

C. A. PERSONS.  
SADDLE.  
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981,939.

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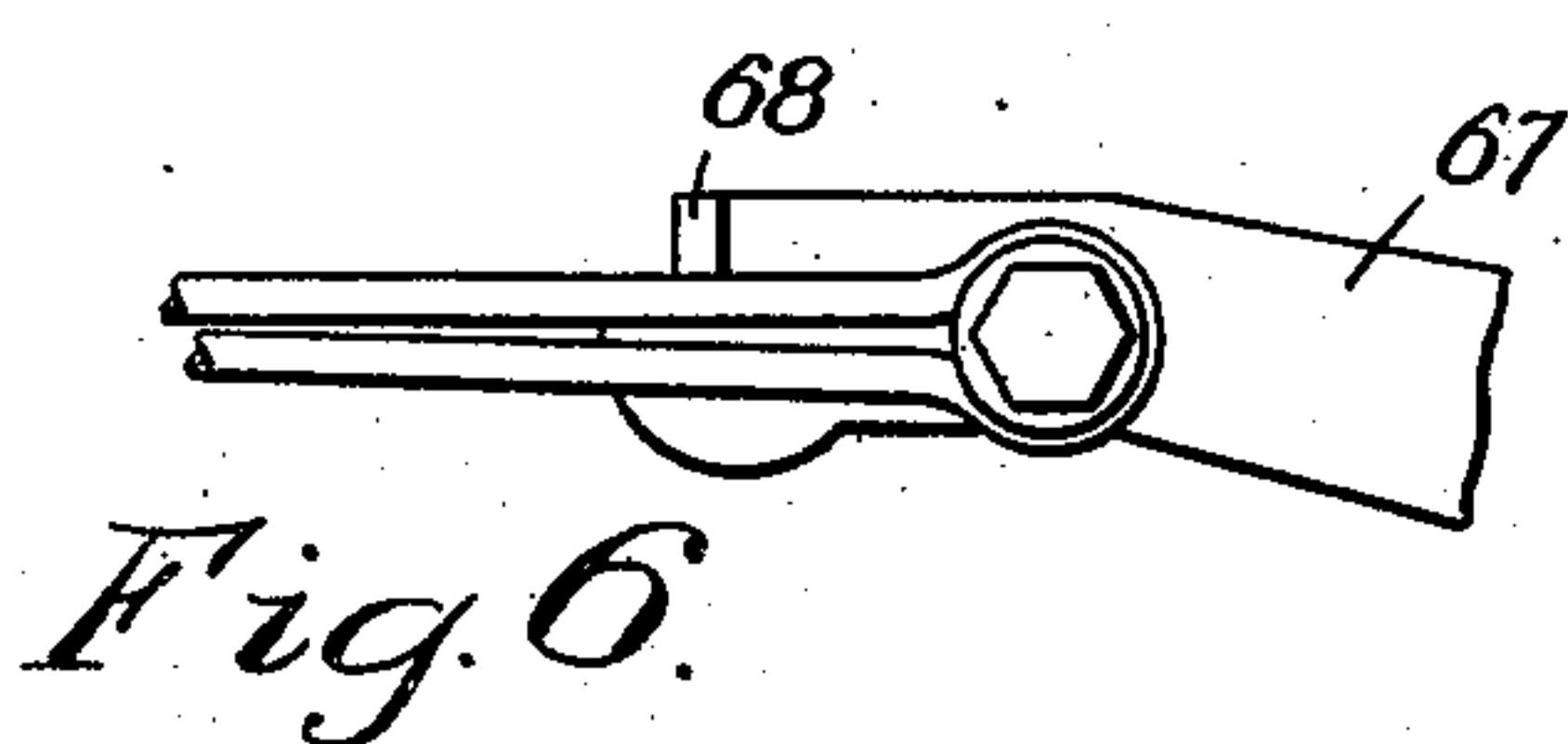
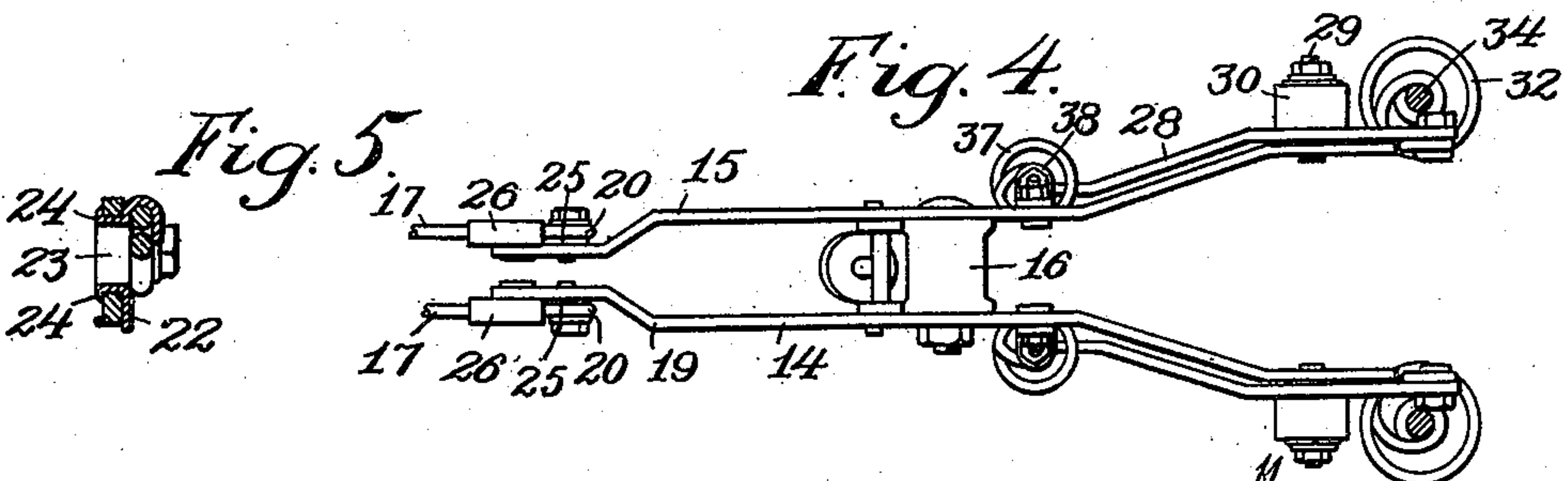
