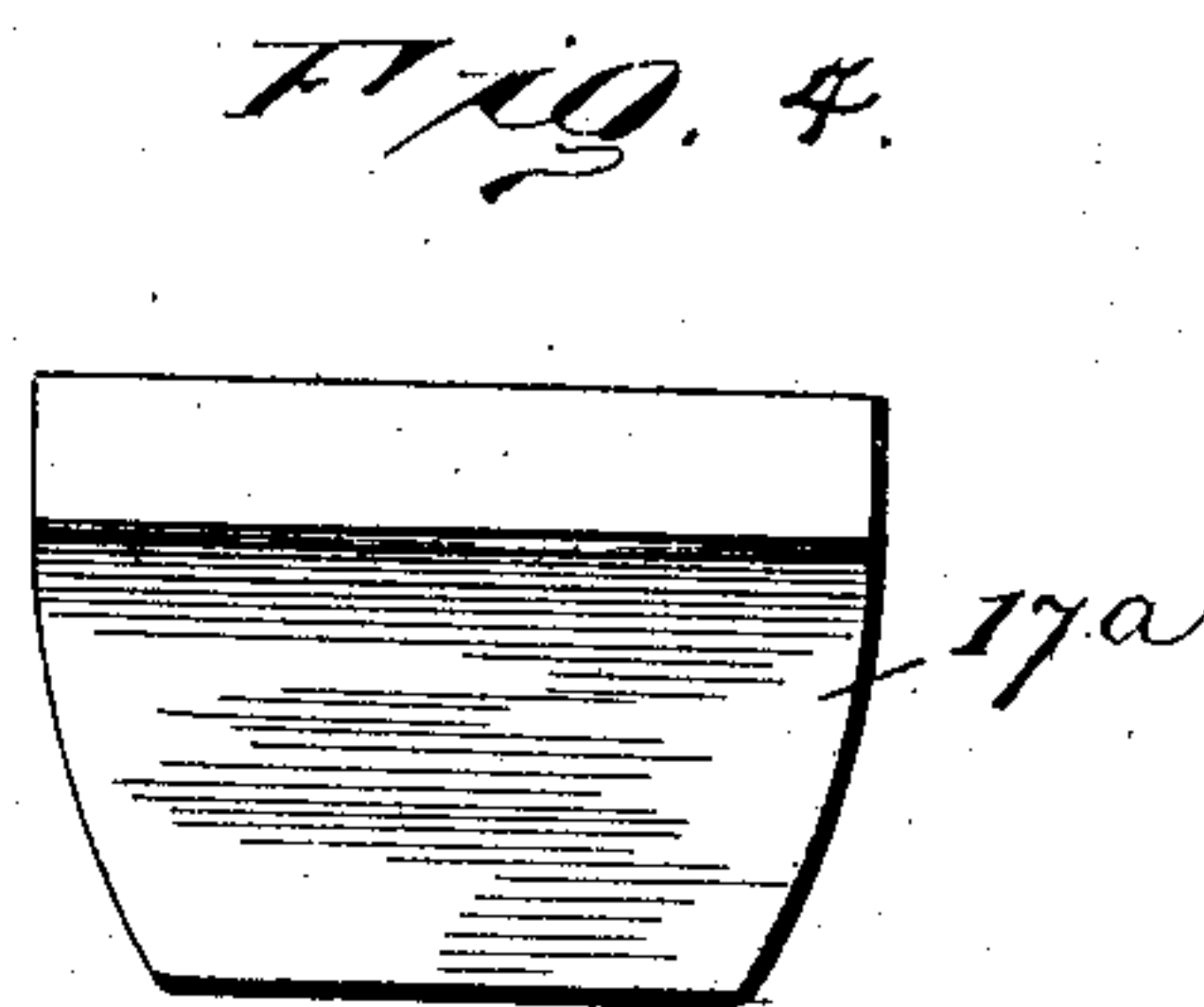
