

(No Model.)

J. W. VALIANT.
BRAKE FOR RAILWAY CARS.

No. 545,112.

Patented Aug. 27, 1895.

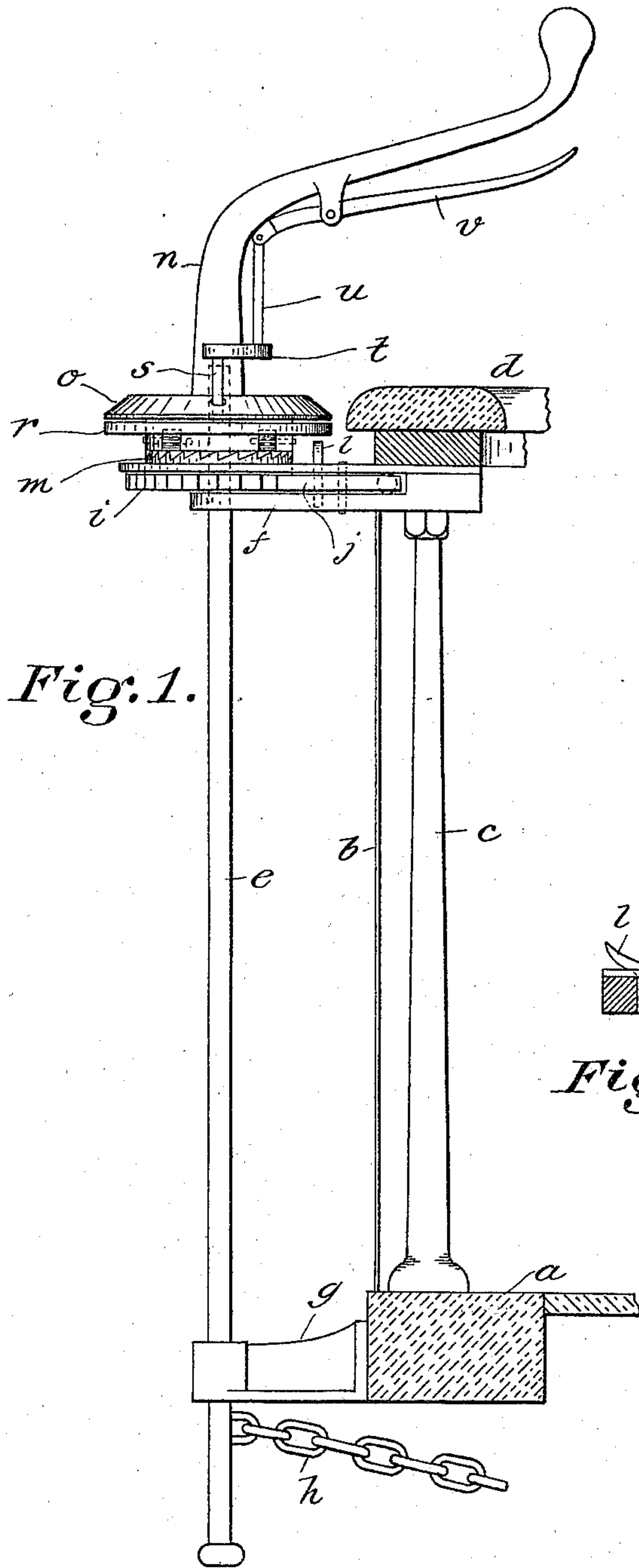


Fig. 1.

