

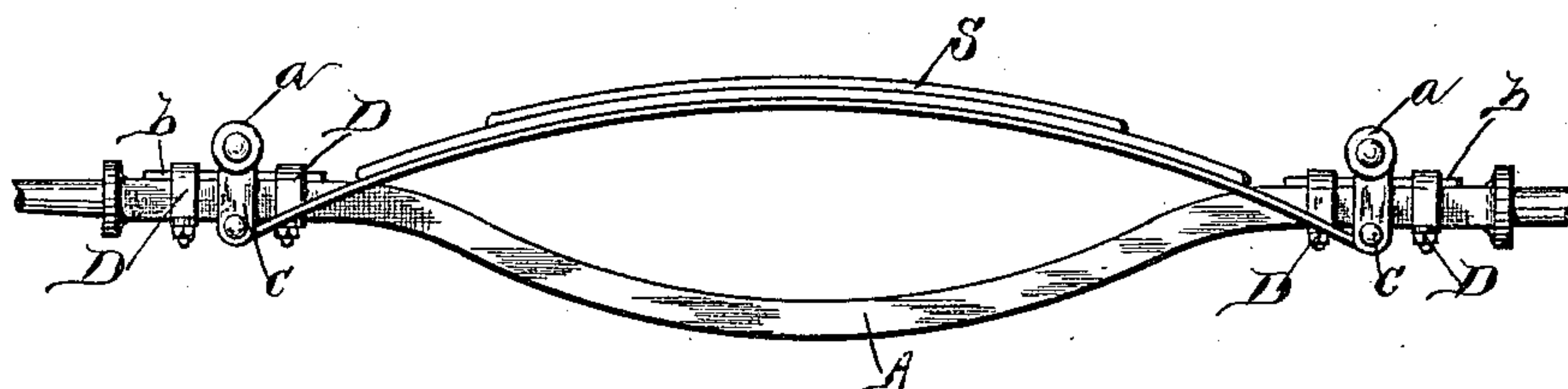
(No Model.)

H. W. PELL.  
SPRING HANGER FOR VEHICLES.

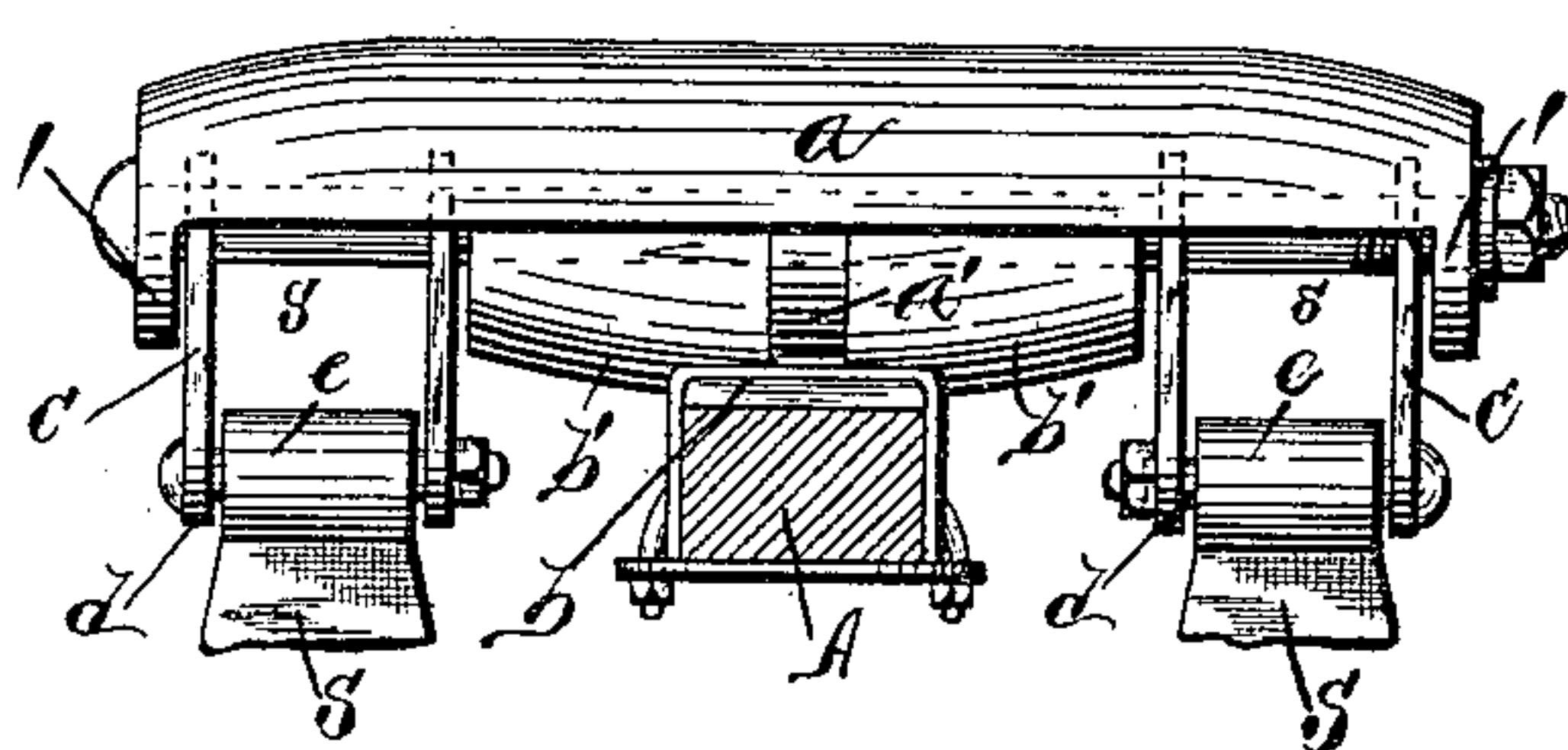
No. 459,792.

