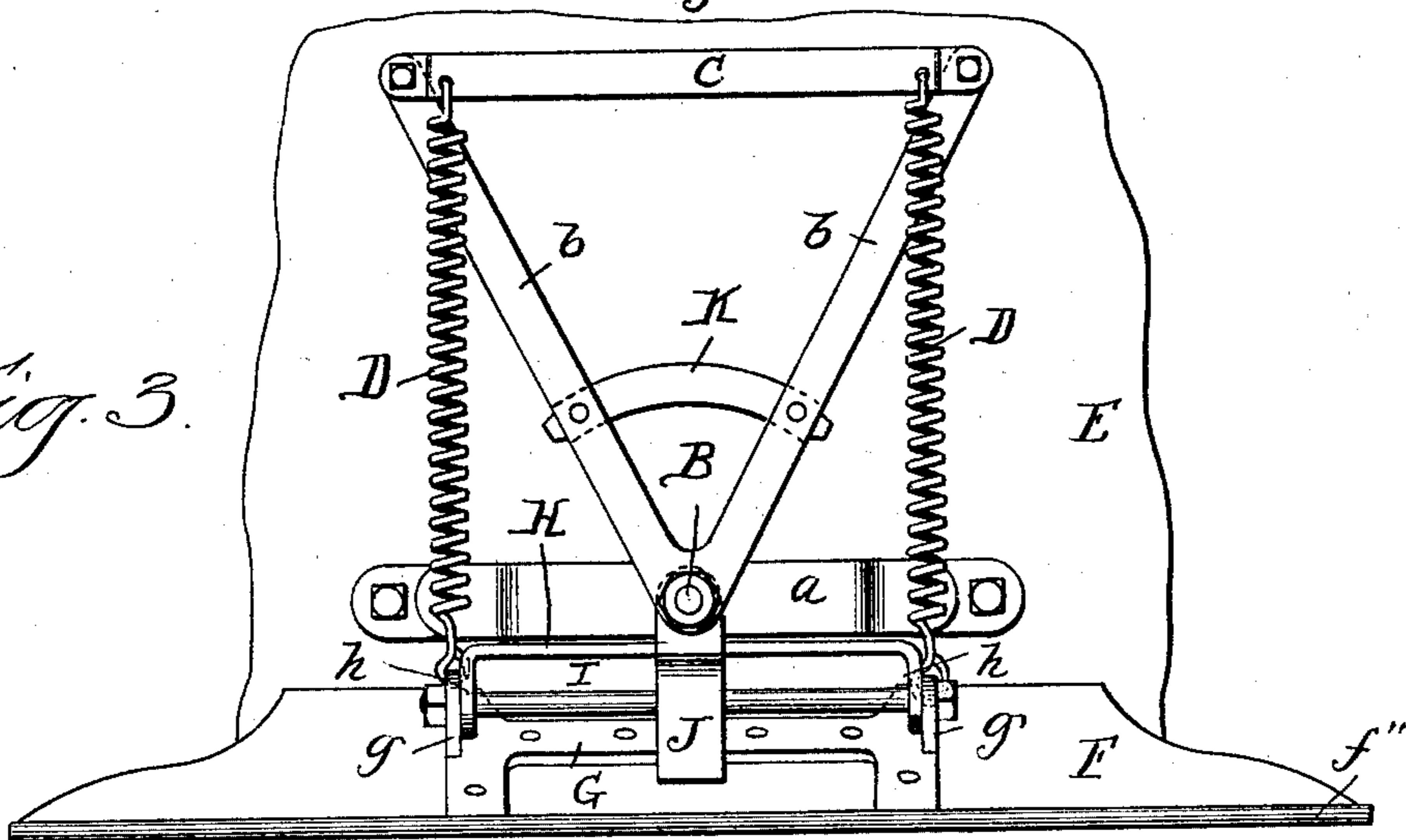


Fig. 3



Witnesses

Wm. L. Hanning
Thos. O. Bell

Inventor

Prentis E. Law,
By Raymond & Quinlan
Attys.

