

R. MILLER.
Base and Cap Plate.

No. 215,533.

Patented May 20, 1879.

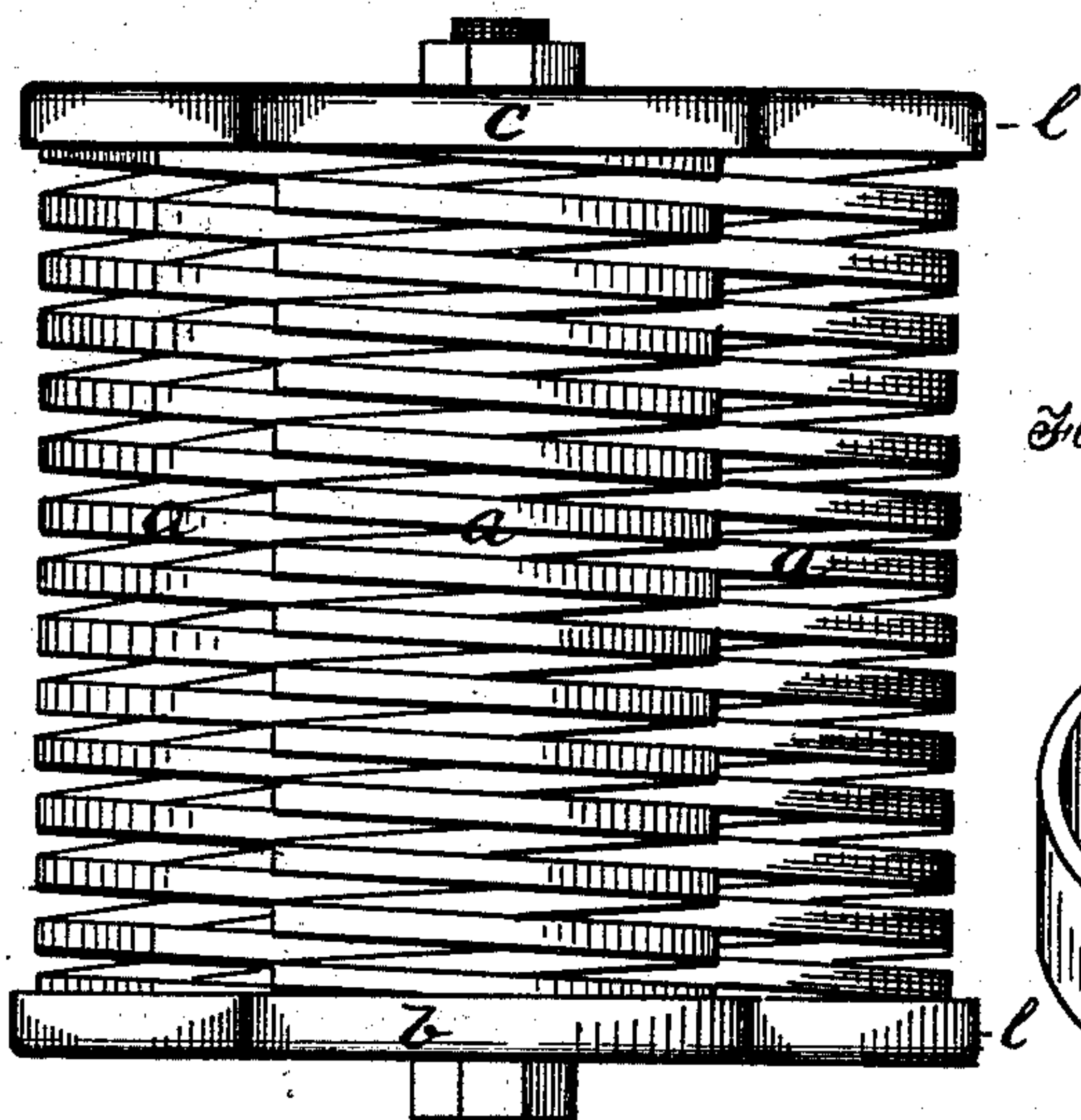


Fig. 1.

