

No. 628,720.

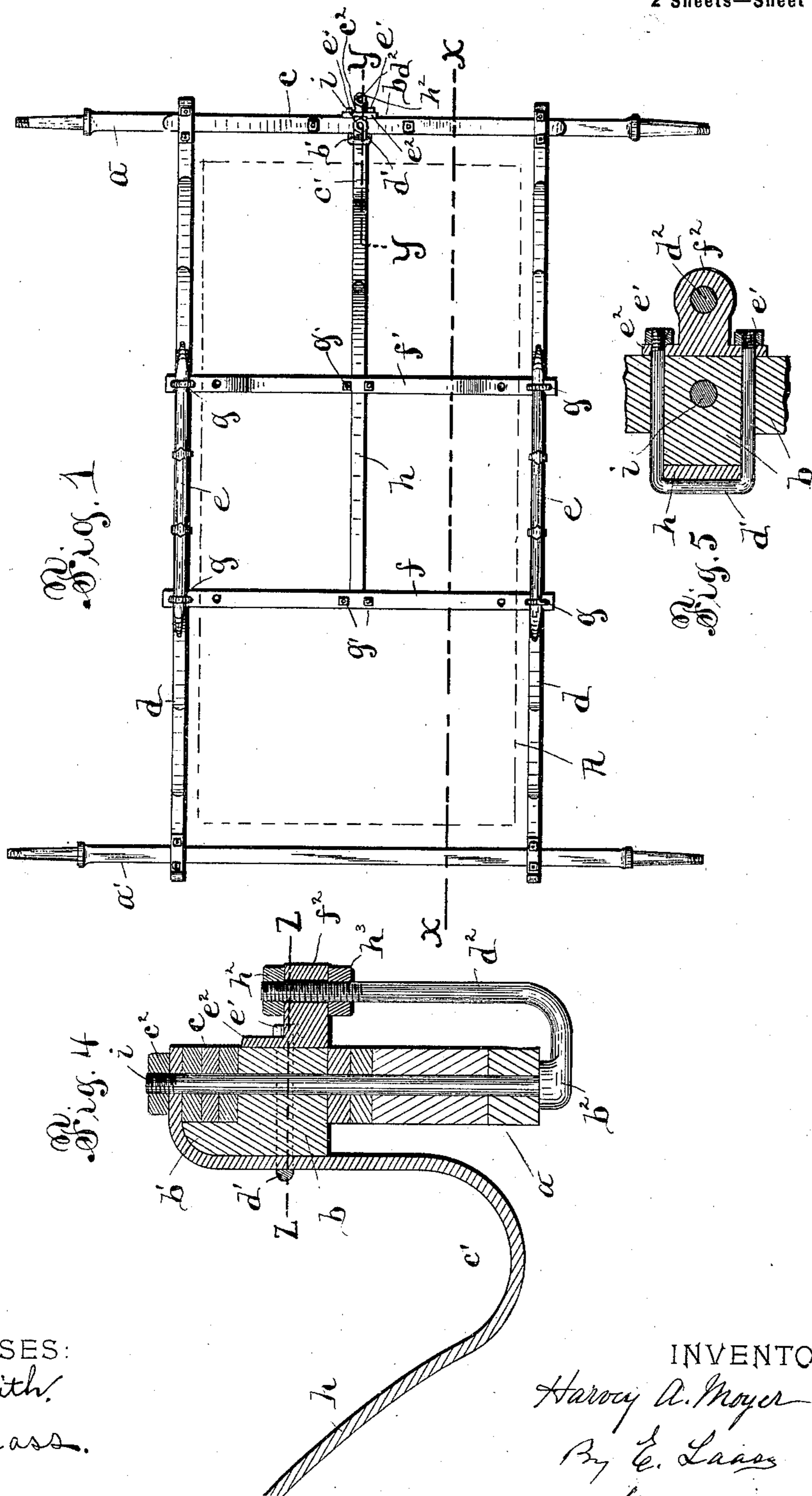
Patented July 11, 1899.

