

No Model.)

J. K. WOOLLEY.

CAR SPRING.

No. 321,776.

Patented July 7, 1885.

Fig. 1

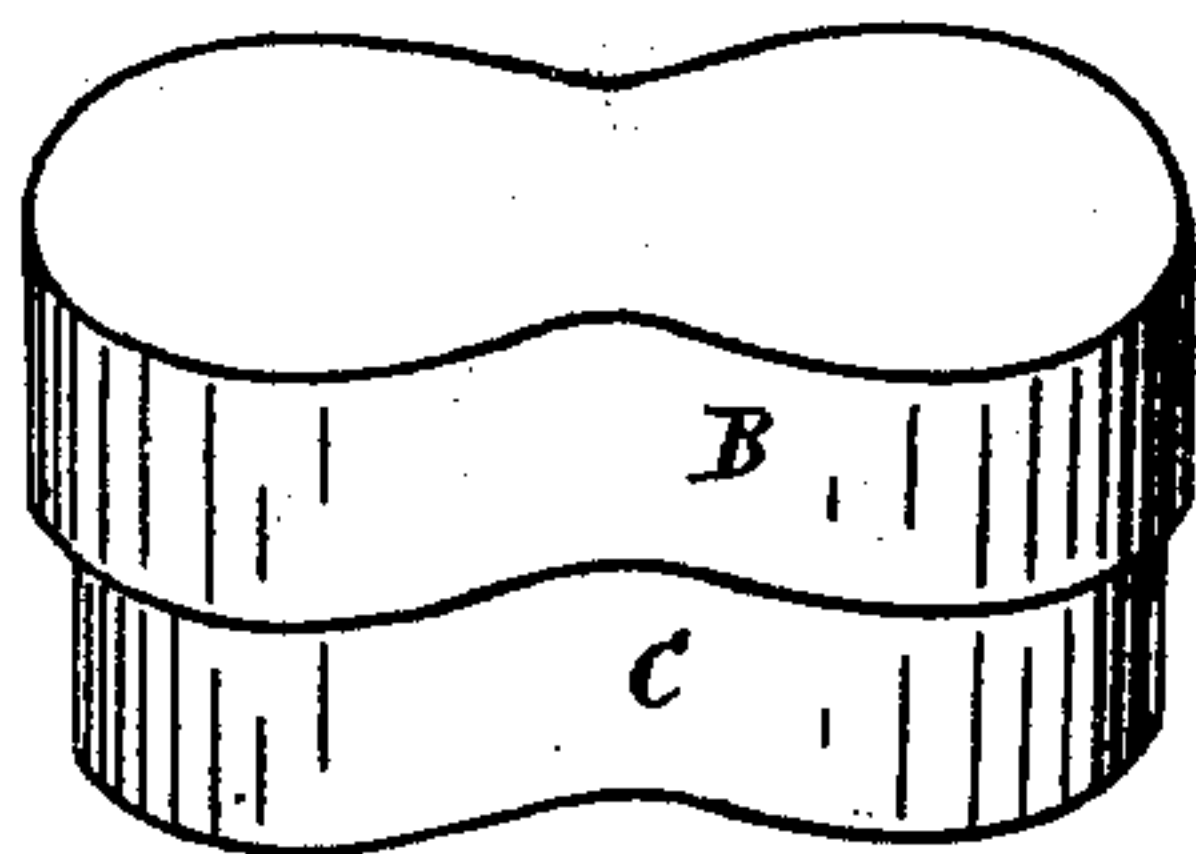


Fig. 3

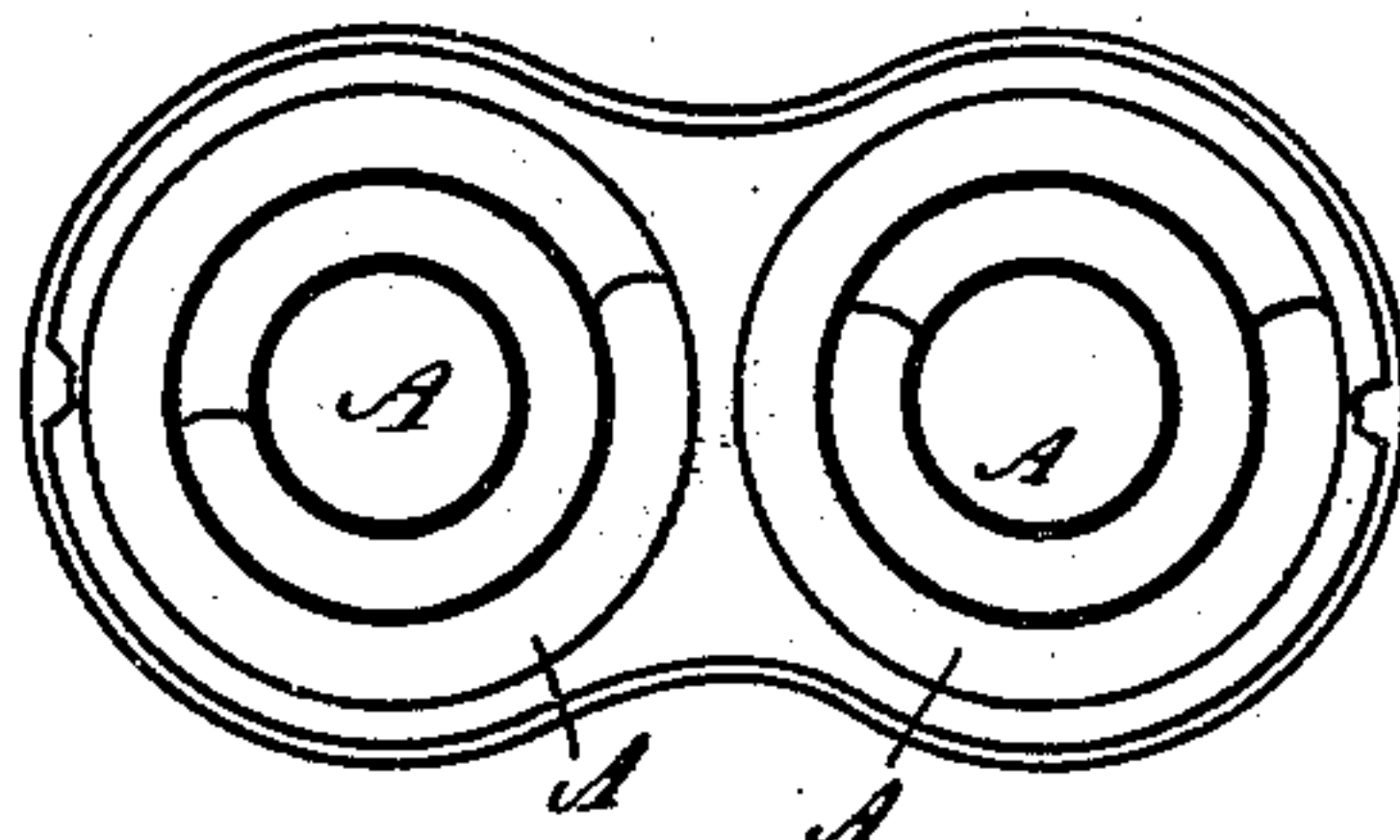


Fig. 2

