

No. 775,582.

PATENTED NOV. 22, 1904.

T. A. SHEA.
COIL SPRING.

APPLICATION FILED JULY 15, 1903.

NO MODEL.

Fig. I.

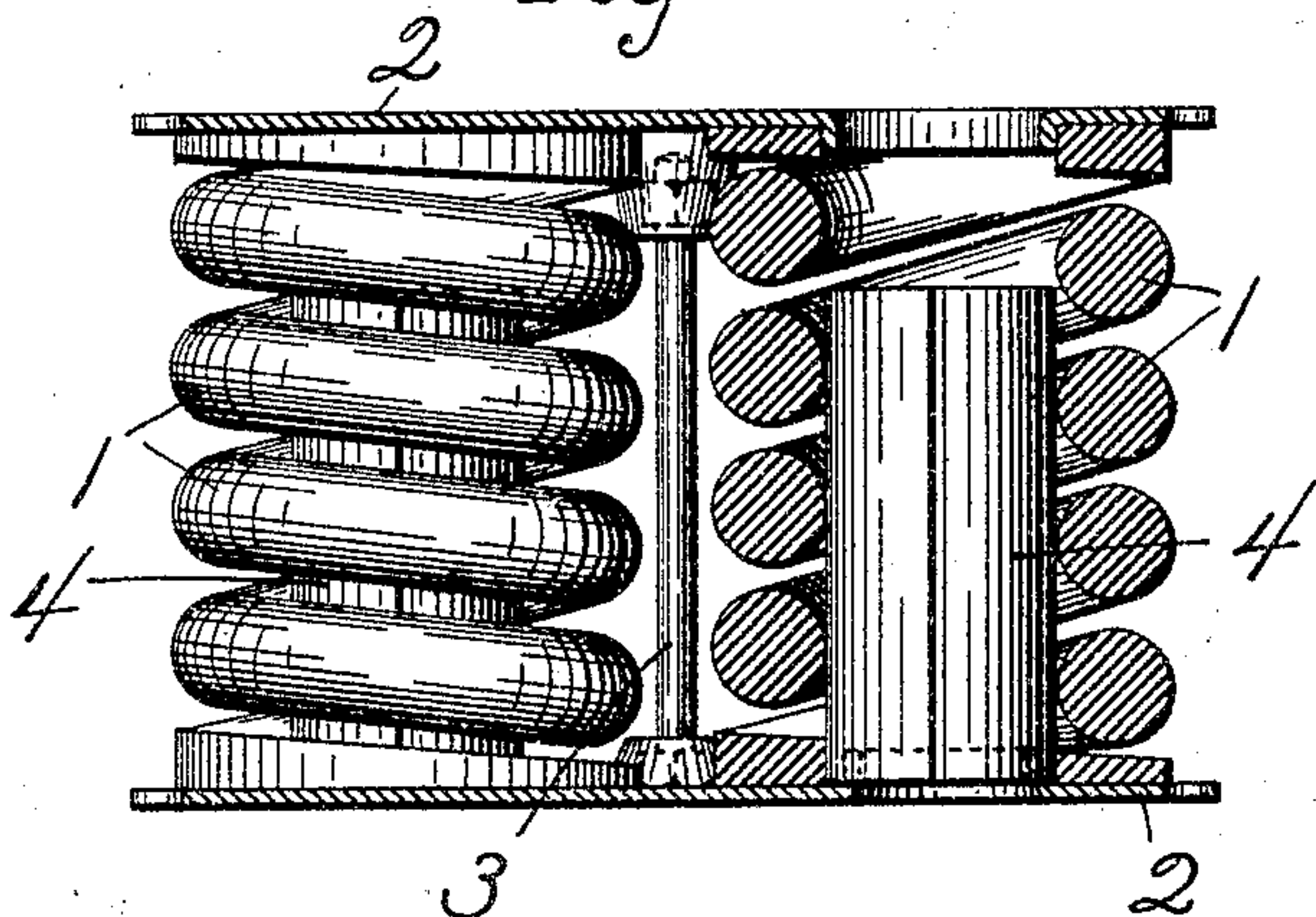


Fig. II.