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2 Sheets—Sheet 2.

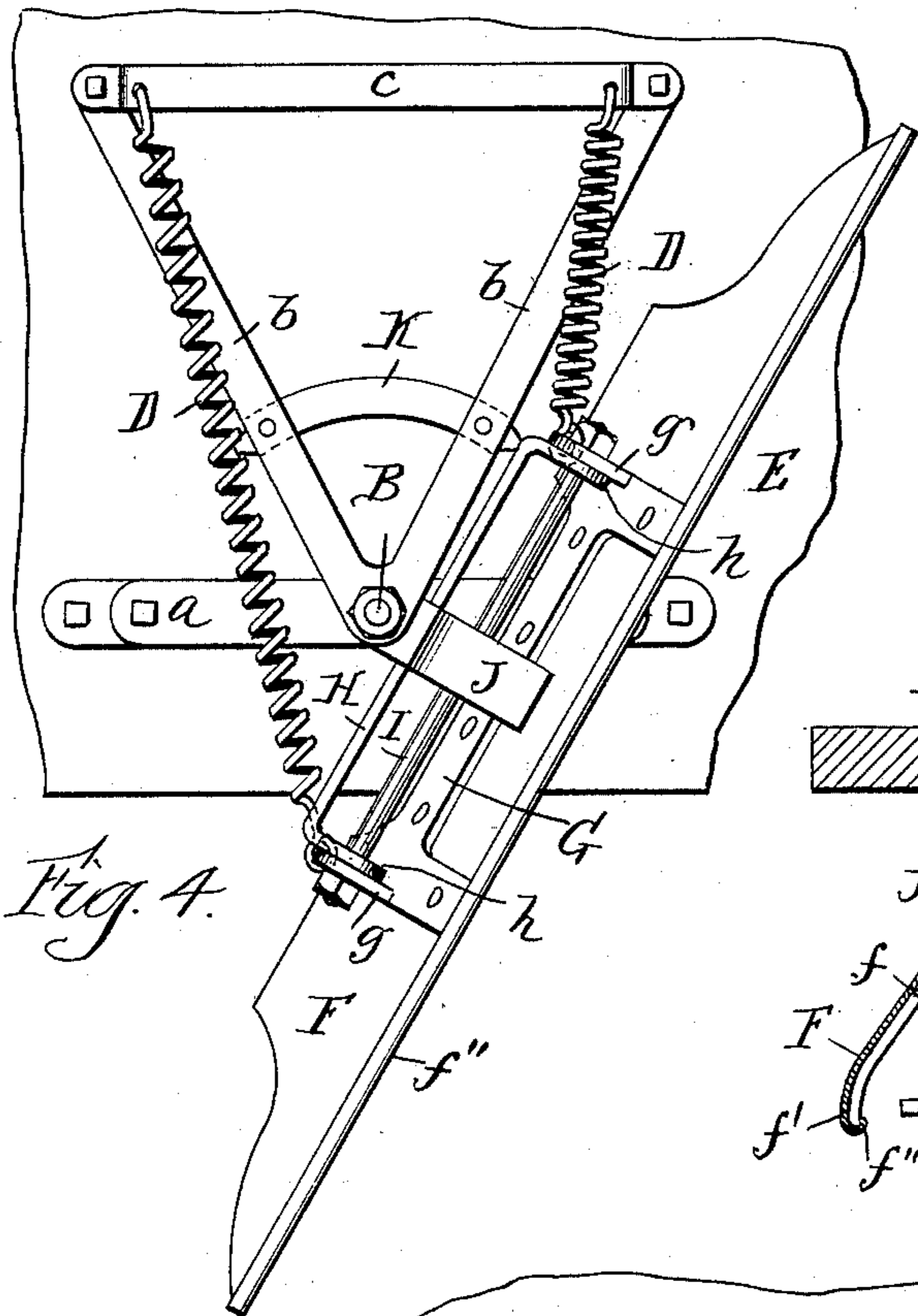


Fig. 4.

