(No Model.) 3 Sheets—Sheet 1.

L. PFINGST & S. A. BEMIS.

CABLE GRIP BEAM AND SUPPORTING DEVICE THEREFOR.

No. 386,344. Patented July 17, 1888.

Fig. 1.

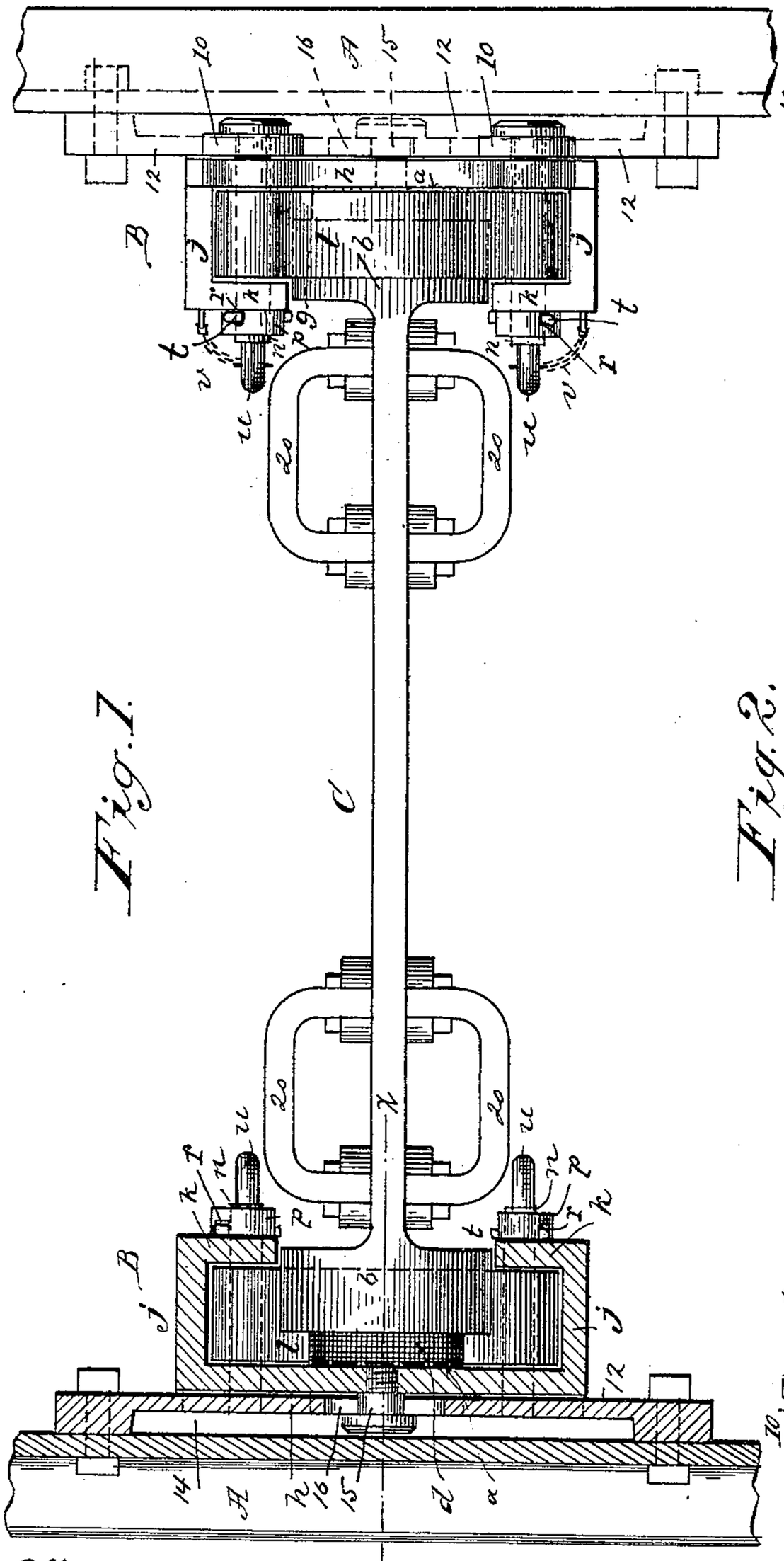
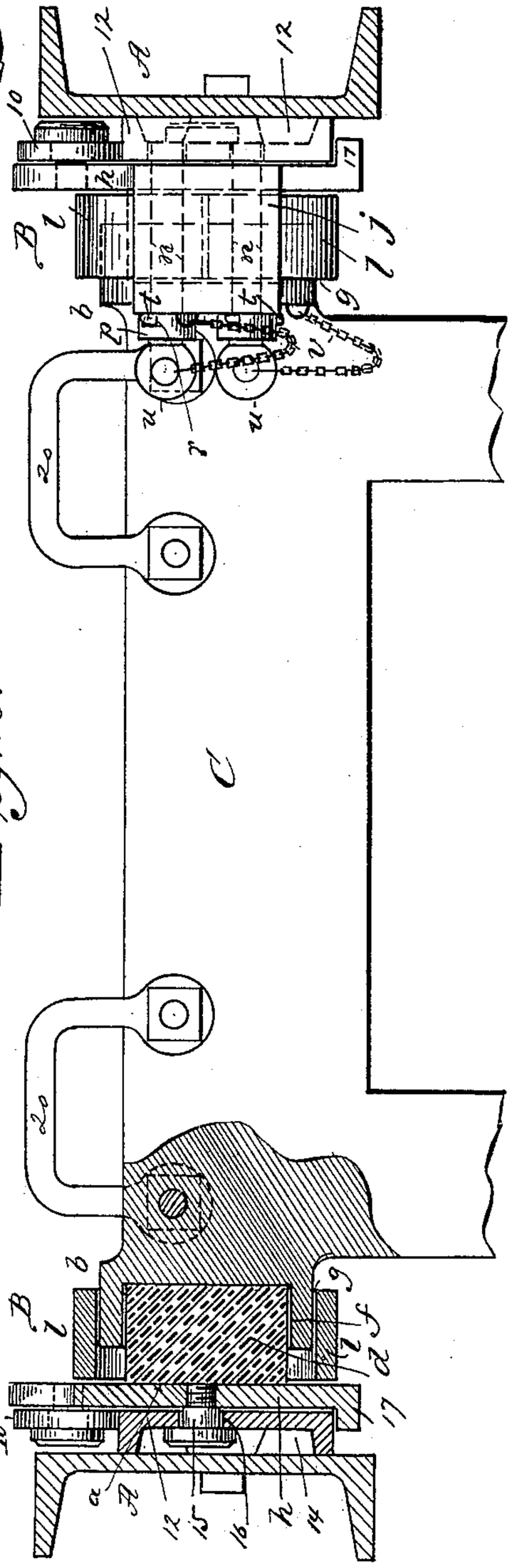