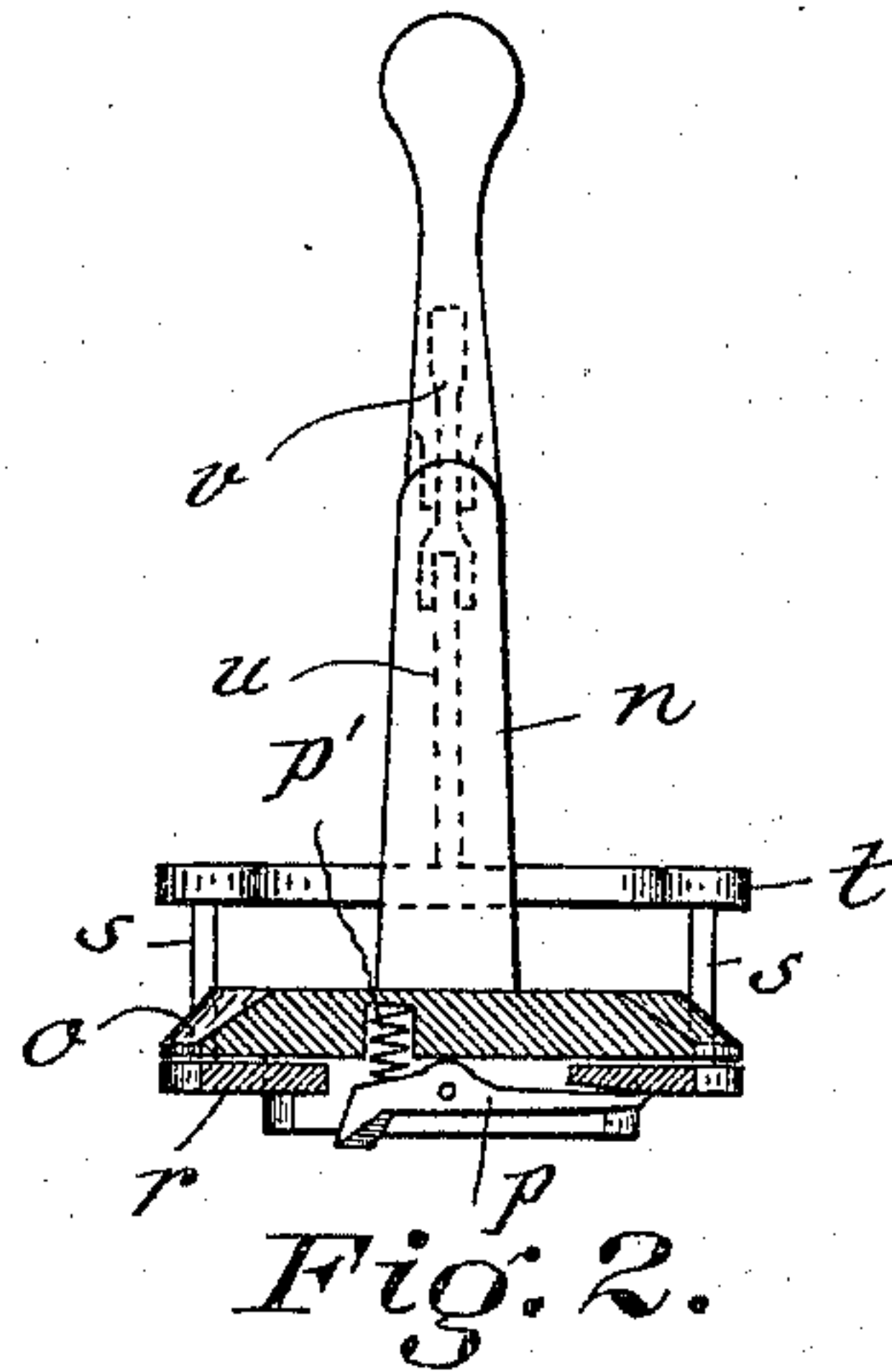


Fig. 2.

