

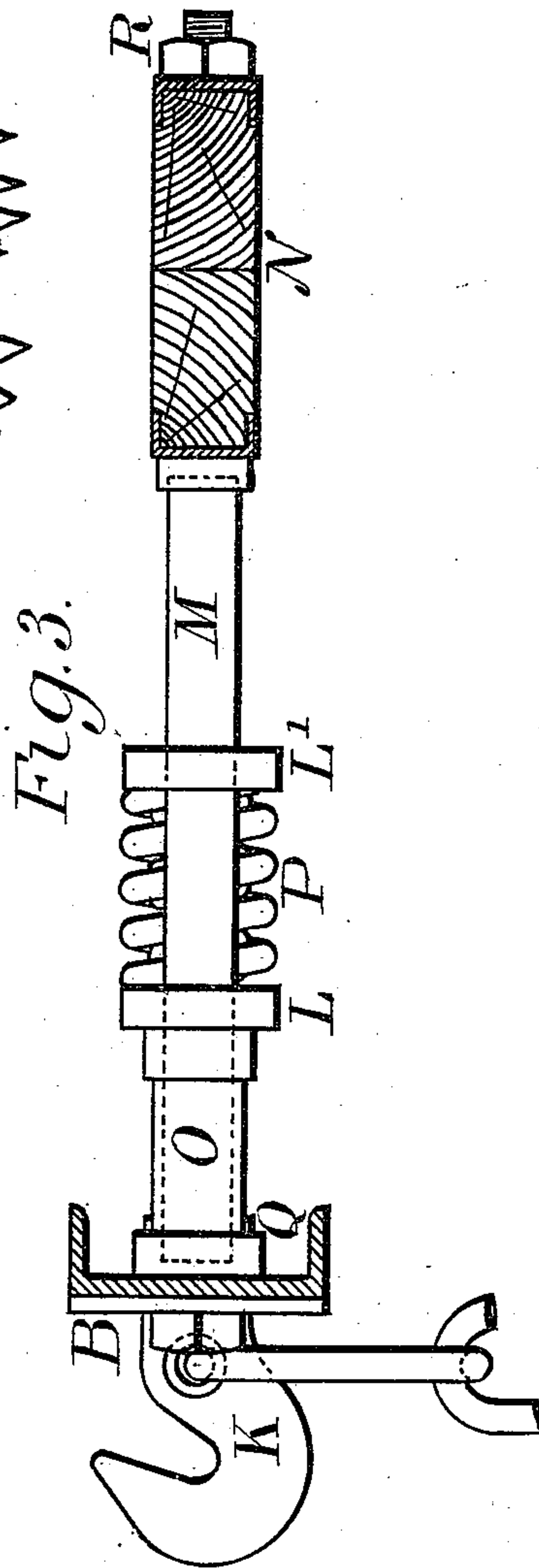
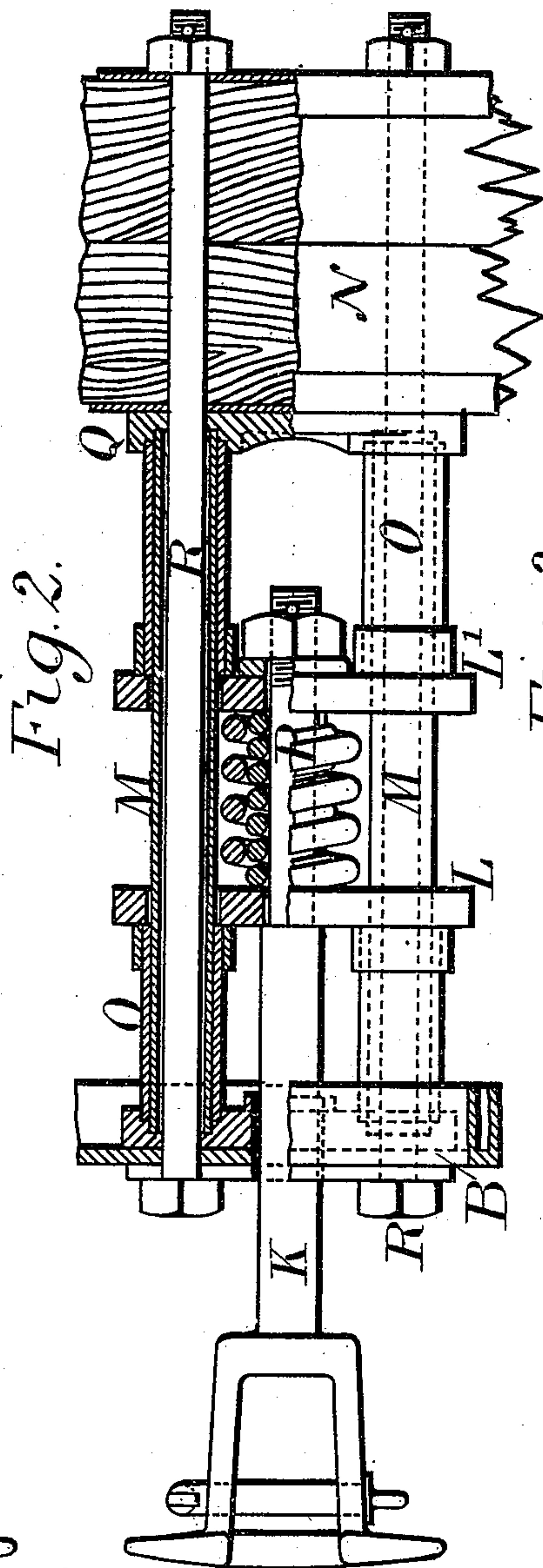
