

(No Model.)

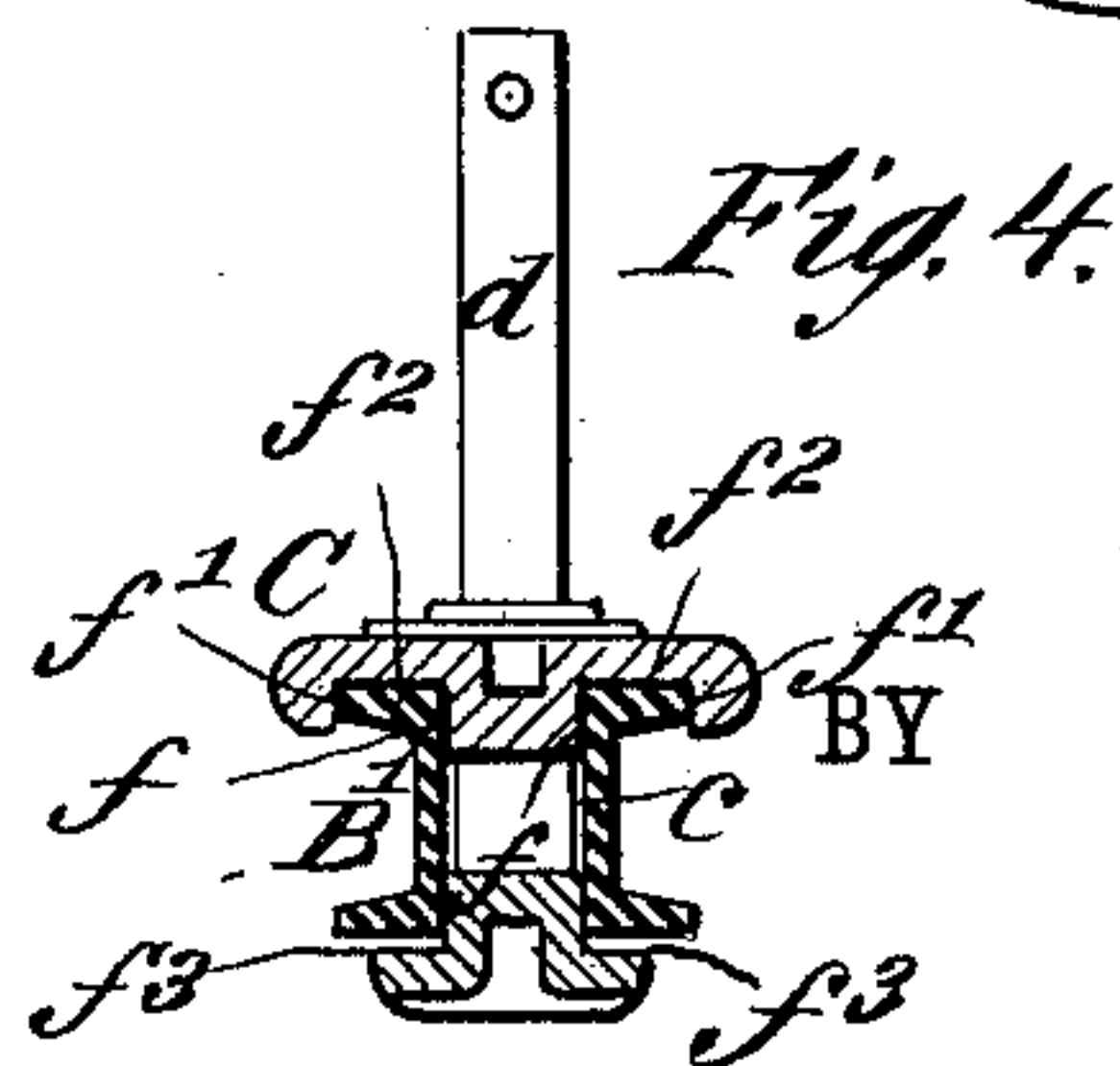