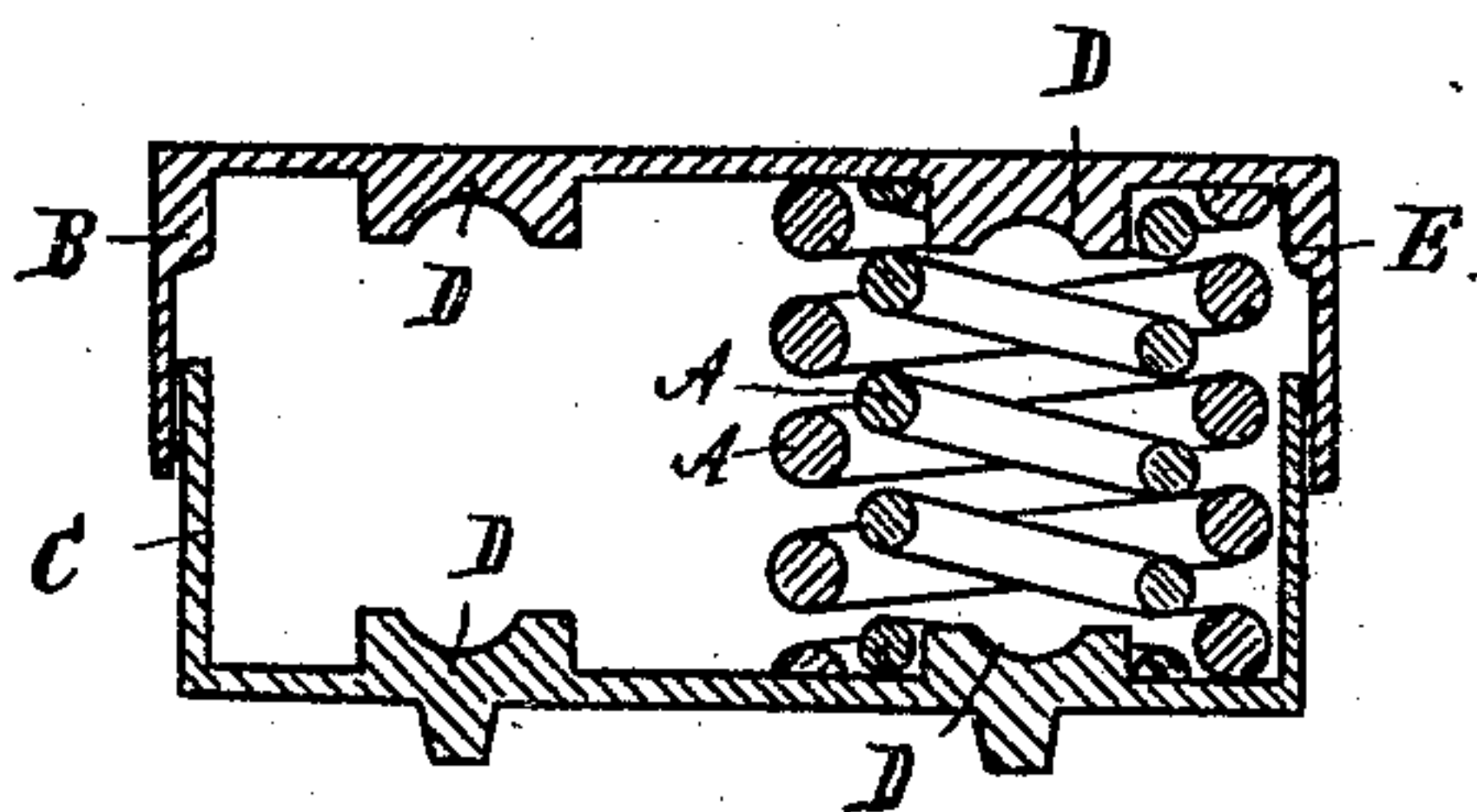


Fig. 4

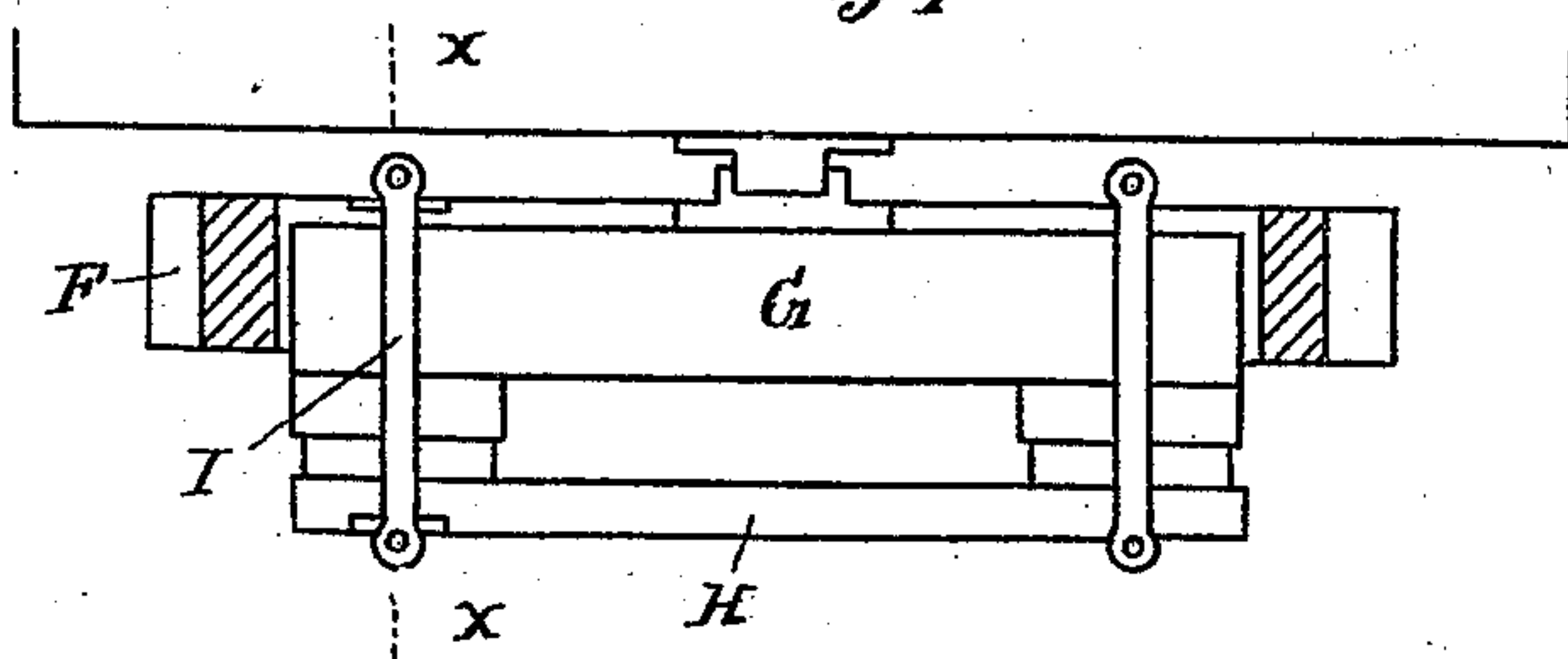
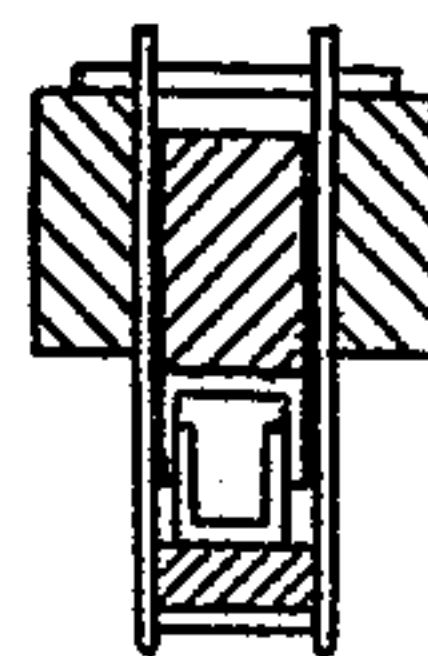


Fig. 5



Attest:

John Schuman.  
Charles J. Hunt.

