

(No Model.)

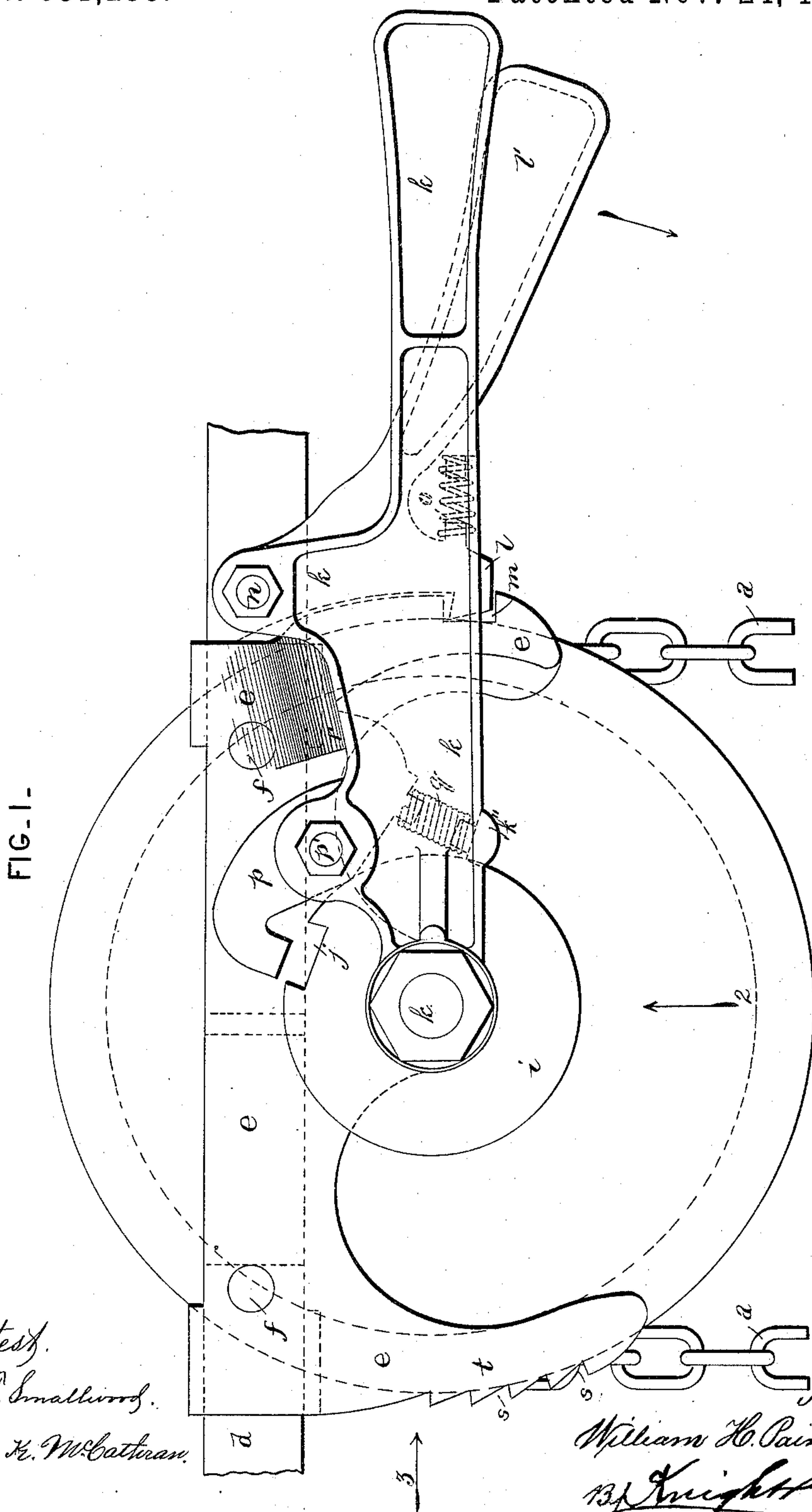
3 Sheets—Sheet 1.

W. H. PAINE.

HAND MECHANISM FOR OPERATING GRIPPERS FOR CABLE RAILWAYS.

No. 331,238.

Patented Nov. 24, 1885.



Attest.
Geo. P. Smallwood.
Jas. H. McCathran.

Inventor
William H. Paine
By Knight atty.

(No Model.)

