No. 793,050. PATENTED JUNE 27, 1905.

C. E. M. CHAMP.

COMBINATION COILED VEHICLE SPRING.

APPLICATION FILED OCT. 31, 1904.

2 SHEETS—SHEET 1.

Fig. 1.

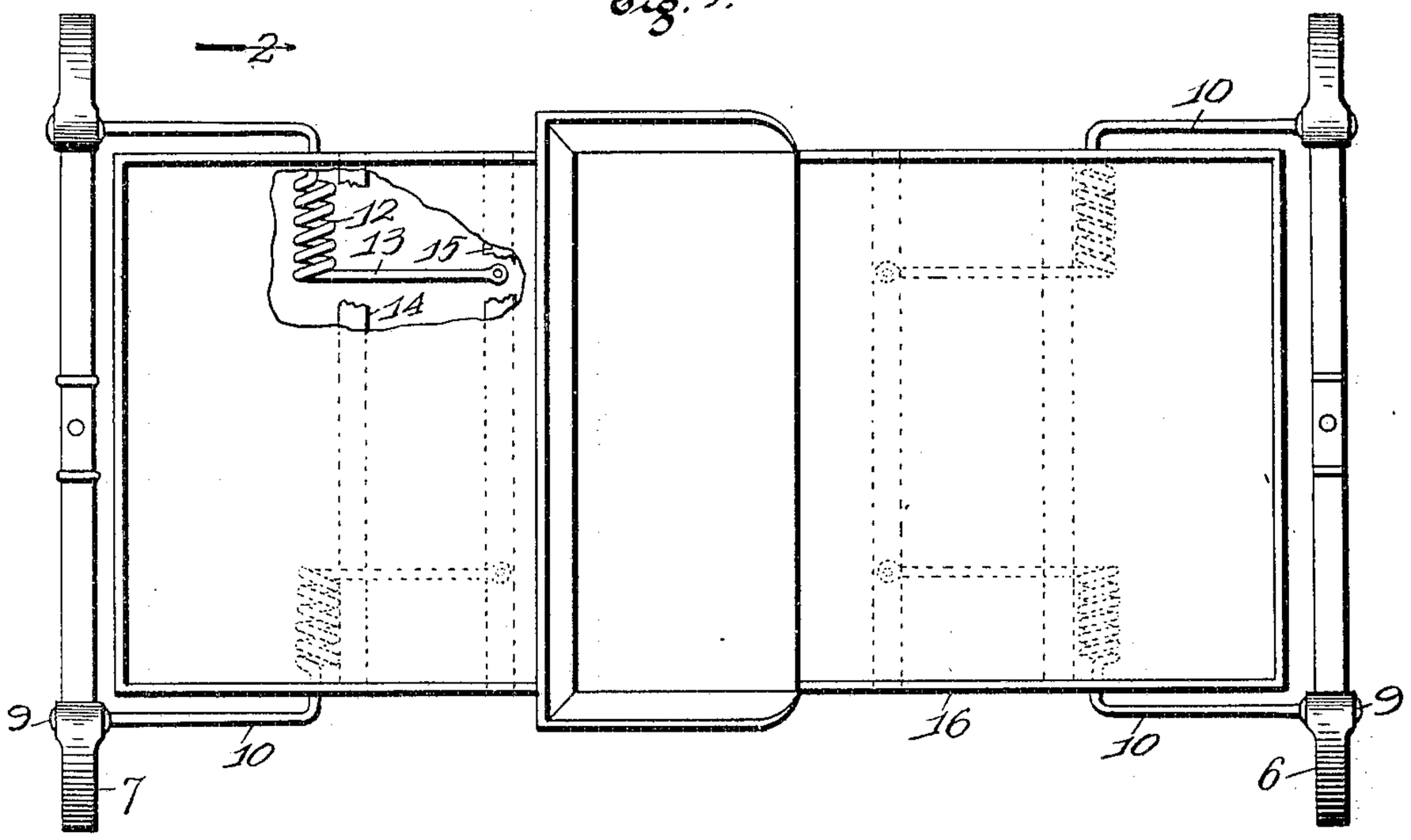
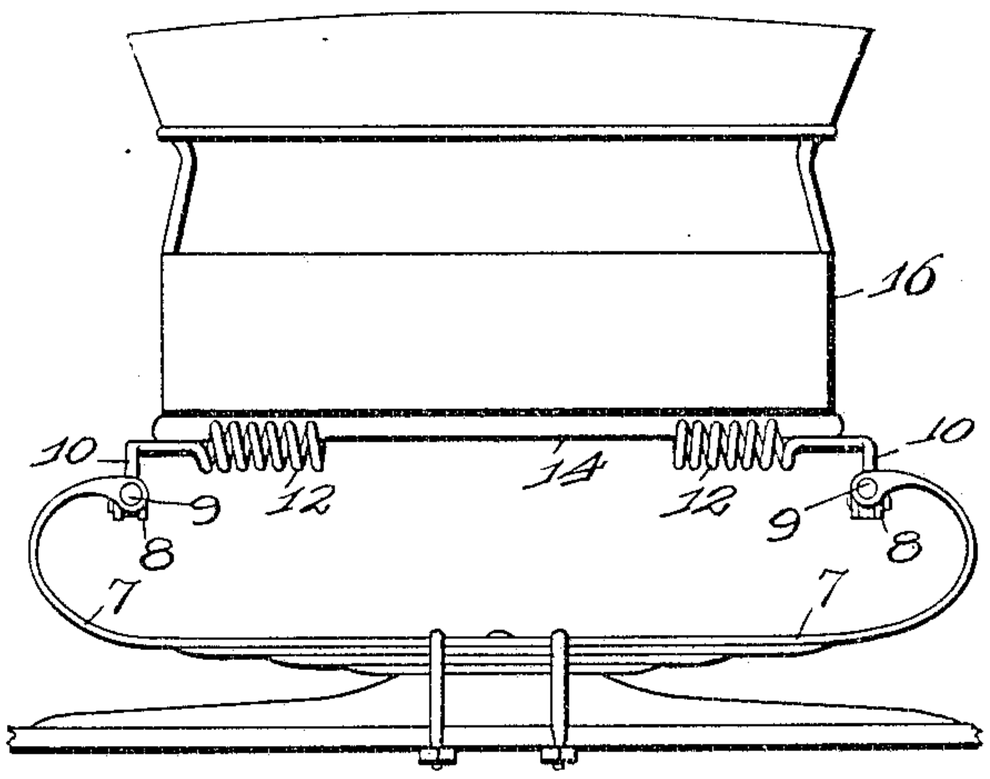


