

P. G. GARDINER.

Car Spring.

No. 84,688.

Patented Dec. 8, 1868.

Fig. 2.

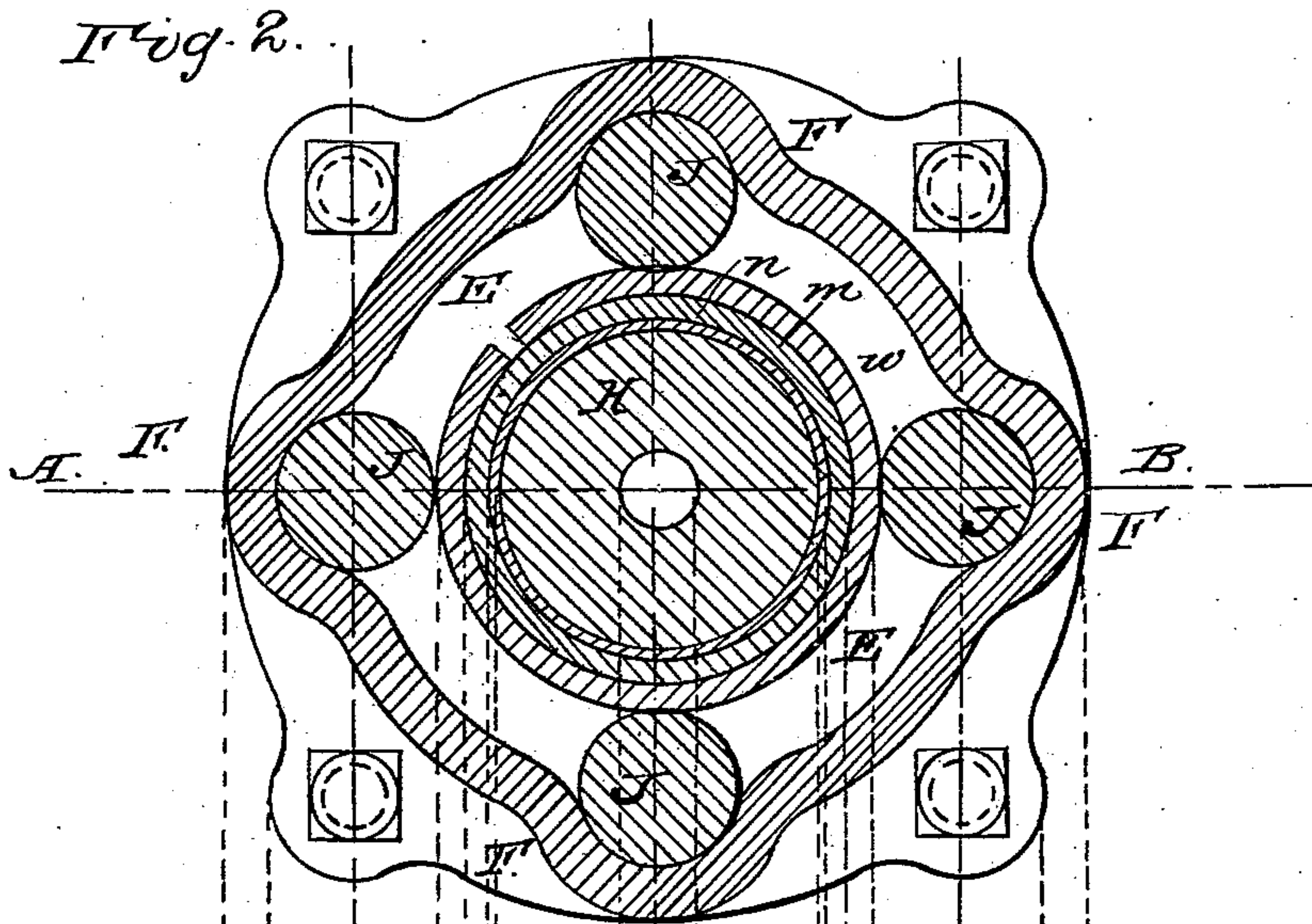
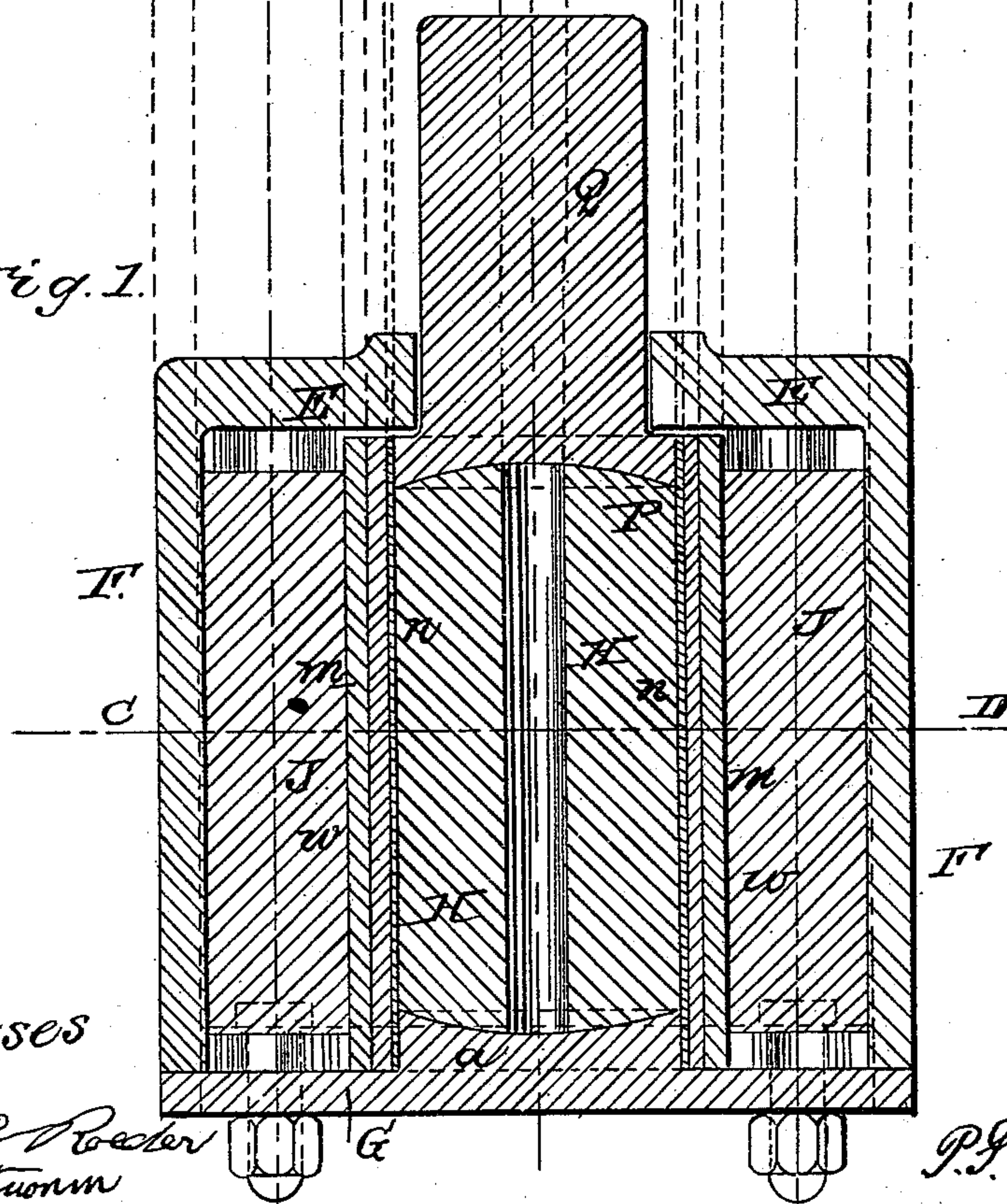