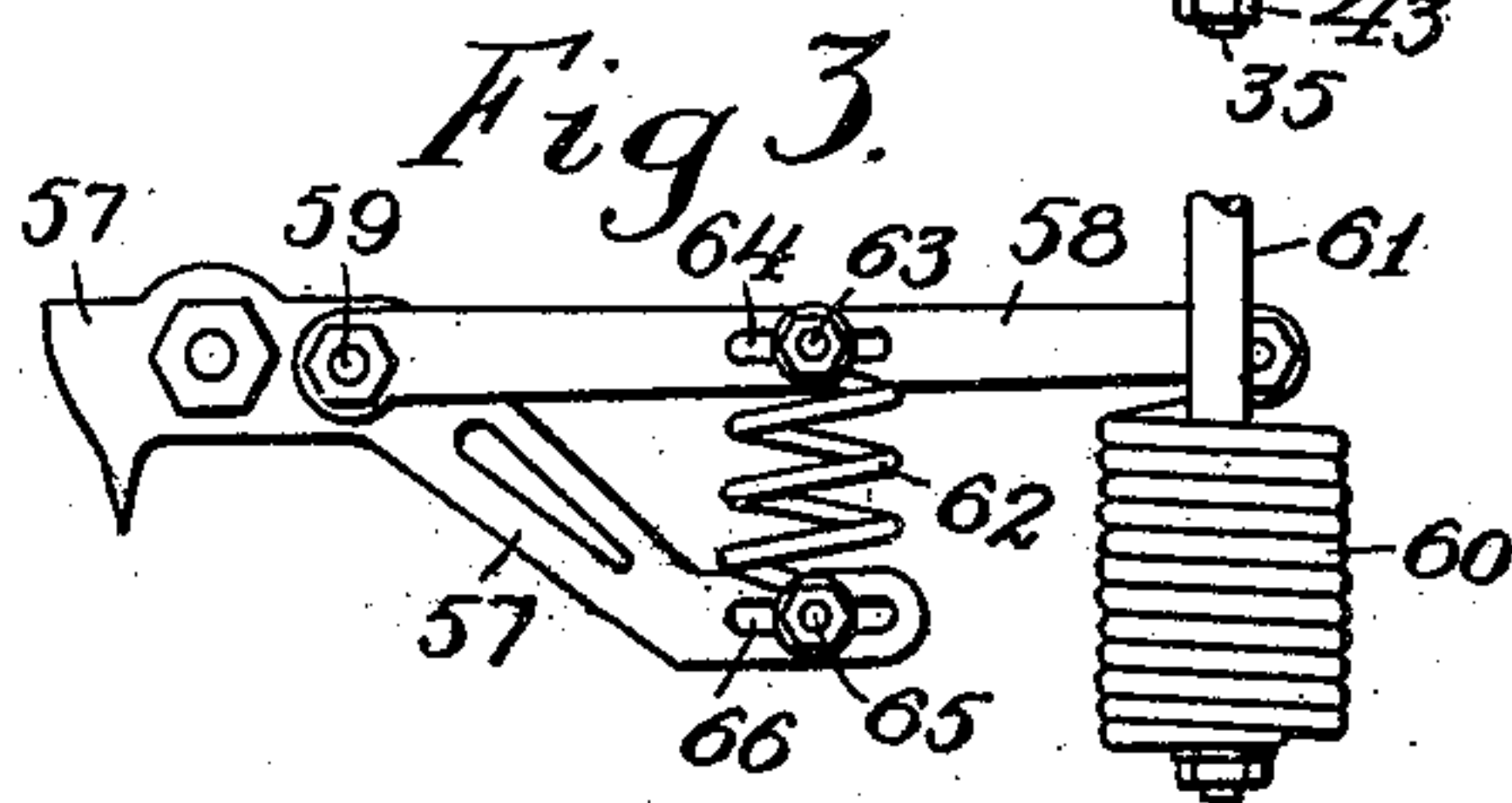
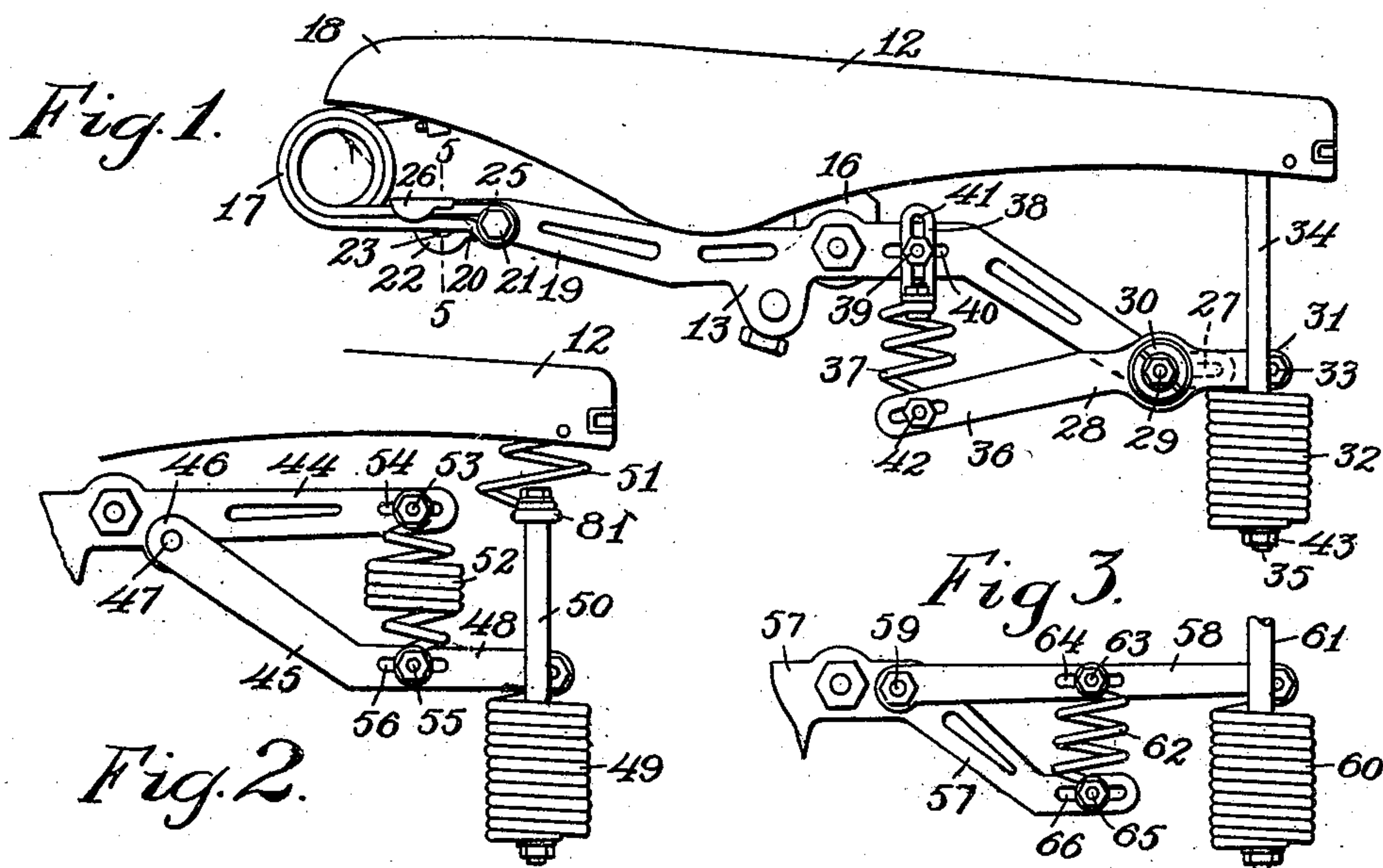


