

(No Model.)

2 Sheets—Sheet 1.

S. H. HARRINGTON.

DERAILMENT BRAKE.

No. 341,573.

Patented May 11, 1886.

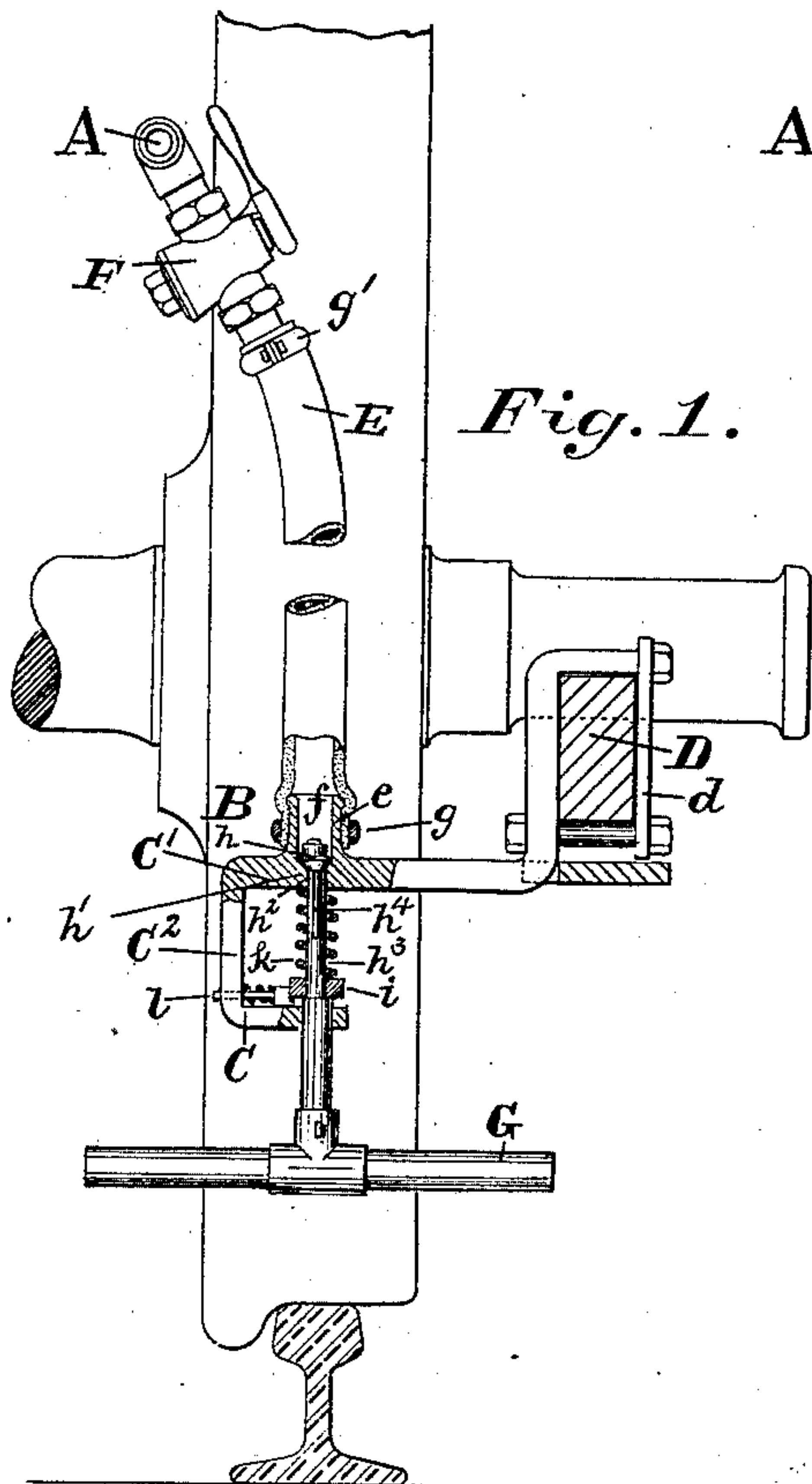


Fig. 1.