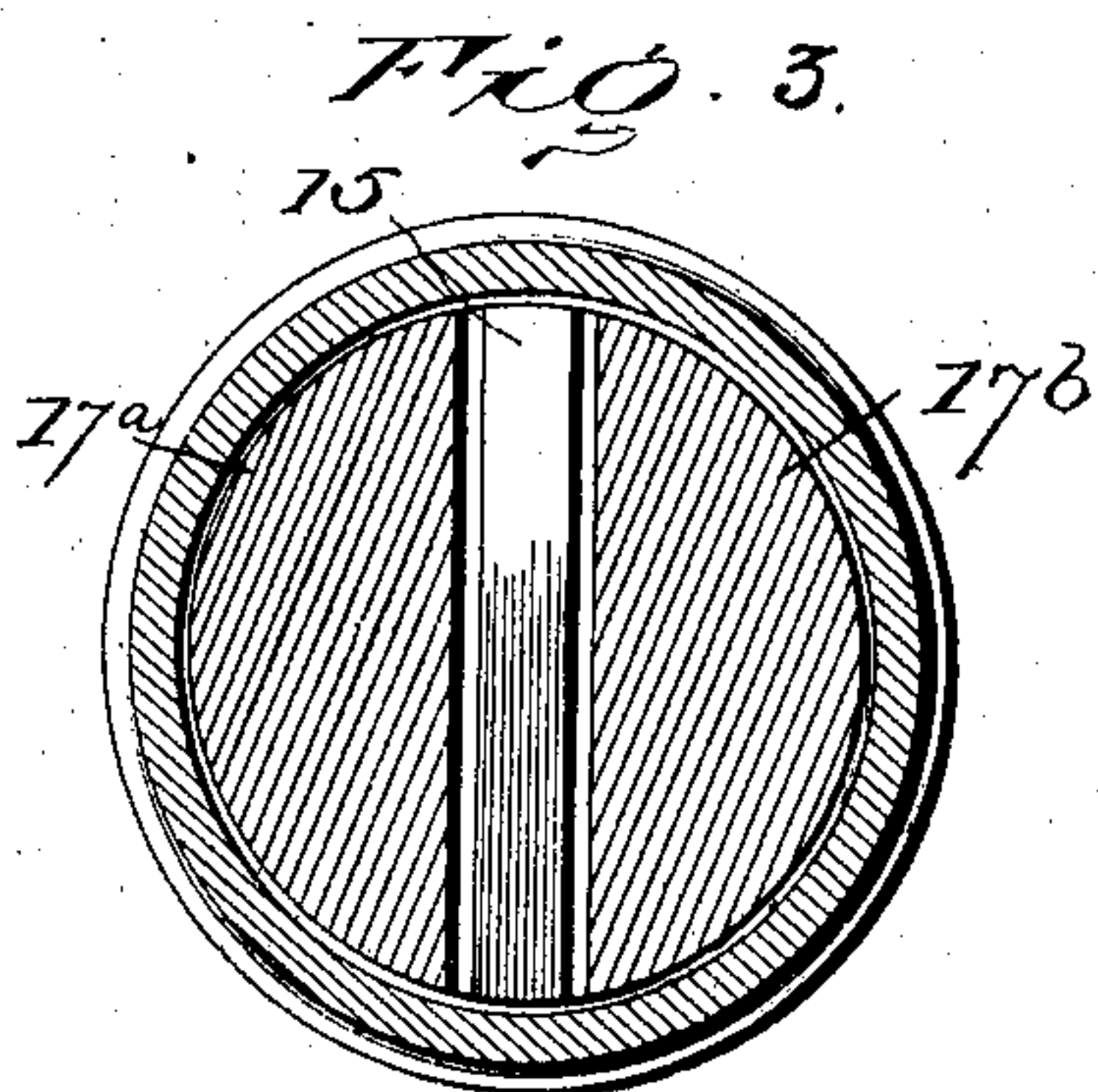
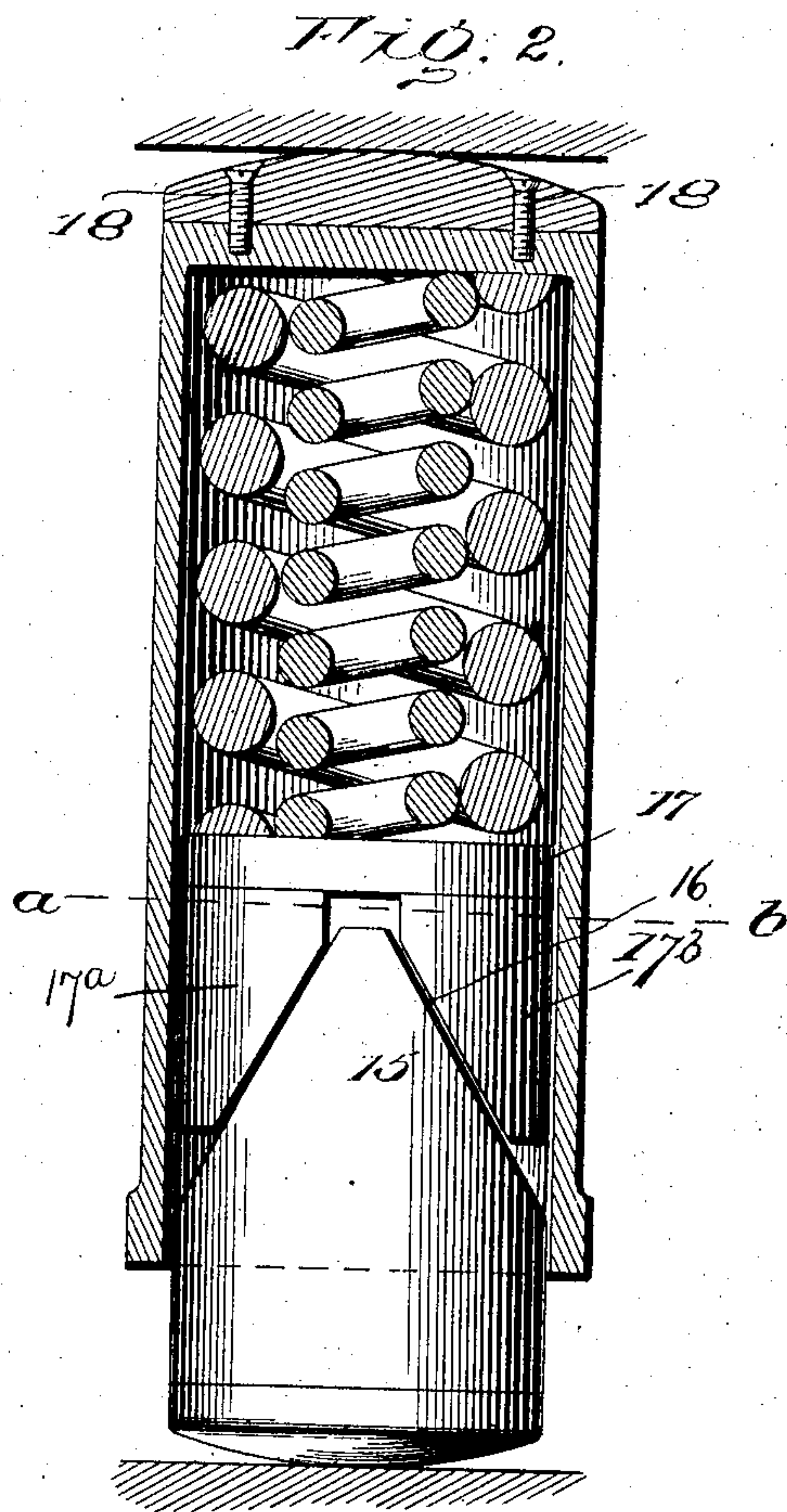