Fig. 2.



Witnesses
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Edw. M. Harrington

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2 SHEETS—SHEET 2.

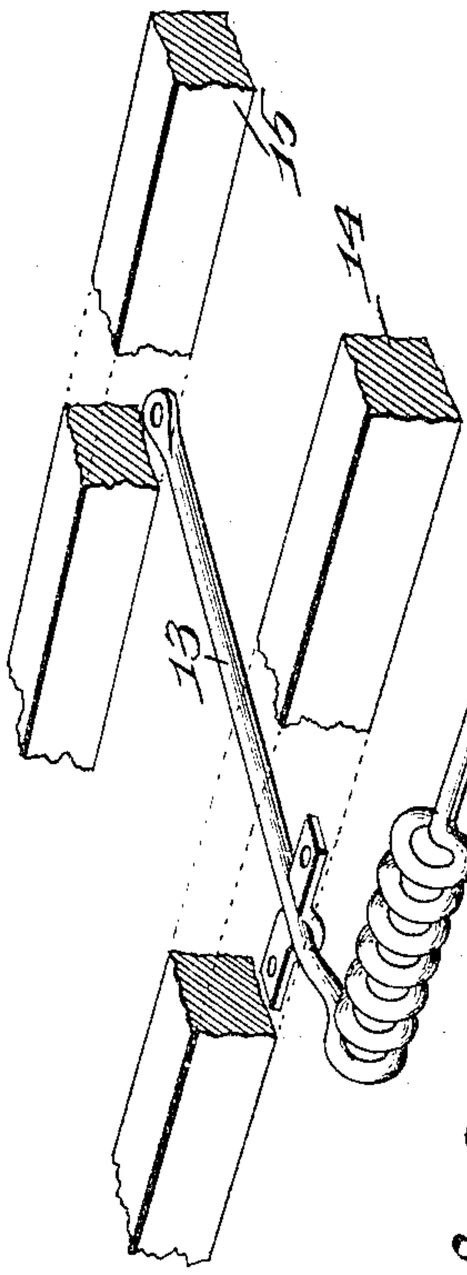

Fig. 3

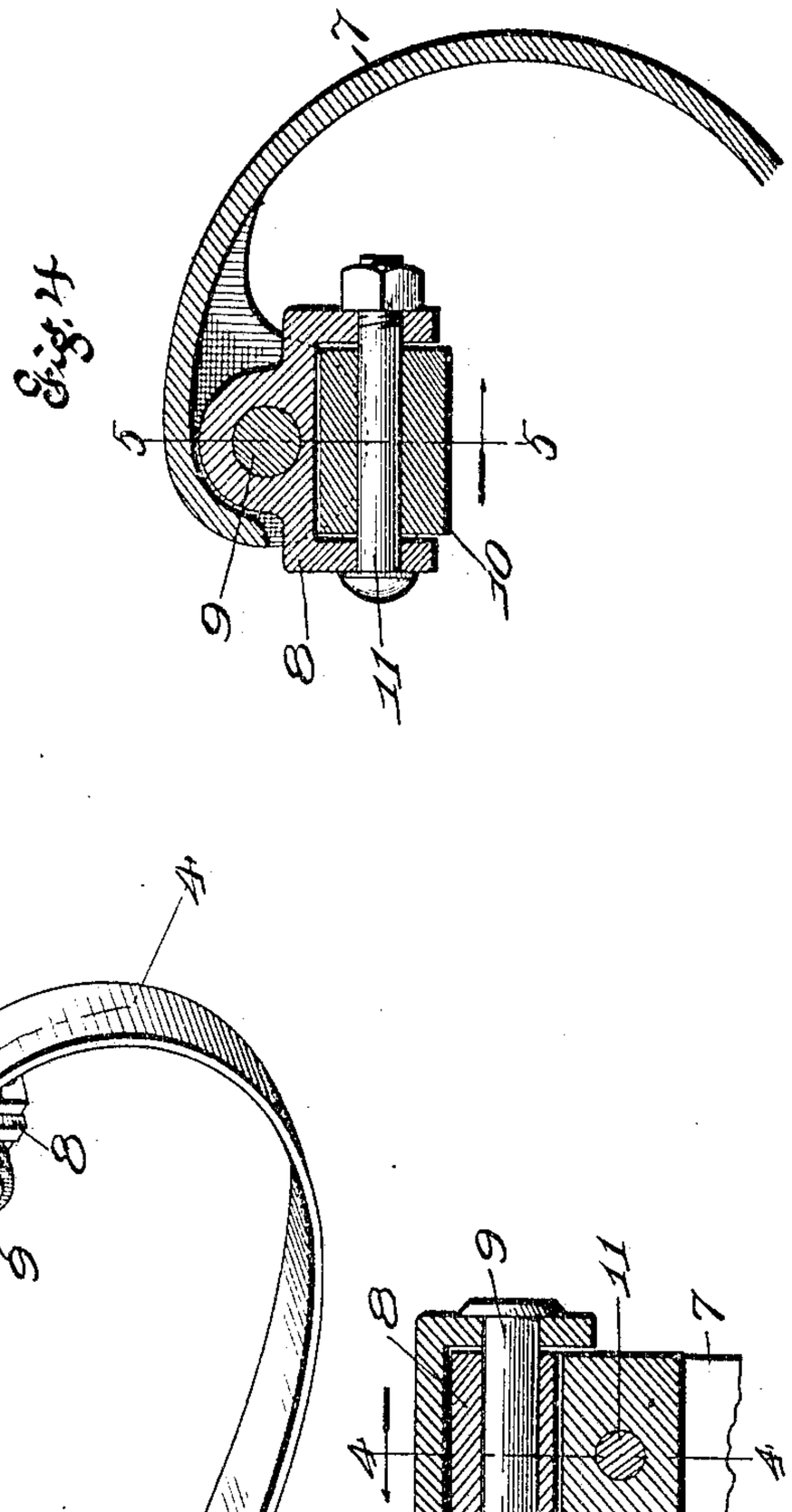

Fig. 1

Fig. 4

Fig. 5.

