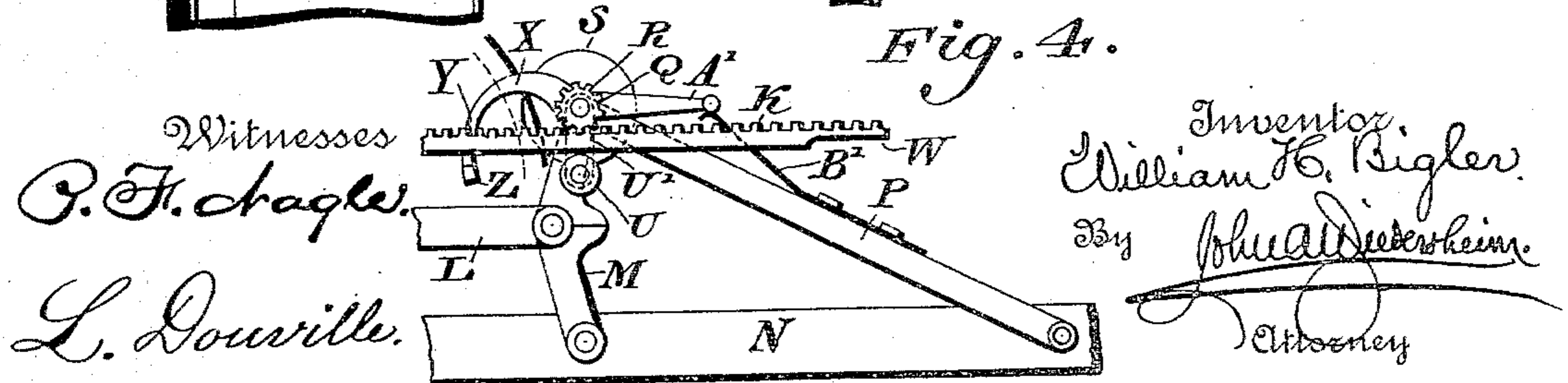
