

(Model.)

H. F. STEARNS & W. F. BIDWELL.

SPRING BOARD WAGON.

No. 249,687.

Patented Nov. 15, 1881.

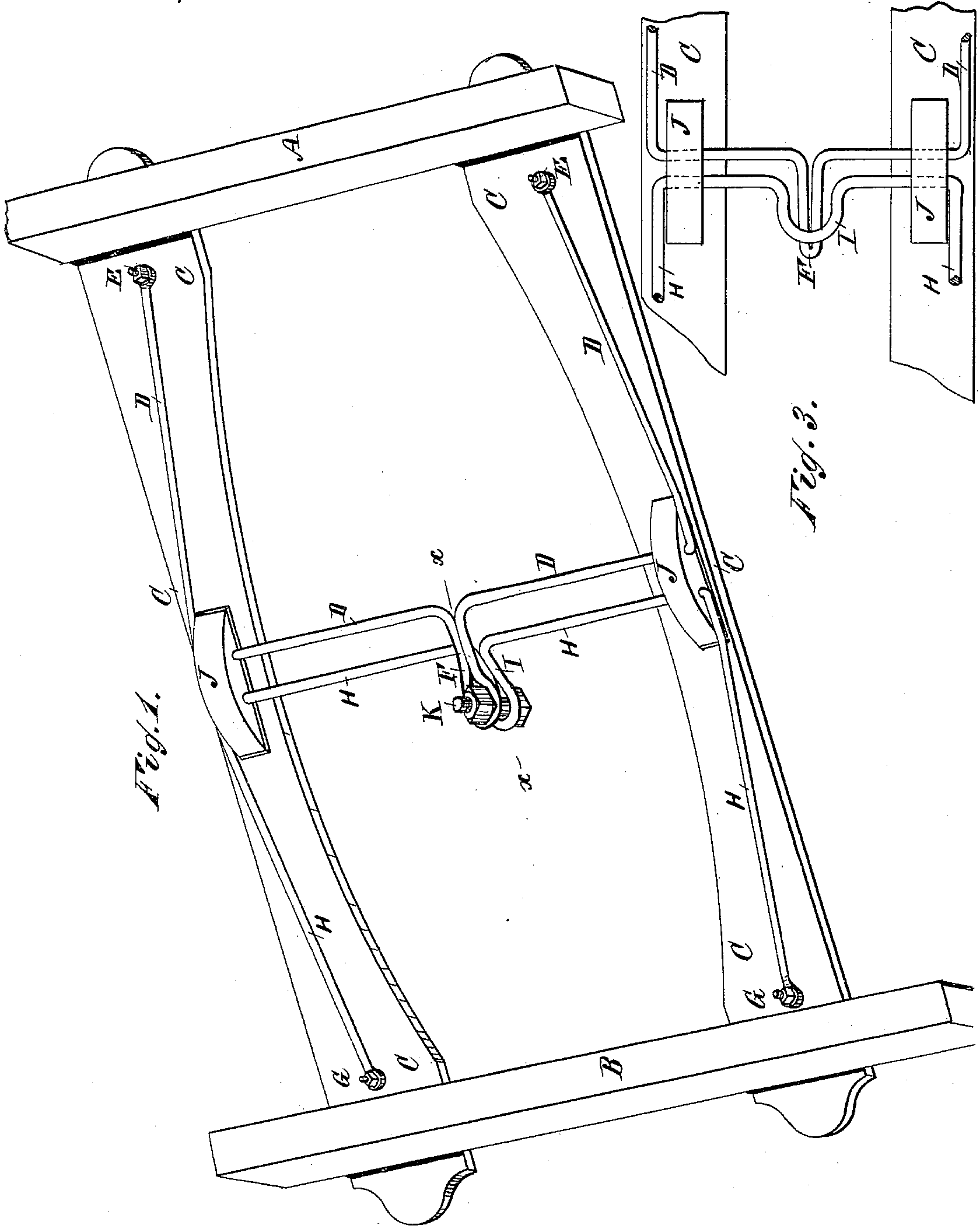


Fig. 1.