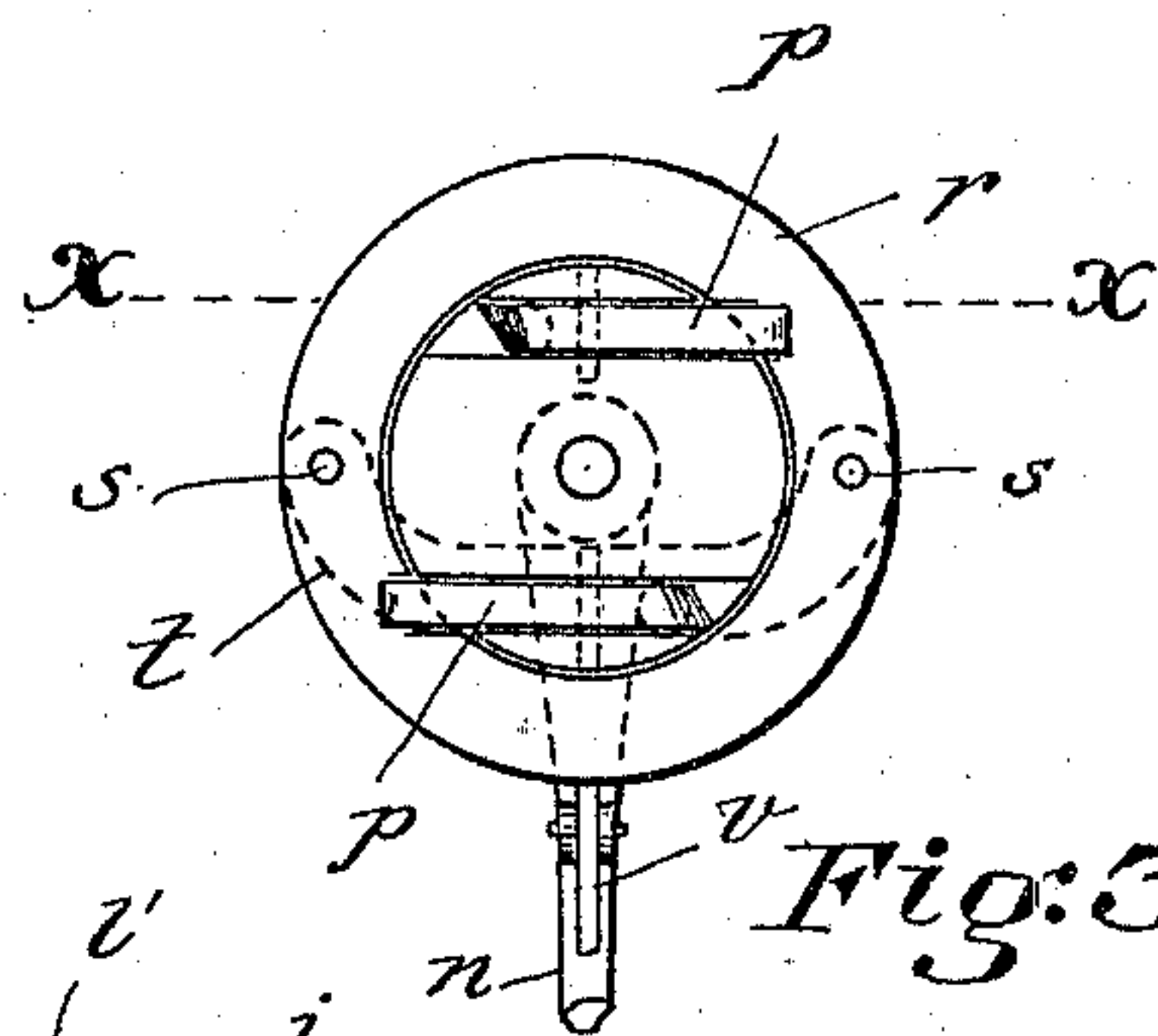


Fig. 3.