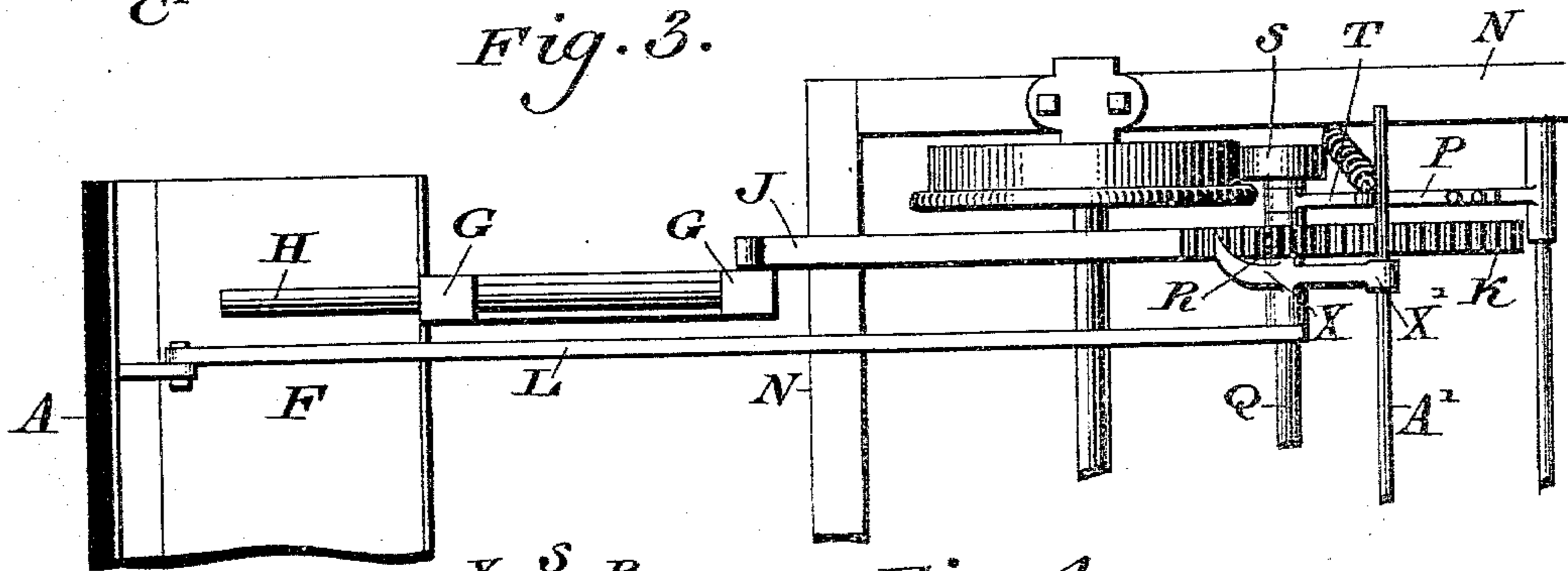
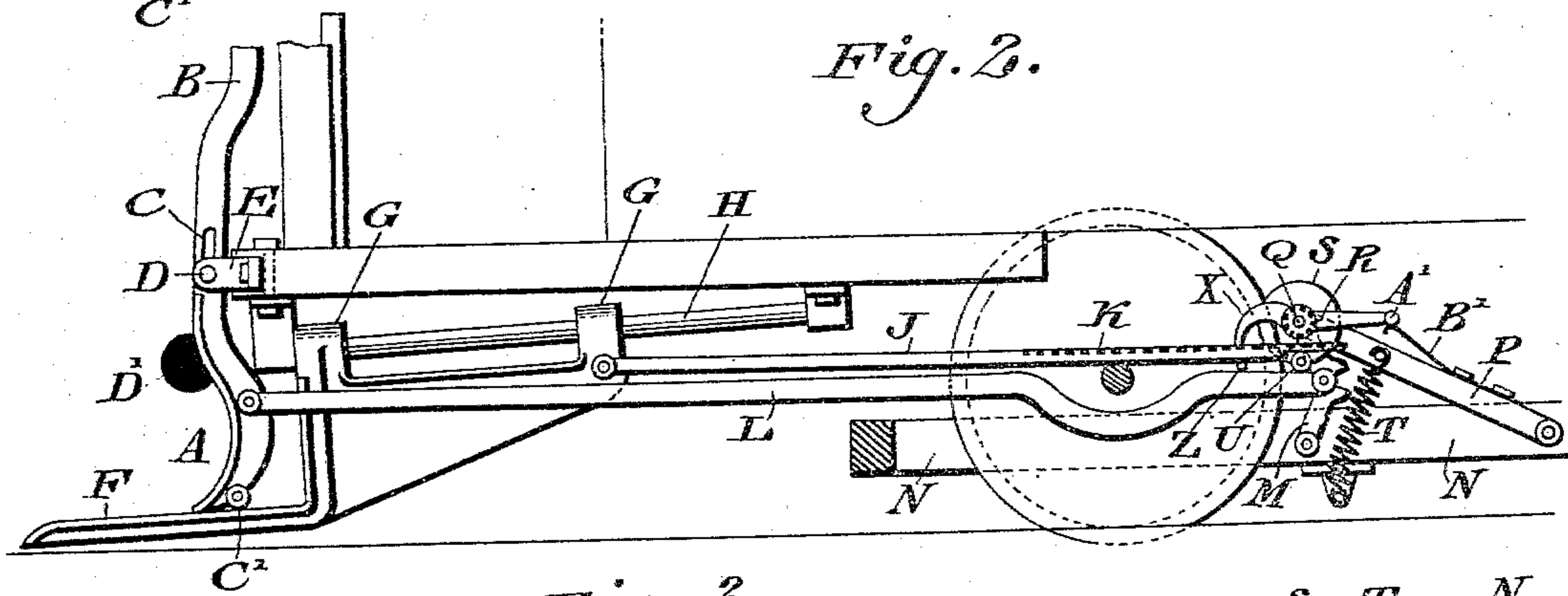