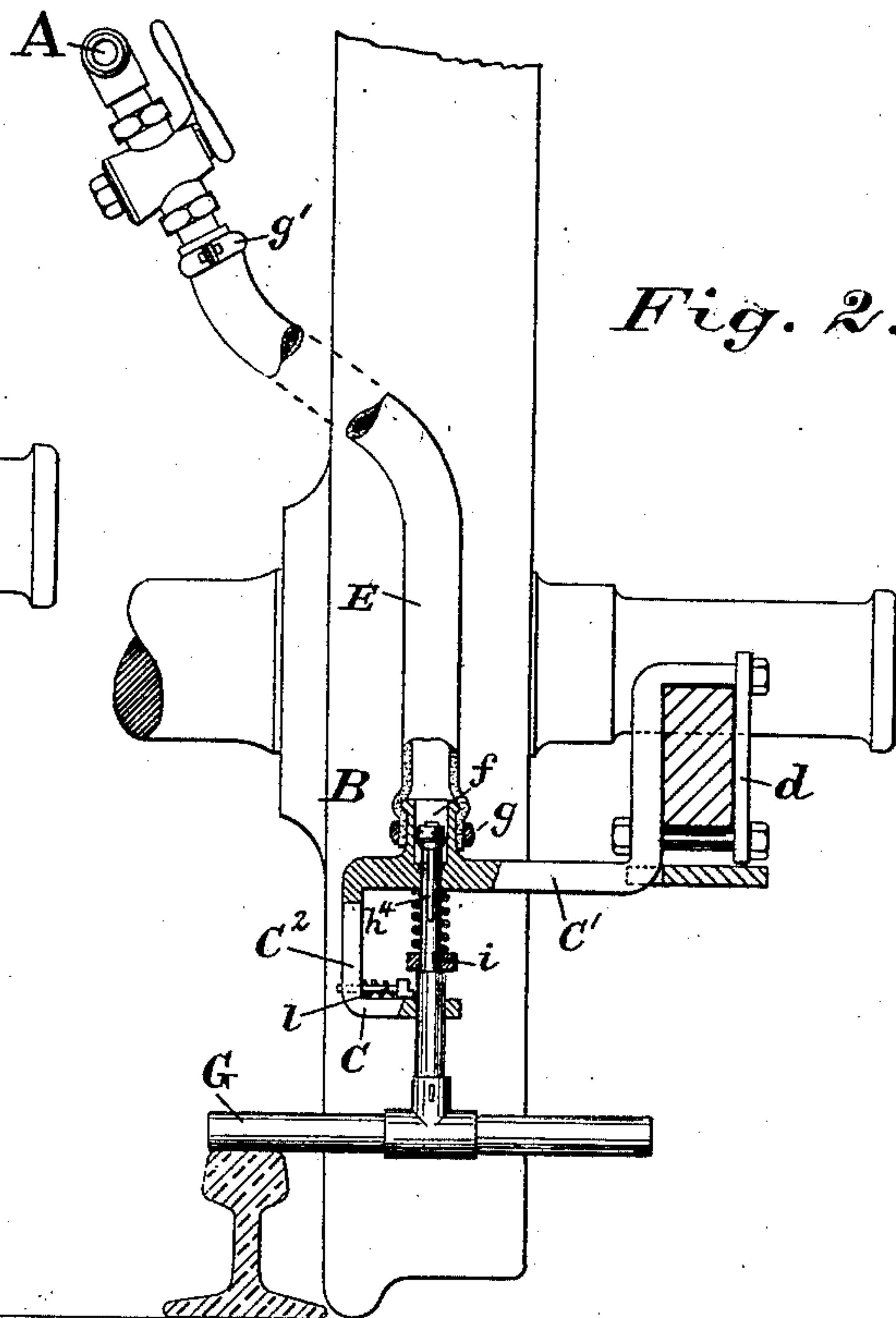


Fig. 2.

