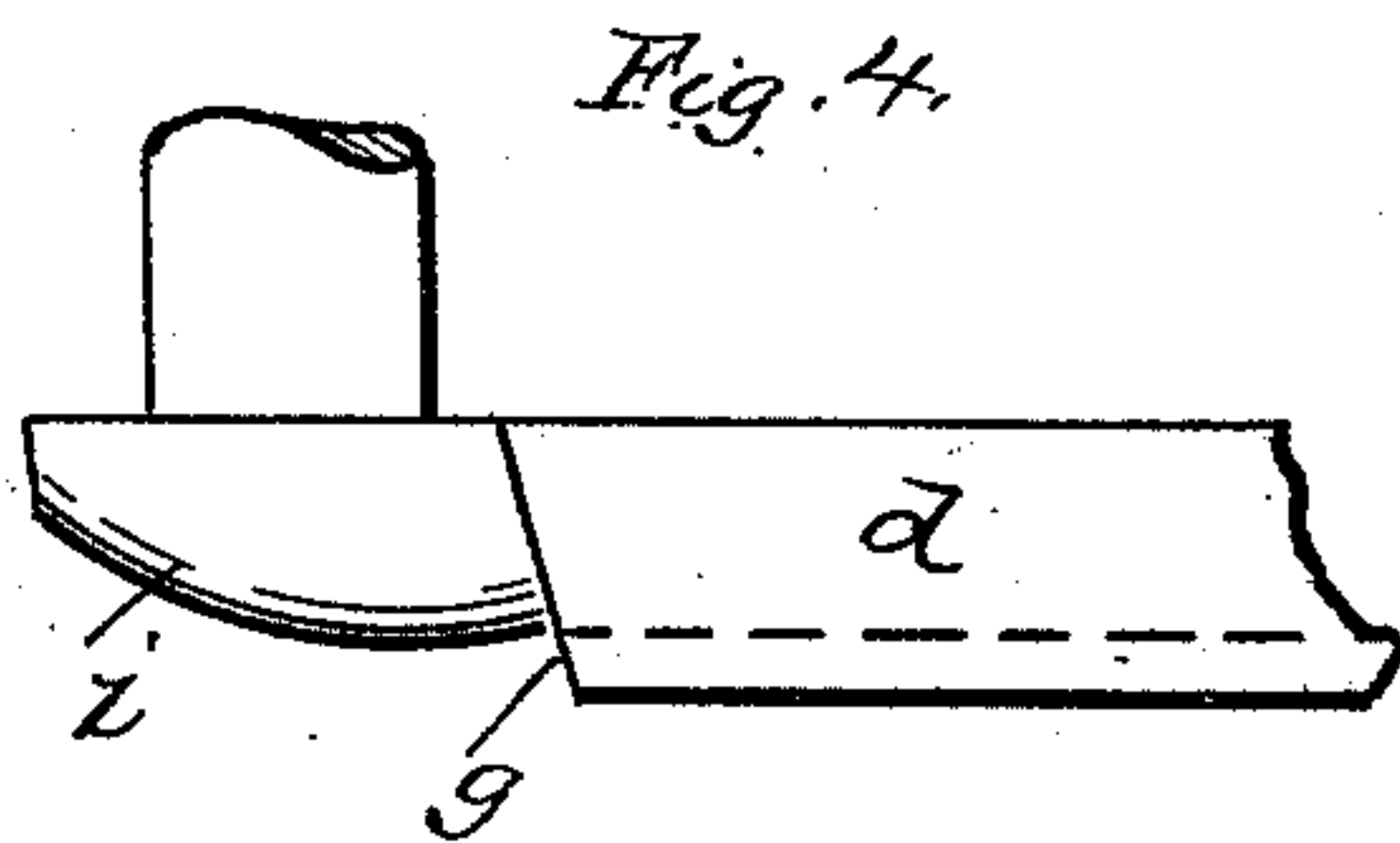