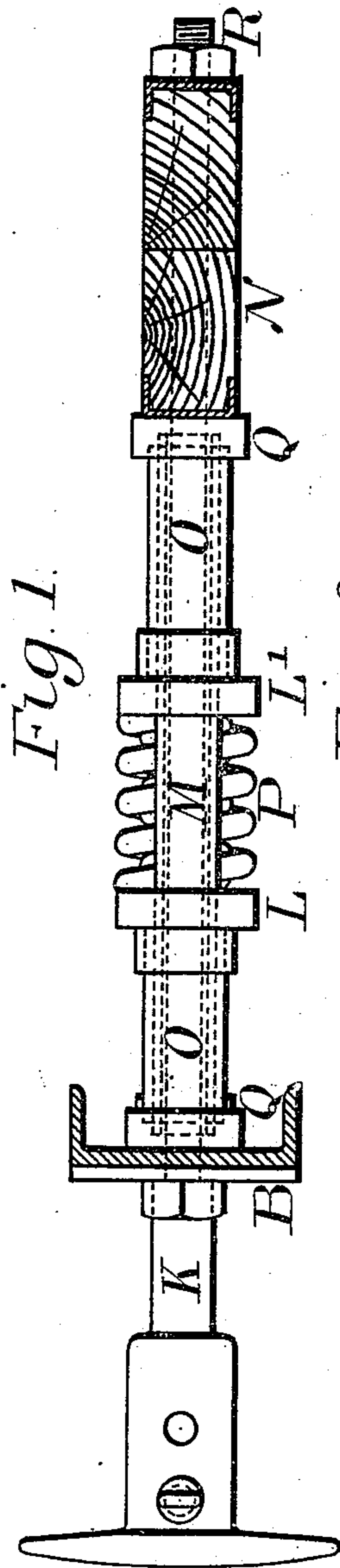
(No Model.)