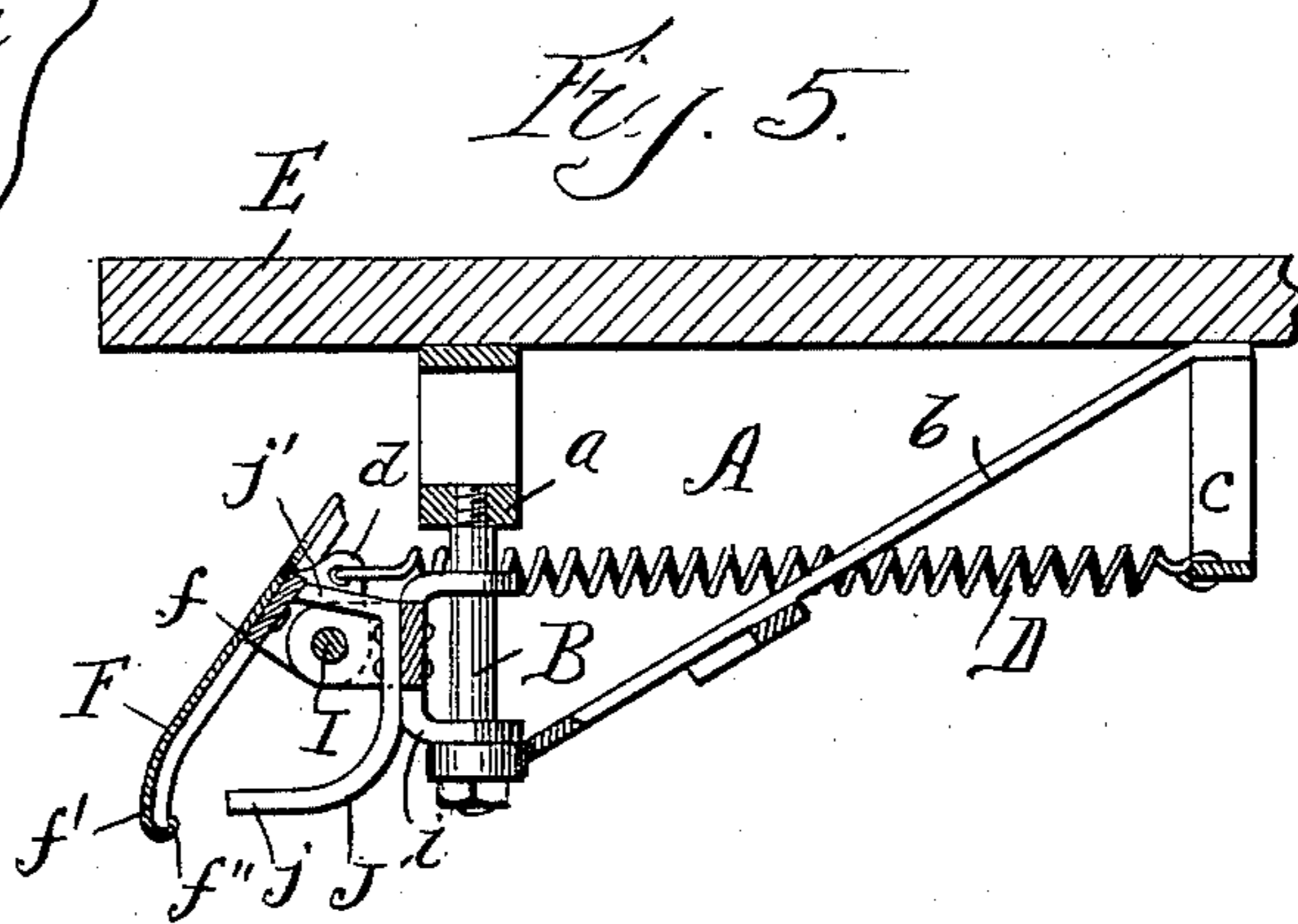


Fig. 5.