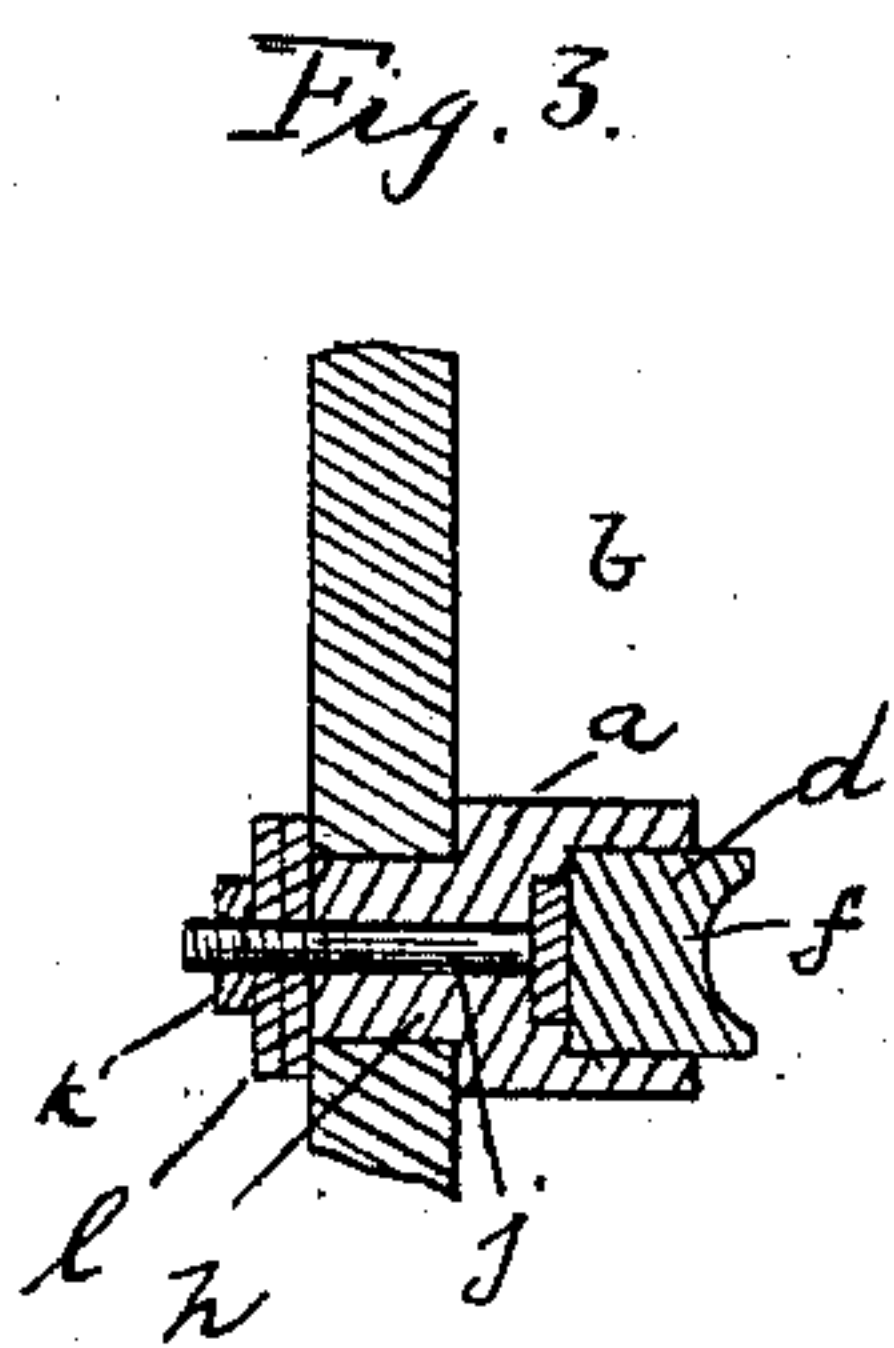
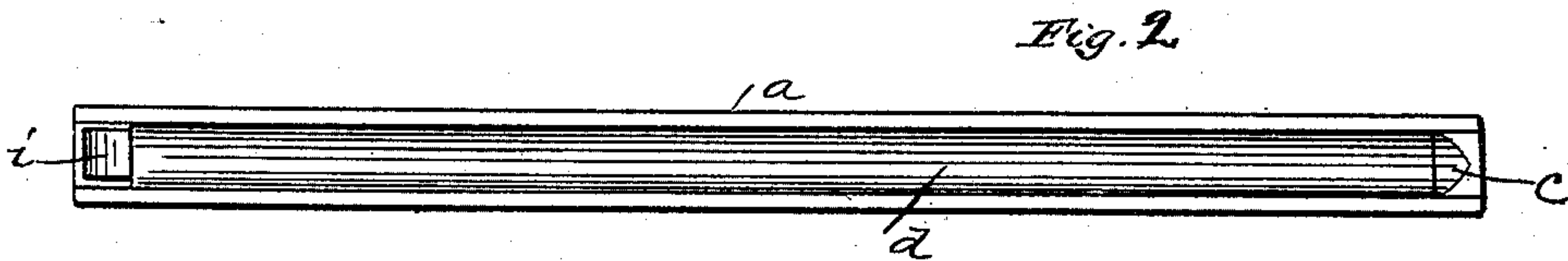