Patented Sept. 22, 1891.

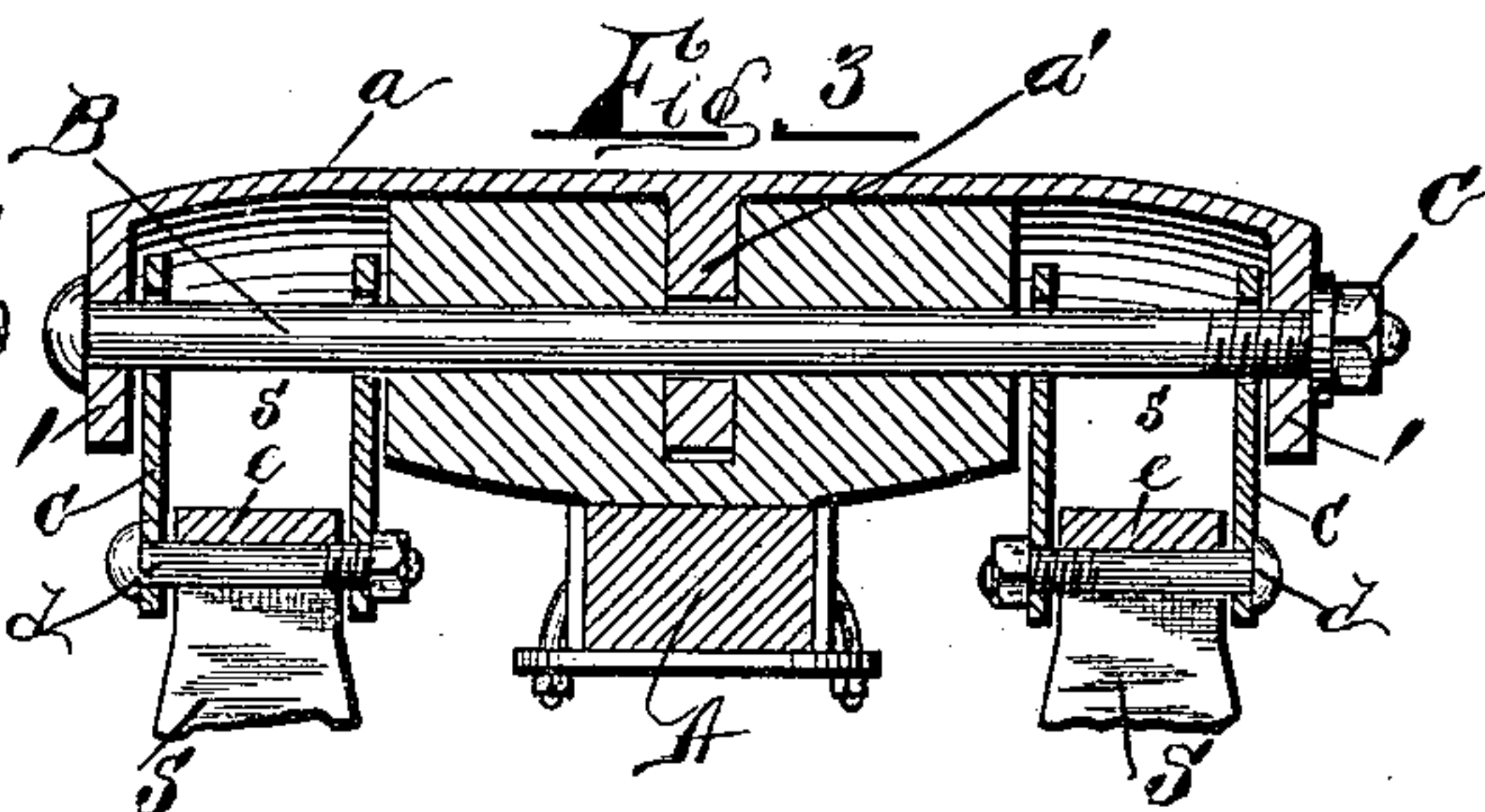
*Fig. 1.*



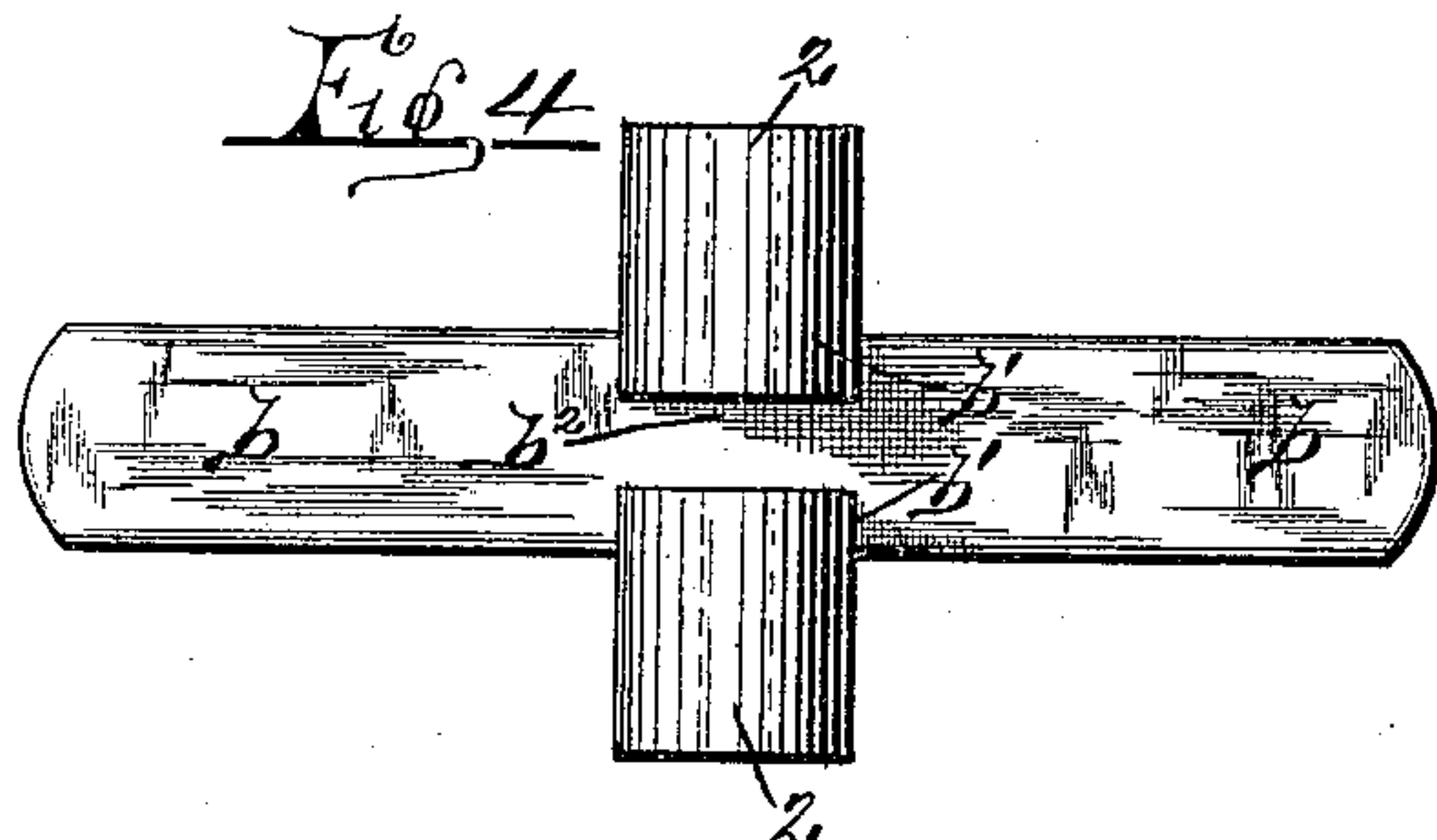
*Fig. 2.*



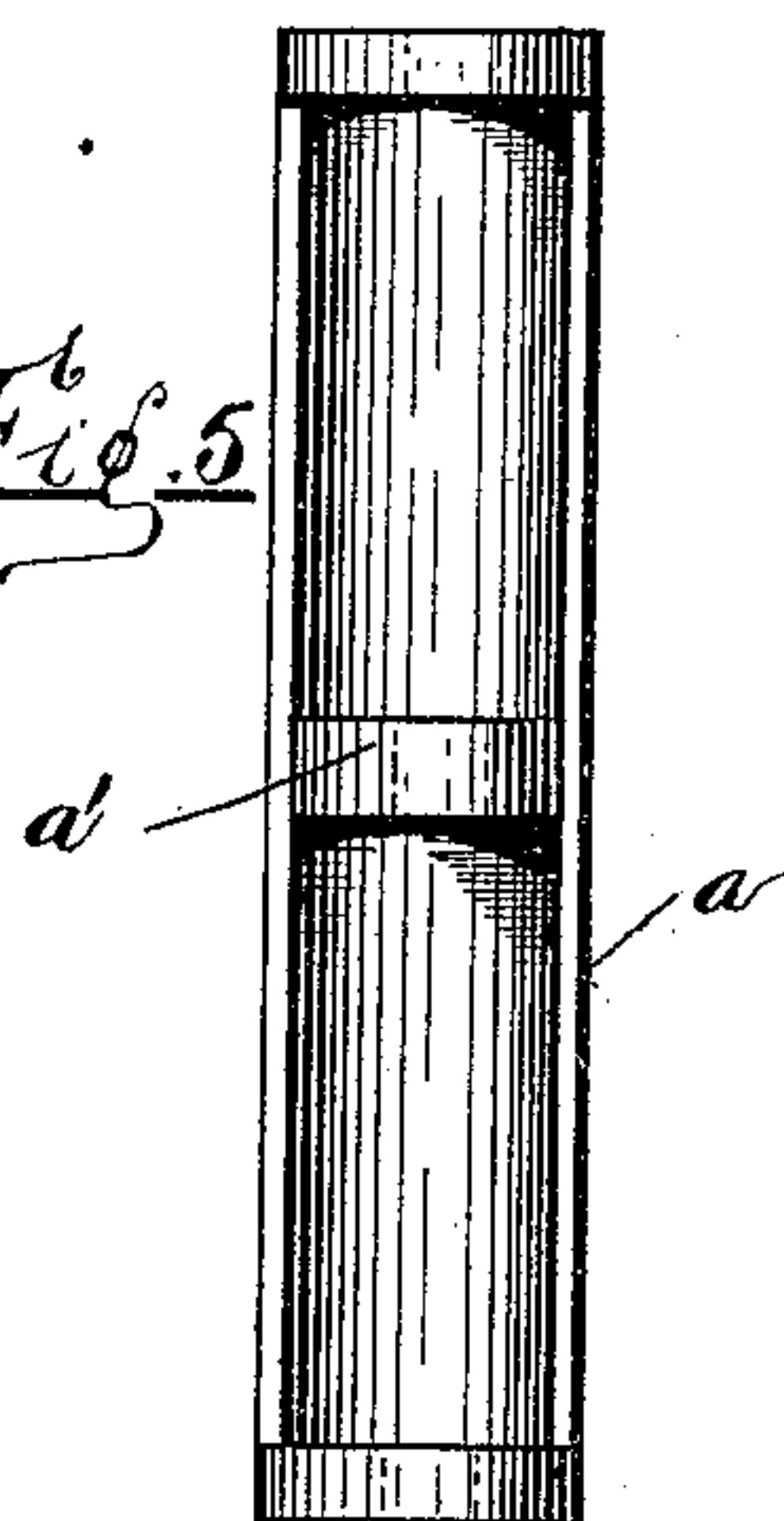
*Fig. 3.*



*Fig. 4.*



*Fig. 5.*



Witnesses

*E. J. Tomlinson.*  
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Inventor

*Henry W. Pell.*  
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# UNITED STATES PATENT OFFICE.

HENRY W. PELL, OF ROME, NEW YORK, ASSIGNOR TO ADELLE M. PELL, OF  
SAME PLACE.

## SPRING-HANGER FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 459,792, dated September 22, 1891.

Application filed July 3, 1888. Serial No. 278,901. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY W. PELL, of the city of Rome, in the county of Oneida, in the State of New York, have invented new and  