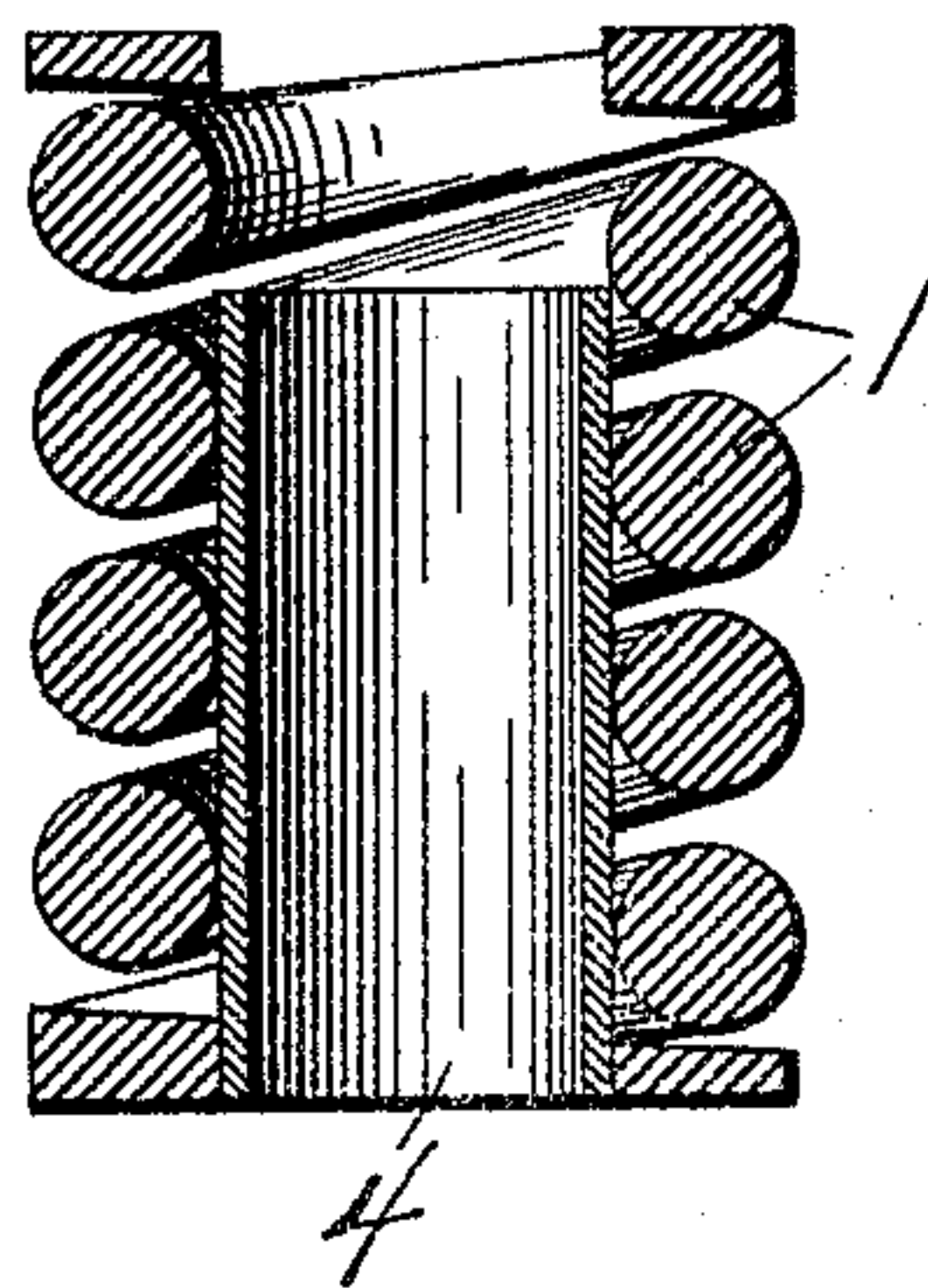


Fig. III.

