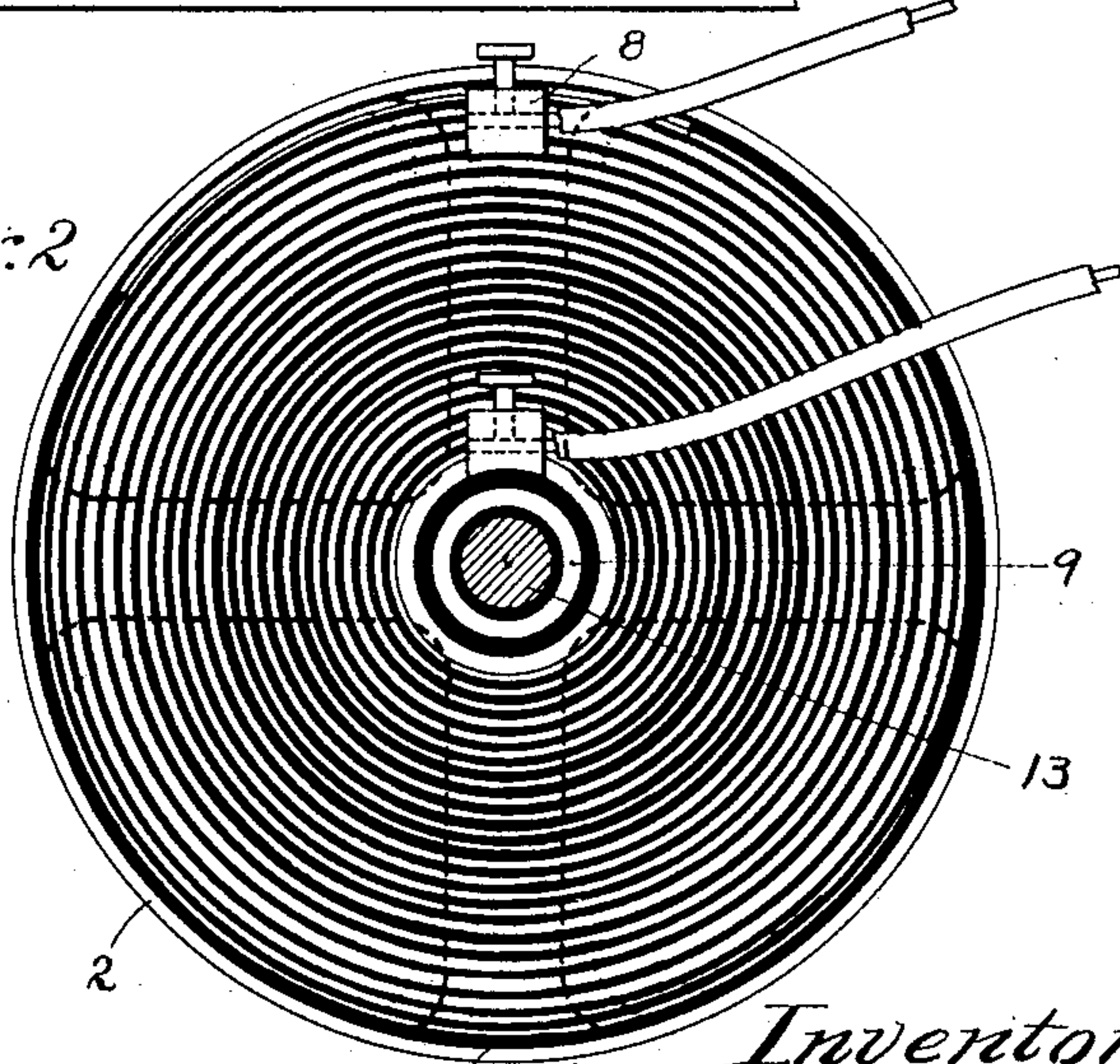