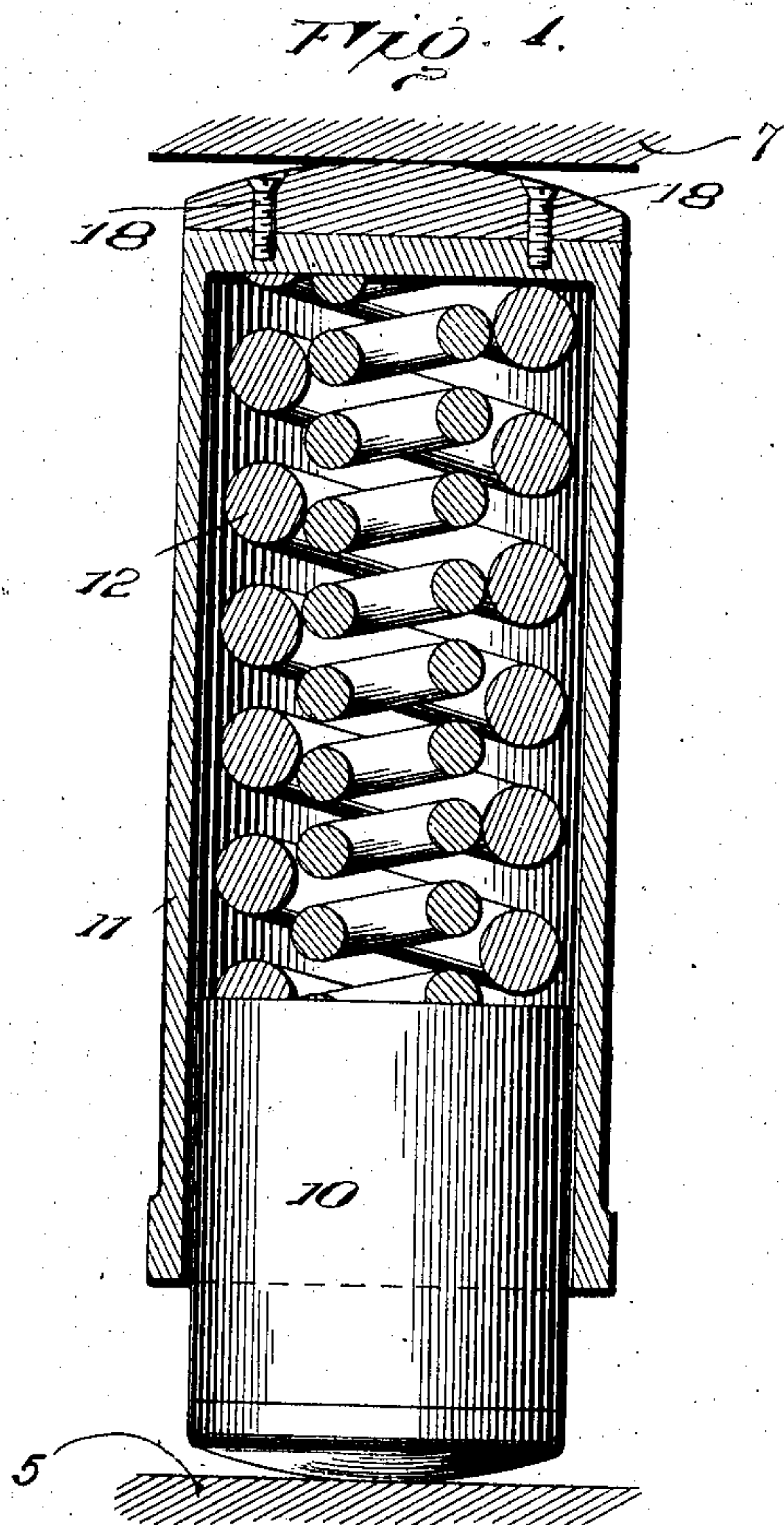