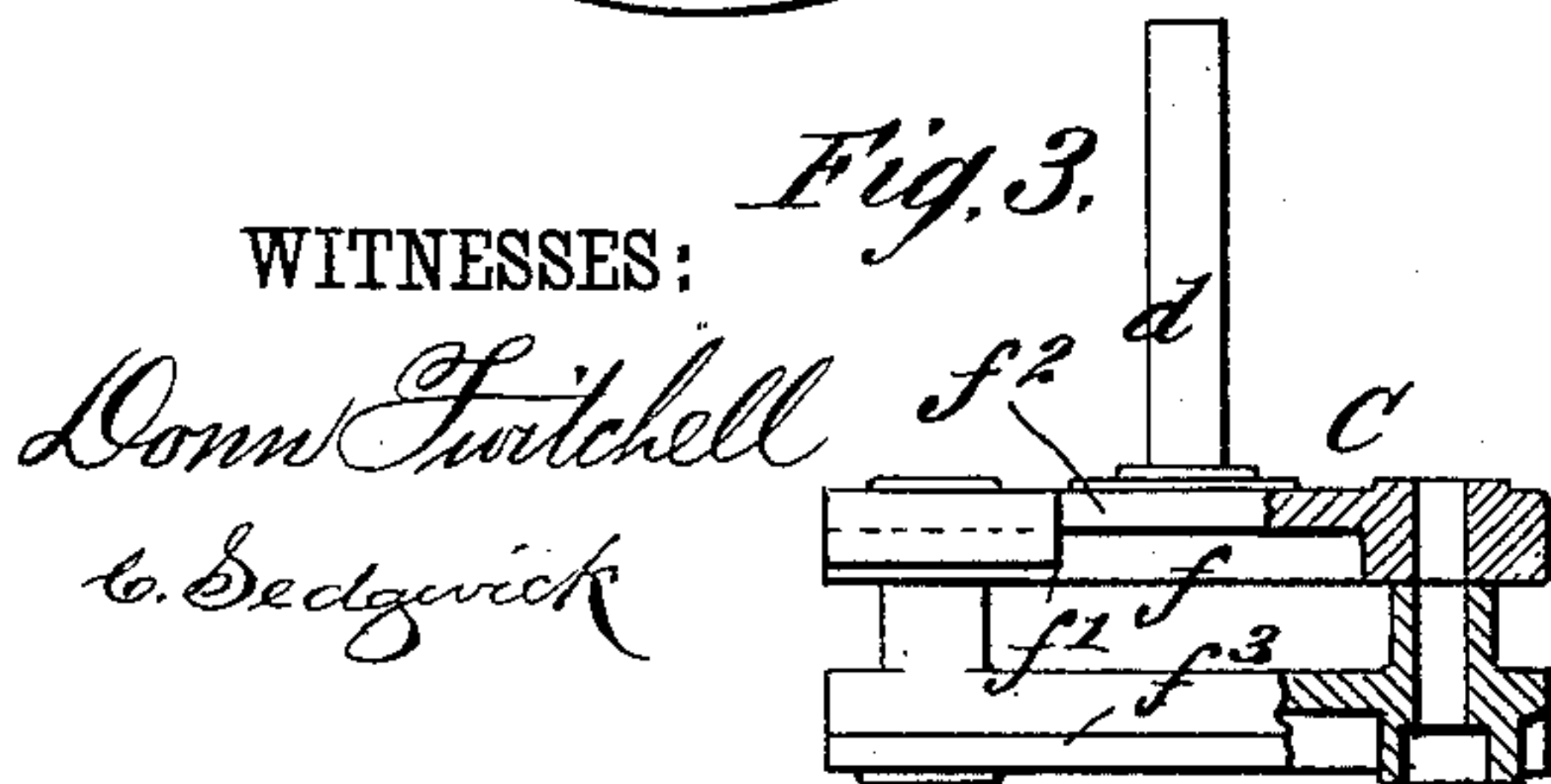