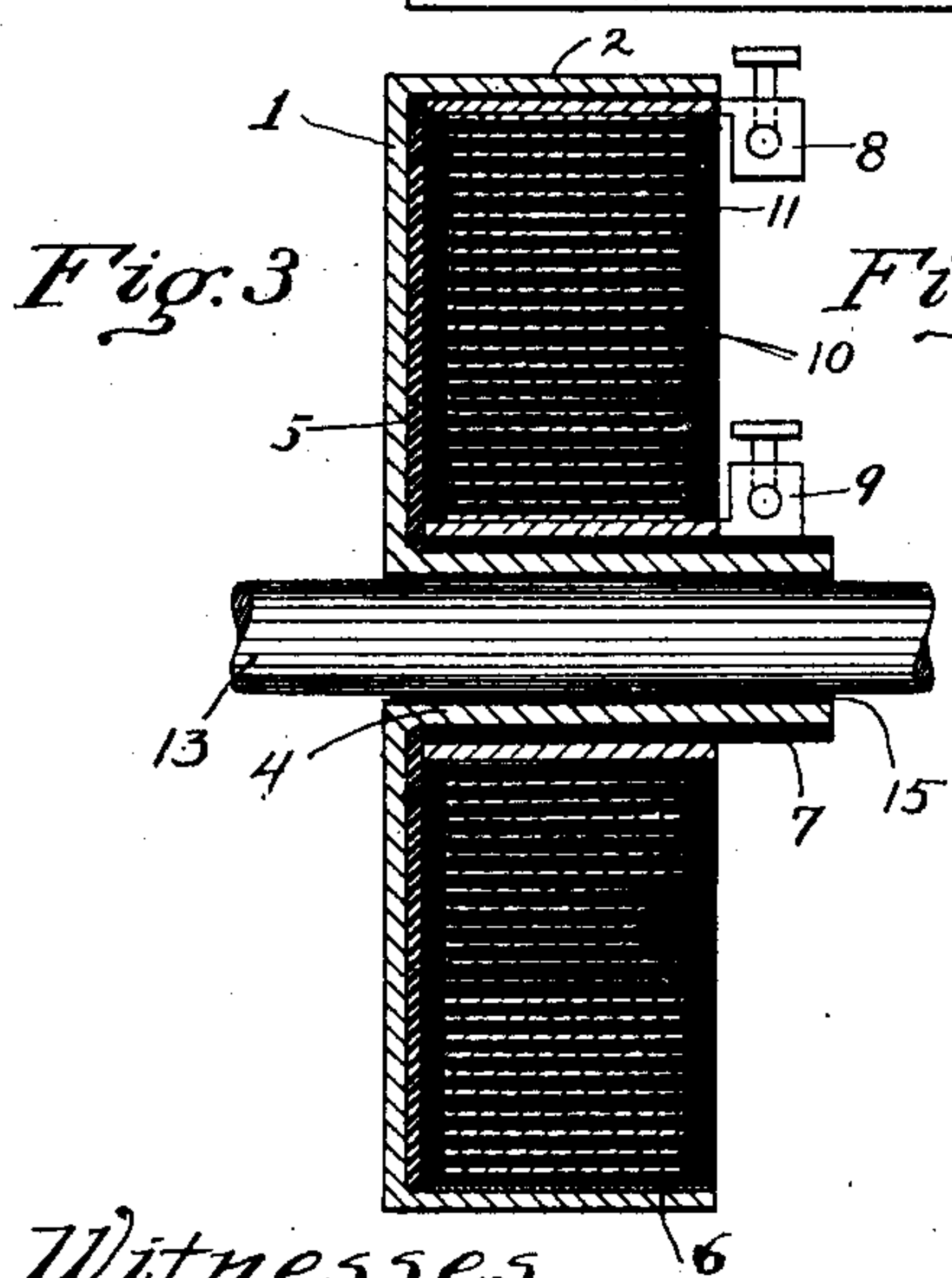