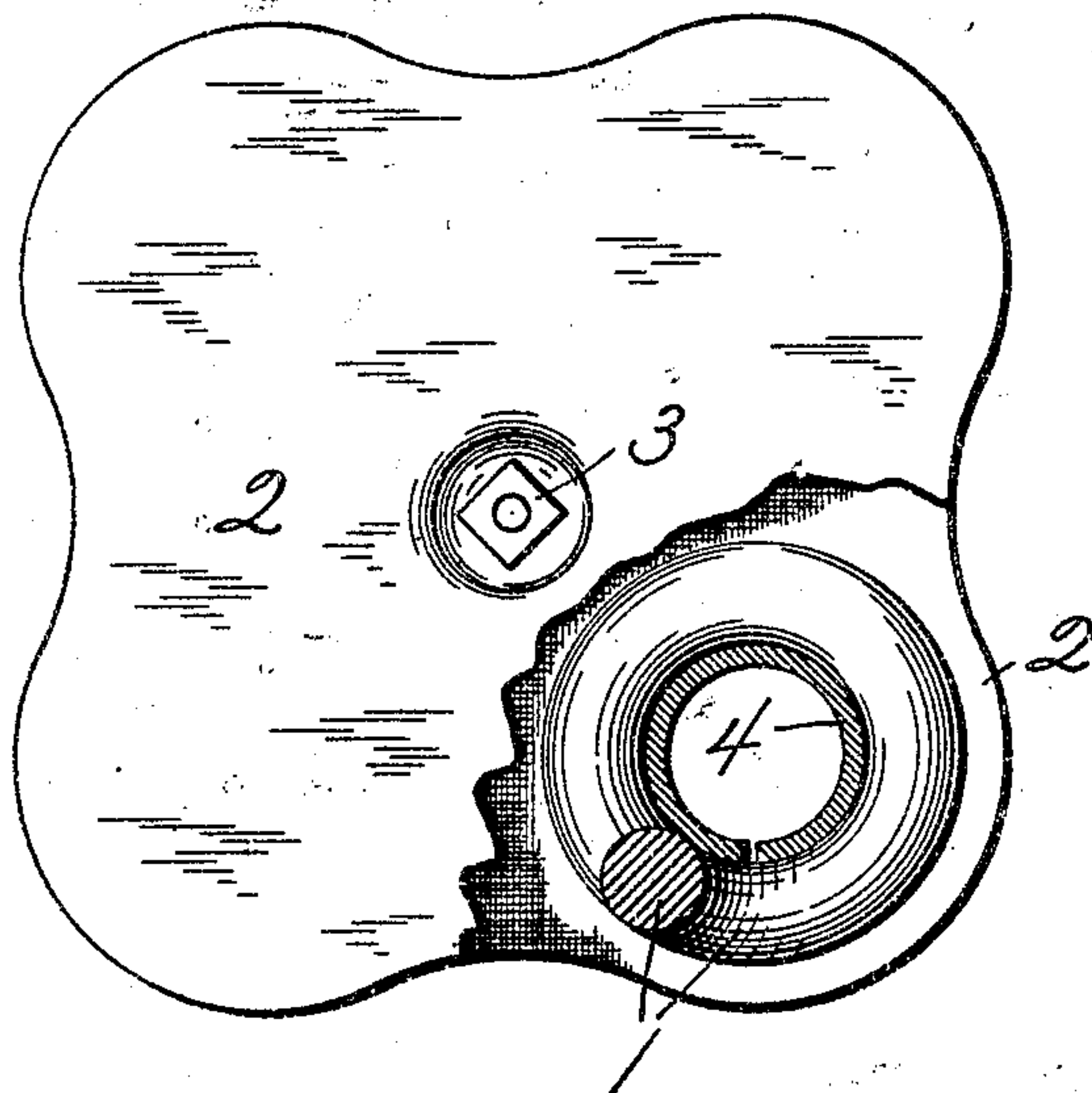


Fig. IV.