Fig. 11.

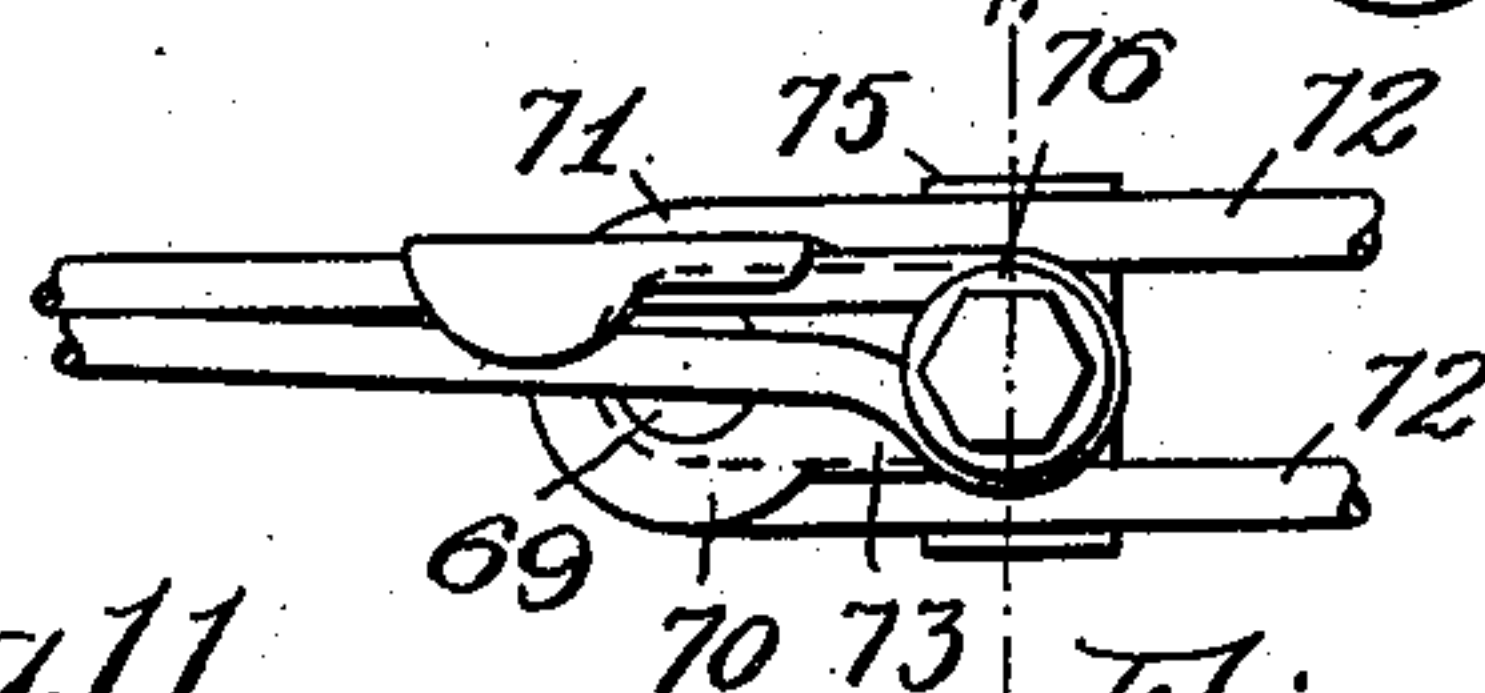


Fig. 8.

Fig. 7.