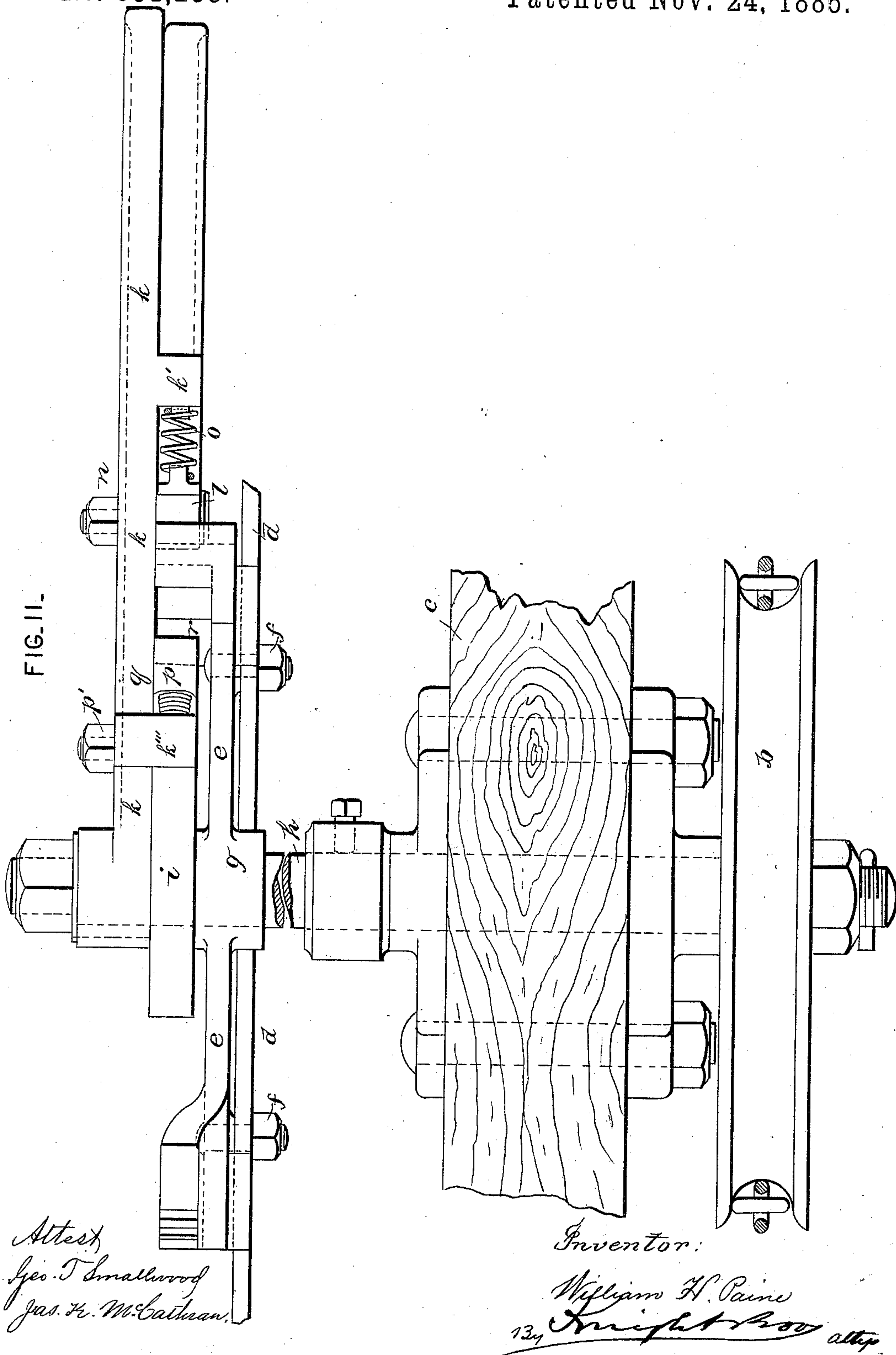
3 Sheets—Sheet 2.

W. H. PAINE.

HAND MECHANISM FOR OPERATING GRIPPERS FOR CABLE RAILWAYS.

No. 331,238.

Patented Nov. 24, 1885.



(No Model.)

