

H. W. LADD.  
Furniture-Springs.

No. 164,189.

Patented June 8, 1875.

Fig. 1.

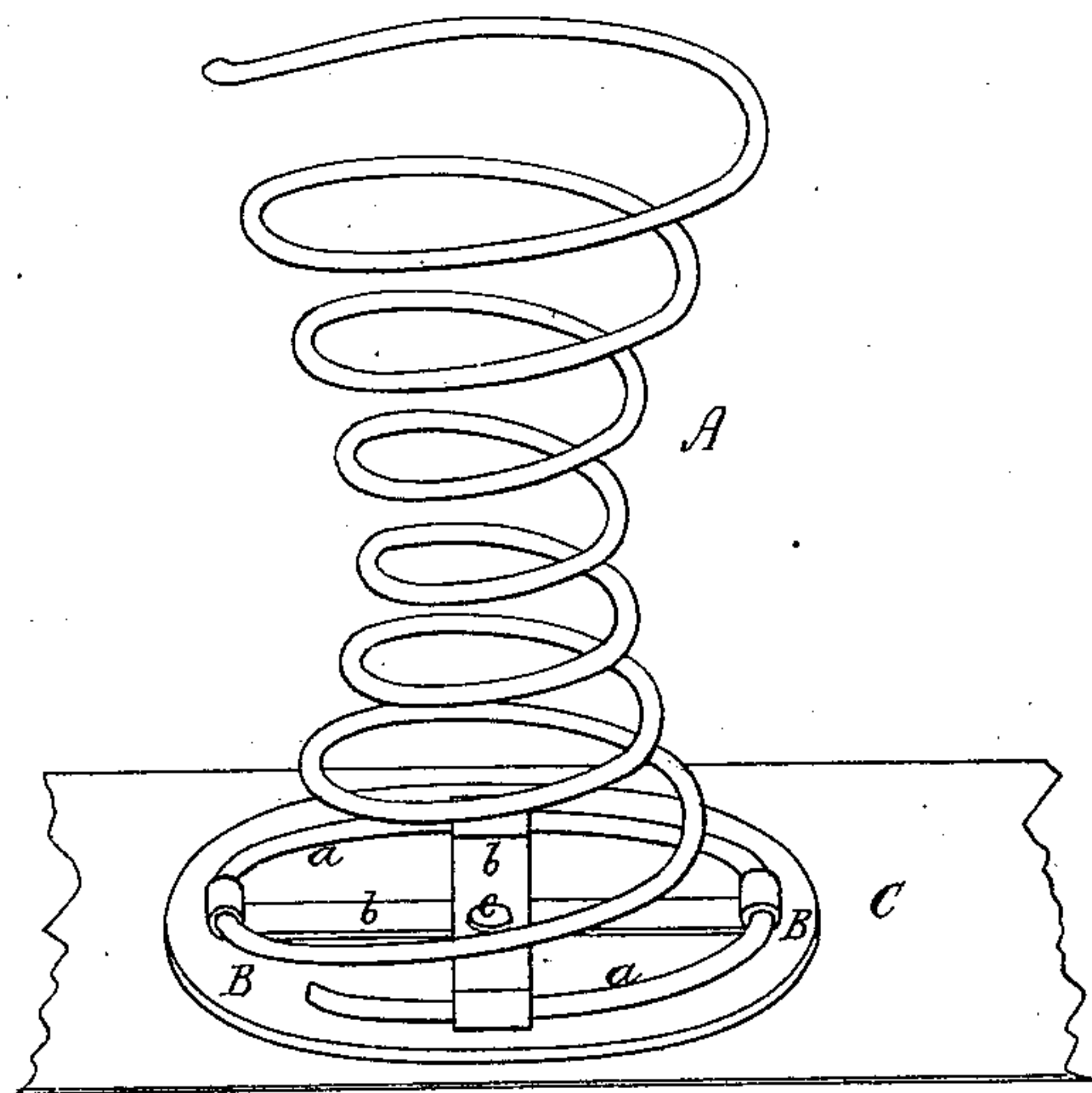


Fig. 2.