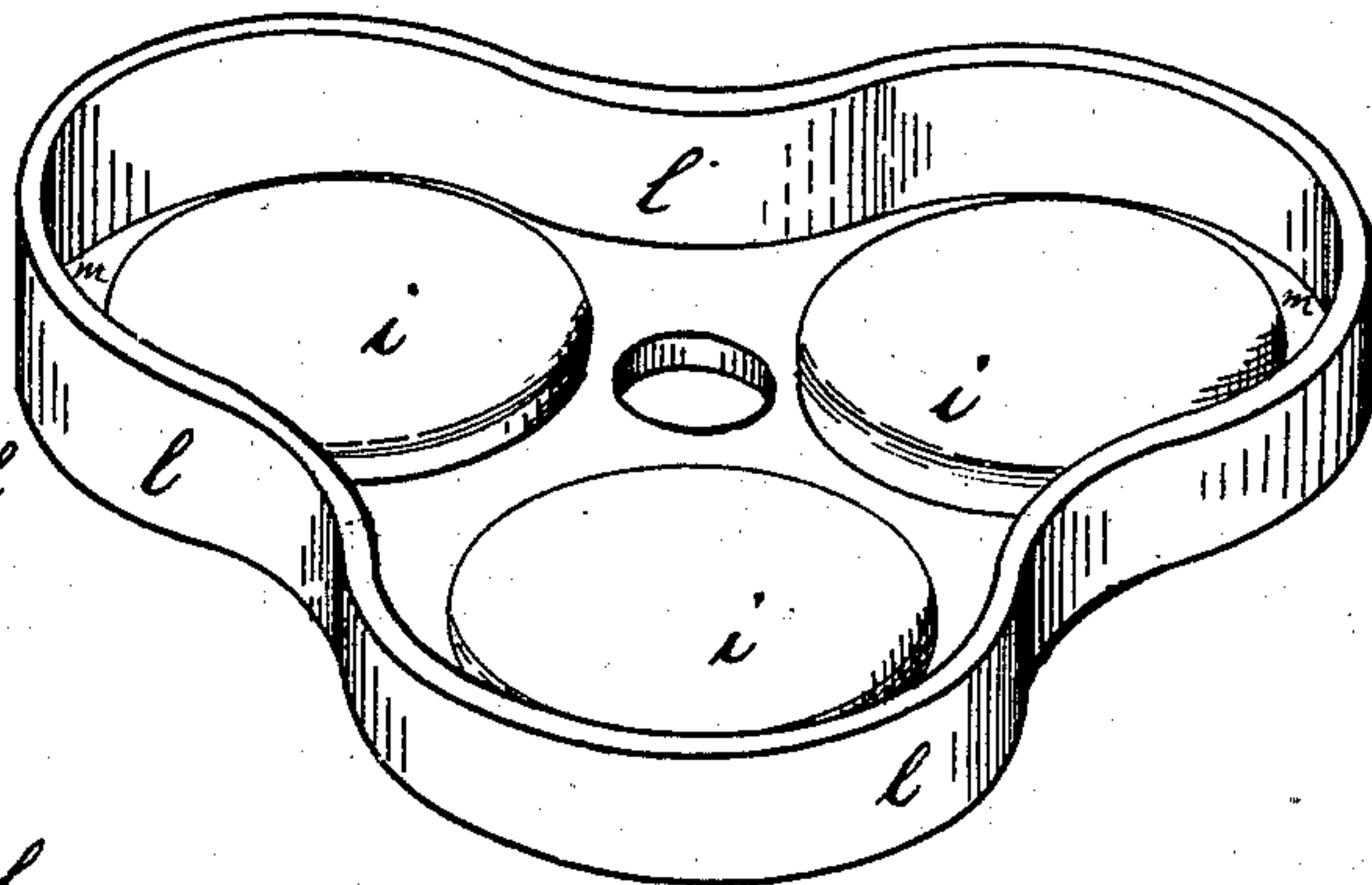


Fig. 3.