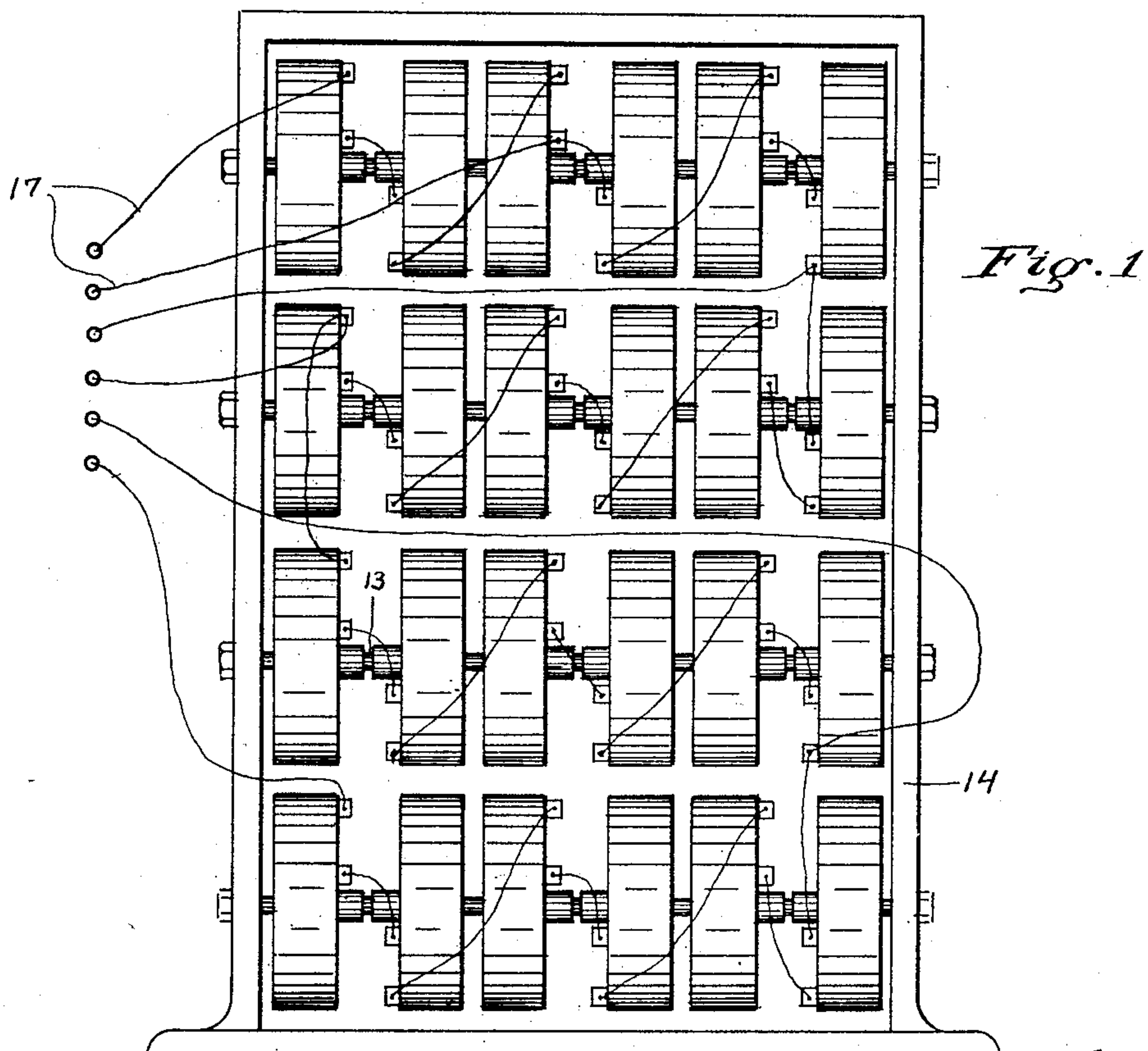