Fig. 2.



Witnesses.

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(No Model.) 3 Sheets—Sheet 2.

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Fig. 3.

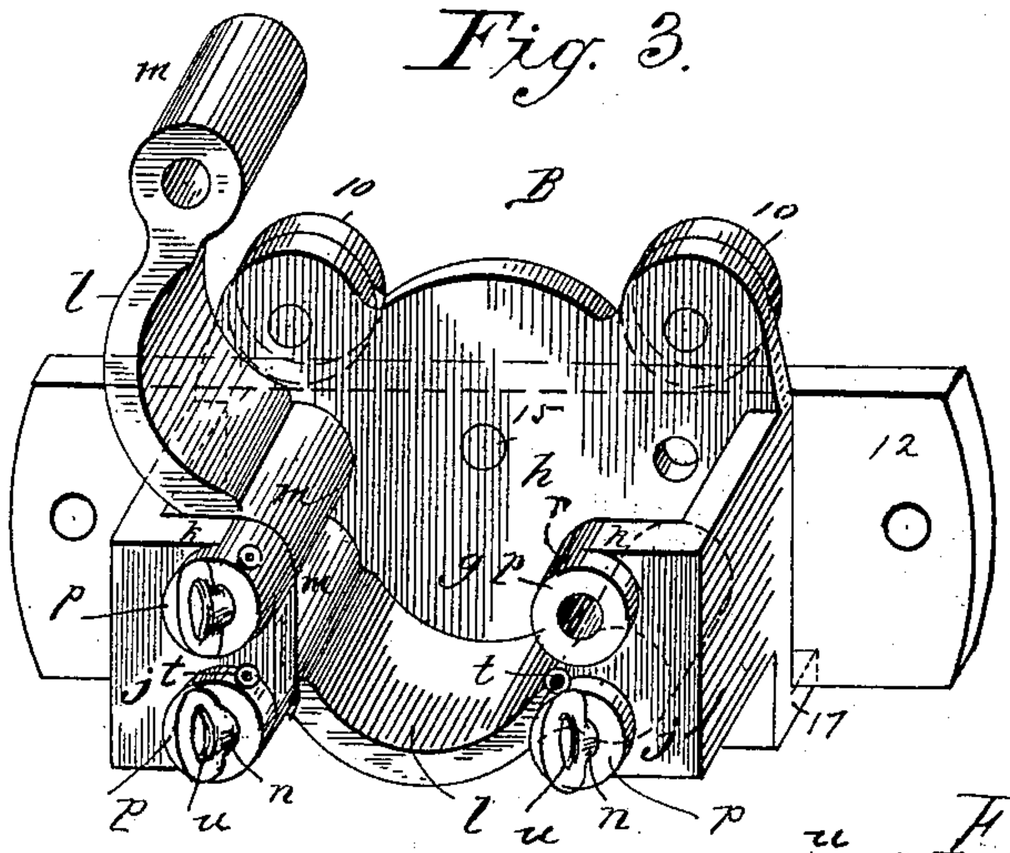


Fig. 3a.

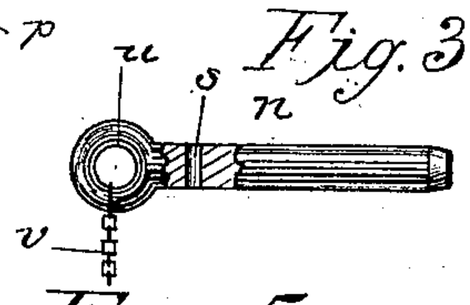


Fig. 4.