H. A. MOYER.
SPRING VEHICLE.

(Application filed Mar. 24, 1899.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:
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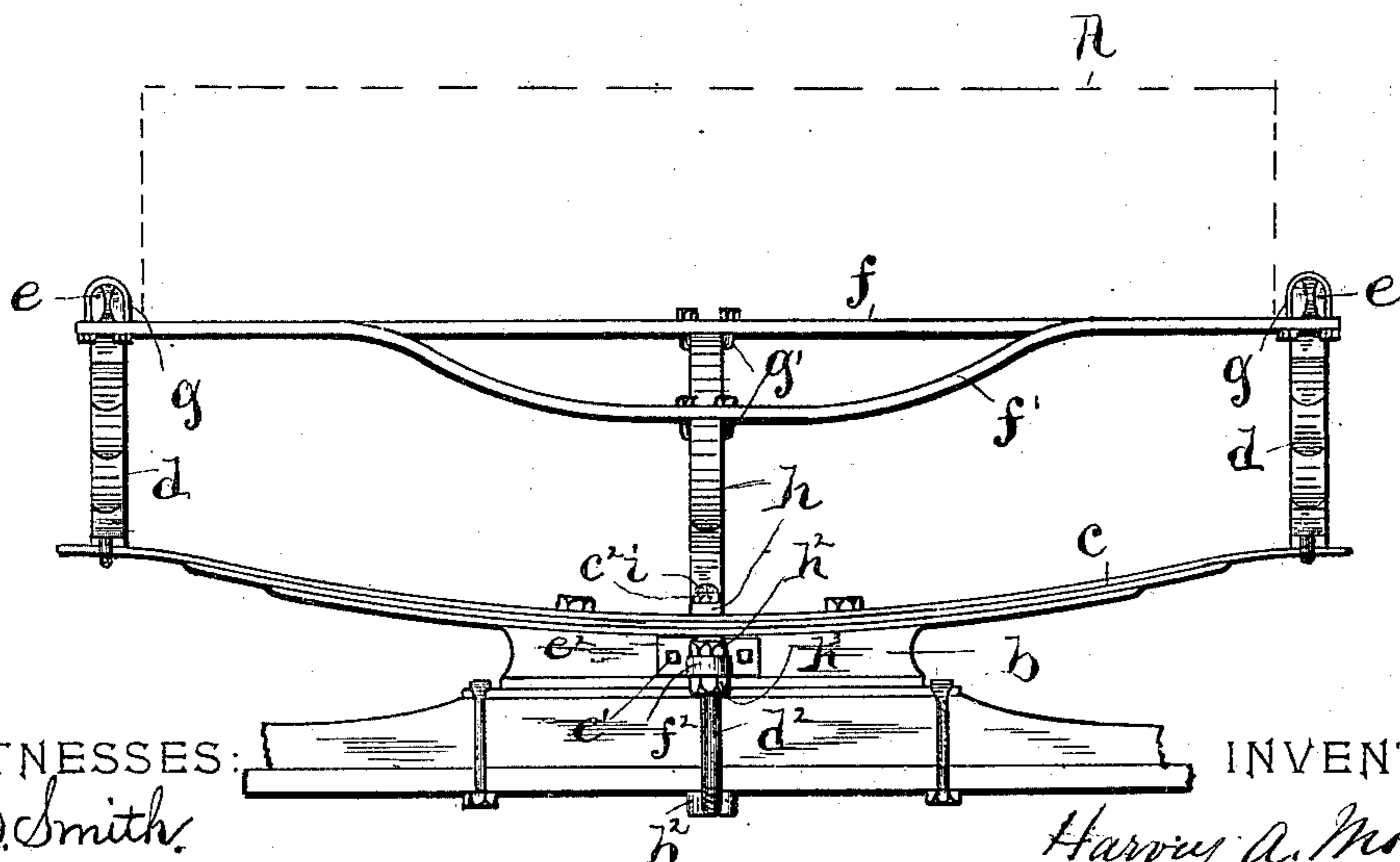