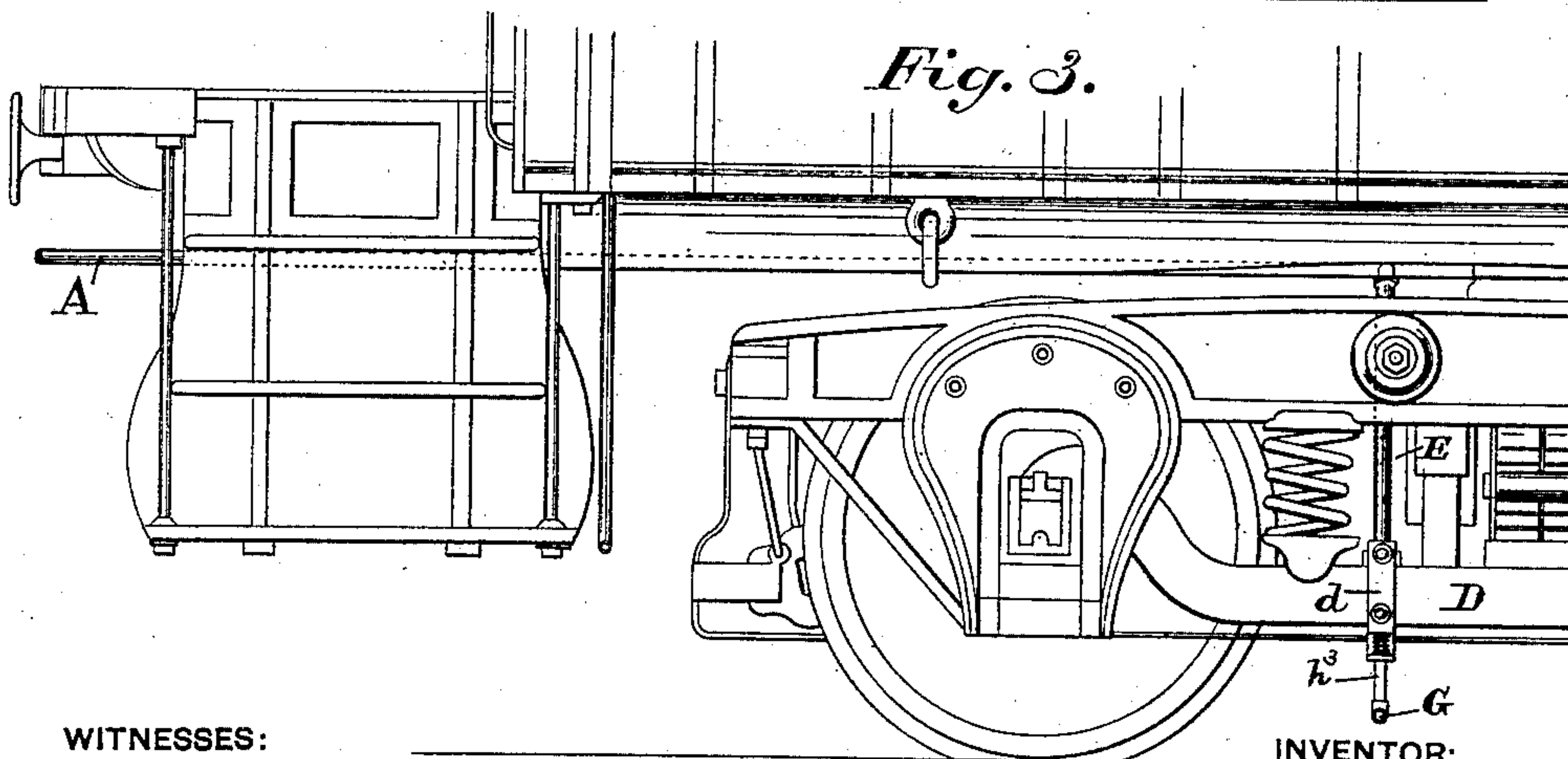


Fig. 3.