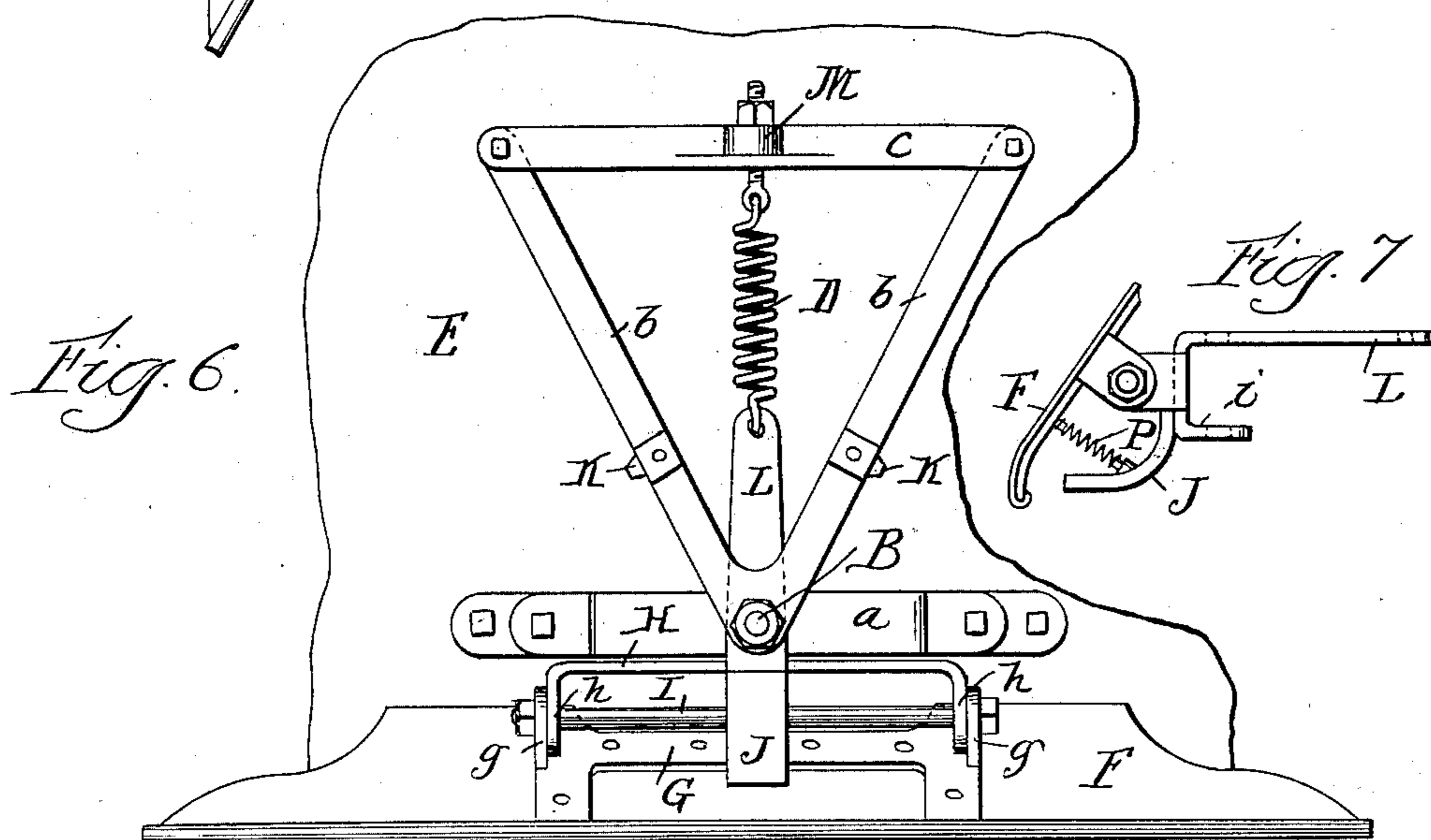


Fig. 6.