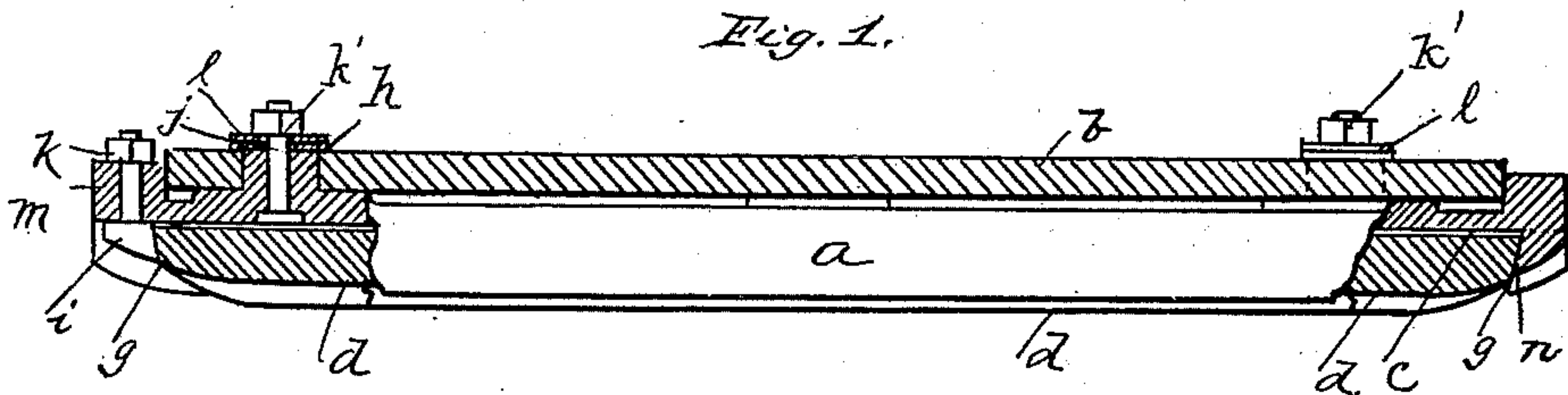