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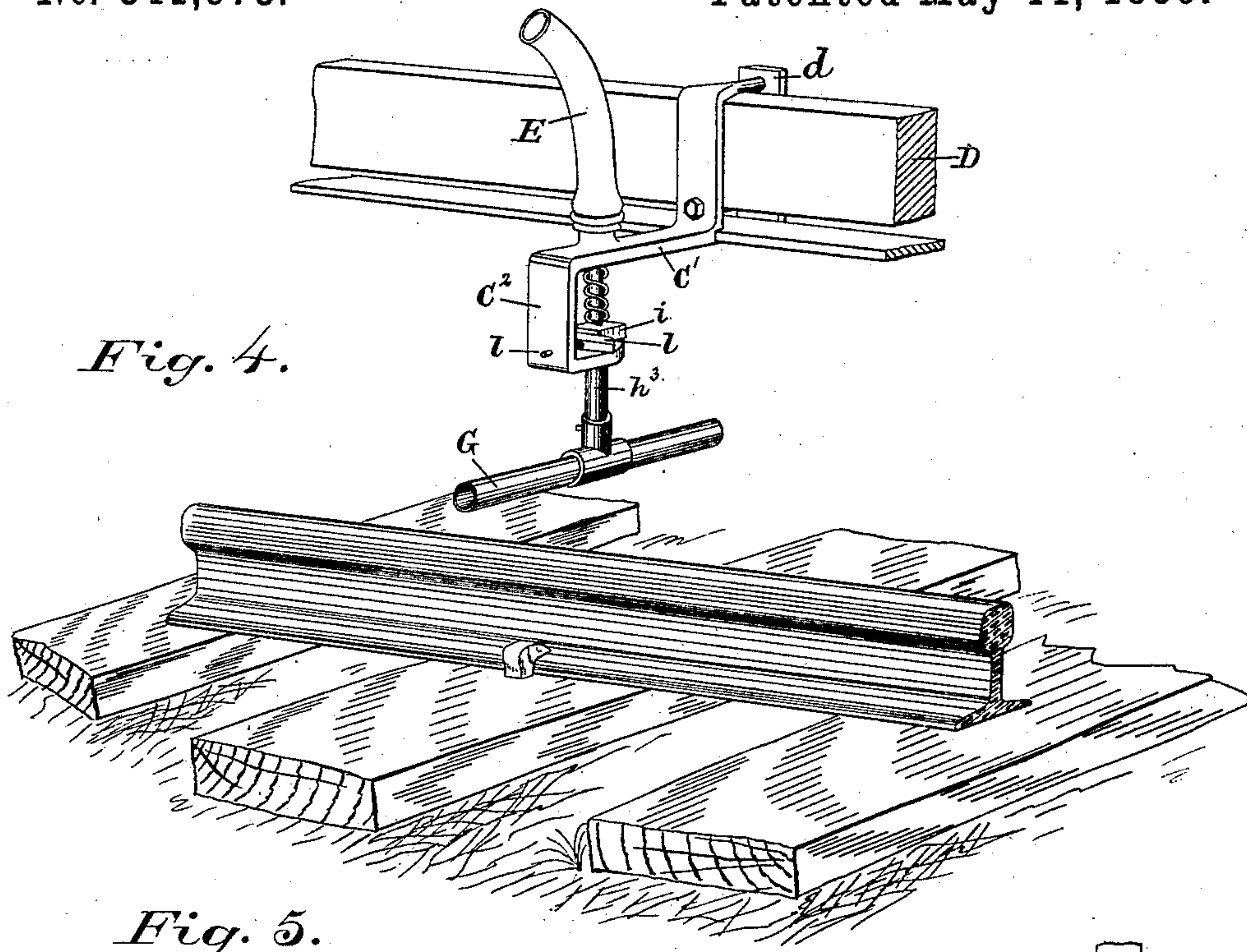


Fig. 5.

