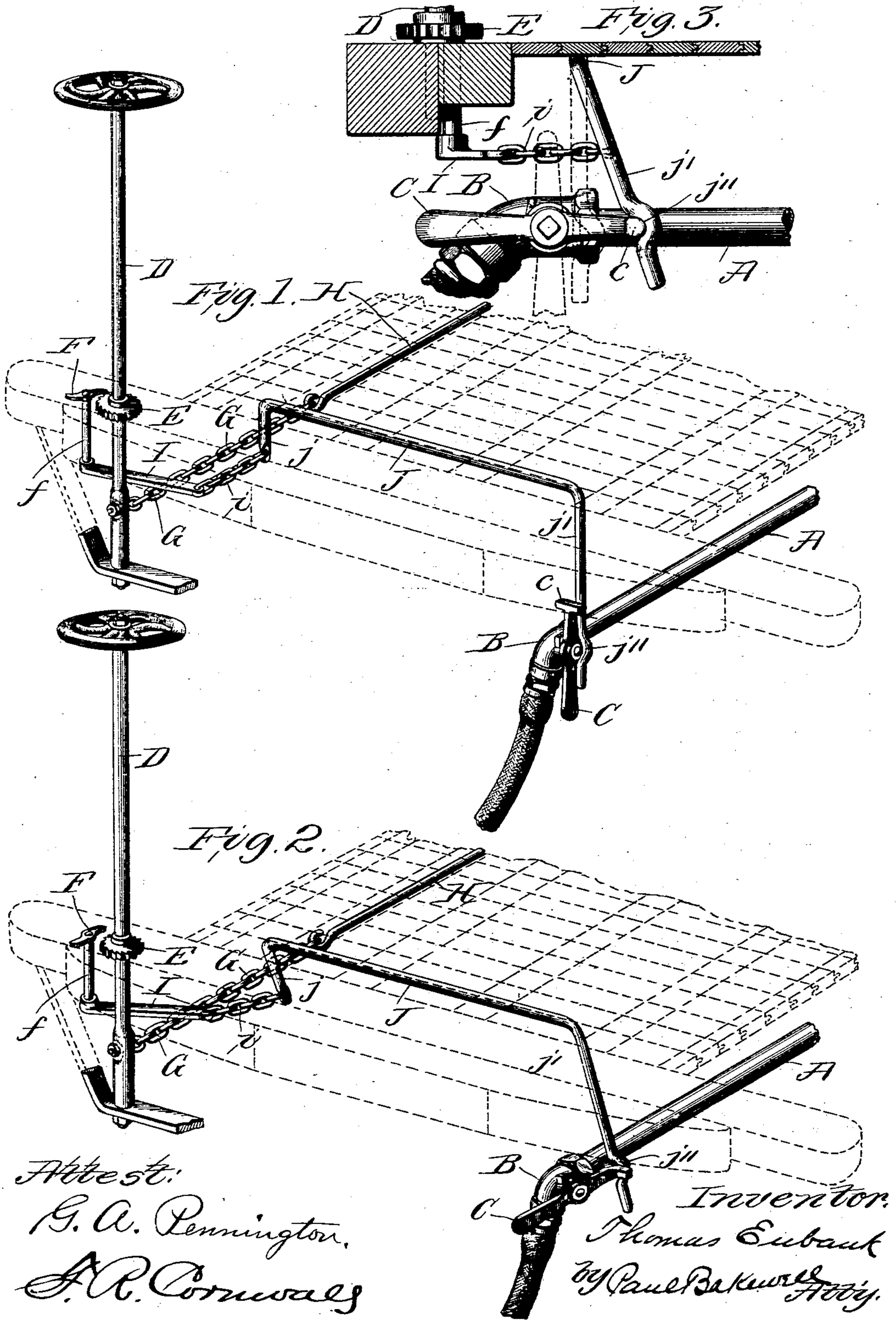


(No Model.)

T. EUBANK.  
HAND BRAKE RELEASE MECHANISM.

No. 591,667.

Patented Oct. 12, 1897.





# UNITED STATES PATENT OFFICE.

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## HAND-BRAKE-RELEASE MECHANISM.

SPECIFICATION forming part of Letters Patent No. 591,667, dated October 12, 1897.

Application filed June 14, 1897. Serial No. 640,593. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS EUBANK, a citizen of the United States, residing at the city of Little Rock, in the county of Pulaski and State of Arkansas, have invented certain new and useful Improvements in Hand-Brake-Release Mechanism, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a detail view illustrating my invention applied to the platform of a car, the parts being in such position that the hand-brake may be set. Fig. 2 is a similar view, the parts being in such position that the hand-brake has been released or is inoperative. Fig. 3 is a detail view.

It is well known that where hand-brakes are used on cars equipped with air-brakes the setting of the hand-brakes will materially affect the action of the air-brake system, causing the brake-shoes when applied by the air-brake system to bind on the wheels, completely stopping their rotation and causing flat treads, due to the sliding of the wheels on the rails. The train crew is generally instructed to see that all hand-brakes are released before a train is started, but it frequently happens that the crew is inattentive, or passengers, without knowing the result, will give the brake-staff a turn or two, partially setting the brakes.

The object of my invention is to provide means to release the hand-brakes when a car equipped with air-brake apparatus is connected with the air-brake system and to prevent the hand-brakes from being set when the air-brake apparatus is connected with the air-brake system.