(No Model.)

C. FITZGERALD.  
REMOVABLE SHOE FOR CABLE CAR GRIPS.

No. 464,924.

Patented Dec. 8, 1891.



Witness:  
H. E. Harman.  
J. A. Herrow.

Inventor.  
C. Fitzgerald  
A. D. Lewis

Attest.

# UNITED STATES PATENT OFFICE.

CHARLES FITZGERALD, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR OF  
ONE-HALF TO J. E. RUGG, OF SAME PLACE.

## REMOVABLE SHOE FOR CABLE-CAR GRIPS.

SPECIFICATION forming part of Letters Patent No. 464,924, dated December 8, 1891.

Application filed August 7, 1890. Serial No. 361,372. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES FITZGERALD, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Removable Shoes for Cable-Car Grips; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to cable-grips; and it consists in the peculiar construction and arrangement of parts, substantially as hereinafter described, and particularly pointed out in the subjoined claim.

The object of the invention is to simplify the construction and increase the efficiency of that class of cable-grips employing a removable shoe, which is held in the frame by a bolt or other device having a beveled side in contact with one end of said shoe. This object is accomplished by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of my improved device, partly in section. Fig. 2 is a side elevation of the same. Fig. 3 is an end sectional view taken on a line adjacent to the bolt *j*. Fig. 4 is a plan view of a part of the shoe and bolt for holding said shoe.

The same letters of reference designate the same parts in the several figures.

*a* designates an oblong casting, which forms the frame of my improved device. The rear edge of this frame *a*, near the opposite ends thereof, is formed with projections *h*, which extend through openings formed in a plate *b*. These projections *h* are formed with openings and with counter-sinks at the inner end of said openings, and through said openings pass headed bolts *j*, having nuts *k'*; the heads of which bolts are located within said counter-sinks, and the nuts of which are located exterior of the plate *b*. Interposed between said nuts and said plate are washers *l*. The plate *b* projects upward and is secured to the car

and its ends engage projections *m* at the ends of said frame *a*. The frame *a* is also formed with an open slot *c*, which extends in the direction of the length of said frame and has one end closed and formed with a beveled or inclined shoulder *n*.

*d* designates the shoe, which fits snugly within the frame *a*, and consists of a bar having a hollow groove *f* formed along its front edge, and tapering or beveled ends *g*, one end of which is adapted to rest against the beveled shoulder *n* and the other to be engaged by the beveled side of a headed bolt *i*, which passes through the projections *m* of the frame *a*, is provided with a nut *k*, and serves to rigidly hold the shoe in position, and at the same time to permit removal thereof when it is desired to replace it by another or for any other purpose.

In operation two shoes are used in a single grip, one on either side of the cable. Removal of the bolt *i* leaves the shoe *d* free to be removed, as will be readily understood, and if it is desired to remove the frame *a* from the plate *b* it is only necessary to remove the nuts *k* and washers *l*.

I do not claim, broadly, the fastening of a cable-shoe in a frame by means of a headed bolt having an inclined or beveled side, since I am aware that such construction is not broadly new; but

What I do believe to be new, and desire to secure by Letters Patent, and what I therefore claim, is—

The combination, with a frame *a*, formed with a slot *c* and with a beveled shoulder at one end of said slot and also formed with perforated projections *h* and projections *m*, said projections *h* having countersinks at their interior ends, and a plate *b*, having openings through which said projections *h* pass and engaging at its ends said projections *m*, of the removable shoe fitted snugly with said frame and having beveled ends, one end of which shoe fits closely against the beveled shoulder of the frame, a bolt *i*, having on its inner end an enlarged head formed with a beveled side engaging the opposite end of said shoe, a nut in the oppo-



site end of said bolt, headed bolts *j*, extending through said projections *h* and having their heads received by the countersink therein, and nuts on the outer ends of said 5 bolts, all substantially as described, and for the purposes specified.

In testimony that I claim the foregoing I

hereunto affix my signature this 16th day of June, A. D. 1890.

CHARLES FITZGERALD. [L.S.]

In presence of—

M. E. HARRISON,  
FRANK W. SMITH.