Inventor:

James K. Woolley.

by his Atty

Thos. L. Sprague

# UNITED STATES PATENT OFFICE.

JAMES K. WOOLLEY, OF DETROIT, MICHIGAN, ASSIGNOR TO THE DETROIT STEEL AND SPRING WORKS, OF SAME PLACE.

## CAR-SPRING.

SPECIFICATION forming part of Letters Patent No. 321,776, dated July 7, 1885.

Application filed May 13, 1885. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES K. WOOLLEY, of Detroit, in the county of Wayne and State of Michigan, have invented new and useful Improvements in Car-Springs and Housings; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

10 This invention relates to a new and useful improvement in car-springs, and more specifically to that class of car-springs commonly called "housed" or "incased;" and the invention consists in the construction, arrangement, and combination of the parts, all as more fully hereinafter described.

15 In the drawings which accompany this specification, Figure 1 is a perspective view of my improved car-spring. Fig. 2 is a vertical central longitudinal section. Fig. 3 is a bottom plan of the top case. Fig. 4 is a vertical central cross-section of a truck to which my car-springs are applied. Fig. 5 is a cross-section on line *x x* in Fig. 4.

25 A A are two sets of springs, each consisting of two or more coil-springs concentrically placed within each other.

30 B and C are respectively the top and bottom of the inclosing-case, the top being made sufficiently larger to telescope the bottom. The case is circularly rounded upon its ends, but is contracted in the middle, and suitable round studs, D, are provided on the inside of the top and bottom to fit into the eyes of the inner coil-springs, and thereby hold the springs in position within the case.

40 E are stops at the rounding ends on the inside of the top of the case. They do in no way interfere with the free telescopic action of the top case, but are intended to form lateral stops to prevent end motion of the upper ends of the coil-springs.

45 The upper case, which has to be longer than the lower case on account of its being telescopic, cannot by itself prevent the side motion of the coil-springs, as the lower case does, and therefore when under pressure the upper ends of the coil-springs would be loose and have a free side play, and give to the car 50 when running an undesirable swaying motion. This side motion is now prevented from

taking place without unduly confining the springs, and thereby subject the case to heavy strains or reduce the elasticity of the springs.

The object of using two sets of springs in a case contracted in the middle will be apparent from Figs. 4 and 5, in which F is the truck-frame; G, the swinging bolster, which bears the central pivot on which one end of the car rests; H, the suspension-bolster on which the car-springs are supported, and I the hangers by means of which the suspension-plate is supported from the truck-frame.

It is clear that, my case being contracted in the center, larger and stronger springs can be used without interfering with the free play of the hangers than if the case were not contracted in the middle.

I am aware that it is not new in itself to contract cases in which springs are housed; but I am not aware that such contraction has ever been made in such a manner as to be of any use for the purpose above stated.

In the present construction of freight car trucks it is a standard construction to use the same arrangement of coil-springs, except omitting the housing. Therefore my housed spring is especially serviceable and applicable to make such car-trucks more suitable for refrigerator-cars, in which the springs have to be protected against the corrosive action of the refrigerating-mixtures.

What I claim as my invention is—

1. In a car-spring, two sets of coil-springs, in combination with an inclosing telescopic case, each part of which is contracted in the middle between the two sets of coil-springs, substantially as described.

2. As a new article of manufacture in car-springs, two sets of springs, each composed of two or more concentric coil-springs, an inclosing-case, each part of which is contracted in the middle between the two sets of springs, studs D, engaging into the eyes of the inner coil-springs, and stops E in the top or larger part of the case, all arranged and combined substantially as described.

JAMES K. WOOLLEY.

Witnesses:

H. S. SPRAGUE,  
CHARLES J. HUNT.