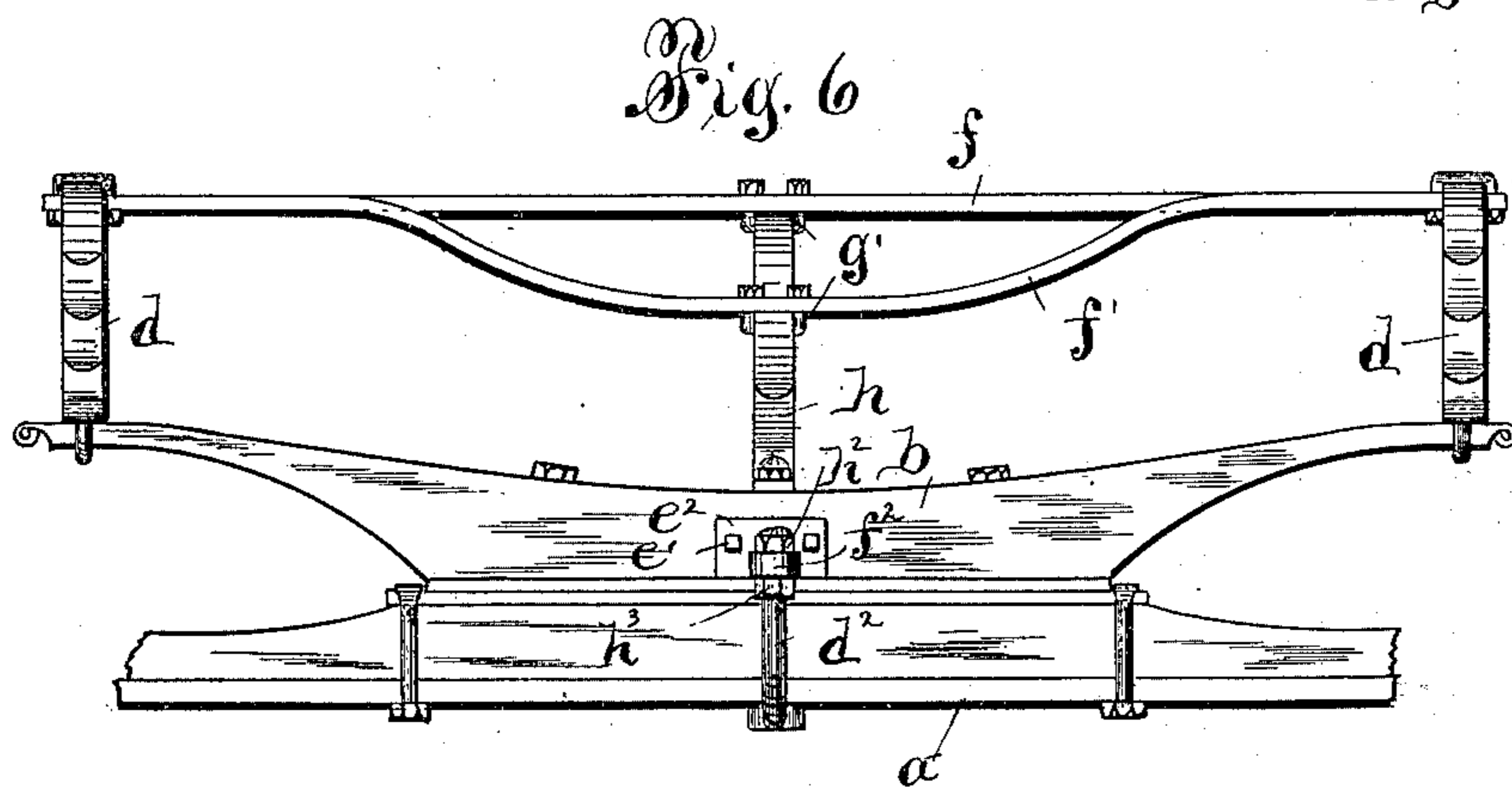
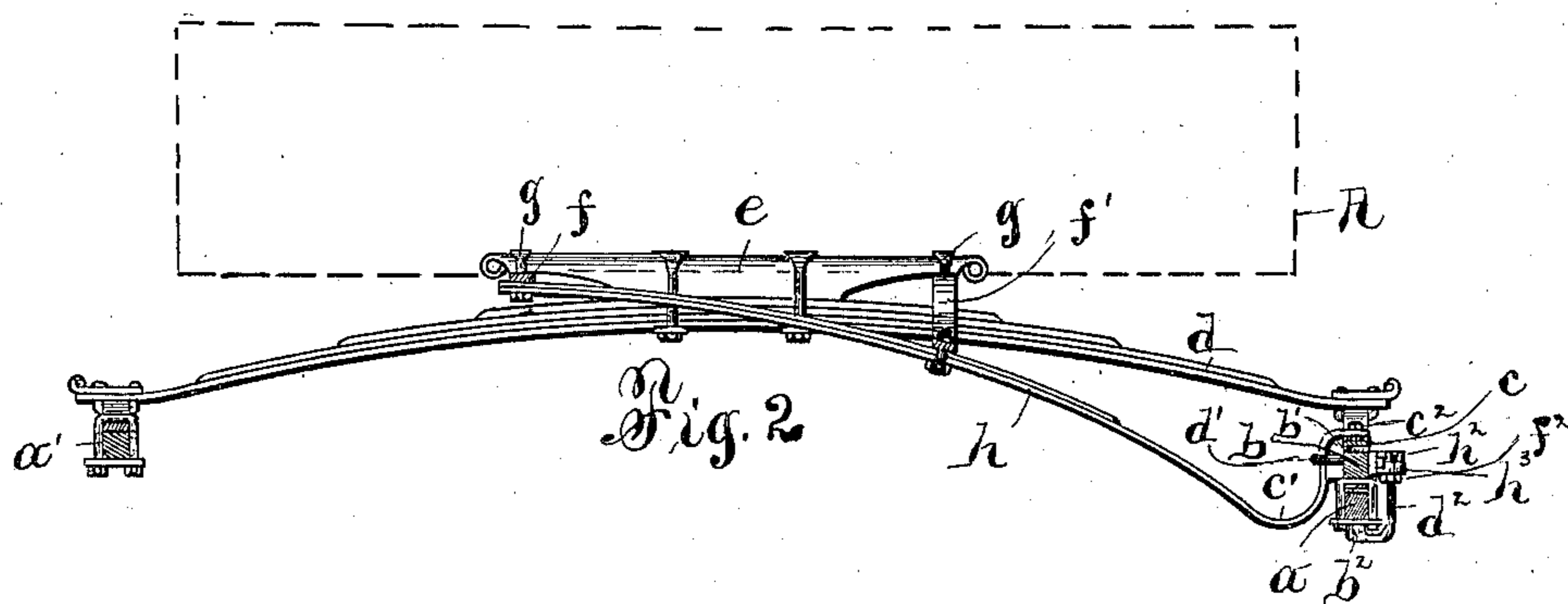
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UNITED STATES PATENT OFFICE.