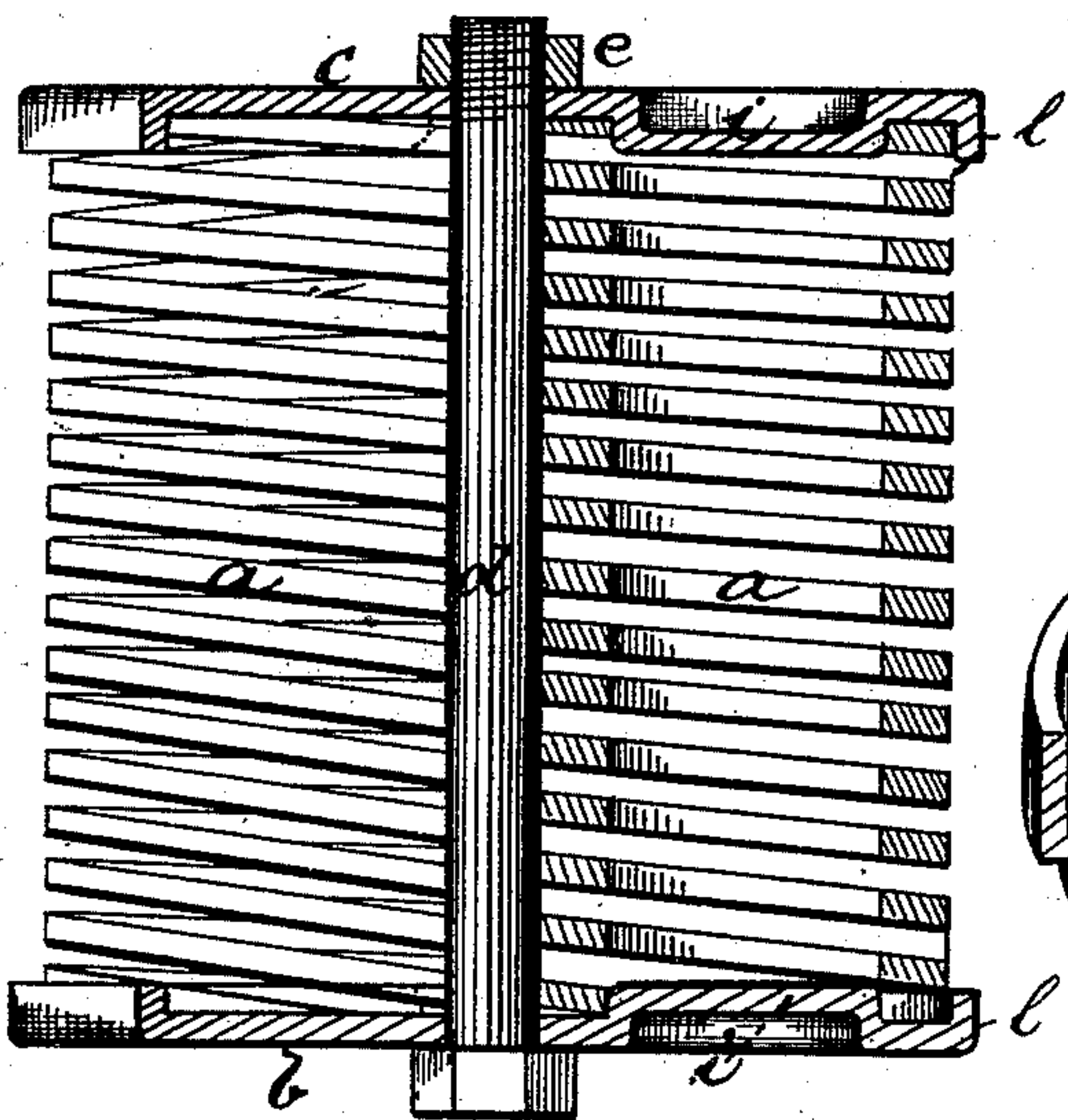


Fig. 2.