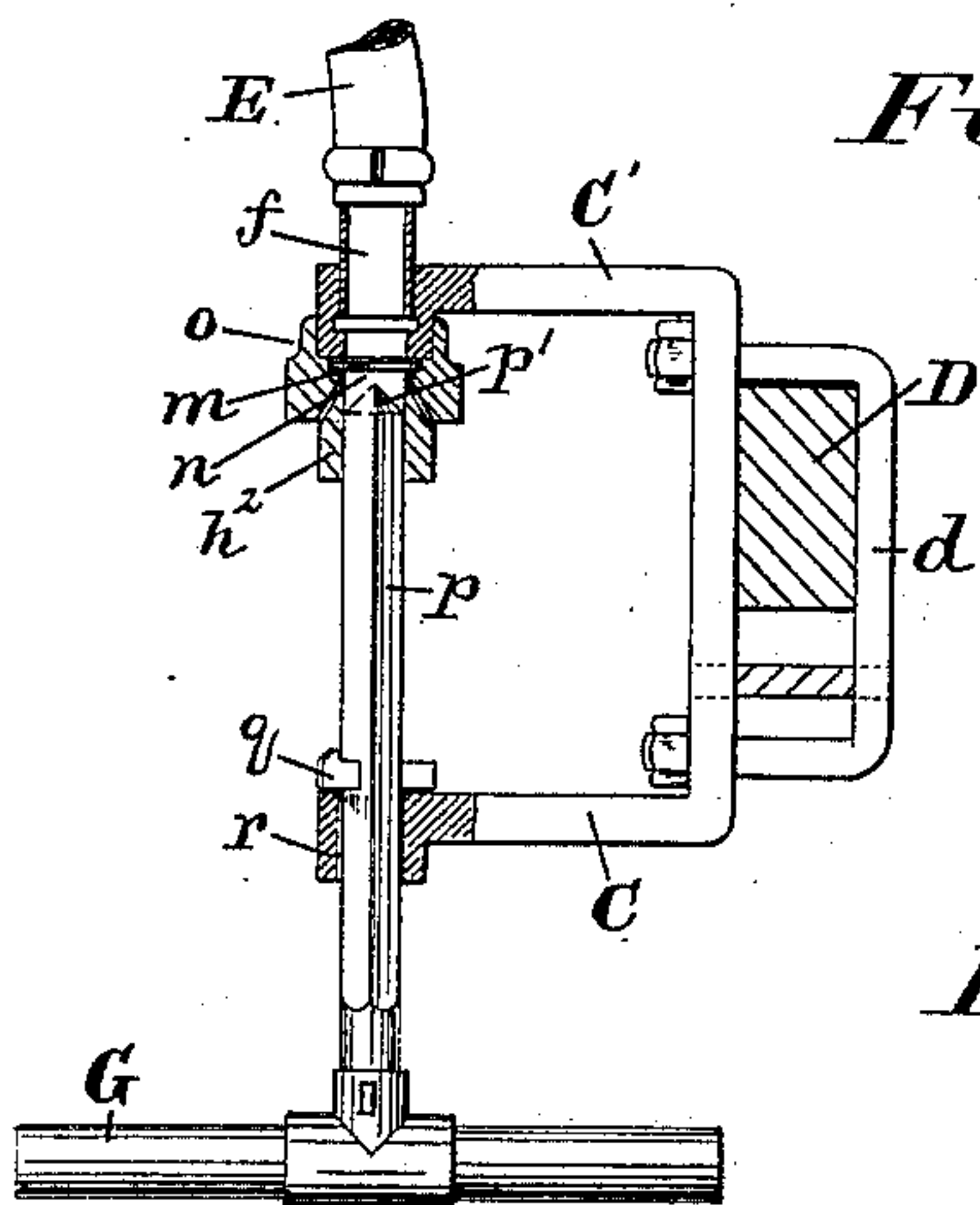


Fig. 6.