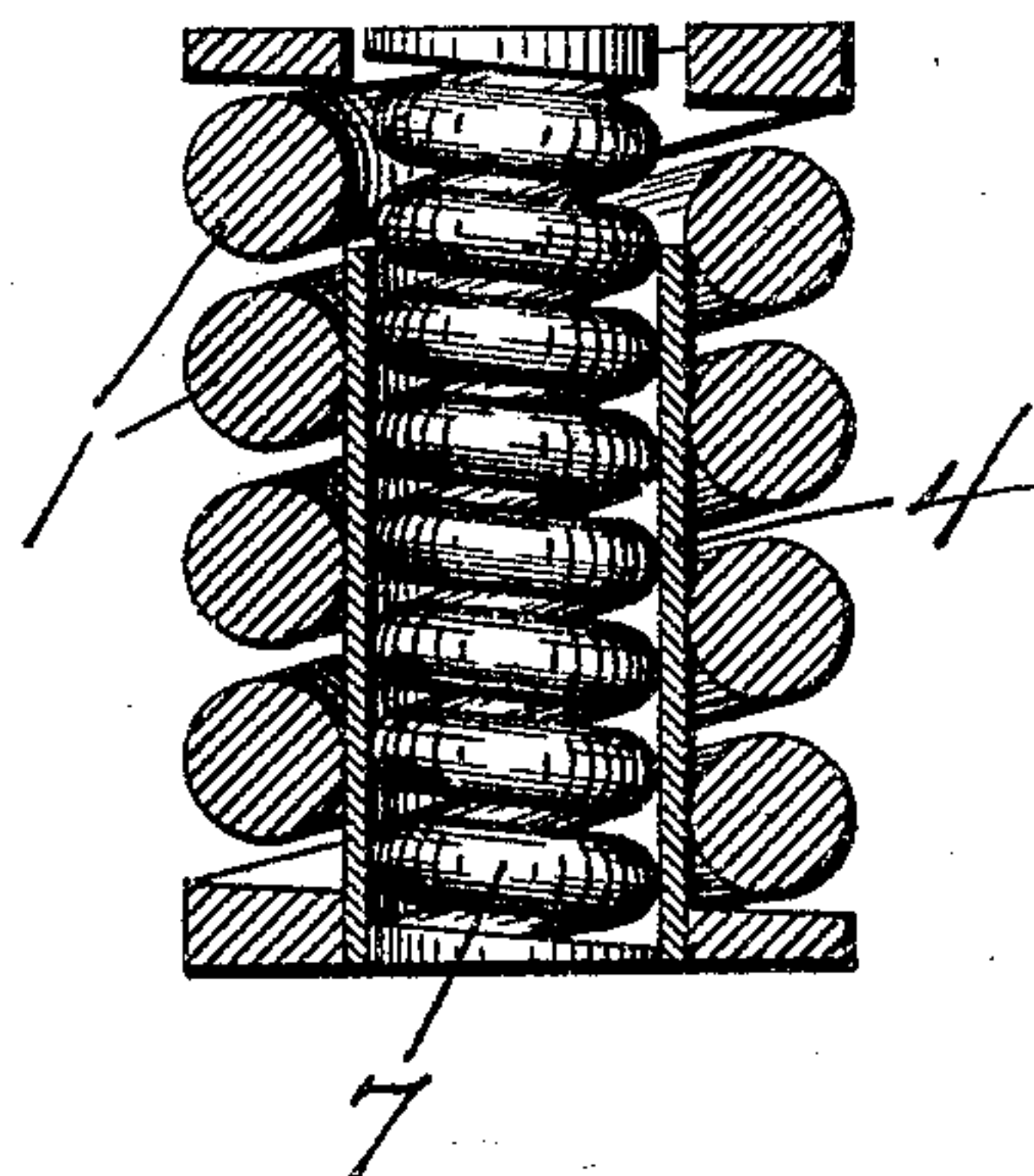


Fig. V.