2 Sheets—Sheet 1.

G. W. ETTENGER.  
BUFFING AND DRAW GEAR FOR CARS.

No. 510,334.

Patented Dec. 5, 1893.



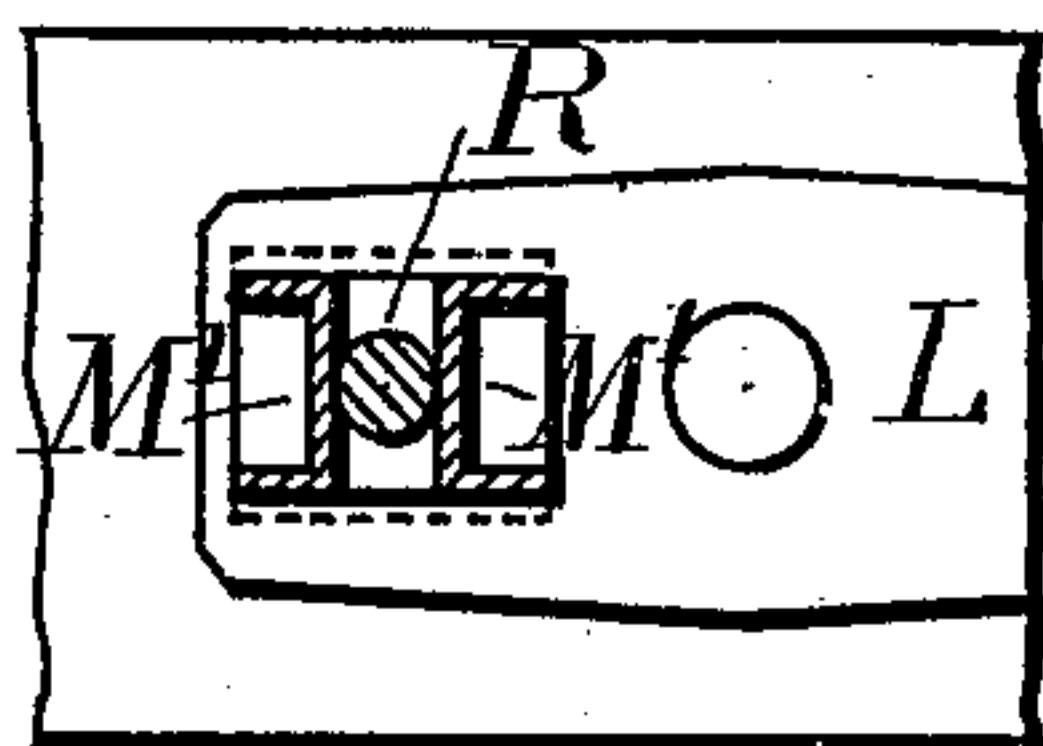