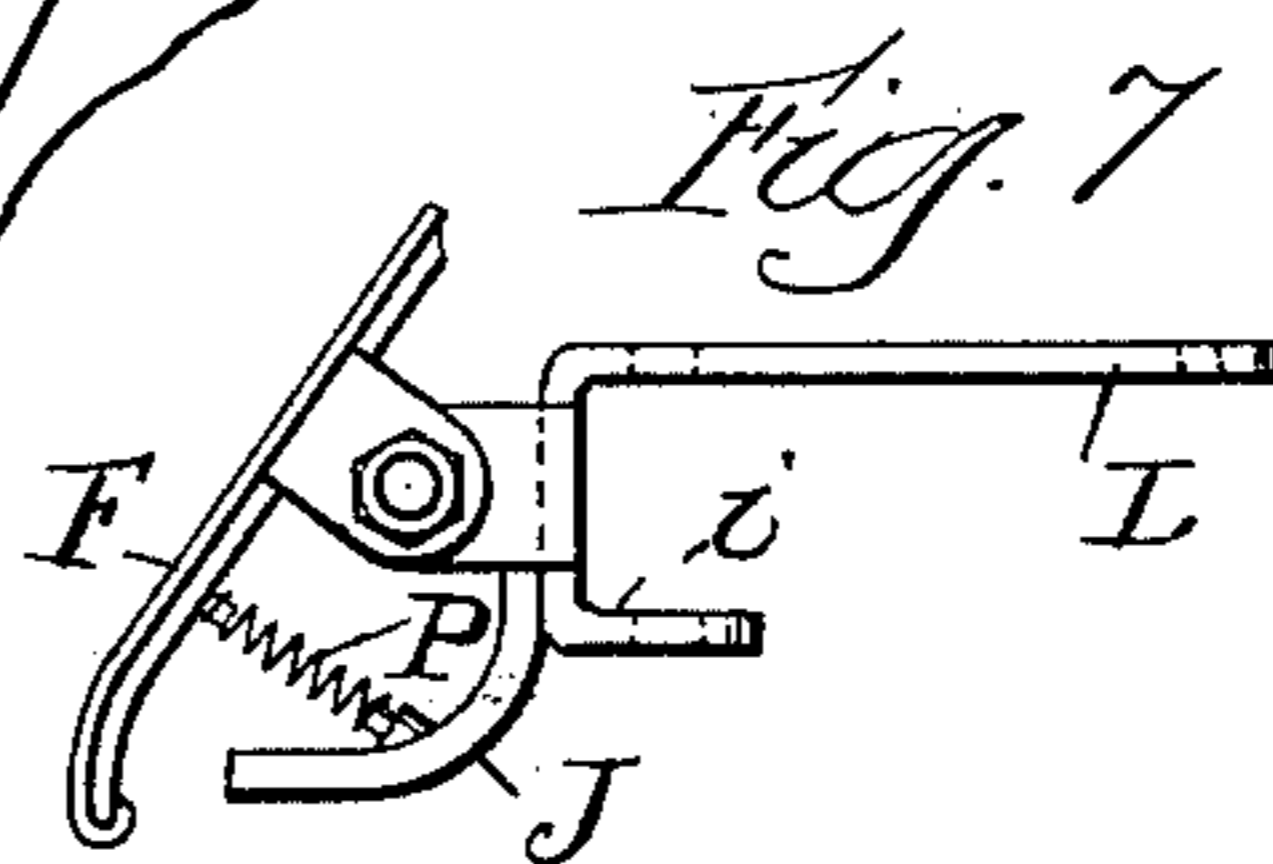


Fig. 7.

Witnesses
Wm. J. Hamming
Wm. O. Belt.

Inventor
Prentis E. Law
by Raymond + Anshunides

UNITED STATES PATENT OFFICE.

PRENTIS E. LAW, OF WILMETTE, ILLINOIS.

CAR-FENDER.

SPECIFICATION forming part of Letters Patent No. 609,818, dated August 30, 1898.