HARVEY A. MOYER, OF SYRACUSE, NEW YORK.

SPRING-VEHICLE.

SPECIFICATION forming part of Letters Patent No. 628,720, dated July 11, 1899.

Application filed March 24, 1899. Serial No. 710,293. (No model.)

To all whom it may concern:

Be it known that I, HARVEY A. MOYER, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Spring-Vehicles, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to improvements in spring-vehicles; and it refers more particularly to that class of vehicles in which the running-gear comprises two side springs attached at their rear ends to the rear axle and at their forward ends to either the head-block or a cross-spring mounted on said head-block.

In running-gears of the class referred to it is found in practice that the front axle is caused to tilt when the springs are subjected to pressure by reason of a heavy load, which tilting creates a great strain on the king-bolt and the parts held by the same, whereby said parts are liable to become loosened by reason of wear, and thus cause a rattling. Therefore the object of the present invention is to provide a rigid and strong construction whereby a wearing of the various joints is obviated and the resultant rattling, and, furthermore, the object is to provide a construction which is simple, neat in appearance, and at the same time inexpensive in its manufacture; and to that end the invention consists, essentially, in the combination, with the front and rear axles, the vehicle-body, and the side springs suitably supported on said axles, of body-supporting cross-bars mounted on said side springs and a spring-reach supported at its forward end over the central portion of the front axle and attached at its rear end portion to the central portion of the body-supporting bars; and the invention also consists in certain novel details of construction, as hereinafter fully described, and specifically set forth in the claims.

In the annexed drawings, Figure 1 is a plan view of my improved vehicle running-gear. Fig. 2 is a longitudinal section on line X X in Fig. 1. Fig. 3 is an enlarged front view of the same. Fig. 4 is an enlarged transverse section through the center of the front axle and taken on line Y Y in Fig. 1. Fig. 5 is a horizontal section taken on line Z Z in Fig. 4. Fig. 6 is another enlarged front view of

the running-gear and illustrating modifications of my invention.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, *a* and *a'* denote the front and rear axles, respectively, of the vehicle.

b represents the head-block, mounted upon the front axle in the usual and well-known manner and formed with a shoulder *b'* on the rear portion of its top, and upon said head-block is seated a cross-spring *c*, which bears against the front of said shoulder.

d d represent the two side springs, which are attached at their rear ends rigidly to the rear axle *a'* and at their forward ends rigidly to the ends of the aforesaid cross-spring *c*, which attachments are made by means of suitable clips, and upon said side springs are secured side-bars *e e* in the usual and well-known manner.