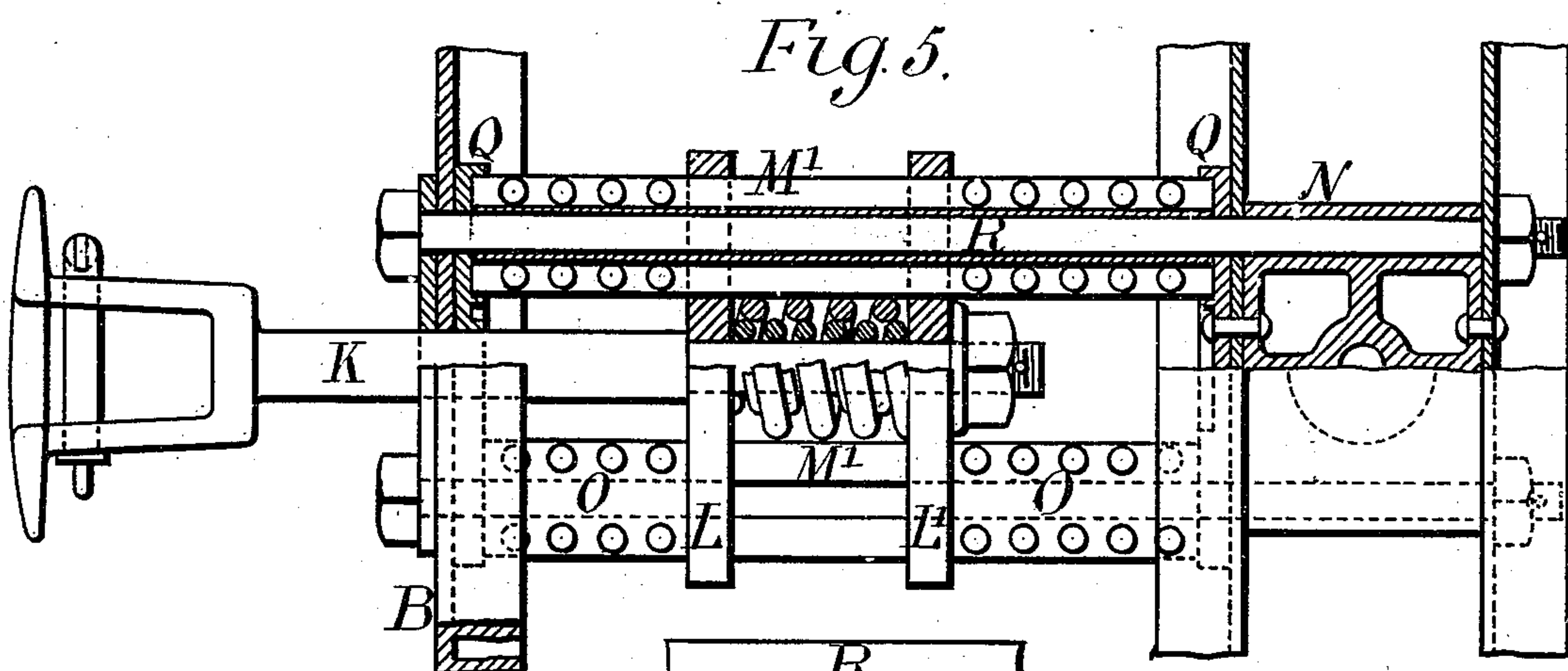
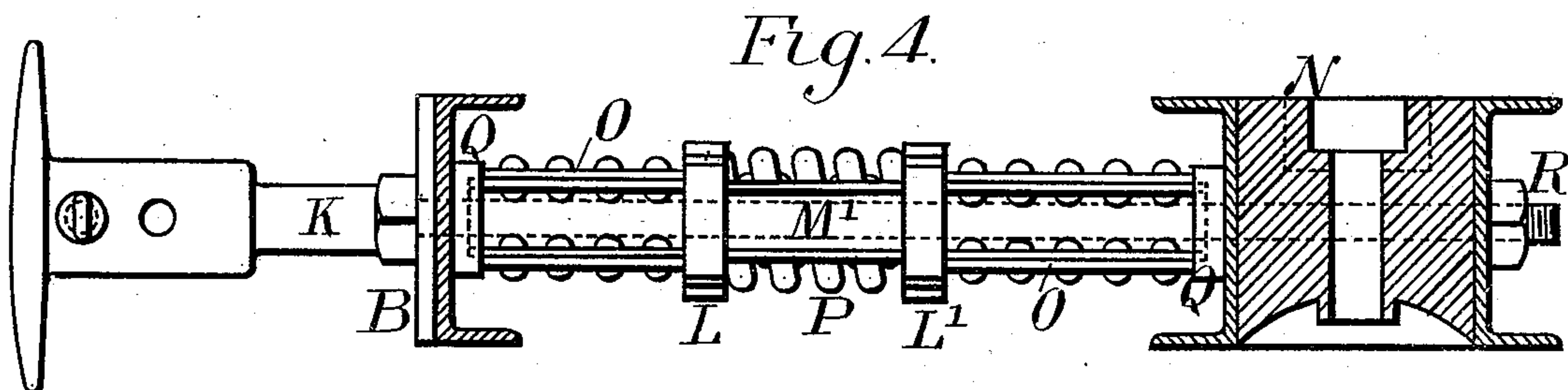
Witnesses  
J. A. Saul  
J. W. Rea.