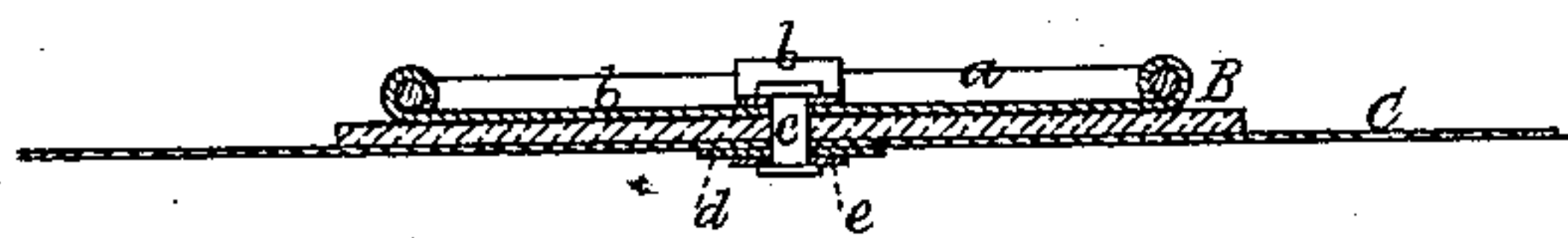
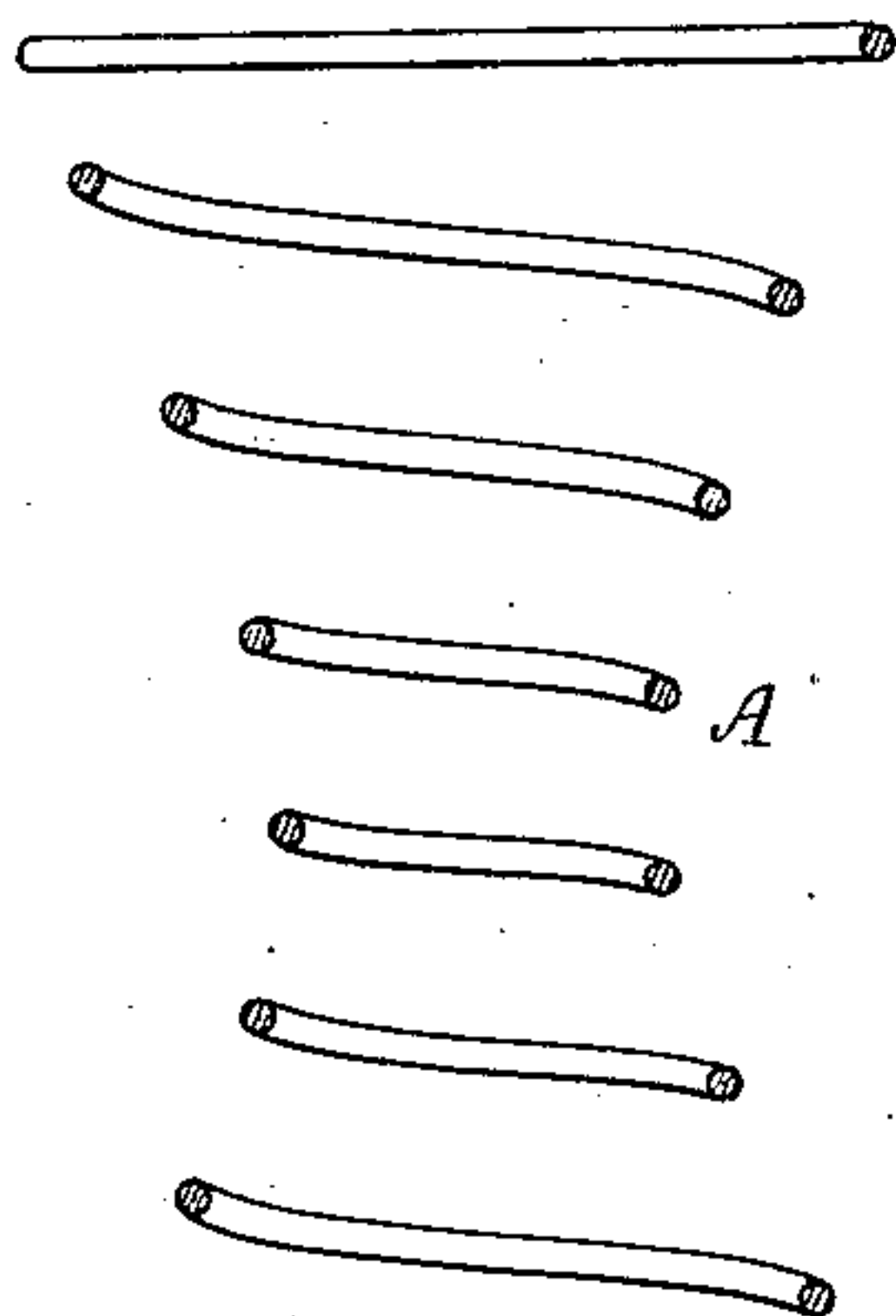