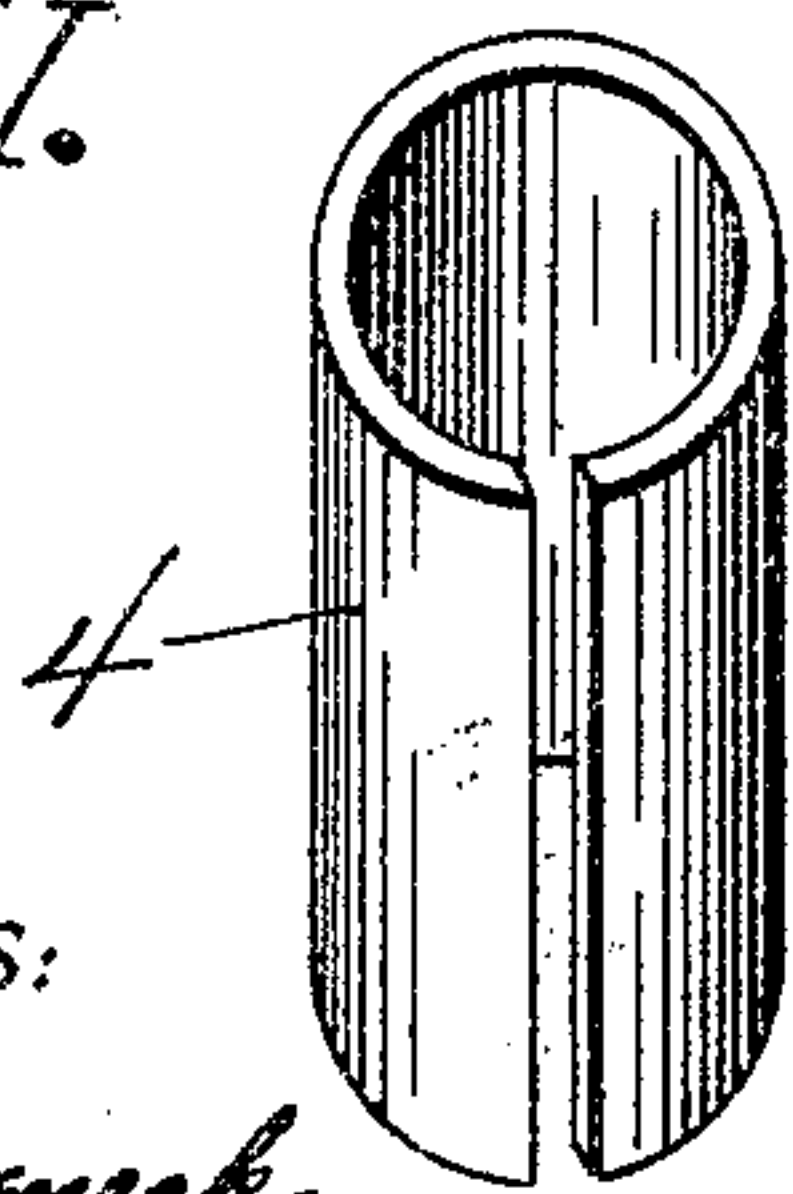