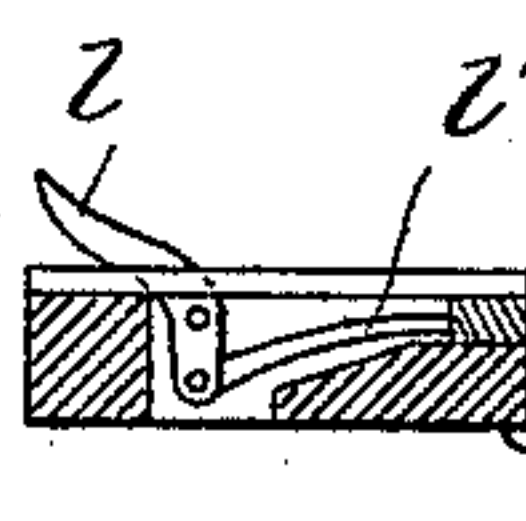


Fig. 5.

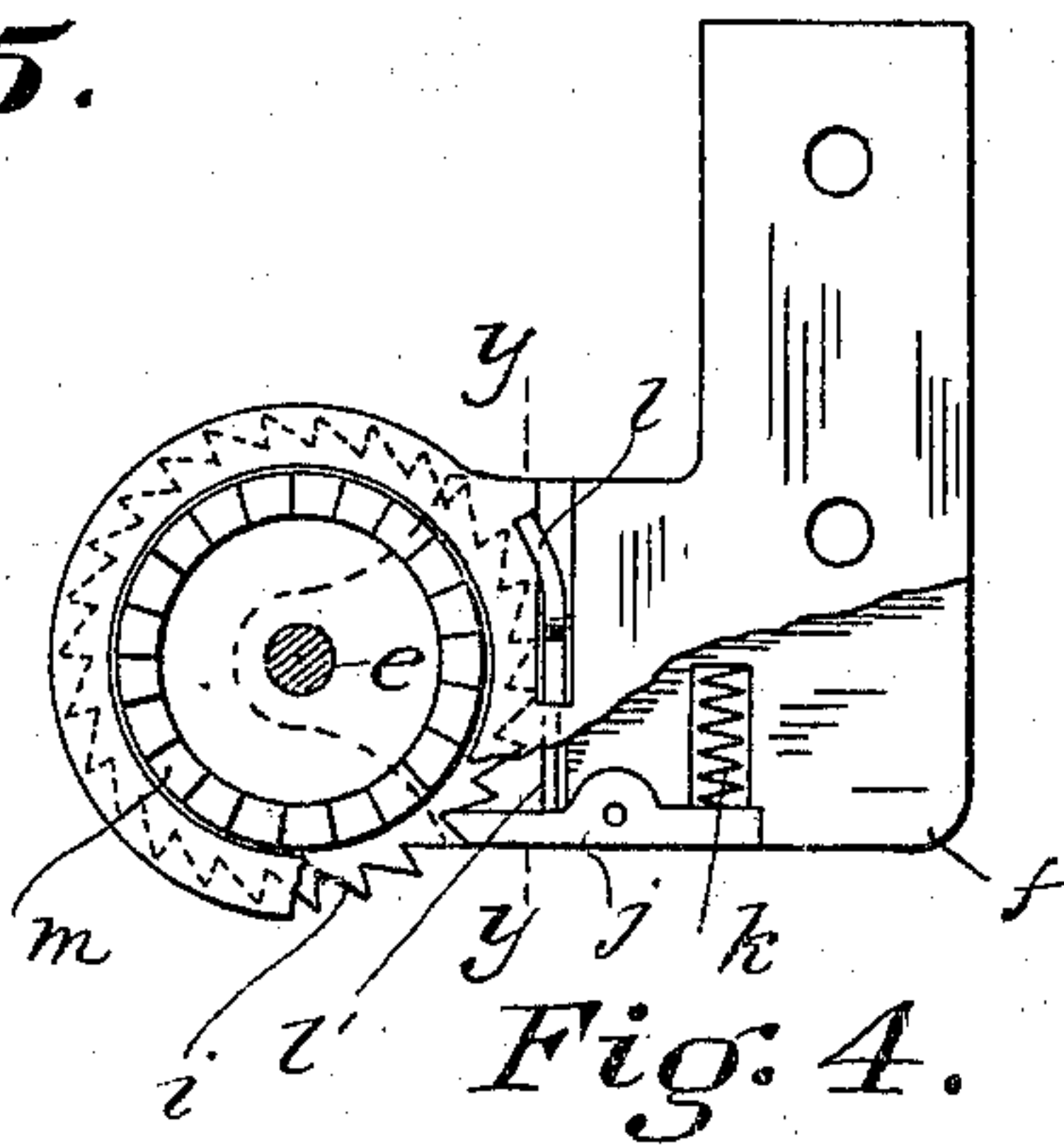


Fig. 4.