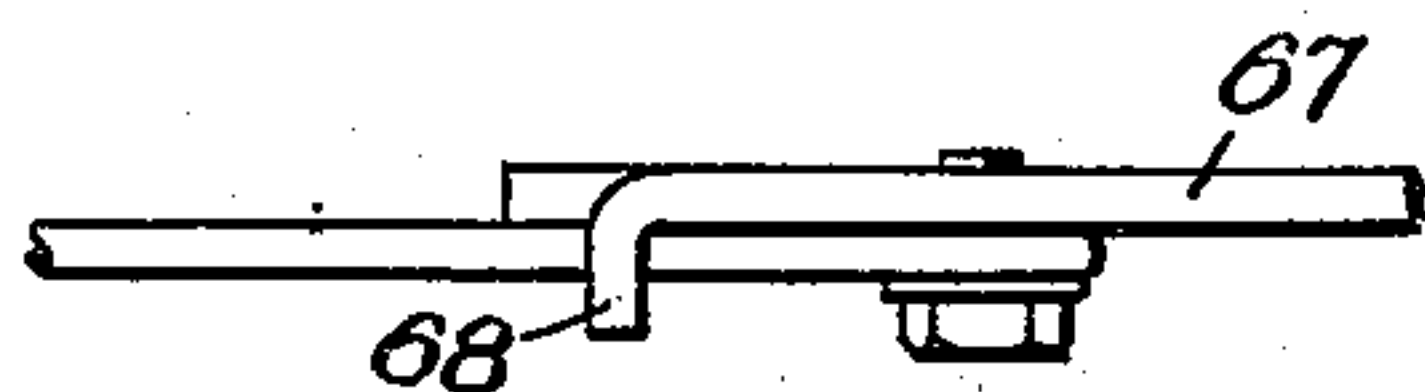


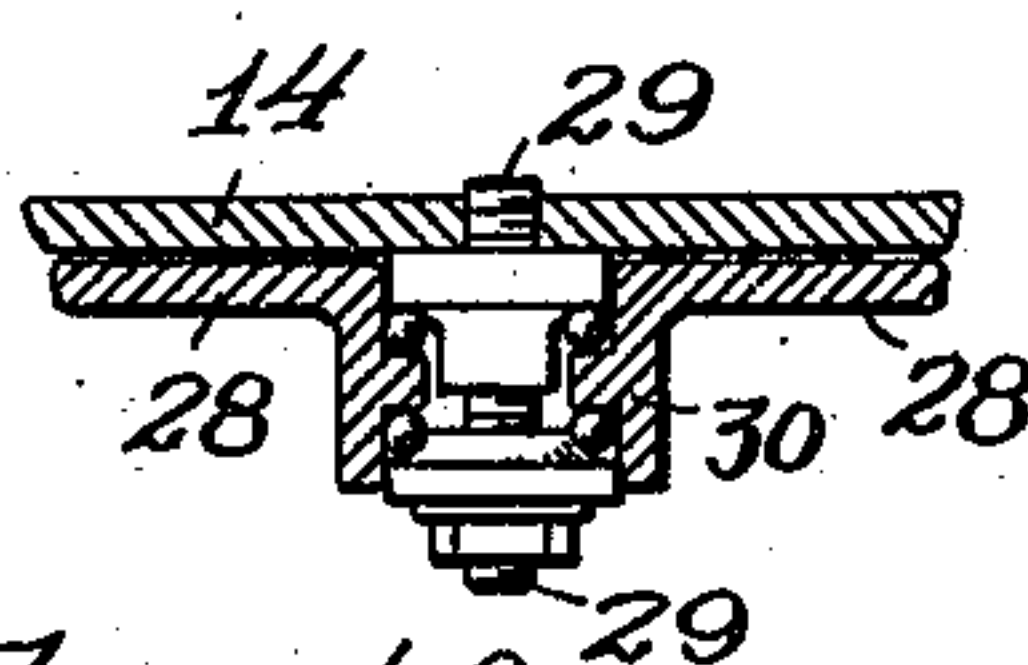
Fig. 9.

Witnesses.

R. D. Tolman.

A. H. Nelson.

Fig. 10.



Inventor  
Charles A. Persons.  
By Harley W. Bantist  
Attorney



# UNITED STATES PATENT OFFICE.

CHARLES A. PERSONS, OF WORCESTER, MASSACHUSETTS.

## SADDLE.

981,939.

Specification of Letters Patent.

Patented Jan. 17, 1911.

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*To all whom it may concern:*

Be it known that I, CHARLES A. PERSONS, a citizen of the United States, residing at Worcester, in the county of Worcester, State of Massachusetts, have invented a certain new and useful Improvement in Saddles, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to resilient seats or saddles, but more particularly to such as are used on velocipedes, bicycles, or other vehicles.

