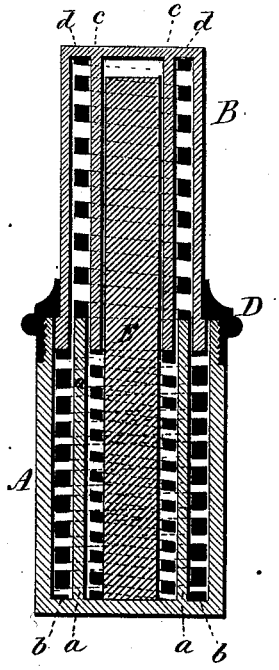
J. BARR.

CAR-SPRINGS.

No. 195,330. Patented Sept. 18, 1877.



Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN BARR, OF BRIDGEPORT, CONNECTICUT.

IMPROVEMENT IN CAR-SPRINGS.

Specification forming part of Letters Patent No. **195,330**, dated September 18, 1877; application filed June 5, 1876.

To all whom it may concern:

Be it known that I, JOHN BARR, of Bridgeport, in the county of Fairfield and State of Connecticut, have invented a new Improvement in Springs; and I do hereby declare the following, when taken in connection with the accompanying drawings, and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent a vertical section.

This invention relates to an improvement in springs for mechanical purposes, the object being to produce a serviceable and durable inclosed spring in small compass.

The invention consists in a case of two parts, one constructed with annular concentric chambers, the other part with concentric chambers corresponding to the partitions of the first part, the partitions of the second part corresponding to the chambers of the first part, combined with springs arranged in the said chambers, and a collar attached to the part of larger diameter, and surrounding the smaller part above a shoulder, so as to prevent the separation of the parts, as more fully hereinafter described.

A is the one part, which consists of a cylindrical case, within which is a concentric cylindrical partition, *a*, forming an annular chamber, *b*, and with a central chamber inclosed within the said partition *a;* B, the other part, which is of cylindrical form, corresponding to the chamber *b* of the other part, and with concentric partition *c*, corresponding to the chamber within the partition *a* of the other part, the partition *c* forming a concentric or annular chamber *d*, which corresponds to the partition *a* of the first part, and so that the two parts will sit together, the one within the other, as shown in the drawing, and move freely axially therein.

Into the chambers *b d*, and in the central chamber beneath the partition *c*, independent spiral springs are arranged, the springs being indicated in solid black, the casing of the cylinder B bearing upon the spring in the chamber *b*, the partition *a* taking the spring in the chamber *d*, and the central spring taking the partition *c*. Therefore a weight or power applied to compress or force the two parts together will be resisted by the combined force of the three springs, and each spring is maintained in its axial position by the walls of its own independent chamber.

For the purpose of securing the two parts together, a collar, D, is set over the cylinder B, and screwed onto the other part A, bearing on an annular shoulder on the part B, as shown.

These annular or concentric chambers may be increased in number, the partitions and chambers in the two parts alternating in like manner, as described, this illustration being sufficient to enable those familiar with mechanical constructions to understand this invention.

A central core, E, of an elastic material—as india-rubber—may be introduced, and add to the strength of the spring.

This spring may be applied for railroad uses, carriage-springs, and generally to mechanical purposes where such a spring is desirable.

This spring is adjustable by removing one or more of the independent springs, thereby reducing the force of the whole.

I claim—

The herein-described spring, consisting of the two parts A B, each constructed with concentric chambers, the chambers of one alternating with those of the other, combined with independent springs in the said chambers, and the collar D, attached to the part A and extending inwardly over a shoulder on the part B, substantially as described.

JOHN BARR.

Witnesses:

MORRIS B. BEARDSLEY,

D. B. CLUTE.