WITNESSES:

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BRAKE FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 545,112, dated August 27, 1895.

Application filed January 11, 1895. Serial No. 534,528. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH WILLIAM VALIANT, a citizen of the United States, residing at Baltimore, in the State of Maryland, have
5 invented a certain new and useful Improvement in Railway-Car Brakes, of which the following is a full, clear, and exact description.

The object of this invention is to provide a brake staff and handle especially for street-railway cars, in which the medium for retaining the brake-staff in the applied position and for releasing the brake-staff, so as to let off the brakes, is located wholly above the platform of the car and within reach of the driver's or motorman's hands, thus dispensing with the foot-operated mechanism heretofore common.

The invention consists, essentially, of a brake-staff, which is positively rotated to set
20 the brake and is allowed to run free to release it, the said staff being rotated to set the brake by a pawl-and-ratchet mechanism connected with the brake-staff handle, and being held in given position by a detent arranged adjacent to the handle and above the floor of the platform, the said pawl-and-ratchet mechanism and the detent being operated from the brake-handle to allow the staff to run free to release the brake, all as hereinafter more particularly set forth and claimed.

In the accompanying drawings, illustrating my invention, in the several views of which like parts are similarly designated, Figure 1 is a side elevation with the brakes released
35 and showing the dash-rail and portion of the platform in section. Fig. 2 is a sectional elevation taken substantially in the plane of the line $x x$, Fig. 3. Fig. 3 is a bottom plan view of the parts shown in Fig. 2. Fig. 4 is a horizontal section taken substantially in the plane of the bottom of the dash-rail; and Fig. 5 is a section taken substantially in the plane of the line $y y$, Fig. 4.

The car-platform a , dash b , post c , and rail
45 d may be as usual.

e is the brake-staff mounted to rotate in brackets $f g$ and having connected with its lower end the brake-chain h , which said chain is to be wound around the end of the brake-staff in order to apply the brakes. The upper end of the brake-staff in substantially the plane of the dash-rail is supplied with a

ratchet-wheel i , having its teeth rotating in a horizontal plane. This ratchet-wheel is normally engaged by a dog j , mounted in the bracket f , and held in engagement with the
55 said ratchet-wheel by means of a coiled spring k .

l is a lever pivoted in the bracket f and projecting above the plane of the said bracket and provided with a push-piece l' , which extends toward the dog j , for a purpose presently appearing.

m is a ratchet having face-teeth—that is to say, teeth projecting upwardly and rotating in a vertical plane—the said ratchet being practically a crown-wheel and secured to rotate with the staff e .

n is a crank-handle or brake-handle provided at its lower end with a disk o , in which
70 disk two pawls p are pivoted, each pawl having a spring p' , which normally forces it into contact with the teeth of the crown-wheel ratchet m . The crank-handle is socketed and applied loosely to the upper end of the staff, and when
75 so applied the pawls p engage with the crown-wheel ratchet m , and thereby there is imparted to the staff e a rotary motion through the crank-handle. As the crank-handle is rotated and the staff e thereby turned and the chain
80 wound up thereupon, the pawl j constantly engages the ratchet i and holds the staff in whatever position it may be placed. Now, when it is desired to release the brake these various
85 pawls must be disengaged from their respective ratchets, and to effect this disengagement I use an annular plate r , suspended below the disk o and in proximate relation to the various pawls, the said plate being supported by arms s , which in turn are supported by a
90 segment t and the latter suspended from arm u , which depends from a lever v , which latter is pivoted to the brake-handle, substantially as shown.