Inventor  
George Watson Ettenger  
by James L. Norris  
Atty.

G. W. ETTINGER.  
BUFFING AND DRAW GEAR FOR CARS.

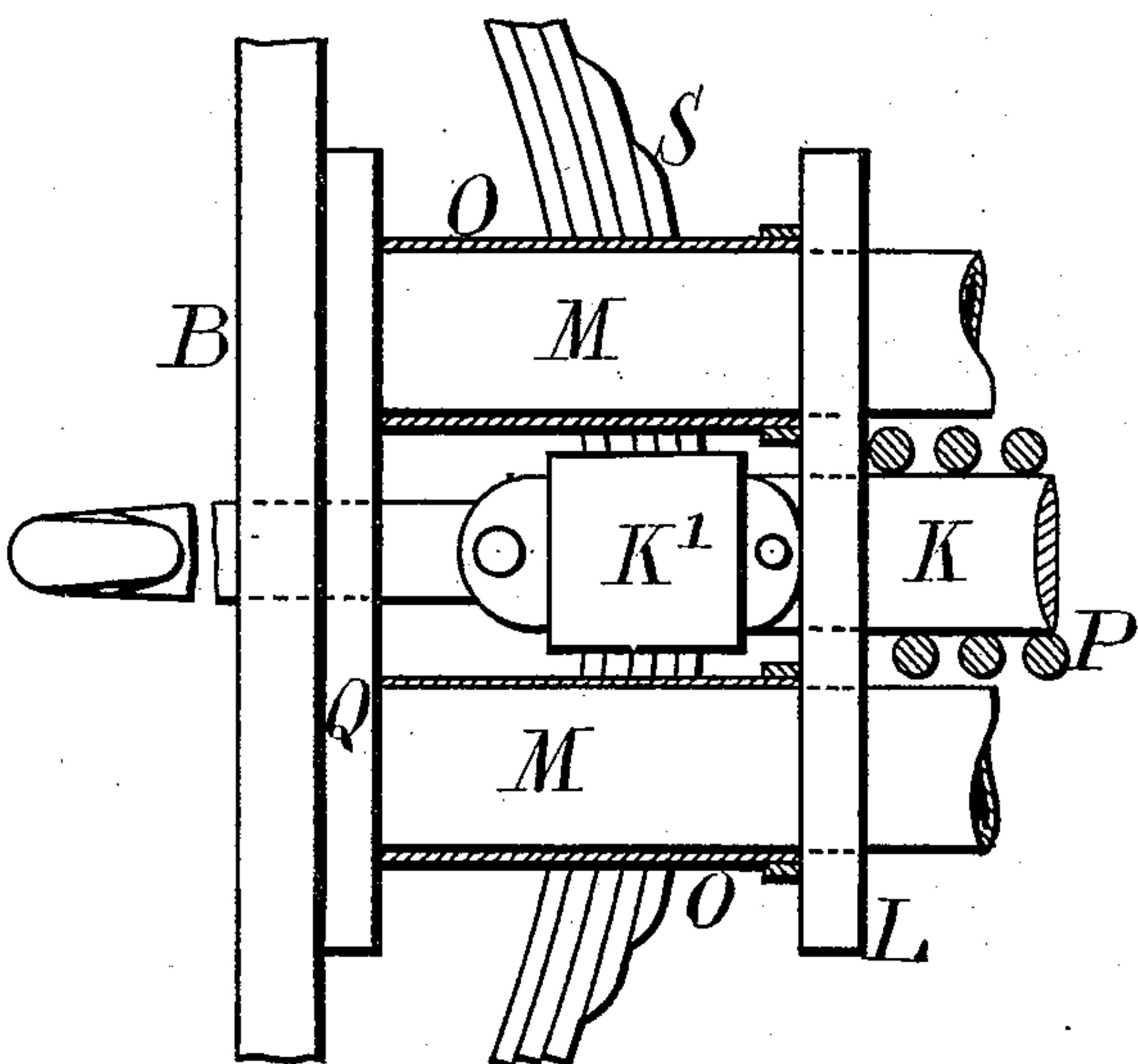
No. 510,334.

Patented Dec. 5, 1893.