For simplicity and clearness in the following description, the device will be treated in connection with bicycle saddles only, but it should be clearly understood that it may be applied to any seat or saddle.

The object of this invention is to provide a saddle having the highest degree of vibration absorption, resiliency and smoothness of action, and whose construction and arrangement of parts allows of easy adjustment or removal of the springs.

Heretofore, the highest grade of saddles have generally been fitted with loop peak springs and compound cantle springs which have been so attached to the supporting frame and seat as to greatly restrict their action and to readily transmit the vibrations from the frame to the seat. Also the springs have been incapable of adjustment.

One feature of this invention is a form of resilient cantle support in which the springs are attached to arms or levers pivotally connected to the supporting frame. These pivots are preferably provided with ball bearings, though any other suitable type might be used.

Another feature is the method of connecting the peak springs with the supporting frame whereby the springs may swing downward without acting against the force exerted by a rigidly held portion. This also allows the point of fastening the spring to the frame to be moved farther to the rear without danger of breaking, for the increased length of the horizontal portion does not increase the stress on this portion, as is the case where the extremity is rigidly held.

A third feature is the means for preventing rebounding of the springs. Frequently, a severe shock causes the springs to be suddenly depressed. They will then rebound far above their normal position and cause the rider considerable discomfort. To

prevent this rebound, a stop has been devised, numerous forms of which are shown in the drawings, and will be hereinafter fully described.

Further features are the adjustability of the cantle springs and spring arms, the ease with which these springs may be removed, and numerous others which will be hereinafter shown and described.

Referring to the drawings:—Figure 1, is a side elevation of a saddle showing one embodiment of the invention. Fig. 2, side elevation of modification of cantle support, as will be hereinafter described. Fig. 3, side elevation of modification of cantle support, as will be hereinafter described. Fig. 4, plan view of saddle supporting frame, seat and part of peak spring removed. Fig. 5, section on line 5—5 of Fig. 1. Fig. 6, side elevation of modification of stop, as will be hereinafter described. Fig. 7, same as Fig. 6, plan view. Fig. 8, side elevation of modification of stop, as will be hereinafter described. Fig. 9, side elevation of modification of stop, as will be hereinafter described. Fig. 10, center section of ball bearing shown in Fig. 1, as will be hereinafter described. Fig. 11, section on line 11—11 of Fig. 8.

In the drawings, a seat 12 is provided with a supporting frame 13, composed of trusses 14 and 15 carrying the saddle clamp 16. A spring 17 connects the peak 18 of the seat 12 with the front portion 19 of the truss 14. The two strands of this spring 17 form a loop 20 to contain the pivot pin 21 set in the truss 14.

A plate 22 is secured to the truss 14 by having a portion driven through the aperture 23 in the extremity of the truss 14 to form an eyelet 24. Another portion of this plate forms a washer 25 through which the pivot pin 21 passes. The top portion of this plate 22 is bent outward and downward to form a stop 26 to prevent rebounding of the spring 17.

In a slot 27 in the rear extremity of the truss 14 is pivoted a swinging arm 28 by means of the pivot pin 29. This pin preferably operates in a ball bearing 30, a section of which is shown in Fig. 10, though any other suitable type of bearing might be used. From the rear extremity 31 of this arm 28 is suspended an extension spring 32, the upper extremity of the spring being preferably pivotally attached to the bolt 33.



A rod 34, attached at its lower extremity 35 to the lower extremity of the spring 32, extends upward preferably within the coils of this spring, and is attached to the under side of the cantle portion of the seat. To the forward extremity 36 of the arm 28 is attached the lower extremity of the compression spring 37, the upper extremity of this spring being secured to the lower extremity of the adjustable plate 38. A bolt 39, acting in a slot 40 in the truss 14, passes through the longitudinal slot 41 in the plate 38 to attach this plate to the truss.

The plate 38 may be adjusted longitudinally or laterally by loosening the nut on the bolt 39. The pivot pin 29 is capable of lateral adjustment in the slot 27. The spring 37 may be removed by removing the bolts 39 and 42, and the spring 32 by removing the bolt 33 and the nut 43 on the extremity 35 of the rod 34.