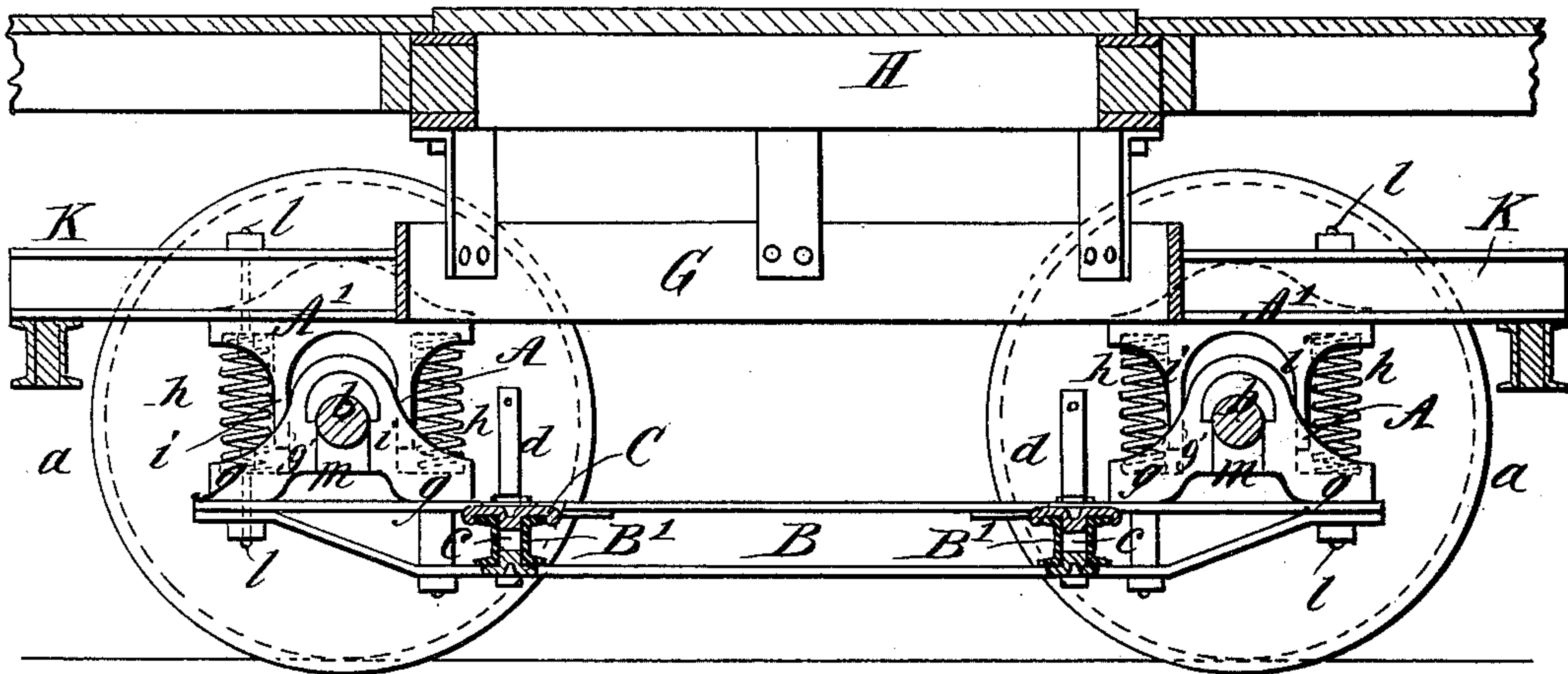