Application filed October 14, 1897. Serial No. 655,143. (No model.)

To all whom it may concern:

Be it known that I, PRENTIS E. LAW, a citizen of the United States, residing at Wilmette, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Car-Fenders, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to certain new and useful improvements in car-fenders of a type which may be applied to the truck or to the platform of the car.

The primary object of this invention is to provide a car-fender which will operate to throw an obstruction to the side of the track on which the car is running and out of the way of the wheels of the car, the construction and operation of the fender being such that it will readily and quickly respond to the force and pressure of the obstruction to move the same either to one side or the other of the track and then return immediately to its normal operative position.

Another object of the invention is to provide a car-fender which will automatically adjust itself when coming in contact with an obstruction or obstacle of any kind to prevent the same from being forced under the fender, but which will assume a position closer to the ground, and in this way form a more effectual safety-guard for the car.

Another object of the invention is to provide a guard-plate for a car-fender of a peculiar form and construction, adapted to remove an obstacle or obstruction from the track and prevent the same from passing beneath said guard.

Another object of the invention is to provide a car-fender which is adapted to automatically adjust itself vertically, whereby the guard may operate to throw a person off to one side of the track, even if the arm or leg of the person is under the guard, and without crushing or cutting the same.

Among the other objects of my invention, which may be here referred to briefly, are to provide, broadly, a pivoted or swiveled guard for a car-fender, which will operate to throw an obstruction off of the track, means for holding said guard in a normally straight position across the track and for returning the guard to this position when it has been moved

into another position, and means for limiting the downward movement of the guard, the vertical movement of the fender, and the pivotal movement of the guard.

My invention also has certain other objects in view, which will be referred to hereinafter in connection with the detail description of the construction and operation and the accompanying drawings, in which—

Figure 1 is a side view of one end of a car, showing my invention arranged under the forward end of the platform. Fig. 2 is a front view of my improved fender. Fig. 3 is a bottom plan view showing the guard in its normally straight position across the track—that is to say, at right angles to the length of the car and parallel with the front thereof. Fig. 4 is also a bottom plan view showing the position which the parts may assume when the guard is in the act of discharging or throwing an obstruction off of the track. Fig. 5 is a longitudinal sectional view on the line 5 5 of Fig. 2. Fig. 6 is a bottom plan view of a car-fender embodying my invention in a slightly-different form. Fig. 7 is a detail view.

Referring to the drawings, in which like letters of reference denote corresponding parts in all the figures, A designates a supporting-frame which comprises a yoke *a*, secured at its ends to the platform of the car by means of bolts *a'*, a king pin or bolt B, secured to said yoke and extending down therefrom, diagonal braces *b*, secured to the platform of the car and to the king-pin, and a plate C, having the downturned ends *c*, to which the springs D are connected.

I have shown my improved fender applied under the forward end of the platform E of a car; but it will be understood that the fender may be arranged back under the car and attached to the truck, if desired. I have also referred to the plate C as having downturned ends *c*, Fig. 1; but it is obvious that this plate may also be made in the form of a yoke, with its ends secured to the platform of the car or elsewhere and the springs attached to the portions between the ends, as shown in Figs. 3 and 4, either construction being suitable to accomplish the purposes of my invention.

The guard F is preferably stamped up or otherwise formed out of a single piece of metal, and it has a substantially straight or level surface over the greater portion of its area,

as indicated by f , and a downwardly-extending portion f' , having its lower edge f'' turned under or curved. The guard is mounted on a guard-frame, hereinafter described, and in such a way that the straight portion f will be inclined downwardly and forwardly, so that the portion f' will be to all intents and purposes vertical, forming, in effect, the nose of the guard. The object of having the guard inclined in this manner is to give to the same a lifting effect when it is operating to throw aside an obstruction, the nose being that portion which is brought into play to move the obstruction off of the track, while at the same time the tendency of the obstruction is to rise up on the guard.