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No. 793,050. Patented June 27, 1905.

UNITED STATES PATENT OFFICE.

CHARLES E. M. CHAMP, OF ST. LOUIS, MISSOURI.

COMBINATION COILED VEHICLE-SPRING.

SPECIFICATION forming part of Letters Patent No. 793,050, dated June 27, 1905.

Application filed October 31, 1904. Serial No. 230,651.

To all whom it may concern:

Be it known that I, CHARLES E. M. CHAMP, a citizen of the United States, and a resident of St. Louis, Missouri, have invented certain new and useful Improvements in Combination Coiled Vehicle-Springs, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in combination coiled vehicle-springs; and it consists of the novel features herein shown, described, and claimed.

In the drawings, Figure 1 is a top plan view showing springs embodying the principles of my invention applied to the bed of the buggy. Fig. 2 is a rear elevation of the parts shown in Fig. 1 as seen looking in the direction indicated by the arrow 2. Fig. 3 is a perspective, upon an enlarged scale, showing the details of construction. Fig. 4 is a vertical central section showing the double-hinge connection between the coil-spring and the leaf-spring and taken substantially on the lines 4 4 of Figs. 3 and 5 and looking in the direction indicated by the arrow. Fig. 5 is a cross-section on the line 5 5 of Fig. 4 and looking in the direction indicated by the arrow.

Referring to the drawings in detail, the forward leaf-spring 6 is attached to the rocker and is of the same construction as is the leaf-spring 7, which latter is attached to the axle and provided with common closed protecting pivot-heads at its outer ends overhanging the body. A link 8 is swung beneath each end of each of the leaf-springs by a longitudinal pivot 9, and the supporting-arms 10 are secured to the links 8 by the transverse pivots 11, so as to make a double-hinge connection between each of the supporting-arms and between each end of each of the leaf-springs. The supporting-arms 10 extend backwardly and forwardly at right angles to the axles, and the opposite ends of said arms are bent inwardly and coiled to form the coil-springs 12, said coil-springs being parallel with the axles, and attaching-arms 13 extend from the inner ends of the coil-springs parallel with the arms 10, said attaching-arms being secured to the sills 14 and 15 of the bed 16 of the buggy. The insertion of coil-springs between the buggy-bed and the supporting means greatly increases the elasticity of the springs without in any way weakening the construction.

Weight upon the bed 16 will be transmitted to the coil-springs 12 and will have a tendency to wind up said springs, and from the springs the weight will be transmitted to the leaf-springs. Side motion of the bed will compress the coil-springs at one side endwise and expand the coil-springs at the other side endwise. The pivot-heads carried by the leaf-springs 7 act as a protection from the weather for the parts which are swung beneath them. The overhanging ends of the springs 7 make the same much more flexible than they would be were the overhung ends omitted. Especially is this so as regards the latter movement of the body relative to the running-gear.

I claim—

In a combination coiled vehicle-spring: the leaf-springs 7 extending outwardly and upwardly and having closed pivot-heads at their outer ends overhanging the body of the said springs, the longitudinal pivots 9 located beneath and protected by said overhung pivot-heads, the links 8 mounted upon said pivots 9: the pivots 11 mounted in the said links transversely of the pivots 9: the supporting-arms 10 mounted upon said pivots 11 and extending horizontally at right angles to the said leaf-springs, the coil-springs 12 extending from said supporting-arms 10 parallel with said leaf-springs, and the attaching-arms 13 extending in a longitudinal direction from the coil-springs: the pivots 9 and 11 forming a universal joint between the coil-springs and the said overhung heads, substantially as specified.

In testimony whereof I have signed my name to this specification in presence of two subscribing witnesses.

CHARLES E. M. CHAMP.

Witnesses:

ALFRED A. EICKS,

M. M. BRAZILL.