

G. FRANKLIN.
Railway Springs.

No. 154,858.

Patented Sept. 8, 1874.

FIG. 1

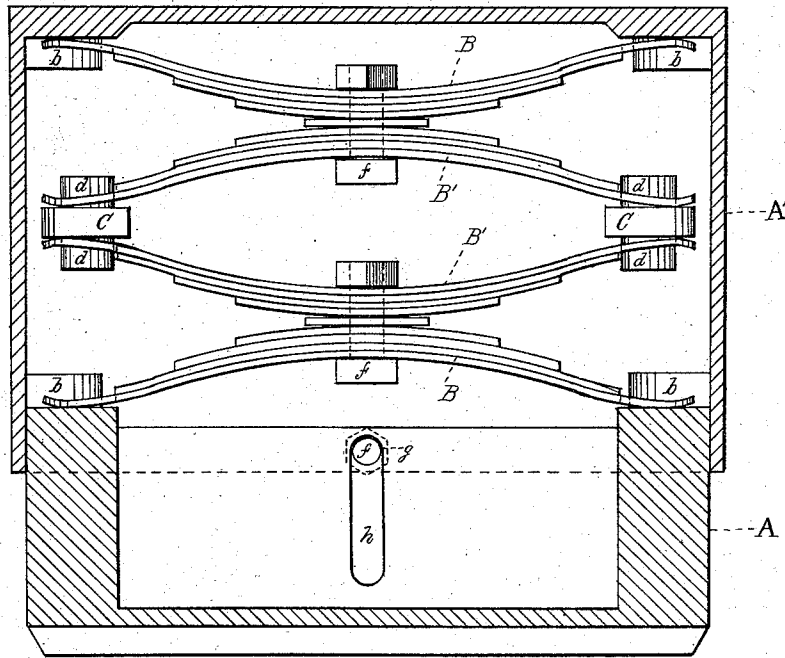


FIG. 2

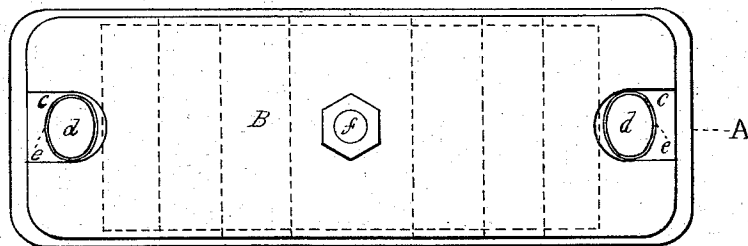


FIG. 3

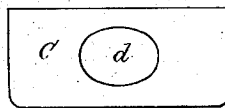
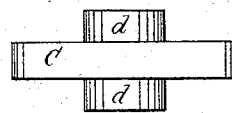


FIG. 4



Witnesses.
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Inventor.
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FIG. 5

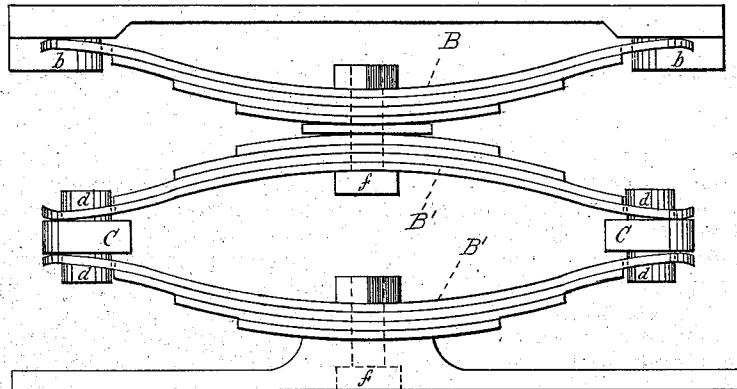
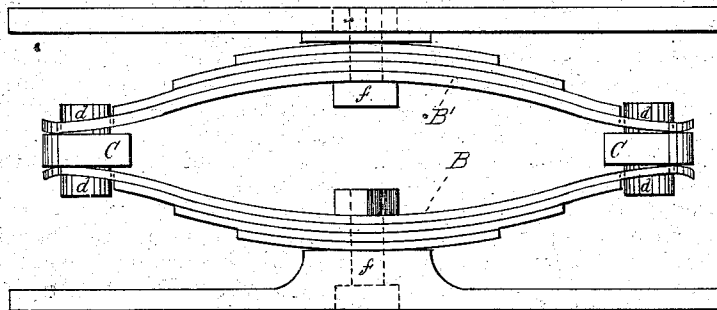