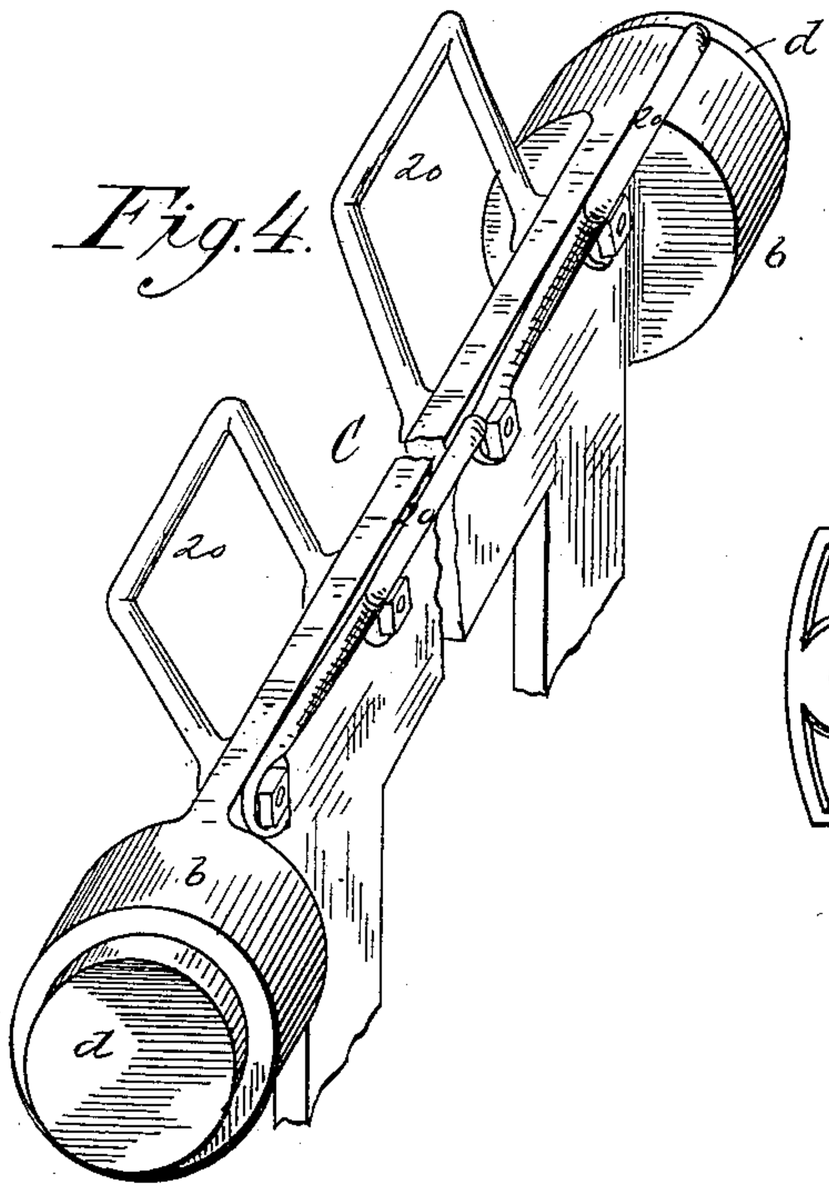
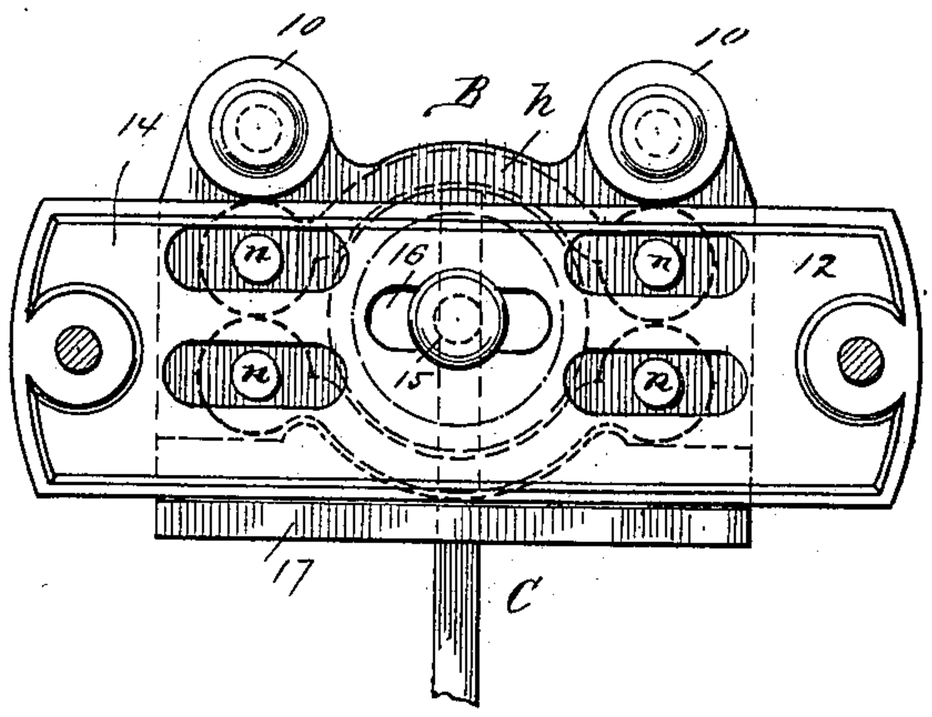


Fig. 5.



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(No Model.) 3 Sheets—Sheet 3.

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CABLE GRIP BEAM AND SUPPORTING DEVICE THEREFOR.

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Fig. 6.