Fenders of this kind are primarily intended as safety devices to prevent accidents to human beings, and while this fender will throw aside inanimate obstructions or obstacles as well as animate beings I will hereinafter refer to the use of the guard and fender as a "life-saving device," employing the word "obstruction" with reference to human beings or animals.

A plate G is secured in a suitable manner on the back of the guard, and it is provided with ears g . A corresponding plate H is provided with ears h , and a shaft I passes through openings in the ears h and g and pivots the guard on that portion of the guard-frame which I will refer to specifically as the "pivot-frame." The plate H is secured to a swivel i , mounted on the king-pin, as clearly shown in Fig. 5. The springs D are secured to the plate C or to the ends thereof and to the eyes d on the guard or the plate G, so that said springs will permit of a pivotal movement on the part of the guard on the king-pin; but whenever the obstruction is removed from contact with the guard the springs will return the guard to its normal position straight across the track.

An arm J is secured to the pivot-frame H, and it has its ends projecting forward to engage the guard, the lower end j being arranged to engage the guard when it is forced back by an obstruction and prevent the guard from being forced into an inoperative position, while the upper end is arranged to prevent the springs D from pulling the guard back into an inoperative position when no obstruction is in contact with it. A stop device K is arranged on the supporting-frame and adapted to prevent the guard from being turned too far on its pivot, and this stop device may be in the form of a plate K, whose ends project beyond the braces b , or it may assume the form (shown in Fig. 6) of studs secured to each brace.

In Fig. 6 I have shown a slightly-different embodiment of my invention, in which the two springs D are dispensed with and a single spring employed to maintain the guard in a normally straight position across the track. In this construction the swivel is provided with a rearwardly-extending arm L,

to which the forward end of the spring D is connected. The rear end of said spring is connected to the plate C at or about its middle and provided with an adjusting device M of some simple form for adjusting the tension of the spring. It will be understood, of course, that adjusting devices may be used on the construction embodying two springs as well as on the construction having one spring only.

The springs D are connected to the guard in such a way that they will hold the same in an elevated position at the same time they are holding it straight across the track, and as these two positions of the guard depend entirely upon the springs it is evident that an obstruction coming in contact with the guard will operate simultaneously to throw the guard downward into a more nearly vertical position and at the same time turn it either to one side or to the other on its pivot, the king-pin. When the guard is forced downward, it comes in contact with the end j of the arm J, and the guard is preferably adjusted on the car in such a position that while it normally clears the road-bed of the railway easily when it is forced into this lowest position it will or may come directly into contact with the road-bed, thereby preventing any portion of the obstruction from being caught under the lower edge of the guard; but it will be observed that the swivel is arranged on the king-pin, so that it may have a limited bodily vertical movement, whereby the parts and devices carried by the swivel may also be adjusted vertically when occasion requires. If by some chance an arm or leg of a person or animal should get beneath the guard, the swivel and the guard and the devices intermediate thereof will all be lifted vertically on the king-pin to prevent the guard from crushing and macerating the arm or leg, while the curved lower edge f'' of the guard will prevent the same from cutting the arm or leg.

The guard will be inclined to that side which is engaged by the obstruction, and as the car moves forward thereafter the guard will throw the obstruction off to the side of the track and out of the way of the car. The pivotal support of the guard is so delicate and sensitive that the danger or liability of the guard being struck by the obstruction squarely in front of the pivot and not being inclined to one side or the other is extremely remote, for while it is theoretically true that an obstruction might engage the guard in direct line with its pivot and not move the guard on its pivot in practice it will be found that the obstructions will engage the guard on the side of its pivot.

The character and form of the guard itself are of importance, as hereinbefore pointed out, as they render the same primarily adapted to accomplish the ends of my invention.

The purpose of making the plate a in the form of a yoke, as shown in Fig. 2, is to pro-

vide for the draw-bar of a coupling and the brake-rods which may pass through this plate.