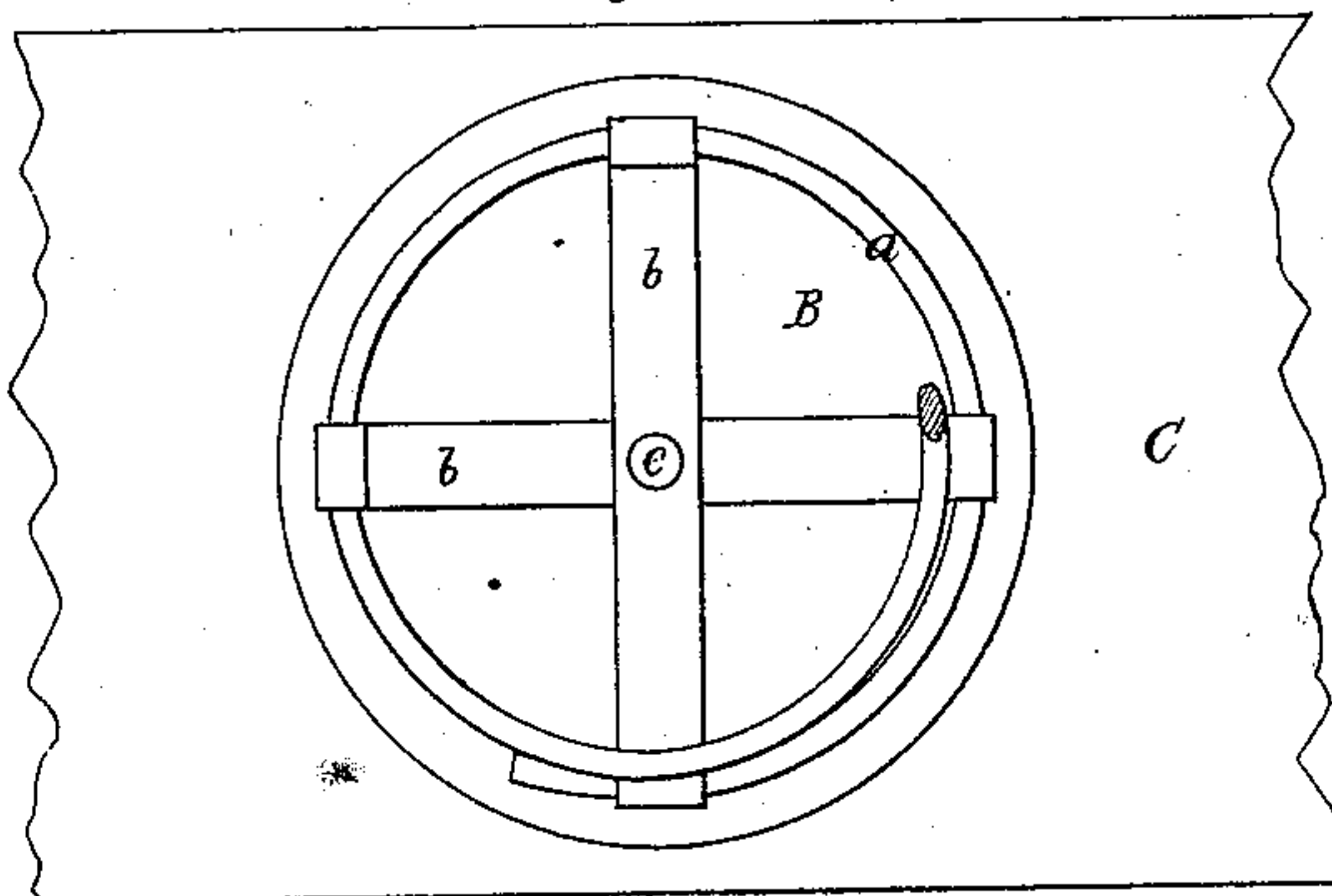