In order to keep the plate r out of contact
95 with the various pawls, it may be held by a spring or by the superior weight of the lever v , or through the force of the springs k and p' , reacting thereupon through their various pawls and their connections. When it is desired to release the brakes, the lever v is
100 actuated to depress the segment t and thereby depress the plate r , and the said plate r coming into contact with the tail-pieces of the

pawls *p* and with the lever *l* the various pawls are raised out of the teeth of the ratchets and the staff *e* is thereby left free to rotate under the action of the brake-springs. It will be obvious that when the lever *l* is rocked upon its pivot by the depressed plate *r* its push-piece *l'* will be projected against the pawl *j*, and so act to throw the pawl out of engagement with its ratchet-teeth. By this construction the necessity for a foot-operated pawl-and-ratchet detaining mechanism for the brake-staff is obviated, and all the operating parts of the brake are placed within convenient reach of the driver or motorman for manipulation by hand.

The advantages of having the whole of the brake-actuating mechanism arranged within a single location apparently are too obvious for statement.

It is obvious that in releasing the brakes the brake-handle does not revolve with the staff.

I do not limit my invention to the use of a crank-handle for actuating the brake-staff, since it is obvious a hand-wheel might be used, and I mean to include as within my invention both these forms of staff-actuating devices and such others as may be applicable, and for purposes of designating such a device I herein refer to the same as a "staff-actuator."

Among other advantages incident to my invention I note that in the act of releasing the brake, while the staff is free to revolve, the staff-actuator is relieved of strain and remains quiet in the hands of the operator, thus obviating the dangers resulting from the common construction wherein the brake-handle, being fixed to the staff, suddenly and forcibly flies around with it in releasing the brakes. I note, further, that the pawl or dog *j* normally is in constant engagement with the ratchet, and therefore the car may be stopped suddenly and quickly.

What I claim is—

1. Actuating mechanism for railway car brakes, comprising a brake staff, a detaining ratchet fast thereon, a pawl normally engaging such ratchet, a brake staff actuating

ratchet, a staff-actuator loosely applied to the brake staff and carrying pawls in normal engagement with the staff actuating ratchet, and means operated from the brake handle for throwing the various pawls out of engagement with the several ratchets, substantially as described.

2. A brake staff, a bracket arranged adjacent to the dash rail and receiving the upper end of the brake staff, a detaining ratchet applied to the brake staff adjacent to said bracket, a pawl normally in engagement with said ratchet, a pawl releasing lever projecting above the plane of the said bracket, a staff actuating ratchet applied to said staff, a brake staff actuator loosely applied to said brake staff and carrying a pawl normally in engagement with the said staff actuating ratchet, and means for releasing the various pawls from their respective ratchets comprising a depressing plate and means to actuate it from the staff actuator, substantially as described.

3. A brake staff having a detaining ratchet applied to it adjacent to the dash rail, a pawl normally in engagement with the said ratchet, a crown wheel ratchet also applied to the brake staff adjacent to the first named ratchet, a brake staff actuator having a disk at its lower end, one or more pawls pivoted to said disk and normally held in engagement with the crown wheel ratchet to impart the rotary motion of the actuator to the brake staff, and a pawl releasing device comprising an annular plate arranged adjacent to the various pawls, and a lever applied to the brake staff actuator and connected with the said annular plate to force it against the pawls and detach them from their respective ratchets while the staff actuator is held quiet, thereby allowing the brake staff to rotate free of its actuating mechanism and under the unwinding action of the brake springs to release the brake, substantially as described.

In testimony whereof I have hereunto set my hand this 8th day of January, A. D. 1895.

JOSEPH WILLIAM VALIANT.

Witnesses:

JAS. W. CLAYTON,
R. LEE SLADE.