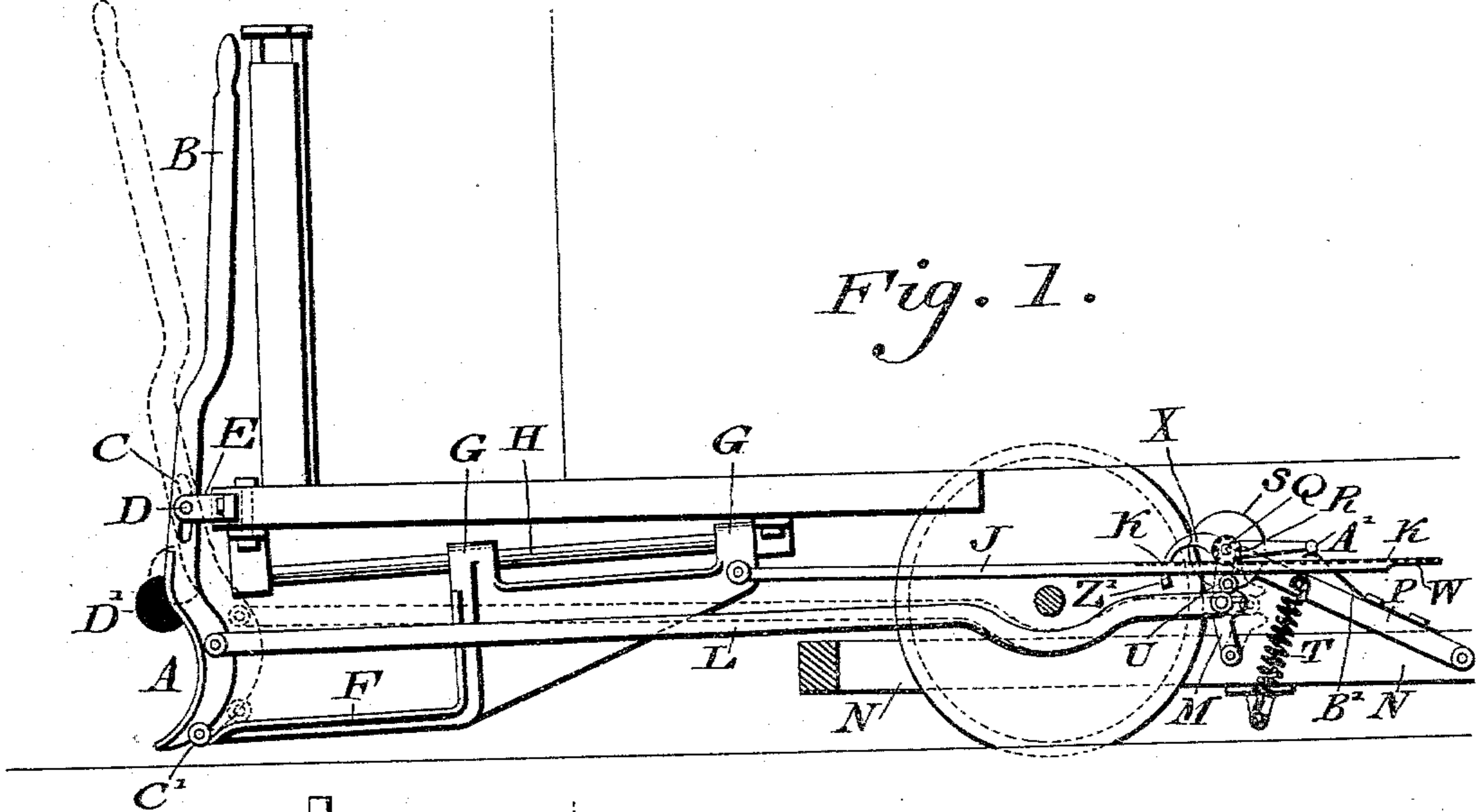