With these objects in view the invention consists in arranging a suitable connection between the angle-cock controlling the passage of air through the train-pipe at the end of the car and the dog cooperating with the ratchet-wheel on the hand-brake staff, whereby when said angle-cock is opened the dog is thrown out of engagement with the ratchet-wheel and said dog cannot reengage the ratchet-wheel until the angle-cock is closed.

In the drawings I have shown the platform-

timbers in dotted lines, but it will be obvious that a different arrangement of timbers could be and, in fact, is employed in the construction of railway-coaches.

It will also be understood that while I have shown my invention as being applied to a railway-coach said invention can be applied to freight-cars.

A indicates the train-pipe, having an angle-cock B arranged therein.

C indicates a handle for operating the valve of this angle-cock, said handle being provided with a heel c.

D indicates the brake-staff; E, the ratchet-wheel fixed thereon; F, the dog for engaging the ratchet-wheel, and G the chain adapted to be wound around the lower end of the brake-staff, said chain being connected to the brake connecting-rod H.

Dog F is mounted on the upper end of a shaft f, the lower end of said shaft carrying a lever I.

J indicates a rock-shaft mounted in the sills of the platform and preferably under the platform-decking. One end of this rod is bent down, as at j, said bent end being connected to the end of lever I by a chain i. The other end of lever J is bent, as at j', and preferably formed with a jog, bend, or notch j'', which is adapted to cooperate with the heel c on the handle of the angle-cock.

The operation of the device is as follows: Assuming the car to be standing on a siding and the angle-cock closed, as shown in Fig. 1, when the car is attached to a train in which the air-brake system is to be utilized suitable coupling is made to connect the train-pipe, and after the train is made up the angle-cocks must be opened. In opening the angle-cock the heel thereon engages the bent arm j' of rock-shaft J and rocks the same to the rear, as shown in Fig. 2, the open position of the cock being such that the heel preferably rests in the jog, bend, or notch j'' near the end of the bent portion j'. This rocking of lever j' will also rock the lever j, (to the rear,) which, being connected to the dog F, through the medium of chain i and lever I, will cause said dog to be moved away from the ratchet-wheel and be disengaged therefrom for such time as the angle-cock may be



kept open. When the angle-cock is closed, the dog may be thrown into engagement with its ratchet-wheel.

From the above it will be seen that should the hand-brakes be set or partially set at the time the car is placed in the train the act of opening the angle-cock to establish a passage throughout the length of the train-pipe will release the hand-brake. Furthermore, the hand-brakes cannot again be set or partially set during the time the angle-cocks are open. When the car is taken out of its train, it is generally the practice to close the angle-cocks, in which event the hand-brakes may be freely used for switching purposes, &c.

I am aware that many minor changes in the construction, arrangement, and combination of the several parts of my device may be made and substituted for those herein shown and described without in the least departing from the nature and principle of my invention—such, for instance, as directly connecting the lever *j'* with the handle of the angle-cock or by using an entirely different arrangement of levers to effect the objects to be accomplished. It is not desirable to positively connect lever *j'* with the handle of the angle-cock unless a position of dead-centers is established when the angle-cock is open. Otherwise a person tampering with the dog might not only succeed in effecting an engagement with the ratchet-wheel on the brake-staff, but might close the angle-cock to the detriment of the air-brake system.

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

1. The combination with an air-brake system of a railway-car, of a hand-brake mechanism, and a connection between the hand-brake mechanism and the air-brake system for rendering the former inoperative when motive fluid is admitted to the latter; substantially as described.

2. The combination with an air-brake system and a cock for admitting pressure thereto, of a hand-brake mechanism in which is included means for locking said mechanism after the brakes have been set by hand, and mechanism which is actuated when the cock is opened to admit pressure to the air-brake

system, for releasing the locking means of the hand-brake system and rendering the same inoperative during the time that said cock admits pressure to the air-brake system; substantially as described.

3. The combination with an angle-cock and its operating-handle, of a dog for locking the hand-brake mechanism, and connected mechanism between said dog and handle; substantially as described.

4. The combination with a cock for admitting pressure to air-brake systems, of an operating-handle therefor, a dog for locking the hand-brake mechanism, and mechanism for throwing said dog into an inoperative position, when said operating-handle is thrown to open the valve; substantially as described.

5. The combination with a cock for admitting pressure to air-brake systems, of an operating-handle therefor, a lever which is actuated by said handle, and a connection between said lever and the dog which locks the hand-brake mechanism; substantially as described.

6. The combination with a cock for admitting pressure to air-brake systems, of an operating-handle therefor, a lever which is actuated by said handle in one direction only, and a connection between said lever and the dog which locks the hand-brake mechanism; substantially as described.

7. The combination with a cock for admitting pressure to air-brake systems, of an operating-handle therefor, a heel on said operating-handle, a lever which is actuated by said heel, said lever being provided with a notch for cooperating with the heel in certain of its positions, a rock-shaft on which said lever is mounted, a lever on the other end of said rock-shaft, and a chain connection between said lever and another lever connected to the dog which locks the hand-brake mechanism; substantially as described.

In testimony whereof I hereunto affix my signature, in presence of two witnesses, this 5th day of June, 1897.

THOS. EUBANK.

Witnesses:

J. F. WILLS,  
C. B. MOORE.