No. 834,820.

PATENTED OCT. 30, 1906.

G. LINDENTHAL.
ROCKER OR SUPPORT.
APPLICATION FILED OCT. 21, 1903.



Witnesses

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ROCKER OR SUPPORT.

No. 834,820.

Specification of Letters Patent.

Patented Oct. 30, 1906.

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To all whom it may concern:

Be it known that I, GUSTAV LINDENTHAL, a citizen of the United States of America, and a resident of New York city, in the county and State of New York, have invented certain new and useful Improvements in Rockers or Supports, of which the following is a specification.

This invention relates to an improvement in rockers designed principally for use in railway-car trucks to transmit the load from the car-sills to the truck-bolster and from thence to the wheels; but it will be manifest that my invention is capable of use in many other relations, and hence is not confined thereto.

The object of my invention is to provide a rocker which is simply a portion or section of a sphere or ball. Instead of using the entire ball I use only a part of it, which is preferably formed in a plurality of pieces with springs between them.

With this object in view it may be said that my invention consists in the rocker as hereinafter described in its preferable embodiments and then definitely claimed at the end hereof.

In the accompanying drawings, which very well show my improved rockers, Figure 1 is a vertical central section of a rocker made in accordance with my invention. Fig. 2 is a similar section of a modified form. Fig. 3 is a section through the line A B of Fig. 2. Fig. 4 is a detail of one of the "braking-wedges" and its coacting plate.

Referring now to the details of the drawings by numerals, 10 and 11 designate the two principal parts of my improved rocker or support, the first of which, 10, is preferably solid and the other, 11, is a hollow cylinder so proportioned and formed that the two parts may telescope one within the other. To keep them apart and under the proper tension, I employ the common form of spiral springs 12, which are seated between the two parts within the cylinder 11. The ends of these parts 10 and 11 are each formed spherical, and the curvature of the ends is such that if a circle be drawn from the center of the rocker it would be found that the curvature of these ends would be in exact line with said circle, so that the rockers in practical working effect form large balls or spheres of a diameter equal to the length of the rockers. The idea is that each one represents a large cast-iron ball or sphere, and when it rests upon a bottom plate 5, for example, and sup-

ports on its upper end any desired load upon a wearing-plate 7 it will freely roll between the wearing-plates, and if the rocker or support is on a car and the car is "taking" a curve the car can move easier around the curve, as less resistance is offered and the space between the two bearing-plates is always the same.

Inasmuch as the rocker, in effect, is a large ball or sphere it will be easily seen that when the rocker rolls the space occupied by it in the vertical direction is always the same, except as the springs give under the load, and consequently the body that is borne by it does not have to be lifted, no matter in what direction the rocker rolls.