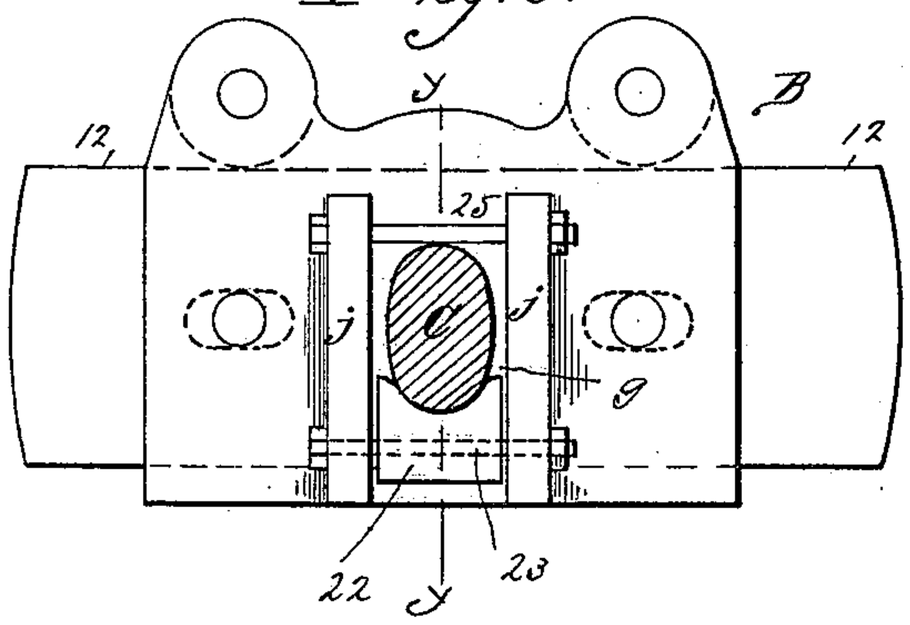
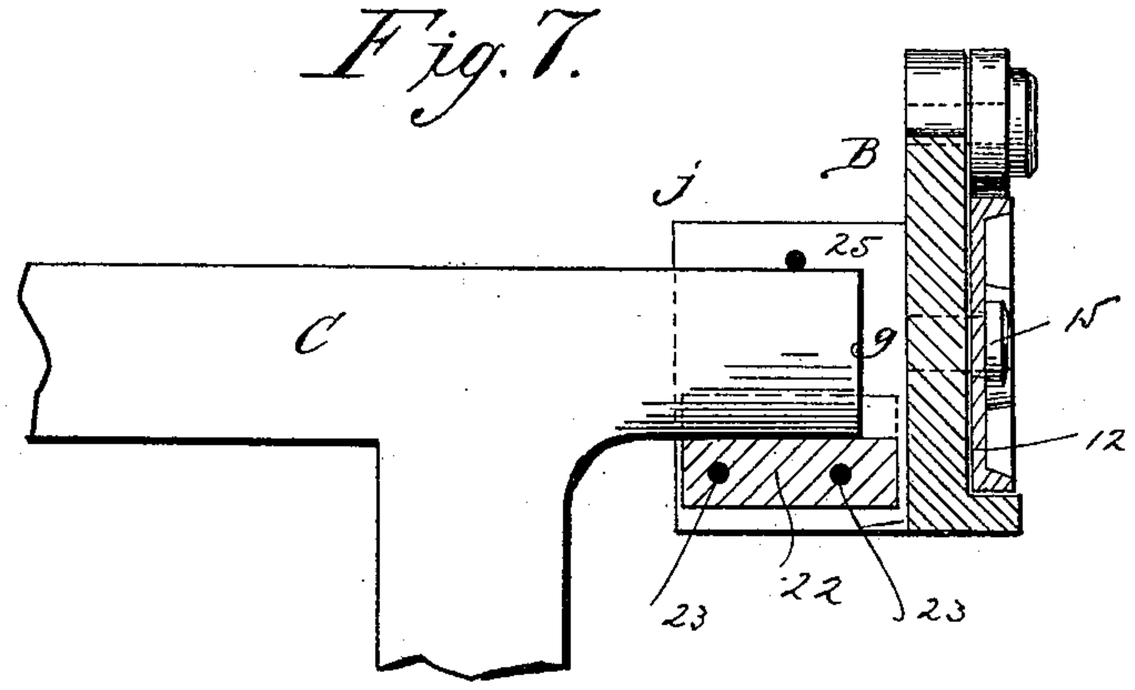


Fig. 7.



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UNITED STATES PATENT OFFICE.

LOUIS PFINGST, OF NEW YORK, N. Y., AND SUMNER A. BEMIS, OF SPRINGFIELD, MASSACHUSETTS.

CABLE-GRIP BEAM AND SUPPORTING DEVICE THEREFOR.