5 useful Improvements in Spring-Hangers for Vehicles, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to improvements in  
10 the class of spring-vehicles usually designated "duplex-spring vehicles," in which two semi-elliptic springs are arranged at opposite sides and parallel with the axle and hung on the same; and it consists, essentially, in combin-  
15 ing with a vehicle-axle a barrel or hollow spring-hanger clipped or secured on the axle, having openings on opposite sides of the axle, in which the duplex springs are secured.

It consists, furthermore, in combining with  
20 the barrel or hollow spring-hanger spring-shackles secured in the openings in the hanger for connecting the ends of the duplex springs with the said hanger.

It consists, furthermore, in making the bar-  
25 rel spring-hanger in two parts and connecting the same to the axle by clips, all as hereinafter more particularly described, and pointed out in the claims.

In describing my invention reference is had  
30 to the accompanying drawings, forming a part of this specification, in which like letters and figures indicate corresponding parts in all the views.

Figure 1 is a front elevation of a vehicle-  
35 axle and springs connected thereto, illustrating the manner of hanging the springs to the axle by my invention. Fig. 2 is an enlarged side elevation of an improved barrel or hollow spring-hanger and the connecting devices  
40 for securing the ends of the springs thereto, the vehicle-axle being shown in section. Fig. 3 is an enlarged sectional view of the same parts shown in Fig. 2, the barrel or hollow spring-hanger being cut through vertically,  
45 illustrating more particularly the manner of securing the spring-carrying shackles in the hanger mounted on the axle. Fig. 4 is an enlarged detached plan view of the lower part of the barrel or hollow spring-hanger, which  
50 is clipped or secured to the axle; and Fig. 5 is an enlarged inverted plan view of the barrel

spring-hanger detached from its support on the axle.