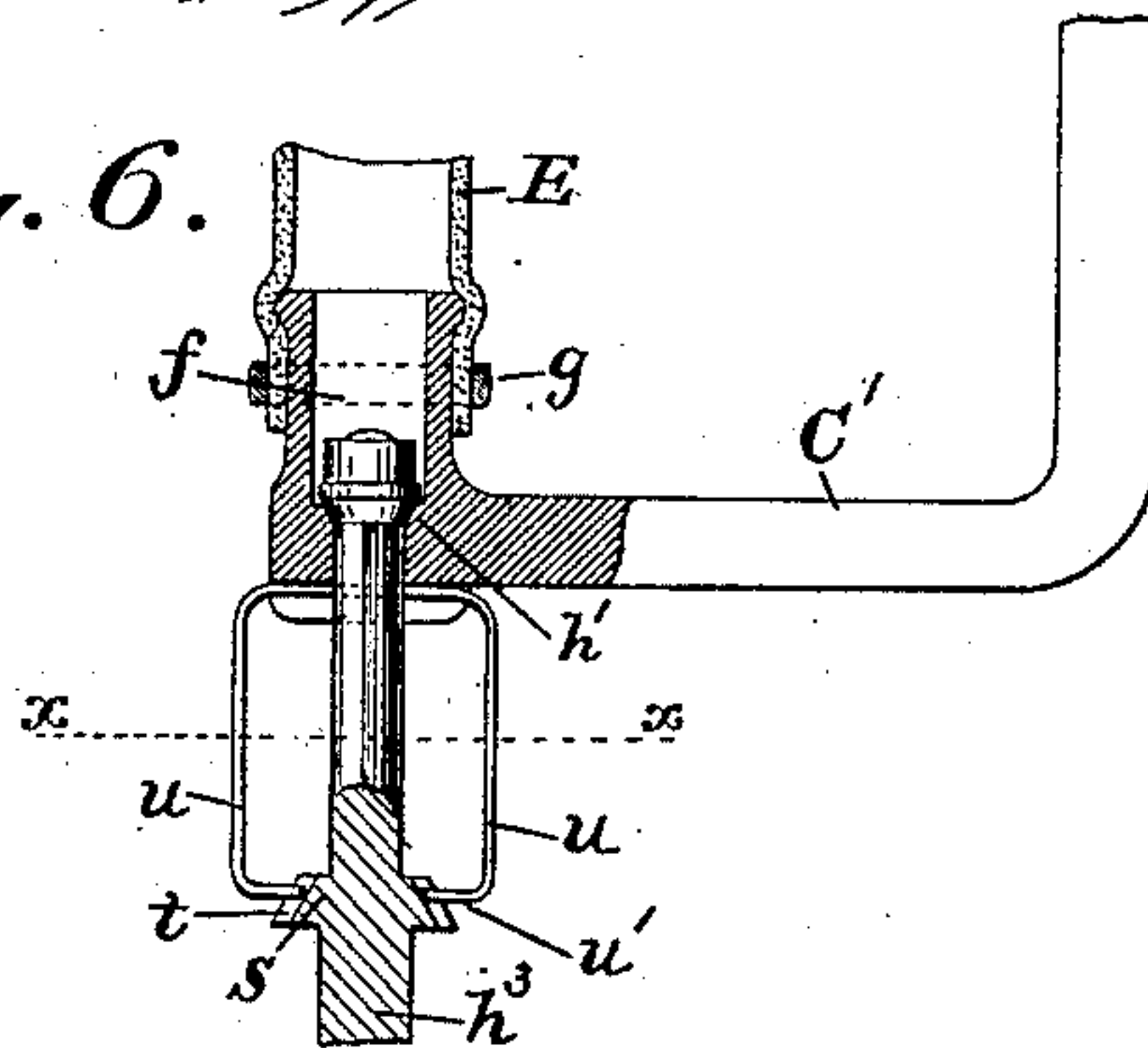
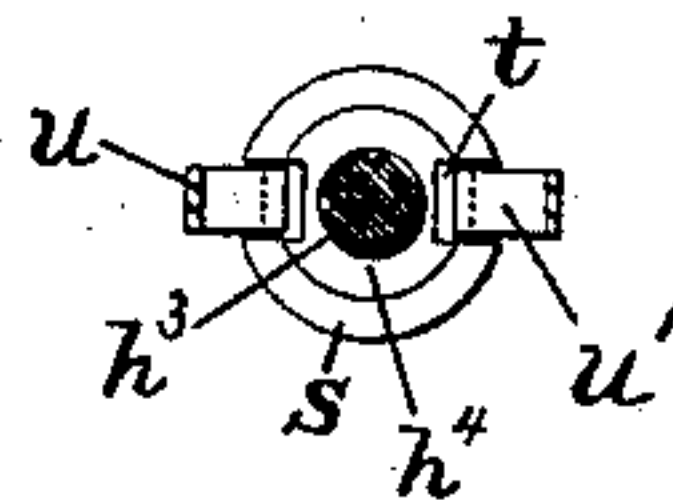


Fig. 7.



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UNITED STATES PATENT OFFICE.

SAMUEL H. HARRINGTON, OF COLUMBUS, OHIO, ASSIGNOR OF ONE-HALF
TO EDWARD B. WALL, OF SAME PLACE.

DERAILMENT-BRAKE.

SPECIFICATION forming part of Letters Patent No. 341,573, dated May 11, 1886.

Application filed May 7, 1885. Serial No. 164,728. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL H. HARRINGTON, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Derailment-Brakes, of which the following is a specification.