SPECIFICATION forming part of Letters Patent No. 386,344, dated July 17, 1888.

Application filed April 11, 1888. Serial No. 270,341. (No model.)

To all whom it may concern:

Be it known that we, LOUIS PFINGST and SUMNER A. BEMIS, citizens of the United States, residing, respectively, in the city, county, and State of New York, and at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Cable-Grip Beams and Supporting Devices Therefor, of which the following is a specification.

This invention relates to improvements in supports on the truck-frames of cable-impelled cars for the grip-beams which carry the cable gripping or engaging devices, the purpose thereof being to present and maintain such gripping devices at all times and under all motions of the car and its truck to their proper relations to the cable, the specific objects to be obtained in the present supports being their capability, first, for permitting endwise movement of the grip-beam therein in relation to the length of the truck; secondly, for permitting a lateral movement of said grip-beam bodily, or as to its either end, in said supports, and, thirdly, for permitting an oscillation or rolling movement of the said grip-beam by its upper or bearing end portions in said supports; and to these ends the invention consists in the construction and combination of parts, substantially as will hereinafter more fully appear.

In the accompanying drawings, Figure 1 represents a grip-beam and its supports, the latter being attached to the transverse braces or girders of a car-truck, showing one of said transverse girders as in horizontal section with some parts of the grip-beam support thereat in horizontal section, other parts thereof being removed. Fig. 2 is a vertical cross-section of said truck cross brace or girders, and in part a side elevation and in part a longitudinal section on line *x x* of the grip-beam and its supports. Fig. 3 is a perspective view of one of the grip-beam end supports, with one of the arc-shaped confining bars or loops swung into an open position. Fig. 3ª is a view of one of the arc-bar securing-pins detached. Fig. 4 is a perspective view of the grip-beam, some portions thereof being broken away. Fig. 5 is a rear view of one of the grip-beam supports as removed from the cross-girder of the truck. Figs. 6 and 7 are respectively a cross-section of one bearing end of the grip-beam and inner face view of the support therefor, and a vertical section thereof on the line *y y*.

In the drawings, A A represent transverse girders or transoms of a car-truck, each provided midway of its length with a grip-carriage, B, and C represents the grip-beam, in length a little shorter than the distance between the inner faces, *a*, of the grip-carriages, so that it may have a slight endwise play between said inner faces of said carriages. The grip-beam at each end, as shown in Figs. 1, 2, and 4, is provided with an enlarged cylindrical-shaped head, *b*, and has a socket, *f*, therein, in which may be placed a spring, *d*, the said spring projecting beyond the ends of said beam-heads and occupying, when the beam is supported in place in the grip-carriages, the spaces between the ends of the beam-heads and the inner faces of the said carriages. The said springs are to be preferably formed of blocks of rubber, although stiff spiral or other form of spring or elastic cushion may be employed in lieu of the rubber springs.

The grip-carriages B B are preferably movable along the length of said cross-transoms—that is, laterally of the car-truck—and said grip-carriages are provided with sockets or rests *g* for the ends of the grip-beam, which permit, in addition to the endwise motion of said grip-beam before mentioned, a partial rotation or roll of the said beam by its bearing ends therein, and said sockets are formed separable, or so as to be divided as to their upper and lower bearing portions or walls, whereby the bearing ends of said grip-frame may be either lifted out thereof or dropped therefrom, and, as particularly shown in the drawings, Sheets 1 and 2 thereof, each grip-carriage B consists of a back plate or outer wall, *h*, provided at each end with forward extension, *j*, terminating in short inwardly-extending lugs *k*, and arc-shaped bars or rigid loops *l*, having eye-heads *m* at each end, are confined in place in said carriage by the pins *n* passing through the inner lugs, *k*, and the back plate of the carriage and through the intermediately-disposed loop-eye heads *m* with their concave

sides or loop-sweeps outwardly disposed in relation to a common horizontal central line, so that substantially a circular pocket is formed corresponding with the transverse contour of the grip-beam heads.

The lugs *k* of the carriage are provided at the outer end of the pin-holes with bosses *p*, provided with transverse holes *r*, through which keys or split pins *t* may be passed, and also through cross-holes *s* in the pins *n*, whereby said pins will be held against escape from their positions for confining the loop-bar ends. Said pins at their outer ends may be provided with ring-eyes *u*, for the connection therewith of chains *v*, which by their other ends are fastened to the carriage.