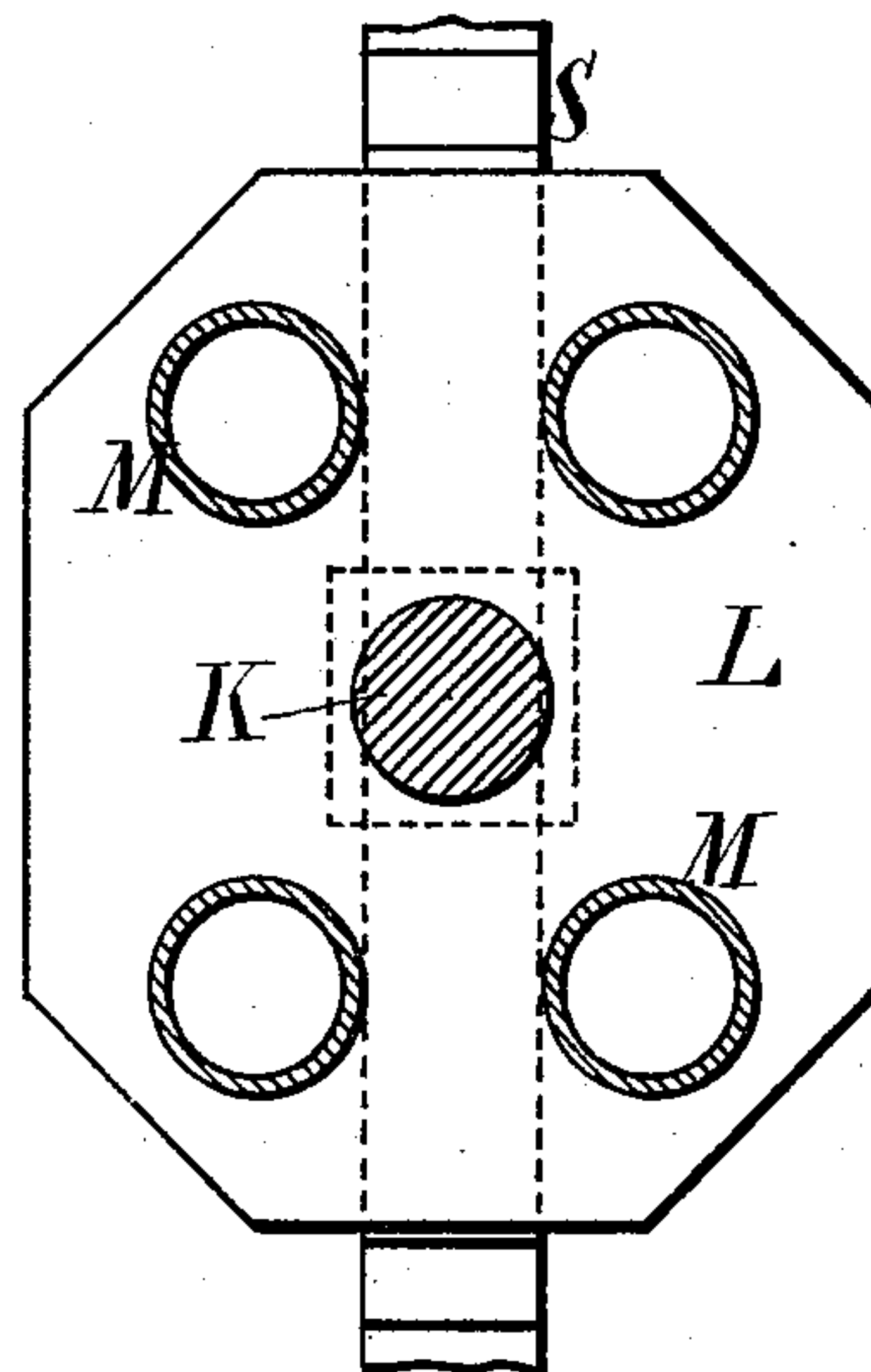


*Fig. 6.*

*Fig. 7.*



*Fig. 8.*



Witnesses  
J. A. Saul.  
G. M. Rea.

Inventor  
George Watson Ettenger  
by James L. Norris  
Atty.



# UNITED STATES PATENT OFFICE.

GEORGE WATSON ETTINGER, OF BARROW-IN-FURNESS, ASSIGNOR OF ONE-HALF TO GEORGE EARL CHURCH, OF LONDON, ENGLAND.

## BUFFING AND DRAW GEAR FOR CARS.

SPECIFICATION forming part of Letters Patent No. 510,334, dated December 5, 1893.

Application filed June 15, 1893. Serial No. 477,748. (No model.) Patented in France May 24, 1893, No. 230,305; in Belgium May 24, 1893, No. 104,792; in Italy June 9, 1893, LXVII, 33, and in New South Wales June 19, 1893, No. 4,472.

*To all whom it may concern:*

Be it known that I, GEORGE WATSON ETTINGER, a citizen of the United States, residing at 12 Church Street, Barrow-in-Furness, Lancashire, England, have invented certain new and useful Improvements in Buffing and Draw Gear for Railway Wagons and Carriages, (for which I have obtained Letters Patent in Italy, dated June 9, 1893, Vol. LXVII, 33; in Belgium, dated May 24, 1893, No. 104,792; in France, dated May 24, 1893, No. 230,305, and in New South Wales, dated June 19, 1893, No. 4,472,) of which the following is a specification.

This invention relates to an improved construction of that description of buffing and draw gear for railway carriages and wagons in which a draft or buffing bar or a combined draft and buffing bar has its inner part passing through and bearing against two follower plates between which is a helical draft or buffing spring, and which can slide on two parallel horizontal pillars secured to the under framing, such pillars being provided with abutments against which the follower plates bear. My improved construction of such device is shown on the accompanying drawings in which—

Figures 1 and 2 show respectively a side view and a part sectional plan of one arrangement as applied to a combined buffing and draw bar. Fig. 3 shows a side view of the device as applied to a draw hook. Figs. 4, 5 and 6 show respectively a side view, a part sectional plan, and a part cross section of a modified construction of the guide pillars. Figs. 7 and 8 show respectively a part plan and a cross section of a modified construction with four guide pillars for use with the ordinary laminated side springs for side buffers.