3 Sheets—Sheet 3.

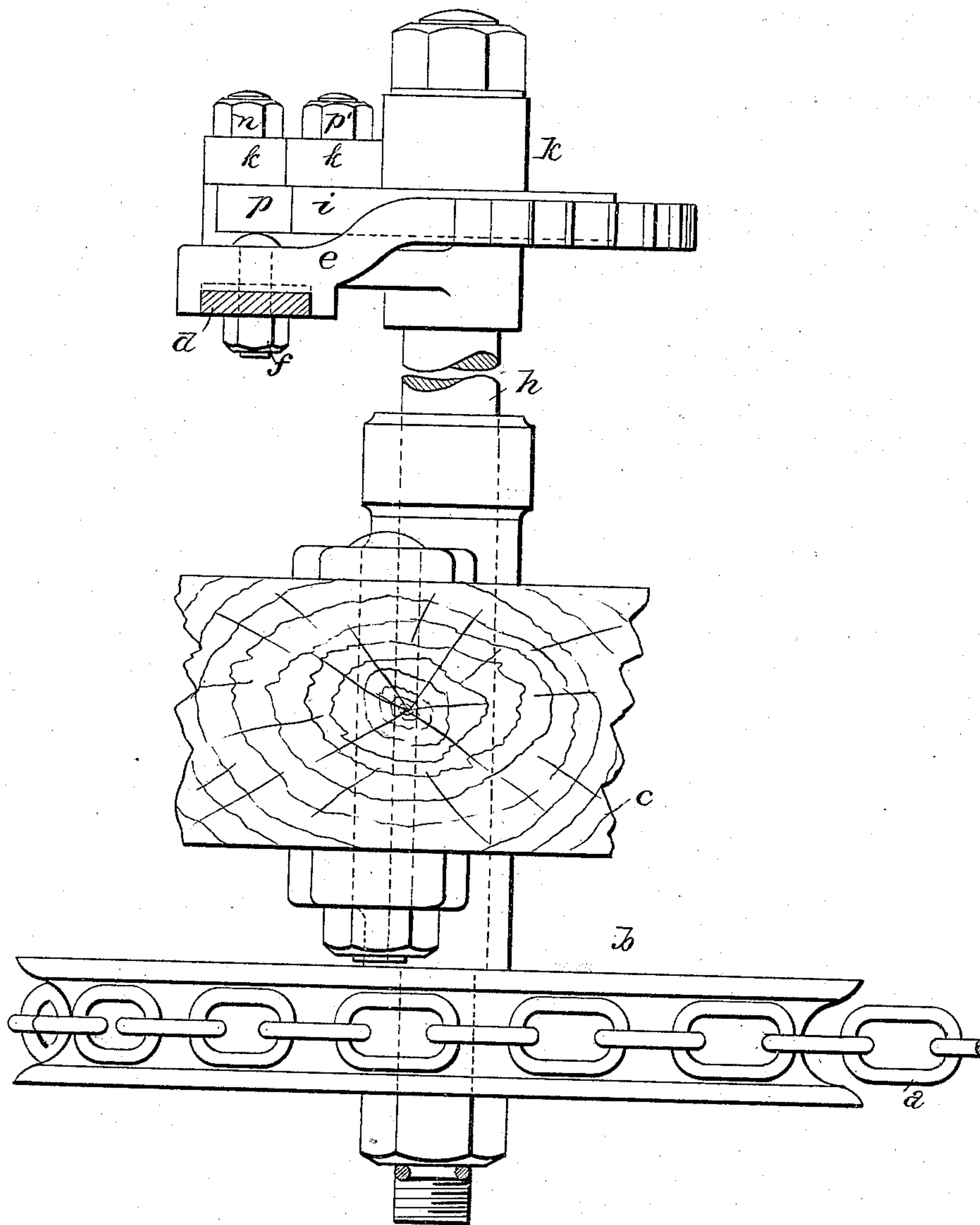
W. H. PAINE.

HAND MECHANISM FOR OPERATING GRIPPERS FOR CABLE RAILWAYS.

No. 331,238.

Patented Nov. 24, 1885.

FIG. III.



Attest
Geo. T. Smallwood
Jas. H. McEachern

Inventor:
William H. Paine
By Knights attys

UNITED STATES PATENT OFFICE.

WILLIAM H. PAINE, OF BROOKLYN, NEW YORK.

HAND MECHANISM FOR OPERATING GRIPPERS FOR CABLE RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 331,238, dated November 24, 1885.

Application filed April 18, 1885. Serial No. 162,702. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. PAINE, a citizen of the United States, residing at Brooklyn, in the State of New York, have invented certain new and useful Improvements in Hand Mechanism for Operating Grippers for Cable Railways, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, in which—
Figure I is a plan of my improved hand mechanism. Figs. II and III are elevations of the same, looking in the directions of the arrows 2 and 3, respectively, Fig. I.

This mechanism is designed particularly for operating a grip such as described in another application of mine filed on the 30th day of April, 1885, Serial No. 164,001, and which is opened and closed by the opening and closing of a pair of levers pivoted to each other in such a manner as to operate as toggle-levers, said levers being moved in opposite directions by an endless belt or chain passed around winding disks or drums at the respective ends of the car, and to the oppositely-moving parts of which said levers are respectively connected. This mechanism is not confined, however, to use in connection with an endless belt or chain and a pair of grip-levers connected thereto and moved thereby, but may be used to operate a grip having a single arm or lever connected with the operating mechanism by means of a single rope, chain, or other connection.