Fig. 3.



Witnesses.  
S. W. Piper  
L. N. Holler

Hermon W. Ladd.  
by his attorney.  
R. H. Ladd

# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN FURNITURE-SPRINGS.

Specification forming part of Letters Patent No. 164,189, dated June 8, 1875; application filed December 30, 1874.

*To all whom it may concern:*

Be it known that I, HERMON W. LADD, of Chelsea, of the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Bed or Furniture Springs; and do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 denotes a perspective view, Fig. 2 a longitudinal section, and Fig. 3 a horizontal section, of one of my improved springs riveted to a piece of cloth or canvas.

The wire spring is duplex, conical, and helical, as shown at A. In carrying out my invention, I combine with the said spring, at either or each of the base-coils *a* of it, a metallic cross, composed of two thin strips, *b b*, of metal, crossing each other at right angles at their middles, and being at or near their ends bent transversely around or to encompass the wire of the coil. I also arrange on said cross and coil a flexible cap or disk, B, as large if not larger in diameter than the coil, which disk I usually make of sole-leather, leather-board, or other suitable flexible material. The band, duck covering, or cloth to be attached to the spring is shown at C, it being connected thereto by means of a rivet, *c*, going up through the centers of the cross and disk, and also through the cloth on a flexible washer, *d*, and a metallic washer, *e*, and upset on the latter, all being arranged as shown. Sometimes I use one very wide strip of metal instead of the cross; but the latter is far preferable.

From the above it will be seen that the spring is held firmly to the cloth at one point

only, viz., at the center of the base-coil or that of the cap, thereby preventing any possibility of the spring being cramped or broken over laterally, as in the case where the base-coil of a spring is sewed or lashed to the canvas.

It is well known to upholsterers and furniture-dealers that the main cause of spring-beds and cushions giving out is owing to the breaking or wearing out of the tacking or lashings of the wire springs used, which is caused by fastening at various points the base coil or coils directly to the cloth or part against which it or they are to rest.

With my improvement the fastening of the cloth is at the center of the disk or cap only, thus leaving the spring free to adjust itself without strain of the coil on the cloth or ties connecting it directly therewith. The cap or disk prevents the cloth from being worn or cut by the base-coil and the straps or cross.

What I claim as my invention in relation to helical springs is—

1. The rivet *c*, the cap or disk B, and the connecting-straps *b*, arranged and combined together, and with the spring A and the canvas or cloth cover C, substantially in the manner and to operate as specified.

2. In combination with the spring A and the canvas or cloth cover C, the flexible cap B, arranged between the said cloth cover and the base-coil of the spring, all substantially as specified.

HERMON W. LADD.

Witnesses:

R. H. EDDY,  
J. R. SNOW.