I am aware that changes in the form and proportion of parts and in the details of construction of the parts and devices herein shown and described as combined to produce my invention may be made by those skilled in the art without departing from the spirit or sacrificing the advantages of the invention, and I therefore reserve the right to make such modifications and changes as fairly fall within the scope of the invention.

Referring to the construction shown in Fig. 6, in which a single spring is employed, it will be observed that this spring is not connected directly to the guard, and therefore the guard would naturally drop down into its lowermost position. To prevent this, I provide a spring P, as shown in Fig. 7, which is secured to the arm J, and this spring holds the guard normally in the position shown in Fig. 1 out of contact with the ground; but the spring is preferably of such a sensitive character that while it will normally hold the guard in its elevated position still it will yield readily to any force or pressure applied to the car to permit the guard being forced into a depressed position.

When two springs D are used, their forward ends are connected, as before mentioned, to the guard, and they hold the guard in what I have referred to as an "elevated" position—that is to say, they hold the guard up to the extreme upward limit of its pivotal movement in contact with the end *j'* of the arm J; but the same result is accomplished in the other construction, where a single spring D is employed by means of this supplemental spring P. In each case there are yielding devices for holding the guard normally at right angles to the length of the car and permitting the guard to return on its pivot upon coming into contact with an obstruction.

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

1. A car-fender, comprising a guard having a limited vertical pivotal movement and a limited upward bodily vertical movement from its normal position, substantially as described.

2. A car-fender, comprising a guard having a limited horizontal pivotal movement and a limited upward bodily vertical movement from its normal position, substantially as described.

3. A car-fender, comprising a guard having a limited vertical pivotal movement, a horizontal pivotal movement and a limited upward bodily vertical movement from its normal position, substantially as described.

4. A car-fender comprising a guard and means for normally and yieldingly maintaining said guard in an inclined position, said guard being capable of a limited bodily vertical movement while in any of its possible positions, substantially as described.

5. A car-fender, comprising a guard and means for normally and yieldingly maintaining said guard in an inclined position, said guard being capable of a limited vertical pivotal movement and a limited bodily vertical movement, substantially as described.

6. A car-fender, comprising a guard and means for normally and yieldingly maintaining said guard in an inclined position, said guard being capable of a limited vertical pivotal movement, a limited horizontal pivotal movement and a limited bodily movement, substantially as described.

7. A car-fender, comprising a guard pivotally supported on a car in a normally-inclined position and adapted to be forced downward into a more nearly vertical position and closer to the ground, or bodily upward from its normal position, when engaged by an obstruction, substantially as described.

8. A car-fender, comprising a supporting-frame, a pivot forming part of said frame, a substantially straight guard pivotally mounted on said pivot and springs secured to the guard and holding the same normally out of contact with the ground and at right angles to the length of the car, but permitting the guard to move into a position closer to the ground and turn on its pivot when engaged by an obstruction to throw the same out of the way of the car, substantially as described.

9. In a car-fender, the combination with a supporting-frame, of a pivot-frame pivotally mounted on said supporting-frame, a guard pivoted to said pivot-frame and springs connected to the guard and holding the same normally out of contact with the ground and at right angles to the length of the car, substantially as described.

10. In a car-fender, the combination with a supporting-frame comprising a pivot-pin, a pivot-frame pivotally mounted on said pin, and capable of a limited vertical movement thereon, a guard pivoted to said pivot-frame, springs for holding the guard normally out of contact with the ground and substantially at right angles to the length of the car and devices for limiting the movement of the guard, substantially as described.

11. In a car-fender, the combination with a supporting-frame comprising a yoke, a pin secured to said yoke, braces secured to the pin and to the car, a pivot-frame pivotally mounted on the pin and having a limited vertical movement, a substantially straight guard pivoted to said pivot-frame, springs attached to the car and to the guard on each side of its pivot to hold the guard normally out of contact with the ground and at right angles to the length of the car and stop devices connected to the pivot-frame for limiting the movement of the guard on said frame, substantially as described.

PRENTIS E. LAW.

Witnesses:

WM. O. BELT,
C. L. WOOD.