A denotes the vehicle-axle, which may be either straight or upwardly deflected in the  
55 form of the so-called "coach-bed axles," as best shown in Fig. 1 of the drawings. To the end portions of the axle, preferably at the top thereof, I secure by clips or other suitable means D the barrel or hollow spring-hanger  
60 base or support *b*, as best shown in Figs. 2 and 3, in which *a* represents the barrel or hollow spring-hanger proper provided with the downwardly-projecting tongue *a'*, which fits within the shoulders *b'* of the base *b*.  
65

It will be observed that the barrel or hollow spring-hanger is made in two parts, and that the two parts are connected by inserting the tongue *a'* into the groove *b<sup>2</sup>*, between the shoulders *b'* of the base of the hanger. A  
70 bolt B is passed through eyes in the ends 1 1 and the tongue *a'* of the upper part *a* of the hanger, and also through eyes in the upwardly-projecting lugs 2 2 on the base *b*, which base is mounted upon the axle. These parts  
75 are firmly connected together by screwing a nut C on the threaded end of the bolt B, as best shown in Figs. 2 and 3. It will be thus observed that the hanger is a barrel, or, in other words, is hollow, and that running lon-  
80 gitudinally through the hanger is the bolt B, which construction presents features of great advantage. In the first place, by forming the spring-hanger in the form of a barrel very thin metal can be used in casting the same,  
85 and from the hollow construction great strength is derived. Moreover, by casting the hanger of very thin metal, when the same is constructed of malleable iron, the hanger can be malleafied clear through, since it is well  
90 known that thin iron is uniformly and evenly malleafied. This is of great advantage, since if there should be a tendency to break all the parts of the metal would bend together, and there would be no brittle portion thereof,  
95 which is always the case where a hanger is constructed solid. Furthermore, the barrel or hollow hanger is also desirable from the fact that the hollow construction thereof pre-  
100 vents breakage by vibration, since when the hanger is solid the continued vibration caused by use crystallizes the metal and causes the



same to become brittle, which result is entirely obviated by a barrel or hollow hanger.

It will be observed by reference to the drawings that strain applied by the springs upon the opposite ends of the hanger would tend to fracture the same at a point between said ends and the center. By passing the bolt B longitudinally through the hanger it will be observed that this strain can in no manner fracture the barrel-hanger without stretching the bolt B, and that thereby breakage of the hanger is practically obviated, since there is no stretch to the bolt.

It will be observed that openings *s s* are formed between the ends 1 1 and the lugs 2 2 of the two-part barrel spring-hanger, which openings receive the ends of the duplex springs S S or their spring-shackle supports *c*. These extremities of the spring or the spring-shackle supports *c* entirely fill up the openings *s s* and strengthen this part of the hanger, which would otherwise be weaker than the remaining portion, and by preventing any weak point between the ends of the springs and the central support thus obviate any fracture of the hanger which might otherwise occur at said point.

By constructing the hanger of two parts the same may be readily formed or cast hollow without complicated patterns, and the economy of manufacture is greatly increased, since coring and coping are avoided in the process of manufacture. This longitudinal adjustment of the semi-elliptic springs S S is rendered more effective by the use of the spring-shackles *c c*, which are hung in the openings

*s s* upon the bolt B and which obviate the necessity of forming cranks upon the extremities of the springs *s s*, as in my prior patent, No. 378,145, of February 21, 1888, and my present invention constitutes an improvement on the invention set forth in the aforesaid Letters Patent. The springs S S are provided with eyes *e*, Fig. 2, affording means, in connection with the bolt *d*, to connect the end of the springs to the spring-shackles *c*. Besides allowing longitudinal movement of the springs, this construction of the parts also prevents the sway incident to the use of duplex springs, and the entire device is very simple, compact, and exceedingly strong and durable.

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

1. The combination of the axle A, a barrel or hollow spring-hanger secured to the axle, and spring-shackles *c*, substantially as and for the purpose set forth.

2. The barrel or hollow spring-hanger *a b*, made in two pieces, in combination with the shackle *c*, axle A, and springs S S, substantially as and for the purpose specified.

In testimony whereof I have hereunto signed my name, in the presence of two attesting witnesses, at Rome, in the county of Oneida, in the State of New York, this 15th day of June, 1888.

HENRY W. PELL.

Witnesses:

FREDERICK H. GIBBS,  
E. WEISBURG.