Fig. 2, shows a modification of the invention in which a truss 44 carries an arm 45 pivoted at 46 by means of the pivot pin 47. This arm may be provided with ball bearings at the pivot point as was shown in connection with the arm 28 of Fig. 1. From the rear extremity 48 of this arm 45 is suspended the extension spring 49, the lower extremity of which is attached to the rod 50. To the upper extremity of this rod is fastened the lower extremity of the compression spring 51, the upper extremity of which is fastened to the under side of the cantle of the seat 12. If desired, this compression spring may be removed and the rod 50 attached directly to the cantle. From the rear portion of the truss 44 is suspended a buffer spring 52 which is attached to the truss by means of the bolt 53 acting in the slot 54. The lower extremity of the spring 52 is attached to the arm 45 by means of the bolt 55 acting in the slot 56. If desired, the spring 52 may be attached to either or both of the bolts 53 and 54 by means of a longitudinally adjustable plate similar to the one shown in Fig. 1, and designated 38.

Fig. 3, shows another modification of the invention in which a truss 57 carries an arm 58 pivoted thereto by means of the pivot pin 59. From the rear extremity of the arm 58 is suspended the extension spring 60, the lower extremity of which is attached to a rod 61 to support the cantle of the seat. This rod may be directly fastened to the cantle, or a compression spring similar to that shown in Fig. 2, and designated 51, may be inserted. A compression spring 62 is attached at its upper extremity to the arm 58 by means of the bolt 63 acting in slot 64. The lower extremity of this spring 62 is attached to the rear extremity of the truss 57 by means of the bolt 65 acting in slot 66. If desired, either or both of the

extremities of this spring 62 may be attached to their respective bolts by means of longitudinally adjustable plates similar to the one shown in Fig. 1, and designated 38.

Fig. 4, is a plan view of the supporting frame shown in Fig. 1, the seat and a portion of the peak springs having been removed. Here may be seen both trusses of the frame.

Figs. 6 and 7 show a modification of the stop to prevent rebounding of the peak spring. The extremity of the truss 67 is split and the upper portion 68 bent outward to form the stop.

Figs. 8 and 11 show a modification of the stop as adapted to a wire supporting frame. An eyelet 69, formed from a portion of plate 70, carries the loop 71 of the frame wire 72. The other extremity 73 of the plate forms a washer through which the bolt 74 passes. The loop of the peak springs passes about this bolt 74. The method of fastening together the frame wires, plate, and peak spring is shown in Fig. 11, in which 75 is a washer having flanged edges to grip the wires of the frame, and 76 an ordinary washer.

Fig. 9 shows a stop for a saddle having a single wire truss. Here a loop 77 contains the bolt 78 upon which is pivoted the loop 79 of the peak spring. The extremity 80 of the wire forming the truss is carried forward and then bent outward to form the stop.

In the type of cantle attachment shown in Fig. 2, it is advisable to brace the two upright rods 50 by connecting these with a support or bridge 81 of the usual type, one end of which is shown in the figure.

If desired, the pivotal connection of the peak spring with the pivot bolt in any of the forms heretofore described might be equipped with a ball bearing similar to the one shown for the arm 28, and designated by 30.

For the sake of compactness of illustration and simplicity of description certain features of the invention have been included in certain figures in the drawings, but omitted in others, and it should be clearly understood that the scope of the invention is not limited to the particular construction or arrangement of parts herein shown and described.

What I claim as my invention and desire to secure by Letters Patent is:—

1. In a device of the class described, a seat, a support, means for connecting the peak of the seat with the support, swinging arms carried by said support, means for connecting said swinging arms with the cantle of the seat, and means interposed between said arms and the support for controlling the movement of said arms.

2. In a device of the class described, a



seat, a supporting frame, means for resiliently connecting the peak of the seat with the support, swinging arms carried by said supporting frame, means for connecting said swinging arms with the cantle of the seat, and means interposed between said arms and the support for resiliently controlling the movement of said arms.

3. In a device of the class described, a seat, a supporting frame, means for resiliently connecting the peak of the seat with the supporting frame, swinging arms carried by said frame, means for resiliently connecting said swinging arms with the cantle of the seat, and means interposed between said arms and the support for resiliently controlling the movement of said arms.

4. In a device of the class described, a seat, a supporting frame, means for resiliently connecting the peak of the seat with the supporting frame, arms secured to the frame by means of pivot pins, ball bearings for said pivot pins, means for connecting these arms with the cantle of the seat, and means interposed between said arms and the support for controlling the movement of said arms.

5. In a device of the class described, a seat, a supporting frame, means for resiliently connecting the peak of the seat with the supporting frame, arms pivoted to said frame, springs connecting said arms with the cantle of the seat, and springs connecting said arms with the supporting frame.