In Figs. 2, 3, and 4 I have shown a modification of Fig. 1, which is a refinement of the form there shown and is intended to make the action softer. In this form the main hollow cylinder may be made exactly like that shown in Fig. 1; but the lower part is formed wedge-shaped, as shown at 15, and this wedge fits within an inverted-wedge-shaped opening 16, formed between two wedge-shaped parts 17^a and 17^b, upon which is supported a plate 17, on which the springs rest, as clearly shown in Fig. 2. Fig. 3 shows a horizontal section through the line *a b*, and Fig. 4 shows a detail of one of the braking-wedges.

It will only take a glance at Fig. 2 to see that as the load compresses the spiral springs between the hollow cylinder and the plate 17 the springs press upon the plate 17 and deliver the load to the wedges which are forced against the walls of the hollow cylinder. The friction is therefore in exact proportion of the load upon the springs, and any jerky action of the load upon the rocker does not result in a jerky action of the springs, for the reason that the braking-wedges prevent by their friction any jerky motion. This results in the same soft spring action which is observed in elliptical springs.

As the spherical ends of the rockers need to be of chilled cast-iron or hard steel, I prefer for constructive reasons to put the ends on separately, and when they are worn they may be easily renewed. These detachable ends may be fastened in position by means of countersunk screws 18, as shown in Figs. 1 and 2. Of course parts 10 and 15 may be formed in like manner, if desired.

What I claim as new is—

1. A rocker or support formed of two tele-

scoping sections, each of which is provided with a spherical end, bearing-plates at opposite ends of said rocker or support having level or parallel bearing-surfaces, one of said sections having its end formed of such curvature that it describes a circle or sphere whose diameter is at least the length of the rocker, substantially as described.

2. A rocker or support made in two telescoping sections, each of which is provided with a spherical end, said ends being formed of such curvature that they describe a circle or sphere whose diameter is substantially the length of the rocker, and bearing-plates at opposite ends of said rocker or support having level or parallel bearing-surfaces, substantially as described.

3. A rocker or support made in two telescoping sections having a spring between them; the sections having spherical ends of such curvature that they describe a circle or sphere whose diameter is substantially the length of the rocker, and bearing-plates at opposite ends of said rocker or support having level or parallel bearing-surfaces, substantially as described.

4. A rocker or support having a hollow cylinder, a coacting part working within said hollow cylinder, a spring within the cylinder between said parts, one of said parts being formed with a spherical end of such curvature that it describes a circle or sphere whose diameter is substantially the length of the rocker, and bearing-plates at opposite ends of said rocker or support having level or parallel surfaces, substantially as described.

5. A rocker or support comprising a hollow cylinder with a spherical end, a coacting part working within said hollow cylinder and having a spherical end, a spring within said cylinder and between said parts, said spherical ends being formed of such curvature that they describe a circle or sphere whose diameter is substantially the length of the rocker, and bearing-plates at opposite ends of said rocker or support having level or parallel bearing-surfaces, substantially as described.

6. A rocker or support comprising a hollow cylinder, a braking-wedge therein, a spring within the cylinder and coacting with said wedge and a second member coacting with

said hollow cylinder and the braking-wedge therein, substantially as described.

7. A rocker or support comprising a hollow cylinder, a wedge entering or telescoping therein, a second wedge within the cylinder and coacting with the first-named wedge, and a spring between the second wedge and the end of the hollow cylinder, substantially as described.

8. A rocker or support comprising a hollow cylinder having a spherical end, a braking-wedge therein, a spring within the cylinder coacting with said wedge and a second member coacting with said hollow cylinder and the braking-wedge therein, substantially as described.

9. A rocker or support comprising a hollow cylinder having a spherical end, a wedge entering therein and having its outer end formed spherical, a second wedge within the cylinder coacting with the other wedge, and a spring coacting with the inner wedge, substantially as described.

10. A rocker or support comprising a hollow cylinder, a wedge-shaped member coacting therewith, a pair of wedges within the cylinder coacting with the wedge-shaped member, and a spring between the pair of wedges and the end of the hollow cylinder tending to force them upon said wedge-shaped member, substantially as described.

11. A rocker or support comprising a hollow cylinder, a wedge-shaped member coacting therewith, a pair of wedges within the cylinder coacting with the wedge-shaped member, and a spring between the pair of wedges and the end of the hollow cylinder tending to force them upon said wedge-shaped member, the exposed ends of said hollow cylinder and said wedge-shaped member being formed of such curvature that they describe a circle or sphere whose diameter is substantially the length of the rocker, substantially as described.

Signed by me at New York this 7th day of October, 1903.

GUSTAV LINDENTHAL.

Witnesses:

M. B. SANFORD,
T. W. SCHMIDT.