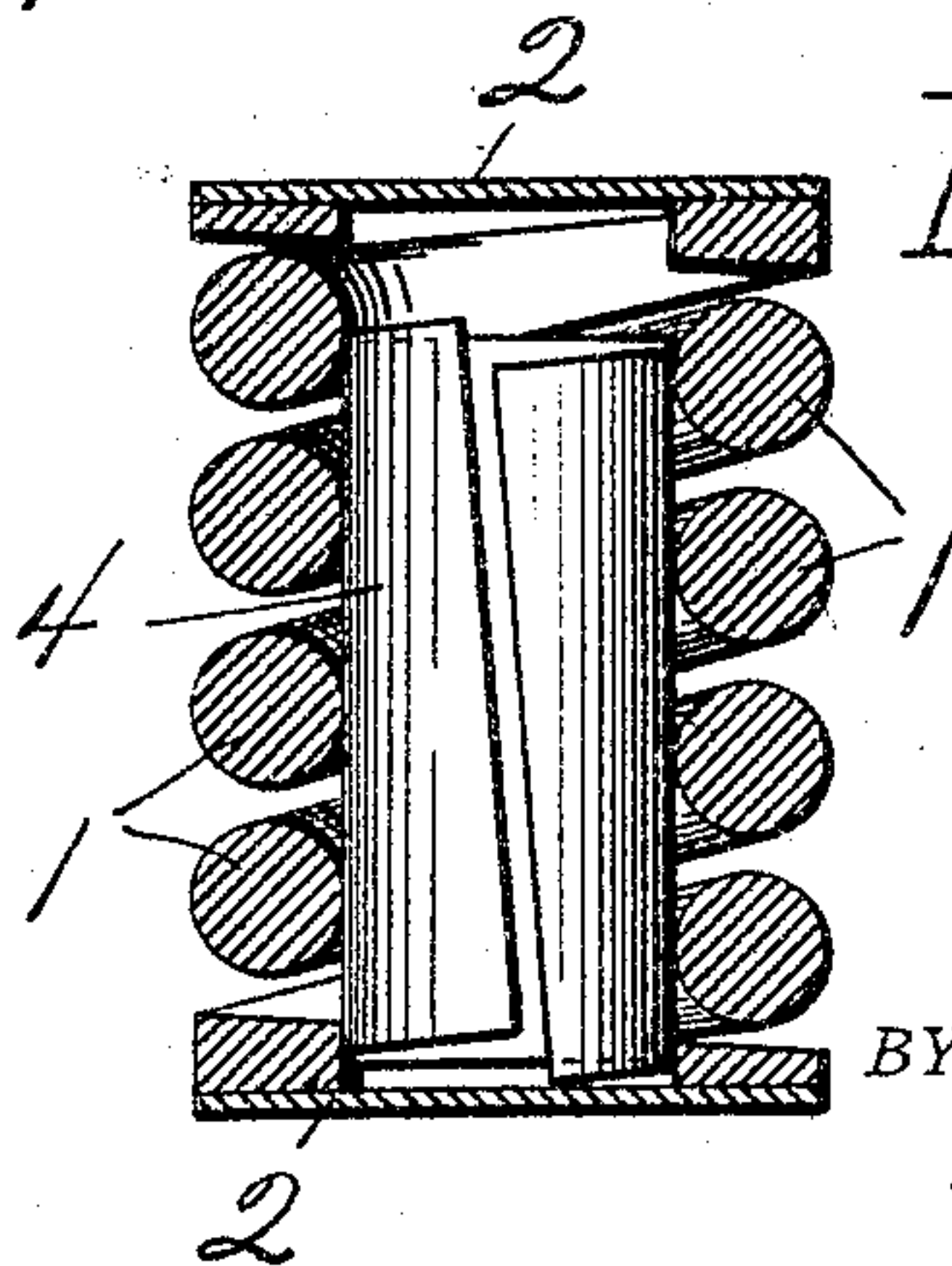