6. In a device of the class described, a seat, a supporting frame, means for resiliently connecting the peak of the seat with the supporting frame, lever arms pivoted to said supporting frame, means for resiliently connecting the outer extremities of said arms with the cantle of the seat, and means for resiliently connecting the inner extremities of said arms with the supporting frame.

7. In a device of the class described, a seat, a supporting frame, means for resiliently connecting the peak of the seat with the supporting frame, lever arms pivoted to said supporting frame, extension springs supported at their upper extremities by the outer extremities of these arms, rigid means for connecting the lower extremities of these springs with the under side of the cantle, and resilient means for controlling the movement of these arms.

8. In a device of the class described, a seat, a supporting frame, means for resiliently connecting the peak of the seat with the supporting frame, lever arms pivoted to said supporting frame, extension springs supported at their upper extremities by the outer extremities of these arms, rigid means for connecting the lower extremities of these springs with the under side of the cantle,

and compression springs connecting the inner extremities of these arms with the supporting frame.

9. In a device of the class described, a seat, a support, means for connecting the peak of the seat with the support, swinging arms carried by said support, means for connecting said swinging arms with the cantle of the seat, means interposed between said arms and the support for controlling the movement of the arms, and means for adjusting said controlling means.

10. In a device of the class described, a seat, a supporting frame, means for resiliently connecting said seat with said frame, and means for limiting the upward movement of said connecting means.

11. In a device of the class described, a seat, a supporting frame, means for resiliently connecting the peak of the seat with the supporting frame, means for limiting the upward movement of said connecting means, and means for resiliently connecting the cantle of the seat with the supporting frame.

12. In a device of the class described, a seat, a supporting frame, means for resiliently connecting the peak of the seat with the supporting frame, stops to limit the upward movement of said connecting means, and means for resiliently connecting the cantle of the seat with the supporting frame.

13. In a device of the class described, a seat, a supporting frame, means for resiliently connecting the peak of the seat with the supporting frame, stops carried by said frame for limiting the upward movement of said connecting means, and means for resiliently connecting the cantle of the seat with the supporting frame.

14. In a device of the class described, a seat, a supporting frame, loop springs connecting the peak of said seat and said frame, means for controlling the upward movement of said springs, and means for resiliently connecting the cantle of said seat with the supporting frame.

15. In a device of the class described, a seat, a supporting frame, springs connecting the peak of said seat and said frame, said springs being pivotally attached to said frame, means for controlling the upward movement of said springs, and means for resiliently connecting the cantle of said seat with the supporting frame.

16. In a device of the class described, a seat, a supporting frame, loop springs connecting the peak of said seat and said frame, said springs being pivotally attached to said frame, means for controlling the upward movement of said springs, and means for resiliently connecting the cantle of said seat with the supporting frame.

17. In a device of the class described, a seat, a supporting frame, loop springs connecting the peak of said seat with said frame,



said springs being pivotally attached to said frame, stops carried by the frame for controlling the upward movement of said springs, and means for resiliently connecting the cantle of said seat with the supporting frame.

18. In a device of the class described, a seat, a support, means for resiliently connecting the peak of said seat with the support, said connecting means being pivotally attached to said supporting means, swinging arms carried by said supports, means for connecting said swinging arms with the cantle of the seat, and means interposed between said arms and the support for controlling the movement of said arms.

19. In a device of the class described, a seat, a supporting frame therefor consisting of two non-connected trusses, independent means for connecting the forward extremities of each of these trusses with the peak of the seat, and means for connecting their rear extremities with the cantle portion of the seat.

20. In a device of the class described, a seat, a supporting frame therefor consisting of two non-connected trusses, independent means for connecting the forward extremities of these trusses with the peak of the seat,

and independent means for connecting the rear extremities of each of these trusses with the cantle portion of the seat.

21. In a device of the class described, a seat, a supporting frame therefor consisting of two trusses having their forward portion non-connected, independent means for resiliently connecting the forward extremities of each of these trusses with the peak of the seat, and means for resiliently connecting the rear extremities of each of these trusses with the cantle portion of the seat.

22. In a device of the class described, a seat, a supporting frame therefor consisting of two non-connected trusses, independent resilient means for connecting the forward extremities of each of these trusses with the peak of the seat, said means being fastened directly to said extremity, and means for connecting the rear extremities of each of these trusses with the cantle portion of the seat.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES A. PERSONS.

Witnesses:

HARTLEY W. BARTLETT,  
A. H. NEILSON.