(No Model.)

# C. H. EMERSON & G. A. EMERY.

## PAWL AND RATCHET MECHANISM FOR BRAKE STAFFS.

No. 456,026. Patented July 14, 1891.

Fig. 1.

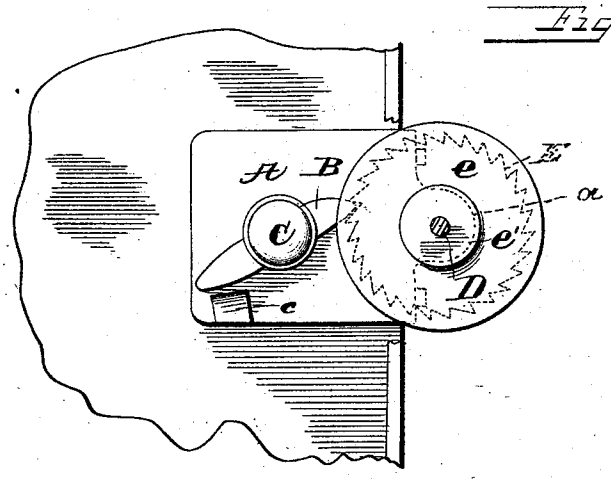



Fig. 2.

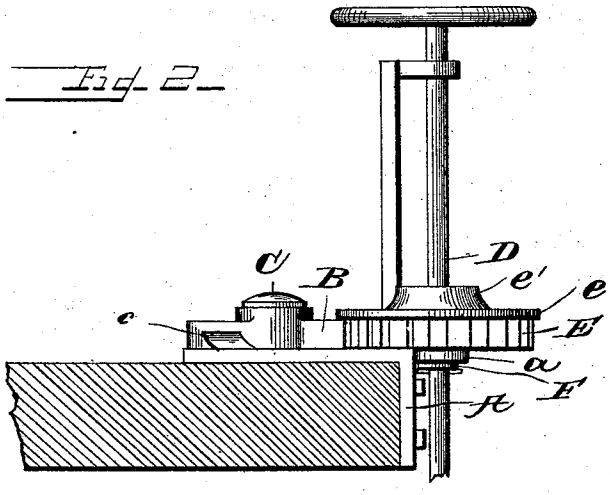
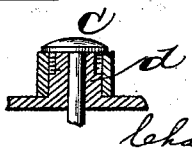



Fig. 3.




WITNESSES;

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# UNITED STATES PATENT OFFICE.

CHARLES H. EMERSON AND GEORGE ALLEN EMERY, OF MASON CITY, IOWA.

## PAWL-AND-RATCHET MECHANISM FOR BRAKE-STAFFS.

SPECIFICATION forming part of Letters Patent No. 456,026, dated July 14, 1891.

Application filed February 6, 1891. Serial No. 380,428. (No model.)

*To all whom it may concern:*

Be it known that we, CHARLES H. EMERSON and GEORGE ALLEN EMERY, citizens of the United States, residing at Mason City, in the county of Cerro Gordo and State of Iowa, have invented certain new and useful Improvements in Pawl-and-Ratchet Mechanism, of which the following is a specification.

Our invention relates to improvements in pawl-and-ratchet mechanism especially adapted for operating railroad-car brakes; and it has for its object to simplify, improve, and cheapen the cost of construction of this class of devices over the existing prior state of the art.

To this end the invention consists in the novel construction and arrangement of the several parts, as will be hereinafter more particularly pointed out in the claim.

We have fully and clearly illustrated our invention in the accompanying drawings, wherein Figure 1 is a plan or top view of the device applied to the platform of a railroad-car. Fig. 2 is a side view of the same. Fig. 3 is a vertical section showing the lug *d* and adjacent parts.

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

Referring to the drawings, A indicates an angular bracket or casting, secured upon the inner or angular end of which is a projecting lug *a*, which is flush with the upper face of said bracket or casting. This lug has a perforation through it centrally, for a purpose which will be presently explained.

B indicates a pawl, which is mounted upon and loosely secured to the face of the bracket or casting by means of a bolt C, which passes through a perforation in a central lug *d*, formed upon or integral with the plate A, upon which the pawl is pivoted. A stop *c* is secured rigidly to one corner of the bracket for the purpose of limiting the movement of the pawl.

D indicates a vertical brake-staff, which is passed rotatably through the perforation in the lug *a*, secured to or formed integral with the bracket or casting and projecting laterally therefrom. Mounted upon this lug and rigidly secured to the brake-staff D near its lower end by means of keys or otherwise is a ratchet-wheel E, having a rim *e* cast thereon of larger diameter than the wheel, and which projects over the teeth of the ratchet-wheel, by which the pawl is prevented from slipping out from engagement with the teeth upon the upper surface or rim of the ratchet-wheel. A hub *e'* is cast centrally upon the outer face of the rim of the ratchet-wheel E, through which the brake-staff is passed and rigidly keyed thereon, and a washer F is interposed between a pin passed transversely through a perforation in the lower end of the brake-staff and the projecting lug of the casting or bracket. The brake-pawl B has a coil-spring coiled around a reduced portion of the lug *d*, which is so arranged as to hold the pawl up against and in engagement with the ratchet-wheel E all the time and prevents displacement of said pawl, so that it does not have to be held up against the wheel with the foot, as is done with wheels of the ordinary construction. This brake-pawl cannot come out from under the rim *e* over the ratchet-wheel E, as is heretofore mentioned. The little stop *c*, cast upon the casting or bracket, will let the brake-pawl only go to a certain limit.

By our construction of device it will be readily seen that when a brake is set up it will stay set and cannot be displaced by the derailment or jolting of the car.

From the foregoing description, taken in connection with the accompanying drawings, the operation of the device will be obvious.

Our device is simple in its construction, easily and conveniently operated, durable, and cheap to manufacture.

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

The combination, with a bracket formed with a stop *c*, a lug *a*, and a lug *d*, of a brake-staff, a ratchet-wheel arranged thereon and provided with the flange *e*, a pawl B, a spiral spring interposed between the pawl and lug *d*, and a bolt for securing the pawl, substantially as described.

In witness whereof we hereunto set our hands in the presence of two witnesses.

CHARLES H. EMERSON.
G. ALLEN EMERY.

Witnesses:
H. I. SMITH,
C. H. MCNIDER.