f denotes a straight rear cross-bar, and *f'* is a front cross-bar, which latter bar has its central portion depressed, as clearly shown in Fig. 3 of the drawings. The cross-bars are supported on and rigidly attached to the aforesaid side-bars *e e* by means of suitable clips *g g*, and upon said cross-bars is mounted the vehicle-body A. (Indicated by dotted lines.)

h represents a spring-reach which is formed with a horizontal frontend portion, by which it is supported on top of the central portion of the cross-spring *c* and attached thereto by means of the king-bolt *i*, passing through said reach cross-spring, head-block, and axle, as clearly shown in Fig. 4 of the drawings. Said reach is formed with a drop *c'* adjacent to the front axle, whereby it is made to bear on the aforesaid shoulder *b'* on the top of the head-block *b* and also against the back of said head-block, also clearly shown on Fig. 4, and attached to the head-block by means of a clip *d'*, embracing the reach and having its shanks or bolts passing through said head-block and provided with nuts *e' e'*, bearing on the usual clip-plate *e²*.

The reach *h* extends upwardly and rearwardly from the aforesaid drop *c'* and is connected at its intermediate portion to the central portion of the centrally-depressed cross-bar *f'* and terminates with its extreme rear end portion in a plane above the front end

and connected thereat to the central portion of the rear cross-bar f , which connections are made by means of clips $g' g'$.

It will be noted that the shoulder b' , formed on the head-block b , serves to brace the cross-spring c and just prevents the same from twisting or turning.

The aforesaid drop e' is provided in the reach h to prevent the vehicle-body from striking the same, and the head-block, projecting rearwardly over the front axle a , serves to prevent the dropped portion of the reach from rubbing against the back of the axle when said axle is turned.

The king-bolt i is formed with a shoulder b^2 , which serves as a head by which it bears against the under side of the axle a , and it is provided with the usual nut c^2 on its upper end, bearing upon the reach h .

Extending forwardly and upwardly from the shoulder b^2 and formed integral with the king-bolt i is a bracing-arm d^2 , which passes with its screw-threaded upper end through an ear f^2 , formed integral with the aforesaid clip-plate e^2 , and is provided with a nut h^2 , bearing on top of the ear, and with a jam-nut h^3 , bearing against the bottom of said ear, which construction constitutes a rigid and adjustable connection between the king-bolt and head-block.

It will be observed that as the plates interposed between the head-block and front axle become worn the aforesaid bracing-arm d^2 , being connected to the head-block and king-bolt, draws said bolt down and holds the same rigid, and thus rattling of said bolt and the parts held thereby is prevented. It will also be seen that the bracing-arm d^2 serves as a safety attachment, wherein it prevents the king-bolt from dropping out in case the nut thereon becomes lost, and, furthermore, in event of said nut becoming lost the spring-reach will not become disconnected, for the reason that the reach is rigidly connected to the head-block by means of the clip hereinbefore referred to.

Referring to Fig. 6 of the drawings, illustrating modifications of my invention, it will be observed that the cross-spring and side-bars are dispensed with. In this case the head-block b is made longer and the side springs $d d$ fastened to the ends thereof. The body-supporting cross-bars f and f' are connected directly to the side springs, and the spring-reach h is connected directly to said head-block.

I claim—

1. In a spring-vehicle, the combination with the front axle and head-block mounted thereon, of a spring-reach connected to the back central portion of the head-block and above the axle substantially as set forth.

2. In a spring-vehicle the combination with the front axle and head-block mounted thereon, of a spring-reach mounted on the central portion of the said head-block and bearing against the back thereof and a clip embracing

said reach and passing with its bolts through said head-block and provided with nuts substantially as set forth.

3. In a spring-vehicle, the combination with the front axle and the head-block mounted thereon and provided with a shoulder on its top, of a spring-reach supported at its forward end over the center of the head-block and formed with a drop whereby it bears on said shoulder and back of the head-block, and a clip embracing said reach and passing with its bolts through the head-block and provided with nuts substantially as set forth.

4. In a spring-vehicle, the combination with the front axle and the head-block, of a cross-spring seated upon said head-block, a spring-reach rigidly connected to the top central portion of said spring, and the king-bolt passing through said parts substantially as described.

5. In a spring-vehicle, the combination with the front axle and head-block mounted thereon and formed with a shoulder on its top, a cross-spring seated upon said head-block and bearing against the front of said shoulder, a spring-reach supported on the central portion of said spring and formed with a drop whereby it bears on said shoulder and back of the head-block, the king-bolt passing through said reach, cross-spring head-block and axle, and a clip connecting the reach to the back of the head-block substantially as described.