FIG. 6



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UNITED STATES PATENT OFFICE.

GEORGE FRANKLIN, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN RAILWAY-SPRINGS.

Specification forming part of Letters Patent No. **154,858**, dated September 8, 1874; application filed March 4, 1874.

To all whom it may concern:

Be it known that I, GEORGE FRANKLIN, of the city and county of Philadelphia, in the State of Pennsylvania, have invented an Improvement in Elliptical Car-Springs, of which the following is a specification:

My invention relates to a series of elliptical springs, in combination with a double box or case. The upper and lower springs have slots in their ends, of uniform dimensions, which fit over lugs of the upper and lower boxes, and the intermediate springs have holes in their ends, which fit over lugs of dividing-strips in such a manner that a series of any number of springs may be connected together, and also connected with the double box or case very expeditiously, to form the combined spring, as hereinafter fully described.

In the accompanying drawings, Figure 1 is a side elevation of a series of springs, B and B', in connection with the lower box A and upper box A', the boxes being shown in vertical section. Fig. 2 is a plan view of the same, the upper box or cap A' being removed. Figs. 3 and 4 are a face and edge views of a strip, C. Fig. 5 is a side elevation of an exact elliptical spring formed of the parts B' B' and a half-spring, B, combined. Fig. 6 is a like view with the half-spring B removed.

Like letters of reference in all the figures indicate the same parts.

A is the lower box, provided at its ends with lugs *b b*, over which the slots *c c* of the half-spring B are placed. The upper box A' is also provided with like lugs *b b*, for the connection of a spring, B, so as to make any of the half-springs interchangeable. When the concave sides of two springs B' are toward each other, forming an exact elliptical spring, their ends are connected by means of strips C C, one of which is shown in Figs. 3 and 4, the lugs *d* of the strips being placed in corresponding holes *e* in the ends of the springs.

Springs that are placed with their convex sides together are connected by means of bolts or rivets *f*.

When any number of springs are connected with the lower box A, the upper box or cap A' is placed in connection therewith, as seen in Fig. 1, and then connected with the lower box by means of the bolt E, the bolt passing through holes *g* in the sides of the upper box, and the vertical slots *h* of the lower box, the slots being extended far enough to give any desired vibration of the springs.

Figs. 5 and 6 show modifications in the numbers and arrangement of the springs. It will readily be seen that any change may be made, so as to have any desirable number or arrangement of the springs, by the use of the lugs *b* of the boxes and the connecting-strips C, and connecting the springs with the slots *c* and holes *e* in their ends.

When a more powerful spring is required than can conveniently be made in a single nest, as represented, I place two or more nests in connection abreast of each other, or as best suited to the occasion. In some cases the double box may be dispensed with and head-plates substituted, as in Figs. 5 and 6.

I claim as my invention—

1. The strips C, having lugs *d d*, in combination with springs B', having holes *e e*, substantially in the manner and for the purpose described.

2. The combination of single springs B, double springs B', and connecting-strips C, having lugs *d*, substantially as described.

3. A combined elliptical spring having boxes A and A', springs B and B', and connecting-strips C, provided with lugs *d*, substantially in the manner and for the purpose specified.

GEORGE FRANKLIN.

Witnesses:

THOMAS J. BEWLEY,
STEPHEN USTICK.