To the rear of the grip-carriage is hung a pair of rollers, 10, which have a bearing in a horizontal line on the cross-transoms, or some part thereof, which bearing parts, for convenience of construction, are here shown as consisting of plates 12, secured to the inside of said transoms, having portions of their faces toward said transoms recessed, as at 14, a headed stud, 15, secured to each of said carriage back plates and passing through a horizontally-elongated slot, 16, in its respectively-adjacent fixed transom-plate 12, serving as a limit to the lateral movement of said carriage on the truck.

Each carriage back plate, *h*, as shown in Figs. 1, 2, and 3, is provided with an outwardly-extending horizontal flange, 17, underlying the transom-plate 12, which serves to insure with greater certainty an even and steady lateral movement of the carriage.

The grip-beam C, as shown, is at its upper side provided with handles 20 20, for convenience in lifting same from the carriage sockets.

In Figs. 6 and 7, in lieu of forming the separable grip-beam-receiving sockets *g* with pivotal arc or loop bars, a rest-block, 22, is supported by bolts 23, loosely passing through the inward carriage-extensions *j* and said rest-block 22, said rest-block being on its upper side of a concave shape to permit the roll therein of the grip-beam end, and above said grip-beam end one or more bolts, 25, are loosely passed through said carriage-extensions *j*, from which construction the same results are attained in substantially the same ways, but under modified formations of some of the parts the endwise and rolling motion of the grip-beam on the laterally-movable carriage being permitted, as plain.

What we claim as our invention is—

1. The combination, with a car-truck, of a grip-carriage supported and laterally movable thereon, provided with a rolling bearing for a grip-beam, substantially as described.

2. The combination, with a car-truck, of a grip-carriage laterally movable thereon, provided with a rolling bearing for a grip-beam, the walls of which bearing are separable, substantially as described.

3. The combination, with a car-truck and a pair of grip-carriages supported and laterally movable thereon, provided with rolling bearings for the grip-beam, of a grip-beam supported in said bearings and having a length less than the distance between the opposing outer walls of said grip-carriages, whereby it may have an endwise movement, substantially as described.

4. The combination, with a car-truck and a pair of grip-carriages supported and laterally movable thereon, provided with rolling bearings for the grip-beam, of a grip-beam supported in said bearings and of a length less than the distance between the opposing outer walls of said grip-carriages, and springs between the ends of said grip-beam and said walls of the carriages, substantialiy as described.

5. The combination, with a car-truck cross-transom provided with a plate, 12, secured thereto and having a horizontal slot, 16, of a grip-carriage having a bearing and support for a grip-beam provided with rollers bearing on said plate 12, and having the stud 15 extending into said slot, substantially as described.

6. The combination, with a car-truck cross-transom provided with a recessed plate, 12, secured thereto, of a bearing and support for a grip-beam provided with rollers bearing on said plate 12, having the headed stud 15 extending into said slot, and the underlying flange 17, substantially as described.

7. A grip-carriage consisting of a wall, *h*, combined with a pair of arc shaped bars, *l*, having at each end an eye, and pins passing through said eyes and said wall, one or both pins of each of said bars being removable, substantially as described.

8. A grip-carriage consisting in the combination, with a wall, *h*, having the extensions *j*, and lugs *k*, provided with the bosses *p*, of a pair of arc-shaped bars, *l*, having at each end an eye, the pins passing through said carriage lug and wall and said eyes, and the keys *t*, passing through said bosses and said pins, substantially as described.

9. The combination, with the cross-transoms A A of a car-truck, provided with the fixed recessed plates 12, having the horizontal slots 16, of the grip-carriages B B, each comprising the rear wall, *h*, extensions *j*, and lugs *k*, the headed stud 15, secured to said wall *h* and passing through the said slot 16, and provided with the rollers 10 10, the arc-shaped bars *l l*, having the eyes and the removable pins passing through said carriage lugs and wall and said eyes, and the grip-beam C, provided with the cylindrical and socketed heads, and the springs *d*, all substantially as and for the purpose described.

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