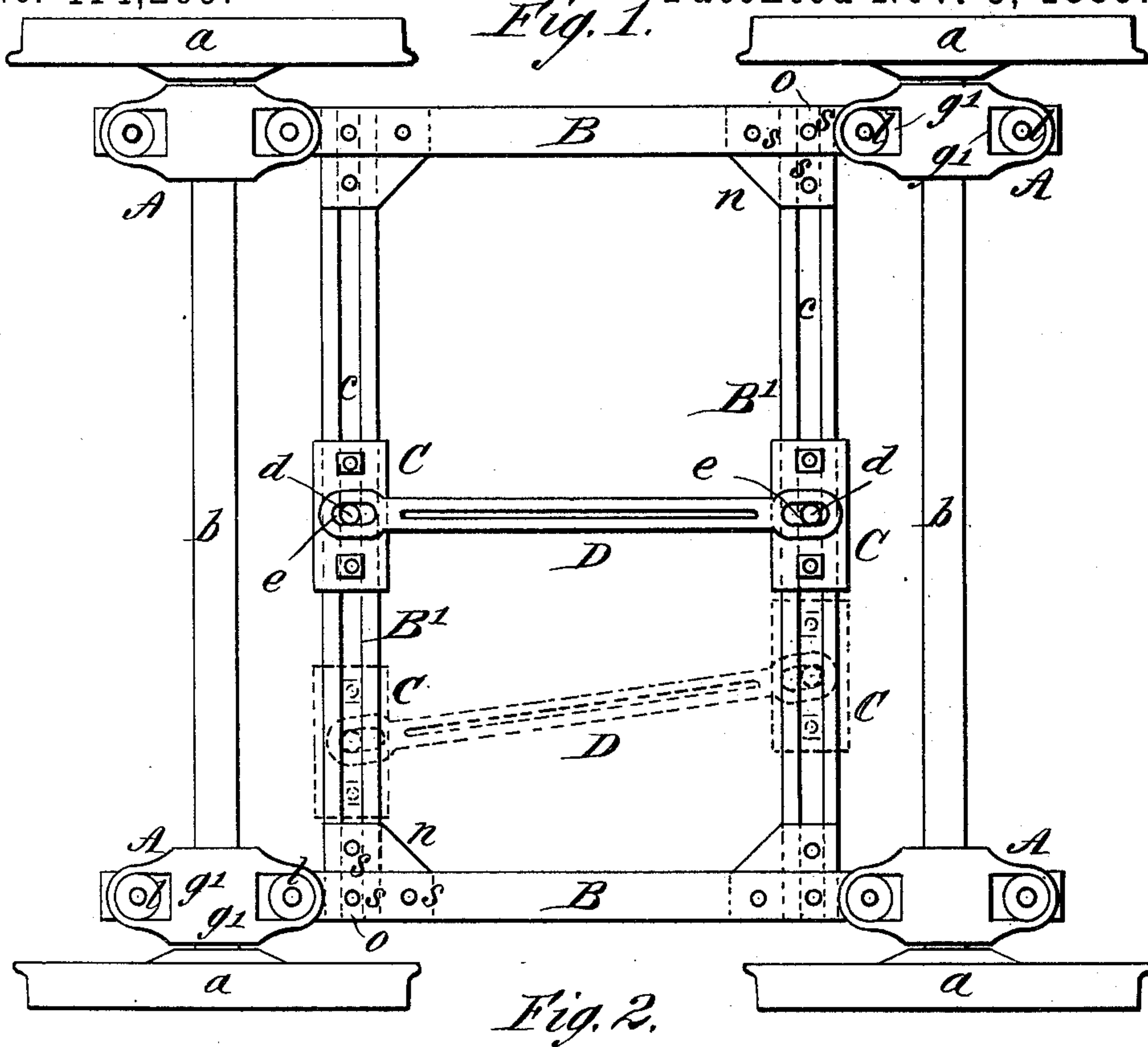
A. TWYMAN.

