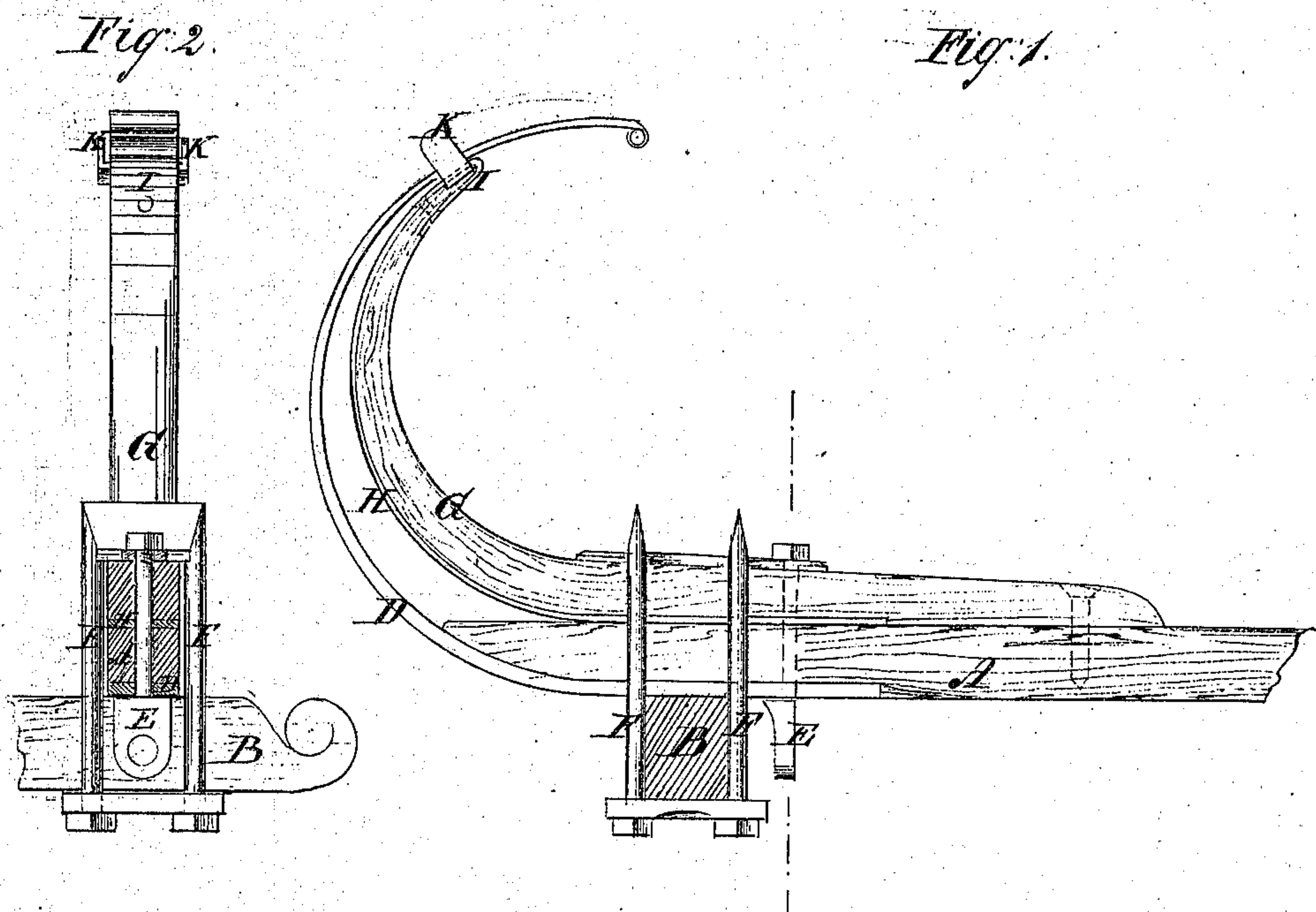


J. GOLLER.  
Carriage Spring.

No. 103,041.

Patented May 17, 1870.



Witnesses:

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Geo. F. Brooks

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# United States Patent Office.

JOHN GOLLER, OF LOS ANGELES, CALIFORNIA.

Letters Patent No. 103,041, dated May 17, 1870.

## IMPROVEMENT IN THOROUGH-BRACE SPRING.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, JOHN GOLLER, of Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Improvement in Thorough-brace Springs; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings forming part of this specification:

This invention relates to improvements in springs for thorough-brace wagons and carriages, and consists in an improved arrangement of steel and wood springs for operation separately or together, according to the load suspended upon them, in a manner to provide more uniform elasticity, whether the load be heavy or light.

Figure 1 represents a side elevation of my improved springs, a part of the reach-bar, transverse section of the axle or bolster, and the mode of connecting the whole together, and

Figure 2 represents a transverse section of fig. 1.

Similar letters of reference indicate corresponding parts.

A is the reach-bar, or one of the bars of the frame, connecting the rear axle and the front bolster.

B is the axle or bolster; and

D is a strong flat steel curved spring, attached to the under side of the reach-bar, so as to pass over the axle or bolster and be secured by the bolt E and the clips F.

G is a curved wood spring, connected to the top of the bar A, also by the bolt E and clips F, and curved like the spring D, but on a shorter radius, so that the upper end of the latter, which is longer than the former, will bear on the top of G, where it passes over it.

H is another steel spring of the same curvature as spring G. It is connected to the bar A by being clamped between it and spring G, and fits the exterior face of the latter snugly.

This spring H is bent over the upper end of G, as shown at I, and a clip, K, is clamped between this spring at the upper end and the end of the wood spring.

The spring D passes between the turned up ends of this clip, and is held thereby against sliding laterally on this bearing.

The leather straps, chains, cords, or other devices whereon the coach-bodies are suspended, are connected to the upper ends of these springs D, which

are thus so arranged as to act entirely independently of the springs G and H until the load becomes so great as to overcome, or nearly so, their elasticity.

They are then drawn up against the said springs G and H, near their upper ends, in a manner to bring them into action in conjunction, affording strong but elastic springs for heavy loads and lighter springs for lighter loads.

In some case the springs H may be dispensed with, and I propose to use it or not, as preferred.

I also propose to use the two steel springs D and H, in some case, without the spring G, which may be done by suitably attaching the clip K to the said springs H, and shortening the rods of the clip F.

Any one will observe, by inspection, that the weight in my primary as well as the secondary spring acts upon the end thereof, and at the greatest leverage.

This class of springs is incomparably the best for steadying and taking up the irregular motion produced by rough roads, but the greatest difficulty has been to adapt them to loads of different size.

The weight acting upon the spring at the greatest possible leverage, a spring which would answer the purpose completely for a small load would give way completely under a heavy one, while a stiff spring, which would answer admirably for a heavy load, would give no elasticity at all to a light one.

As persons who use vehicles of any kind expect them to be weighted unequally at different times, and wish always to neutralize the jolting, it becomes a great desideratum to produce a spring which will adapt itself to circumstances.

Now, I am aware that reinforcing springs have been used for vehicles heretofore, but they have only been employed on springs where the weight acted by simple pressure while lying upon it.

My improvement has no application to this class of springs.

Having thus described my invention,

I claim as new and desire to secure by Letters Patent—

The combination with an ordinary thorough-brace spring, D, to the end of which the vehicle is attached, and upon which end the weight acts, of a secondary reinforcing spring, G, which is shorter and stiffer, and whose elasticity is only brought into play by a comparatively heavy load, all as shown and described.

JOHN GOLLER.

Witnesses:

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