Fig. 2.

Fig. 3.



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## SPRING-BOARD WAGON.

SPECIFICATION forming part of Letters Patent No. 249,687, dated November 15, 1881.

Application filed September 17, 1881. (Model.)

*To all whom it may concern:*

Be it known that we, HENRY F. STEARNS and WILLIAM F. BIDWELL, of Glens Falls, in the county of Warren and State of New York, have invented a new and useful Improvement in Spring-Board Wagons, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is an under-side perspective view of our improvement. Fig. 2 is a sectional elevation of a part of the same, taken through the line *x x*, Fig. 1. Fig. 3 is an under-side plan view, showing a modification of the improvement.

In this invention the undersides of the spring-boards are provided with torsion-springs, which are arranged to exert their force upwardly against the middle portion of the spring-boards, so as to arch the same and promote their elasticity, strength, and safety.

The invention consists in the combination, with the spring-boards, of torsion-springs in the manner herein described; also, in the peculiar devices herein described of adjusting the pressure of the torsion-springs.

A represents the head-block, B the rear axle, and C the spring-boards, of a wagon.

The boards C are concaved or narrowed upon their inner edges from their ends toward their centers, as shown in Fig. 1, to make the said boards more elastic at their centers, and stronger at their ends, where they are attached to the head-block and axle. To the forward parts of the spring-boards C are secured the ends of a spring-rod, D, either by bolts E, passing through the said ends of the rod and through the said boards, as shown in Fig. 1, or the ends of the spring-rod D can be passed through the head-block A and secured in place by nuts. The rod D, near the centers of the boards C, is bent twice at right angles, so that its middle part will cross the space between the boards C, and upon the center of the said transverse part of the said rod D is formed an arm or loop, F, projecting rearward and downward. To the rearward parts of the spring-

boards C, or to the rear axle, B, are attached, by bolts G or other suitable means, the ends of a corresponding spring-rod, H, which also is bent twice at right angles, so that its middle part will cross the space between the spring-boards C a little in the rear of and parallel with the middle part of the spring-rod D.

Upon the center of the transverse part of the spring-rod H is formed an arm or loop, I, projecting rearward and upward, so that when the said spring-rods D H are left free the arms F I will incline from each other at an angle. The ends of the transverse parts of the springs D H pass through and work in bearings in blocks J, attached to the centers of the under sides of the spring-boards C. The ends of the arms or loops F I are drawn toward each other by a bolt, K, which puts the two springs under a torsion strain, and causes them to hold the spring-boards C in a slightly-arched position, and prevent the said boards from sagging.

The amount of arch of the boards C, and consequently their strength, is regulated by adjusting the nut of the bolt K to hold the arms F I at a greater or less distance from each other. If desired, the loop I may be made wider, and the loop F passed up through it, so that the ends of the said arms F I will rest upon each other, and thus put the springs D H under a torsion strain. In this case the torsion strain can be regulated by interposing blocks between the ends of the arms or loops F I.

If desired, tubular rubber washers can be placed upon the parts of the spring-rods D H that pass through the bearing-blocks J, to prevent noise or rattling. For the same reason rubber packing-plates can be interposed between the spring-boards C and the head-block A and axle B, as shown in Fig. 1.

The body or seat risers are designed to be arched upon the lower side, and are secured at their ends by bolts to the spring-board C upon the opposite side of and equally distant from the centers of the said spring-boards, so that the full elasticity of the centers of the said boards will be utilized.

The risers are not shown in the drawings.

Having thus described our invention, we



claim as new and desire to secure by Letters Patent—

1. The combination, with the spring-boards C, of the torsion-springs D H, when said springs  
5 are provided, respectively, with central adjusting-loops, F I, as herein shown and described.
2. The combination, with the central adjusting-loops, F I, springs D H, and spring-boards C, of the central adjusting-bolt, K, substan-  
10 tially as herein shown and described.

3. The combination, with the spring-boards C and the torsion-springs D H, of the bearing-blocks J, substantially as herein shown and described.

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Witnesses:

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