2 Sheets—Sheet 1.

GRIPPING DEVICE CARRIER AND ATTACHMENT THERETO FOR CABLE  
RAILROAD CARS.

No. 414,269.

Patented Nov. 5, 1889.



WITNESSES:

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to Sedgwick

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ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

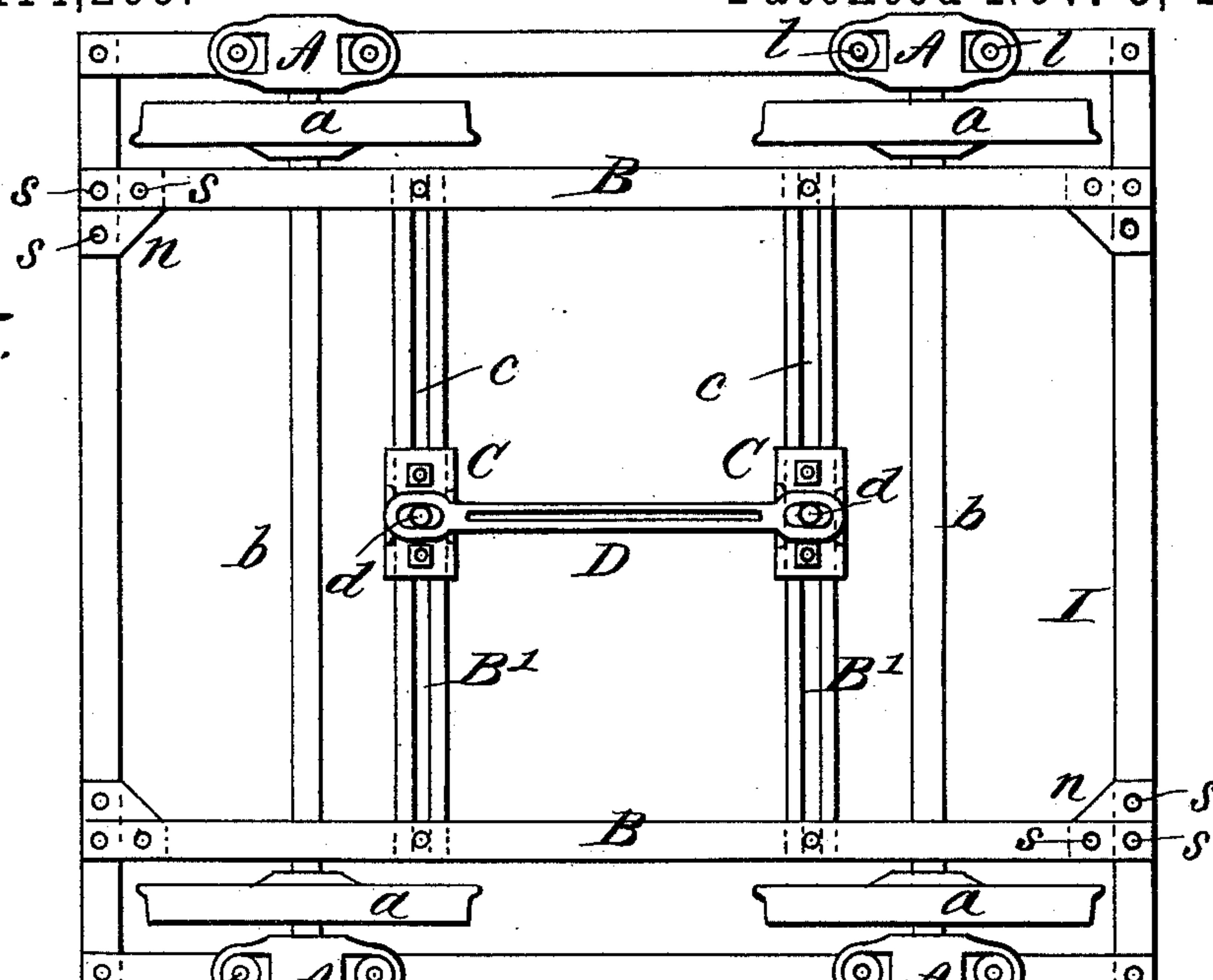
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*Fig. 5.*





# UNITED STATES PATENT OFFICE.

AARON TWYMAN, OF PULLMAN, ILLINOIS.

GRIPPING-DEVICE CARRIER AND ATTACHMENTS THERETO FOR CABLE-RAILROAD CARS.

SPECIFICATION forming part of Letters Patent No. 414,269, dated November 5, 1889.