No. 745,759.

ENTED DEC. 1, 1903.

G. BAEHR.
RESISTING DEVICE.
APPLICATION FILED AUG. 6, 1902.

NO MODEL.



Witnesses.
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UNITED STATES PATENT OFFICE.

GEORGE BAEHR, OF McKEESPORT, PENNSYLVANIA, ASSIGNOR TO NATIONAL TUBE COMPANY, OF NEW YORK, N. Y., AND PITTSBURG AND McKEESPORT, PENNSYLVANIA, A CORPORATION OF NEW JERSEY.

RESISTING DEVICE.

SPECIFICATION forming part of Letters Patent No. 745,759, dated December 1, 1903.

Application filed August 6, 1902. Serial No. 118,562. (No model.)

To all whom it may concern:

Be it known that I, GEORGE BAEHR, a resident of McKeesport, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Resistance Devices; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to electric resistance devices; and its object is to provide a device of this kind composed of a number of units each of which is very simple and cheap to make and so arranged that any number can be easily arranged in proper position and order and the circuit connections thereto changed with ease.

In the accompanying drawings, Figure 1 is an elevation showing a stand with a number of my resistance devices therein. Fig. 2 is a face view of one of the units thereof, and Fig. 3 is a section therethrough.

Each of the resistance units comprises a frame or casing 1, which is somewhat pan-shaped, having a rim 2, and the bottom either being solid, but preferably perforated, or composed of a series of bars, as indicated in Fig. 2, said pan being provided with the perforated central hub 4. This frame or casing is preferably made of cheap cast metal. The bottom thereof is lined with a layer of insulating material 5, such as asbestos or the like, and inside the frame is also placed a layer of insulating material 6, such as mica or the like. The hub 4 is also surrounded by a sleeve of insulating material 7, such as asbestos or the like. The terminals or contact-pieces are shown at 8 and 9. They are formed of metal, the former being segmental in shape, as shown in Fig. 2, and lies just inside of the insulating-ring 6, whereas the latter is of sleeve form surrounding the insulating material 7. Each terminal-piece is provided with a suitable binding-post for the connection of the wires. These terminals are connected by a continuous conductor 10, which preferably is in the form of a thin strip or ribbon of metal wound in spiral form, as shown in Fig. 2, and having the coil separated by suitable insulating material. A cheap and convenient way of forming this coil is to take a strip or ribbon of sheet metal, lay the same upon a strip or ribbon of insulating

material, such as asbestos or the like, and wind the two together in spiral form. In this manner a continuous spiral conductor is formed, the coils of which are thoroughly insulated from each other. The ends of this conductor are connected to the terminal-pieces 8 and 9. The strip or ribbon of insulating material 11 will be somewhat wider than the strip or ribbon of conducting material, so that its edges will project beyond the edges of said conductor, as shown in Fig. 13, thus preventing any leakage of the current around the edges of the insulating material.

The units constructed as above described can be readily assembled in any quantity or in any order by merely passing a rod 13 therethrough, four such rods being shown in Fig. 1 and being mounted in a suitable frame 14. To further guard against short-circuiting, the units will be insulated from the rods 13 by a layer of asbestos or the like 15 and by mica washers insulating each unit from the adjacent one. The units preferably will be assembled in pairs, as indicated in Fig. 1, the members of each pair facing each other, and the outside members of each pair being back to back to the similar member of the next adjacent pair. The connections can then be very easily made between the central terminals of facing pairs and the outside terminals of the pairs placed back to back, as shown in Fig. 1. The wires 17 leading to the contacts of the switchboard can be connected in any manner by merely inserting them in the binding-post of any one of the terminal-pieces of the units, and whenever it is desired to alter the resistance it is a simple matter to change these connections, as it merely necessitates the taking out of the wire from one terminal-piece and inserting it in another.

The resistance device described is exceedingly simple, cheap to make, and cannot readily get out of order, and the units are so assembled that connection therebetween and to the switchboard can be very quickly and easily made.

What I claim is—

1. A resistance unit comprising a frame having a hub and a rim, metallic terminal-

pieces located respectively at the rim and at the hub and insulated therefrom, and a conductor connecting said terminal-pieces, said conductor being formed from a metal strip
5 wound into spiral form and having the coils thereof separated by a strip of insulating material wider than the conducting-strip.

2. A resistance device comprising a frame having a hub and a rim, a lining of insulating
10 material for said frame, metallic terminal-pieces located respectively at the rim and at the hub inside of the insulated lining, a conductor connecting said terminals, said conductor comprising a strip of sheet metal wound
15 in spiral form and having the coils separated by a strip of insulating material wider than the conducting-strip.

3. A resistance device comprising a plurality of units each comprising a frame having
20 a rim and a perforated hub, terminal-pieces located respectively at the rim and hub and insulated from the frame, and a conductor connecting said terminal-pieces, said conductor comprising a metal strip wound into spiral
25 form and having the coils insulated from

each other and from the frame, a rod passing through the perforated hubs of a number of said units, and insulating material between said rod and said hubs.

4. A resistance device comprising a plural- 30
ity of units each comprising a frame having a perforated hub and a rim, terminal-pieces located respectively at the rim and at the hub and insulated from the frame, and a con-
ductor connecting said contact-pieces, said 35
conductor comprising a spirally-wound metal strip having its coils insulated from each other and from the frame, a rod passing through the hubs of said units, said units being ar-
ranged in pairs facing each other, and elec- 40
trical connections between the central terminal-pieces of facing units and between the outside terminal-pieces of units placed back to back.

In testimony whereof I, the said GEORGE 45
BAEHR, have hereunto set my hand.

GEORGE BAEHR.

Witnesses:

A. M. STEEN,
G. C. RAYMOND.