My invention relates to that class of devices which are used in connection with railway-cars to automatically apply the brakes in case of derailment or the breaking of an axle, wheel, or other part of the truck. In devices of this kind as heretofore constructed the actuating device for applying the brakes in case of accident has been in general so arranged in connection with the car-body that its operation shall depend on the relative position of the said car-body with reference to the track or the truck, and as in its normal condition the car-body moves freely and in many directions upon its truck when in motion, the actuating device must be arranged to allow for so much variation in position that it cannot be depended upon to actuate the brake in all cases of derailment or similar accident. The same defect exists, though in a less degree, in those constructions where the actuating device is supported upon those portions of the truck which vary in their position relative to the track during the movement of the car, or as the load is increased or diminished.

The object of my invention is to secure the brake-actuating device to the car in such a way that it will be practically unaffected by the normal motions of a moving car, or by any variations in its weight, and hence so placed that an improper position on the road-bed will unfailingly set it in operation, and also to provide certain improvements in the mode of adjustment and operation of the actuating devices which I believe to be new and useful.

My invention accordingly consists in supporting the actuating rod or trip, which when it strikes against the track or road-bed sets the brakes, upon the equalizing-bar of the truck, or upon the axle-boxes or similar parts, the position of which with reference to the track is normally constant; also in securing to the supporting-bracket a valve or other device for confining the air under pressure, and so arranged as to be opened when the actuating-rod strikes the

track, and in connecting it with the brake-supply pipe by a flexible connecting-pipe, and in the devices hereinafter fully described, by which the motions and positions of the actuating-rod are regulated and controlled.

My improvements are adapted to be used in connection with the well-known Westinghouse automatic air-brake, or other train-brake mechanism in which the brake is applied by the liberation of air in the train-pipe or the admission of air or steam to a brake-cylinder, and may also be applied to systems where the making or breaking of an electric circuit is caused to actuate a brake.

Reference being now had to the drawings, which illustrate what I believe to be the best application of my improvements, and show them as applied to the Westinghouse system, in which the reduction of pressure in the train-pipe results in the application of the brakes, Figure 1 is an elevation of my device and of a car-wheel and track, showing the device in its normal position. Fig. 2 is a similar elevation, showing the wheel as derailed and the actuating-rod raised by falling on the track to the position in which it opens the valve communicating with the train-pipe and applies the brake. Fig. 3 is a side elevation of parts of the truck and car-body, showing the application of my improvements thereto. Fig. 4 is a perspective view of the equalizing-bar and rail and of my device in normal position therewith. Figs. 5 and 6 show modified constructions of my devices. Fig. 7 is a cross-section on the line *xx* of Fig. 6.

A is the main brake-connection or train-pipe, to which my derailment-brake appliances (designated collectively by the letter B in Fig. 1 of the drawings) are attached.

C C' C² is a strong iron bracket or supporting-frame, which is supported on some part of the truck not affected by the bearing-springs, preferably, as shown in the drawings, the equalizing-bar D, to which it is easily secured by a clip, *d*, or any other fastening device. The form of this bracket C may be indefinitely varied. I have shown three modes of constructing it in the drawings.

When my device is to be used in connection with the air-brake system, for which it is especially adapted, I secure to or form in the

bracket C a short annular tube or projection, f , which is connected with the train-pipe A by means of a flexible tube, E, of ordinary air-hose or jointed metal tubing. In this tube f , I secure a valve or diaphragm, which completely closes its orifice and prevents the escape of the compressed air when the tripping device is in normal position. Such a valve is shown at p , Fig. 1, and in the other drawings, except in Fig. 5, which illustrates the tube f as closed with a frangible disk, m . Upon the bracket C, I secure in any convenient manner an actuating-rod or tripping-arm, arranging its upper end with reference to the valve or other device by which the tube f is closed, so that any upward thrust will lift the valve from its seat or open the air-connection in any convenient way. The lower end of this actuating-rod, which is designated by the letter h^3 in Figs. 1, 4, and 6, extends downward over the track, and may safely approach it within a distance not greater than the height of the rail, or even less, and is preferably furnished with cross-bars G, or other projecting arms, which normally extend across the track, so as to insure striking it in case of derailment.