Application filed March 1, 1889. Serial No. 301,698. (No model.)

*To all whom it may concern:*

Be it known that I, AARON TWYMAN, of Pullman, in the county of Cook and State of Illinois, have invented new and useful Improvements in Gripping-Device Carriers and Attachments Thereto for Cable-Road Cars, of which the following is a full, clear, and exact description.

In the construction of cable-railroad cars it is necessary to provide for certain movements of the cable-gripping device relatively to the track either by mechanical contrivances attached to the gripping device or to the car or truck, or that part of the car or truck which is either directly or indirectly connected to the gripping device and the cable, or attached thereto, in order that the propelling or drawing power of the moving cable may be conveniently and effectively communicated to the car or train of cars which it is required to propel or haul along the line of railroad.

My invention consists in a cable-car grip-slide and its attachments of novel construction, substantially as hereinafter described, and pointed out in the claims, whereby the above-named desired results are very perfectly secured.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 represents a plan view of a certain lower frame of a cable-road-car truck forming part of my invention, the gripping-device beam applied thereto, and other parts of the invention, also showing the axles and wheels of the truck. Fig. 2 is a vertical longitudinal section of the same, with an upper frame and car-body in part mounted thereon, but omitting the gripping-device beam. Figs. 3 and 4 indicate, respectively, a partly sectional side view of one of the grip-slide boxes or pieces, and transverse section of the same applied to one of the slotted members of the lower frame which carries the grip-slide; and Figs. 5 and 6 are plan views showing the invention as applied to different constructions of the lower frame and different arrangements of the truck-wheels relatively to said frame.

Referring in the first instance or more par-

ticularly to Figs. 1, 2, 3, and 4 of the drawings, *a a* indicate the wheels of the truck, and *b b* their axles. *A A* are the journal boxes or bearings for said axles.

*B B'* are side and cross members of a frame which is suspended from or attached to the journal-boxes *A A*. The cross-members *B'* are each formed of a bar constructed with a vertical longitudinal slot or space *c* within it, and are adapted to receive the sliding boxes or blocks *C C*, which receive or support the gripping-device beam *D*, said boxes or blocks being provided with upright pins *d d*, which carry the said beam *D* of the gripping device. This beam *D* is constructed with oblong holes *e e* in its ends where it fits over the pins *d d* on the slides or boxes *C C*, the length of said holes being in the direction of the length of the beam, and the object of which will be hereinafter explained.

The sliding boxes or blocks *C C*, which receive the strain on or pressure of the gripping device and transmit it to the slotted cross-bars *B'* of the frame *B B'*, are each constructed (see Figs. 3 and 4) with inner bearing surfaces or portions *f f* between the sides or walls of the slots *c* in the bars *B'* to receive and transmit the strain or pressure in a horizontal direction within or between the two interior sides of either bar *B'*, and each of said slides, boxes, or blocks is further constructed with bent-over upper bearing surfaces or portions *f'* to receive the lateral or horizontal pressure on the outer sides of either bar *B'*, likewise with bearing-surfaces *f<sup>2</sup>* on the top of the bars *B'* to receive or transmit the downward pressure of the gripping device, and with bearing-surfaces *f<sup>3</sup>* on the under sides of the bars *B'* to receive or transmit the upward pressure of the gripping device. These several bearings or bearing-surfaces serve very effectually to receive the varying pressures or strains which are developed in the transmission of the moving power of the cable to the car that is to be propelled or hauled.

The normal position of the gripping-device beam *D* is parallel with the direction of the railroad-track on which the wheels *a a* are running and with said car-wheels, and the centers *e e* being coincident with the centers



of the pins  $d d$  the horizontal forward strain or pressure of the gripping device is transmitted equally from the beam D to the two pins  $d d$ ; but if for any cause or for any purpose it becomes necessary to change the position of the beam D with respect to the railroad-track or the car-wheels  $a a$  it will be seen that, by reason of the slides C C and the oblong holes  $e e$  in the ends of the beam D, the latter is free to move in various directions—that is, either to the right or left, or one end to the right and one end to the left; or one end of said beam may be thrown over to either side and the other end remain stationary—that is, in its normal position; or said beam may assume a diagonal position on one side or the other of its central normal position, as shown by dotted lines in Fig. 1, for instance.