In the arrangement shown in side view and part sectional plan at Figs. 1 and 2 the combined buffer and draw bar K (which may be of any of the various known constructions) passes through the headstock B and through two follower plates L L', which slide with eyes over the tubular guide pillars M that extend from the headstock B to the transom N, abutment sleeves O, O, being fitted on each end of the pillar guides, for the plates L L'

to butt against, the plates being kept against their abutments by the helical springs P mounted on the bar K between the two plates. The bar K being made to bear with a shoulder against the outer plate L and with a nut against the inner plate L', it will be seen that when the bar is forced inward by a buffing action it will move the plate L inward upon the pillars and will compress the springs against the inner plate L' which will bear against its abutments, while when the bar K is drawn outward by a drawing action, it will draw the plate L' outward, compressing the springs against the plate L. The guide pillars M, and abutment sleeves O instead of abutting directly against the headstock and transom as heretofore, are made to fit with their ends in sockets formed in socket plates Q fitting against the headstock and transom and extending across from the one guide pillar to the other so as to securely hold these in position, such socket plates being formed with holes through which pass the tie bolts R that secure the guide pillars and socket plates firmly to the headstock and transom. Also, by forming the follower plates L L' with circular holes fitting on the guide pillars instead of only with semicircular notches fitting half-round the pillars, as heretofore, a much securer guiding of the draw and buffing bar K is insured, and any accidental displacement of the follower plates and springs, such as occurs with the old construction, is entirely prevented.

When the apparatus is applied only as a draw bar, or only as a buffer, the inner or outer abutment sleeves O as the case may be, may be dispensed with.

Fig. 3 shows a side view of the apparatus applied as a draw hook, the inner abutment sleeves being dispensed with.

Figs. 4, 5 and 6 show respectively a side view, a part sectional plan and a part cross section of a modified construction in which the tubular guide pillars are replaced by two bars M' M' of a trough section as shown in the cross section at Fig. 6, between which bars the tie bolt R passes, and which are connected together at each end by plates O, O, riveted or otherwise secured thereto as



shown, the ends of which plates serve as the abutments for the follower plates L, L'. These plates are formed with rectangular holes for fitting over the two bars M' as shown. The  
 5 sockets of the plates Q are also formed rectangular to receive the ends of the bars M.

Figs. 7 and 8 show respectively a part plan and a cross section of an arrangement for adapting the above described apparatus to  
 10 the ordinary arrangement with central draw hook and side buffers, in which the laminated buffer spring connected to the draw bar is employed. In this case there are two  
 15 pairs of guide pillars M, between which the laminated buffer spring S passes this being connected to a loop K' of the draw bar K. The follower plates L are in this case made  
 20 with four holes to slide on the four columns, and the socket plates Q are made with four sockets to receive the pillars M and their abutment sleeves O. Helical springs P are, as  
 before, provided behind the follower plate L.

Having thus described the nature of my said invention and the best means I know for carrying the same into practical effect, I claim—  
 25

1. In buffing and draw-gear for railway carriages, the combination with parallel guide-pillars M, of abutments O, socket plates Q  
 30 extending over the entire interval between the guide-pillars and having sockets which receive both ends of said pillars and the ends of the abutments, parallel plates L having openings in their ends which receive the  
 35 guide-pillars M, the latter being entirely encircled by said plates, springs P arranged between the said follower-plates, and a bar K

passing through the forward socket plate Q and through both parallel plates L, and having a shoulder in front of the forward plate and a nut behind the rearward plate, substantially as described. 40

2. In buffing and draw-gear for railway carriages, the combination with guide-pillars M each composed of two oppositely arranged  
 45 trough-shaped plates, of tie-rods R arranged between said trough-shaped plates, abutment plates O laid upon and riveted to said trough-shaped plates, socket plates Q having sockets which receive both forward and rearward ends of the guide-pillars and abutment-  
 50 plates, parallel plates L having openings which receive and entirely surround the guide-pillars, springs P arranged between the said parallel plates, and a bar K passing through said plates and provided with a shoulder  
 55 in front of the forward plate and a nut lying behind the rearward plate, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of  
 60 two subscribing witnesses, this 9th day of May, A. D. 1893.

GEORGE WATSON ETTINGER.

Witnesses:

CHAS. D. ABEL,  
*Chartered Patent Agent, 28 Southampton Buildings, London, W. C.*

JNO. P. MILLARD,  
*Clerk to Messrs. Abel & Imray, Consulting Engineers and Patent Agents, 28 Southampton Buildings, London, W. C.*