(No Model.)

W. H. BIGLER.  
CAR FENDER.

Patented Aug. 27, 1895.

No. 545,263.



Witnesses  
C. F. Bagley.  
L. Douville.

Inventor,  
William H. Bigler.  
By John A. Dierckheim.  
Attorney

# UNITED STATES PATENT OFFICE.

WILLIAM H. BIGLER, OF PHILADELPHIA, PENNSYLVANIA.

## CAR-FENDER.

SPECIFICATION forming part of Letters Patent No. 545,263, dated August 27, 1895.

Application filed November 27, 1894. Serial No. 530,134. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. BIGLER, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Car-Fenders, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of a car-fender formed of a shield and scoop or device for receiving or taking up the person or object that may be in front of the car and strike said shield, so that said scoop, which is primarily under the front of the car, will be automatically thrust forward into operative position. After the work has been accomplished, said scoop may be automatically returned and the parts reset, as will be hereinafter described.

Figures 1 and 2 represent side elevations, partially in section, of a car-fender embodying my invention. Fig. 3 represents a top or plan view of a portion thereof. Fig. 4 represents a side elevation of a detached portion on an enlarged scale.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings, A designates a shield, which is connected with the handle B and provided with vertical slots C, through which pass the pins D of the ears E, by which said shield is connected with the platform of a car, and which permits said shield to be raised and lowered.

F designates a scoop which is located below the floor of the car, primarily rearward of the shield A and formed with bosses G, which receive the inclined rods H, secured to the floor of the car. Extending backward from the scoop F and pivoted thereon are bars J, which have racks K on their rear ends. Bars L are pivoted to the shield A and extend backward therefrom, and have at their rear ends the axes of the toggle-levers M, whose lower limbs are pivoted to the frame N, and their upper ends are pivoted to the rising and falling arms or levers P, which are mounted on said frame N, the latter being properly suspended from the body of the car.

On the pivot or shaft Q, which connects the upper limb of the toggle with the arms P, are pinions R and friction-pulleys S, the latter being adapted to contact with the adjacent

car-wheels and the former with the racks K, as will be hereinafter explained.

Springs T are connected with the arms P and frame N, and their tendency is to draw down said arms and hold the toggle-levers in closed position and hold the pulleys S in contact with the car-wheels.

U designates rollers, which are mounted on the limbs U' of the arms or levers P and located below the racks K, it being noticed that the rear ends of the latter are recessed on their under side, as at W.

On the shaft Q are pawls X, whose teeth Y are adapted to engage with the racks K, said pawls being also formed on their ends with shoulders Z, which are adapted to engage with the under side of the racks K in order to raise the same. The pawls are secured to rods A', which are pressed upwardly by springs B', which are attached to the arms P, said rods being adapted to be forced downwardly by the conductor in order to release the teeth of the pawls from the rack-bars.

On the lower end of the shield A are rollers C', which are adapted to ride on the lower limb of the scoop F when the latter is thrust forward, as will be seen in Fig. 2.

The front of the shield is provided with the buffer or cushion D', and clad with canvas or other suitable pliable material, to prevent injury to the person that may strike the same. It will be noticed that when the parts are in normal position the lower end of the shield is below the front end of the lower limb of the scoop, so that any small obstruction on the road bed or track will strike said shield. Now, when the shield is struck by a person or obstruction, the former is forced rearward, whereby the bar L opens the toggle-levers M. As the latter previously sustained the pinions R and friction-pulleys S in elevated position, said pinions and rollers contact with the car-wheels and rotate the pinions which now mesh with the racks K. This causes said bars and the arms J to move to the front, whereby the scoop F is quickly thrust forward and downward in front of the shield, unobstructed by the same, and so takes or picks up the person or object, whereby the latter is prevented from passing under the truck or reaching the car-wheels. When the racks have advanced to full extent, the recessed

portions W thereof reach the rollers U and so the racks drop clear of the pinions, whereby forward motion of the racks, and consequently of the scoop, ceases, although the friction-pulleys continue in contact with the car-wheels, but the pawls X prevent rearward motion of the scoop.