The journal-boxes A are each constructed with wing-pieces  $g g$ , which serve to support springs  $h h$ , and are further constructed with bearing-surfaces  $g'$ , formed by recesses at the sides to receive the jaws  $i i$  of the pedestals A'.

K, Fig. 2, is the upper frame of the truck or truck-frame, which is attached to and supported by the pedestals A'. This frame K may be of any convenient shape and be furnished with any suitable attachment to carry the car-body H, Fig. 2, or it may itself form the foundation-frame of a car.

G, Fig. 2, is a frame which is attached to the floor-frame H of a car-body. It may be of any convenient shape and be furnished with any suitable connection to the truck-frame K, or the frame G may be omitted and any other suitable connection may be used to support the floor-frame H and otherwise maintain it in a proper central position upon the truck-frame K.

The pedestals A' rest upon the springs  $h h$ , which may be supported above and below by spring-seats in the journal-box and pedestal. Said springs  $h h$  are further held in position by the heads of upper and lower bolts  $l l$ , and it is preferred to so fit the oil-cellars  $m$  that they can be removed from the journal-boxes without disturbing any other part of the running-gear.

The car-wheels, their axles and journal-boxes, and with them the frame B B', can be removed from under the truck or car-body by lifting the pedestals, together with the frames K and G, from the springs  $h h$ .

The meeting or crossing portions of the bars or members B B' may be provided with angle-pieces  $n n$ , to impart angular stiffness to said frame, and be furnished with short-distance blocks  $o o$ , to maintain the proper space or longitudinal opening  $c$  of the slotted bars B', and three bolts  $s s s$  be used at each angular junction of the bars B B'.

Figs. 5 and 6 of the drawings show substantially the same construction so far as the leading or essential features of the invention are concerned; but the frame B B' and wheels  $a a$  are represented as differently carried or arranged, said frame in Fig. 5 being carried by an outer frame I, with the wheels  $a a$  in between the two frames, and the wheels  $a a$  in Fig. 6 being on the inside instead of, as in Fig. 1, on the outside of the bars B of the frame B B'.

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

1. In gripping-device supports and mechanism for cable-road cars, the frame which carries the gripping-device beam, provided with bars having a longitudinal slot or space adapted to receive slides carrying said beam, substantially as specified.

2. In gripping-device supports and mechanism for cable-road cars, the slides or sliding blocks or boxes C C, provided with upright pins  $d d$ , adapted to hold the gripping-device carrier or beam, and constructed with lateral inside and outside and upper and lower bearings or bearing-surfaces for operation upon and within slotted bars of a frame forming part of or connected with the car or its truck, essentially as specified.

3. In gripping-device supports and mechanism for cable-road cars, the combination, with the longitudinally-slotted cross-bars B' B', of the slides or sliding boxes or blocks C C, having upright pins  $d d$ , and constructed with lateral inside and outside and upper and lower bearings for operation upon and within said cross-bars, substantially as and for the purpose or purposes herein set forth.

4. In gripping-device supports and mechanism for cable-road cars, the gripping-device carrier or beam D, having longitudinally-arranged oblong holes  $e e$  in or near its ends, adapted to receive holding-pins within and through them, whereby variations in the position of said beam relatively to the track are provided for, essentially as described.

5. In gripping-device supports and mechanism for cable-road cars, the combination, with the slotted bars B' B' of a frame forming part of or connected with the car or its truck, of the slides or sliding boxes or blocks C C, having upright pins  $d d$ , and the gripping-device carrier or beam D, having oblong holes  $e e$  in its ends, adapted to receive the pins  $d d$  through them, substantially as shown and described.

AARON TWYMAN.

Witnesses:

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R. G. SCHULZ.