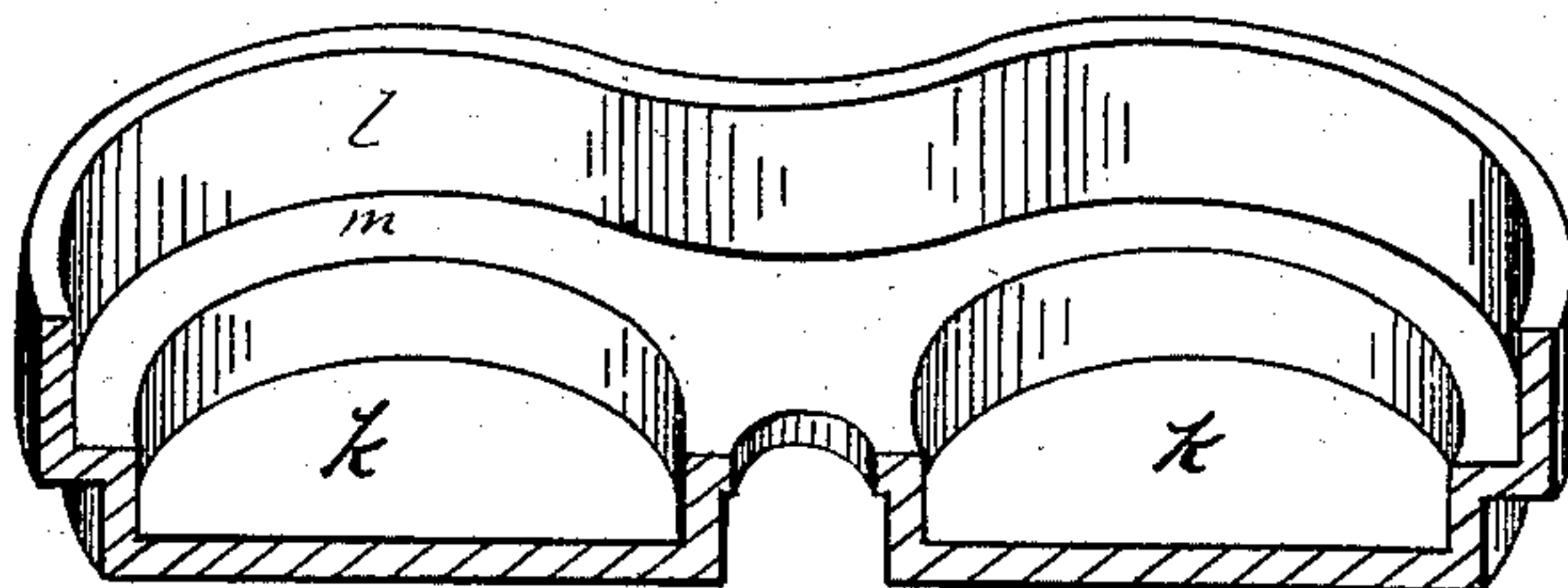


Fig. 4.

Witnesses.

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UNITED STATES PATENT OFFICE.

REUBEN MILLER, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN BASE AND CAP PLATES.

Specification forming part of Letters Patent No. **215,533**, dated May 20, 1879; application filed January 16, 1879.

To all whom it may concern:

Be it known that I, REUBEN MILLER, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Base and Cap Plates for Car and other Springs; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an elevation of a cluster-spring having my improvements applied. Fig. 2 is a sectional view of the same. Fig. 3 is a detached view of one of the plates. Fig. 4 is a modification of the plate.

Like letters refer to like parts wherever they occur.

My invention relates to the construction of cluster-springs; and consists in combining, with a series or cluster of spiral, volute, or similar springs, cap and base plates of wrought-iron, soft steel, or similar malleable metal, provided with seats for the springs, whereby lightness, strength, and durability, as well as uniformity in wear and bearing, are obtained.

In the construction of cars, and in many other places where strong springs are desirable, it has been common to employ two or more, arranged in clusters, and to secure the same between a set of coupling-plates, or a base and a cap plate common to the series; but, so far as I am aware, in all such cases the plates have been formed of cast metal, which is objectionable, first, because the plates are necessarily from one-quarter ($\frac{1}{4}$) to three-eighths ($\frac{3}{8}$) of an inch thick to obtain the requisite strength, and are consequently heavy; and, secondly, because, being of cast metal, they are brittle and frequently break from sudden jars, and when the bearing-surfaces (bolsters, &c.) are uneven.

The object, therefore, of the present invention is to obtain a light, effective, and durable base and cap plate.

I will now proceed to describe my invention, so that others skilled in the art to which it appertains may apply the same.

In the drawings, *a a* indicate a series of springs, arranged in a cluster, and secured be-

tween the base and cap plates *b c* by the bolt and nut *d e*, or in other suitable manner. The form or construction of the springs *a a* and the manner of connecting the plates not being part of this invention, and being changeable at the will of the manufacturer, need not be specifically described herein.

The plates *b c* are constructed either with raised surfaces *i*, adapted to enter and retain the springs, or with cup-shaped depressions, as at *k*, Fig. 4, in which the spring may be seated, which will produce an equivalent result. When, however, the plate is formed with the raised surface *i* or retaining projection, I prefer (though the same is not absolutely necessary) to turn up the edge of the plate, forming a flange, *l*, around the same, so that the space *m* between *i i* and *l* will constitute a seat or depression.

The metal employed in manufacturing the plates *b c* should be malleable, and is preferably wrought-iron or soft steel, though other suitable metal may be used.

To form the article, a drop-press or suitable dies may be employed, the general shape thereof corresponding to the projections or depressions required in the plates and demanded by the spring or springs to be used.

The advantages of my invention are, that the plates may be made lighter, will be more durable, will not be liable to break when resting on unequal or uneven surfaces, and will better sustain and protect the spring or springs.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

The combination, with a cluster of spiral or similar springs, of a malleable-metal base and cap plate, said plates provided with raised or depressed seats for the reception and retention of the springs, substantially as and for the purpose specified.

In testimony whereof I, the said REUBEN MILLER, have hereunto set my hand.

REUBEN MILLER.

Witnesses:

R. H. WHITTLESEY,

F. W. RITTER, Jr.