When the car is stopped, the conductor presses down the rods A', so that the pawls clear the racks and the shoulders Z raise the latter into contact with the pinions. The motorman now backs the car a short distance, when the friction-pulleys rotate the pinions in reverse order, thus moving the racks rearward over the rollers U and drawing in the scoop to its first position, when the car is stopped. The pawls are now let go, so as to lock the racks, and the motorman raises and restores the shield to its normal position by the handle B, when the bars L are carried forward and the toggles are closed, thus raising the arms or levers P and the rollers U and friction-pulleys S, said pulleys being cleared of the car-wheels, and the other parts placed in position for repetition of the operations hereinbefore set forth.

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

30 1. A car fender having a pivoted shield, a sliding scoop, supported on inclined bars secured to the under side of the car arms pivotally attached respectively to said shield and scoop and mechanism as described connected with said shield arm and adapted to engage a rack on said scoop arm for advancing the latter, said parts being combined substantially as described.

2. A car fender having a shield and scoop, 40 bars connected with said parts, a rack on one bar, a toggle lever connected with the other, an arm carrying a pinion connected with one limb of said lever, and a friction pulley on said arm adapted to contact with one of the 45 wheels of the car, substantially as described.

3. A car fender having a rising and falling shield and a sliding scoop, and inclined rods secured to the car furnishing supports for said scoop, said shield being adapted to ride 50 in said scoop when the latter is thrust forward, and downward, substantially as described.

4. In a car fender, a shield and scoop, a bar, a toggle lever connected with said bar, a swing-

ing arm attached to one limb of said toggle, 55 and a frame on the car to which the other limb is attached, a pinion and friction wheel on said arm, and a bar with a rack thereon, said wheel being adapted to engage with one of the wheels of the car, and said pinion to 60 mesh with said rack, said bars being connected respectively with said shield and scoop, the parts named being combined substantially as described.

5. In a car fender, the bars J and L connected with a shield and scoop at the front of the car, the rack K on the bar J, the toggle lever M on the bar L, the arm P, the pinion R, and the friction wheel S on said arm, and the roller U on said arm below said rack, the 70 latter having the recess W, which is adapted to permit the same to lower on said roller, substantially as described.

6. In a car fender, a rack connected with the scoop at the front of the car, and a pinion 75 meshing with said rack, in combination with a pawl adapted to engage with said rack, and provided with shoulders adapted to engage the under side of the rack for again raising the same after being disengaged from said 80 pinion, substantially as described.

7. In a car fender, a pivoted shield, a sliding scoop movable on inclined guide rods secured to the car, an arm pivoted to said shield, a toggle lever pivotally connected to a 85 frame at one end and at its axle to said shield arm, a spring controlled arm pivoted to said frame and to the upper end of said toggle lever, said last mentioned pivotal connection having thereon a friction pulley, a pinion 90 and a pawl, an arm connected with said scoop having a rack thereon, engaged by said pinion, and a shoulder on said pawl adapted to support said rack arm, said parts being combined substantially as described. 95

8. A car fender having a pivoted shield, a scoop depending and supported on inclined bars secured to the under side of a car, arms pivotally attached to said shield and scoop respectively, and mechanism connected with 100 said shield and scoop arm for operating the latter on the movement of the former, said parts being combined substantially as described.

WILLIAM H. BIGLER.

Witnesses:

JOHN A. WIEDERSHEIM,  
A. P. JENNINGS.