Fig. VI.



WITNESSES:

Abraham
M. E. Gagon

INVENTOR

Thomas A. Shea

BY

Alfred Wilkinson
ATTORNEY.

UNITED STATES PATENT OFFICE.

THOMAS A. SHEA, OF OSWEGO, NEW YORK, ASSIGNOR TO GEORGE B. SLOAN, JR., OF OSWEGO, NEW YORK.

COIL-SPRING.

SPECIFICATION forming part of Letters Patent No. 775,582, dated November 22, 1904.

Application filed July 15, 1903. Serial No. 165,642. (No model.)

To all whom it may concern:

Be it known that I, THOMAS A. SHEA, a citizen of the United States, residing at Oswego, in the county of Oswego and State of New York, have invented certain new and useful Improvements in Coil-Springs; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to coil-springs principally used for the rolling-stock of railroads, also with other vehicles; and it consists in a device for retarding the spring vibrations, so that these coil-springs can be used in place of the more expensive leaf-springs.

My invention consists of a tempered spring-steel bushing of slightly-larger diameter than the inner diameter of the coil and split up one side, adapted to be inserted in a compressed condition in the coils, so that it exerts entirely by its own resiliency an outward pressure on the inner surface of the coil, and when the spring is in use this frictional pressure controls, dampens, or diminishes the vibrations of the spring.

My invention will be understood by reference to the drawings herewith, in which the reference-numerals of the specification indicate the corresponding parts in all the views.

Figure I shows a cluster of springs in section with my invention applied thereto. Fig. II shows a single spring in section with the bushing. Fig. III is a top plan of Fig. I. Fig. IV shows my invention applied to a nest of springs. Fig. V is an isometric view of the bushing detached. Fig. VI is a vertical section showing a modified form of bushing.

In the figures, 1 indicates the coils, retained in position in usual manner by cap-plates 2 2 and bolt 3.

4 is the bushing, split up one side, permitting it to be compressed and inserted within the coil or compressed as it is inserted, the opening within the coil being commonly of slightly-larger diameter at one end than at the other. The bushing by its own resilience tends to expand and exerts a constant frictional pressure on the spring when it is ex-

panding and contracting in use, which overcomes or diminishes the vibration thereof and reduces the number of its vibrations. It will be evident that the length of the bushing cannot be more than the solid height of the spring.

By changing the size of the bushing, either its length or its thickness, I can easily proportion it to obtain the amount of control desired to diminish the number of vibrations, either more or less. Normally I make my bushing as long as permitted by the solid height of the coil to give a large contact-surface. A change in its thickness will tend to increase or diminish the resiliency of the bushing, and therefore the pressure it exerts on the coil.

My bushing may be used with cluster or single springs, as shown in Figs. I, II, and III, or with a nest of coils, because the bushing does not interfere with the insertion of one or more inner coils. In Fig. IV is shown a nest 7, indicating the inner coil, whether one or more.

My device may be modified in form and arrangement without departing from the spirit of my invention.

In Fig. VI is shown a bushing of the volute form, so that it will longitudinally compress at the greatest compression of the coil.

My invention is easy and economical to make and to apply to coil-springs of usual construction and arrangement, and the bushing is easily modified in size to obtain a regulable amount of control to control and diminish the number of vibrations more or less, as may be required, similar to a leaf-spring.

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

1. The combination with a coil-spring, of a tempered spring-steel bushing, split up one side so as to be compressed and inserted within the spring.

2. The combination with a coil-spring, of a tubular, tempered spring-steel bushing, not longer than the solid height of the coil, and split up one side so as to be compressed and inserted within the coil.

3. The combination with a coil-spring, of a .

tubular, tempered spring-steel bushing, said bushing being of slightly larger diameter than the inner diameter of the coil, not longer than the solid height of the coil, and split up one
5 side so as to be compressed and inserted within the coil.

4. In combination with a coil-spring, a single, integral resilient element arranged within the coil and in frictional contact with the
10 inner surface of the coil.

5. In combination with a coil-spring, an integral, resilient element arranged longitudinally within the coil, and in contact with the inner surface of the coil.

15 6. In combination with a coil-spring, a tubular resilient element arranged within the coil and exerting an outward pressure on the inner surface of the coil.

20 7. In combination with a coil-spring, a tubular resilient element arranged within the coil, to exert an outward pressure on the in-

ner surface of the coil, substantially uniform throughout the entire extent of said element.

8. In combination with a coil-spring, a resilient element arranged within the coil and
25 in contact with the inner surface of the coil, and exerting a frictional pressure on the inner surface thereof, as the coil is compressed and expanded in use.

9. In combination with a coil-spring, a resilient element arranged within the coil and extending longitudinally throughout the greater extent thereof, said element being normally of larger diameter than the inner diameter of the coil, so as to be compressed and inserted
35 therein.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS A. SHEA.

Witnesses:

C. C. SCHOENECK,
M. E. GAGON.