Fig. 1.



Witnesses

Henry E. Roeder  
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# United States Patent Office.

PERRY G. GARDINER, OF NEW YORK, N. Y.

Letters Patent No. 84,688, dated December 8, 1868.

## IMPROVED CAR-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, PERRY G. GARDINER, of New York, in the county and State of New York, have invented a new and useful Spring, which I call "The Novelty Spring;" and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of this invention consists in the arrangement of a solid, or nearly solid, India-rubber spring, surrounded by two or more flat steel springs, against the outside of which latter three or more India-rubber solid springs are placed, the whole enclosed in a suitable casing, and operated by a plunger acting upon the central India-rubber spring.

Figure I is a longitudinal section of the spring, at the line C D of Fig. II, and

Figure II is a horizontal section of the same, at the line A B of Fig. I.

Similar letters represent similar parts.

In the accompanying drawings—

E is a casing, made with four circular recesses, F, and secured to and closed by a bottom or sole-plate, G.

In the centre of this casing E, a solid, or nearly solid, strong India-rubber spring, H, is placed, resting upon a concave projection, *a*, provided on the sole-plate G.

Around this India-rubber central spring H, two, three, or more flat steel springs, *n*, *m*, and *w*, are placed, arranged in such a manner that the cut in each spring shall come opposite, or nearly so, to the cut of the spring situated inside of the other.

The interior or central spring *n* is made to enclose the central India-rubber spring H tight; and in the same manner the spring *m* fits tight around the spring *n*, and the spring *w* fits tight around the spring *m*.

These springs, *n*, *m*, and *w*, are made of such a length as to correspond with the whole depth of the interior

of the casing E, and act, at the same time, as a guide for the plunger P.

Against the outside of the outer spring *w*, and the interior surface of the recesses F, made in the casing E, solid India-rubber springs J are placed, fitting tight into this space, and acting against the exterior of the flat steel springs in such a manner as to keep the said springs tight against the internal and central India-rubber spring H.

These India-rubber springs J are made considerably shorter than the internal depth of casing E, to allow for their expansion lengthwise, when the spring is in action.

Upon the top of the central India-rubber spring H, a plunger, P, is made to act, provided with a projecting bolt, Q, passing through the top of the casing E.

The load acting upon this bolt Q will cause the plunger P to compress the central India-rubber spring H lengthwise, which latter being confined within the steel-spring rings *n*, *m*, and *w*, will cause to expand the said steel-spring rings, and which, in their turn, act upon the India-rubber springs J laterally, producing, by the united strength of all these springs, a very strong and powerful spring, by a very small expenditure of material.

What I claim as my invention, and desire to secure by Letters Patent, is—

The arrangement of an India-rubber spring, H, surrounded by steel-spring rings, *n*, *m*, and *w*, and India-rubber springs J, enclosed in a suitable casing, E, in combination with a plunger, P, acting upon the central India-rubber spring H, the whole being combined and operating together, in the manner and for the purpose substantially as described.

Witnesses: PERRY G. GARDINER  
HENRY E. ROEDER,  
LOUIS STUMM.