In the drawings a section of this endless connection is shown at *a*, while *b* represents one of the winding disks or drums located beneath the platform, a fragment of which is shown at *c*.

d is the iron frame or railing to which the "dash-board" of the car is secured.

e is a casting, which will be hereinafter referred to as a "rack-plate," secured to the railing *d* by bolts and nuts *f*. This rack-plate is substantially of the form shown in the plan view, Fig. I, and is apertured at *g* for the passage of the winding-staff *h*, the lower end of which works within suitable bearings in platform *c* of the car.

i is a disk secured rigidly to the winding-staff *h* and formed with a notch, *j*, in its periphery, for the purpose to be hereinafter fully set forth.

k is the hand-lever, which is pivoted loosely on the upper end of the staff *h*, and is capable of being turned thereon in the direction of the arrow. This lever is here shown in its retracted or inoperative position, where it is held by the engagement of a dog or latch, *l*, with a notch, *m*, formed in the rack-plate *e*. This latch *l* is pivoted to the hand-lever *k* at *n*, and provided with a handle, *l'*, within convenient reach of the handle of the lever *k*, so that both may be grasped by the one hand of the operator when the grip is to be applied or released. The nose of this latch is held normally out or in position to engage automatically by a spring, *o*, interposed between its heel and a lug, *k'*, projecting downward from the lever *k*.

p is a dog pivoted to the hand-lever *k* at *p'*, and *q* a spring interposed between the heel of said dog and a lug, *k''*, projecting downward from the lever *k*, whereby the nose of said dog tends always to engage with the notch *j* in the disk *i*. When, however, the hand-lever is in the position shown in Fig. I, the heel of this dog is engaged by a lug or other tripping device, *r*, projecting upward from the rack-plate *e*. While in this position, the staff *h* may turn freely, which is necessary if the grip is to be operated from the other end of the car; but just so soon as the latch *l* is released from its notch *m* and the lever *k* moved a short distance in the direction of the arrow, the dog *p*, being no longer held out of engagement by the trip *r*, will have its nose forced by the spring *q* into the notch *j* of the disk *i*. Any further movement of the lever *k* after this engagement of the dog has taken place will therefore rotate the staff *h*, and thereby cause the endless chain or other connection to move as required, and close the jaws of the grip. To lock the grip, this movement of the hand-lever *k* should be continued until the latch *l* falls into engagement with one of the notches *s* of the rack *t*, formed on the rack-plate *e*. This mechanism for operating grips is rendered practicable where the movement of the jaws is reduced to a minimum by automatically taking up any wear that may occur in the faces of the grip-shoes. Devices for accomplishing this result are described and claimed in my application above referred to.

Having thus described my invention, the fol-

lowing is what I claim as new therein and desire to secure by Letters Patent:

1. The combination, with the winding-staff, of a pivoted hand-lever and a dog for automatically connecting said winding-staff and hand-lever when the latter is moved from its inoperative position, substantially as described.

2. The combination, with the winding-staff, of a hand-lever pivoted thereto, a latch for holding said lever normally out of operative position, an automatic dog carried by said lever, and a trip for holding said dog out of engagement with the winding-staff when the hand-lever is out of operative position, substantially as set forth.

3. The combination, with the winding-staff having a notched disk secured thereto, of a hand-lever pivoted to said staff, an automatic dog pivoted to said lever and adapted to engage with said disk, and a trip for holding said dog out of engagement, in the manner and for the purpose set forth.

4. The combination, with the gripper, the winding-staff, and connection between them, of a hand-lever pivoted to said staff, and a dog for connecting said hand-lever and staff at the will of the operator, substantially as set forth.

5. The combination, with the winding-staff *h* and the concentric notches *m s*, of the hand-lever *k*, pivoted to the staff *h*, and provided with latch *l*, substantially as and for the purposes set forth.

6. The combination, with the staff *h*, having the notched disk *i*, of the hand-lever *k*, pivoted thereto, the dog *p*, and the latch *l*, pivoted to said lever *k*, and provided with the springs *q* and *o*, respectively, the trip *r*, and the notch *m*, all constructed and arranged to operate substantially as and for the purposes set forth.

WILLIAM H. PAINE.

Witnesses:

HERBERT KNIGHT,
LEONARD K. PRINCE.