6. In a spring-vehicle, the combination with the front and rear axles, and the vehicle-body, of side springs supported on said axles, body-supporting cross-bars supported on said springs, and a spring-reach supported at its forward end over the center of the front axle and attached at its rear end portion to the central portion of said cross-bars substantially as set forth.

7. In a spring-vehicle, the combination with the front and rear axles and the vehicle-body, of a cross-spring supported on the front axle, side springs attached to said cross-spring and rear axle, body-supporting cross-bars supported on the side springs, and a spring-reach fastened to the center of the cross-spring and extending rearward therefrom and attached to the central portion of said cross-bars substantially as set forth.

8. In a spring-vehicle, the combination with the front and rear axles, and the vehicle-body, of a cross-spring supported on the front axle, side springs attached to said cross-spring and rear axle, bars mounted on the side springs, body-supporting cross-bars supported on said side-bars, and a spring-reach fastened to the central portion of the cross-spring and extending rearward therefrom and attached to the central portion of the said cross-bars substantially as set forth.

9. In a spring-vehicle, the combination with the front and rear body-supporting cross-bars, and the front axle, having a cross-spring supported thereon, of a spring-reach rigidly connected at its forward end to the top central portion of said cross-spring, and attached at

its opposite end to the rear cross-bar and at its intermediate portion to the front cross-bar substantially as set forth.

10. In a spring-vehicle, the combination 5 with the front and rear axles, and the vehicle-body, the head-block on the front axle, a cross-spring supported on the head-block, side springs attached to said cross-spring and rear axle, body-supporting cross-bars supported 10 on the side springs, a spring-reach mounted at its forward end upon the central portion of the cross-spring and attached to said body-supporting bars and the king-bolt passing through said reach, cross-spring, head-block 15 and front axle substantially as set forth.

11. In a spring-vehicle, the combination with the front and rear axles, the vehicle-body, and the head-block mounted on the front axle, a cross-spring supported on said 20 head-block, side springs attached to said cross-spring and rear axle, body-supporting cross-bars supported on the side springs, a spring-reach mounted at its forward end upon the central portion of the cross-spring and 25 bearing on the back of the head-block, the rear end portion of said reach being attached to the central portion of said cross-bars, a clip connecting said reach and head-block, and the king-bolt passing through said reach, 30 cross-spring, head-block and front axle substantially as set forth.

12. In a spring-vehicle, the combination with the front axle and its head-block formed with a shoulder on its top, the cross-spring 35 seated on said head-block, a spring-reach having a horizontally-disposed front end portion by which it is mounted on said spring, said reach being formed with a drop whereby it embraces said shoulder and back of the head- 40 block, a clip connecting said reach and head-block and a bolt passing through said reach, cross-spring, head-block and axle substantially as set forth.

13. In a spring-vehicle, the combination 45 with the front and rear axles, the vehicle-body and the head-block mounted on the front axle,

of a cross-spring seated on the head-block, side springs attached to the rear axle and the cross-spring, body-supporting cross-bars supported on the side springs, and a spring-reach 50 supported at its front end on said cross-spring and formed with a drop immediately back of the front axle and having its rear portion terminating in a plane above the front end where- 55 by it is attached to the central portion of the aforesaid cross-bars substantially as set forth.

14. In a spring-vehicle, the combination with the front and rear axles, and the vehicle-body, a cross-spring supported on the front axle, side springs attached to said cross-spring 60 and rear axle, a centrally-depressed body-supporting cross-bar supported on said side springs, and a spring-reach supported at its front end on the central portion of the cross-spring and having its rear end portion at- 65 tached to the central portion of said body-supporting bar substantially as set forth.

15. The combination with the front axle and the head-block provided with an ear on the front, of a cross-spring seated on said 70 head-block, a spring-reach supported on the central portion of the cross-spring, a king-bolt passing through said parts and provided with a shoulder bearing against the under side of the axle and a nut on its upper end, a verti- 75 cal arm formed integral with the king-bolt and extending with its screw-threaded upper end through said ear, and nuts on said arm bearing against the top and bottom of the ear 80 for the purpose set forth.

16. The combination with the front axle and head-block mounted thereon and provided with a shoulder on its top, a cross-spring seated upon the head-block and bearing 85 against the front of said shoulder, and the king-bolt passing through said spring, head-block and axle substantially as described.

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Witnesses:

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