As shown in the drawings, the valve p , Fig. 1, is secured directly to the head of the actuating-rod, and the pressure of the air upon the valve-head serves to keep the rod in its normal position. It is not essential, however, that the valve should be attached to the rod, and in all cases I prefer to employ a spring—such as h^4 , Fig. 1, or u , Fig. 6—to keep the rod in proper position and steady it in its loose supporting-journals.

I prefer to connect the actuating-rod with the bracket C in such a manner that it can turn freely therein in case of meeting an obstruction; but it is important that the cross-bars G should extend across the track at all other times. I therefore secure a collar, i , Fig. 4, to the rod h^3 , against a square face of which a T-shaped spring-bolt, l , presses, so as to prevent the rod from turning. This spring-bolt also serves to prevent the return of the valve p to its seat after it has been lifted by the rod h^3 as it presses forward against the rod when the collar i is raised above it, and prevents the falling back of the rod to its normal position. I do not intend to confine myself to the exact construction of these parts shown in the drawings, Figs. 6 and 7 of which illustrate another arrangement of springs and collar by which the same results are obtained. The collar here, as shown at s , is cone-shaped and provided with grooves, into which spring-arms u engage to prevent the turning of the rod, and these springs also engage with the bottom of the collar when the rod is raised and prevent its return to its initial position.

In Fig. 5 the actuating-rod is square in section, as shown at p . This is advantageous, as it allows the air to escape from the tube f around the rod. In this figure, also, the end

of the rod is shown as having a sharp point, p' , with which to break the frangible disk m .

I prefer to provide a cock, F, by which the derailment devices may be cut off from connection with the brakes.

It is of course evident that many changes may be made in the details of construction described and shown, and I do not therefore limit myself to such construction.

In case it is desired to use my actuating-rod device in connection with an electric brake, any simple arrangement by which the upward thrust of the rod is made to make or break electric connection may be combined with it.

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

1. In combination with a car provided with air, steam, or electric brakes, a rod or tripping-arm having its lower end so placed that it will strike against the track or road-bed in case of derailment, and its upper end arranged to actuate devices which will apply the brakes, and a support for said rod firmly secured to the equalizing-bar or other portion of the truck not affected by the motion of the bearing-springs, substantially as specified.

2. In combination with a car provided with air or other pneumatic brakes, a bracket secured to the equalizing-bar or its equivalent, as described, and supporting a valve or other device for confining the air, a dependent rod, also supported on the bracket, and arranged to strike the track and open the air-passage in case of derailment, and a flexible pipe connecting the valve or its said equivalent with the air-supply pipe, substantially as specified.

3. In a derailment-brake, substantially as shown and described, the actuating-rod h^3 , having the collar i , or its equivalent, as described, in combination with a spring catch or bolt adapted to engage with the collar when the rod is raised and prevent its falling back to its normal position.

4. In a derailment-brake, substantially as shown and described, the actuating-rod h^3 , having cross-bar G G and collar i , or its equivalent, as described, in combination with a spring bolt or catch arranged to engage with the collar and prevent rotary movement of the rod h^3 when the same is in its normal position, and to release the rod and permit it to rotate when raised from its seat.

5. In a derailment-brake, substantially as shown and described, the actuating-rod h^3 , having cross-bar G G and collar i , or its equivalent, as described, in combination with a spring bolt or catch arranged to engage with the collar and prevent rotary movement of the rod h^3 when the same is in its normal position, to release the rod and permit it to rotate when raised from its seat, and to prevent its reseating itself by engaging with the under side of the collar.

6. In a derailment-brake, substantially as

shown and described, the bracket secured to the equalizing-bar, in combination with the valve or other device for confining the air, the actuating-rod h^3 , adapted to open the air-passage in case of derailment, and the spring catch or bolt adapted to engage with a collar on the rod h^3 , as specified, all supported on said bracket.

7. In a derailment device, substantially as specified, the combination of the valve-tube f ,

supported on a bracket secured to the equalizing-bar, with a dependent actuating-rod having a valve secured to its upper end.

In testimony whereof I affix my signature in presence of two witnesses.

SAMUEL H. HARRINGTON.

Witnesses:

JOHN E. MORRIS,

CHAS. B. MANN.