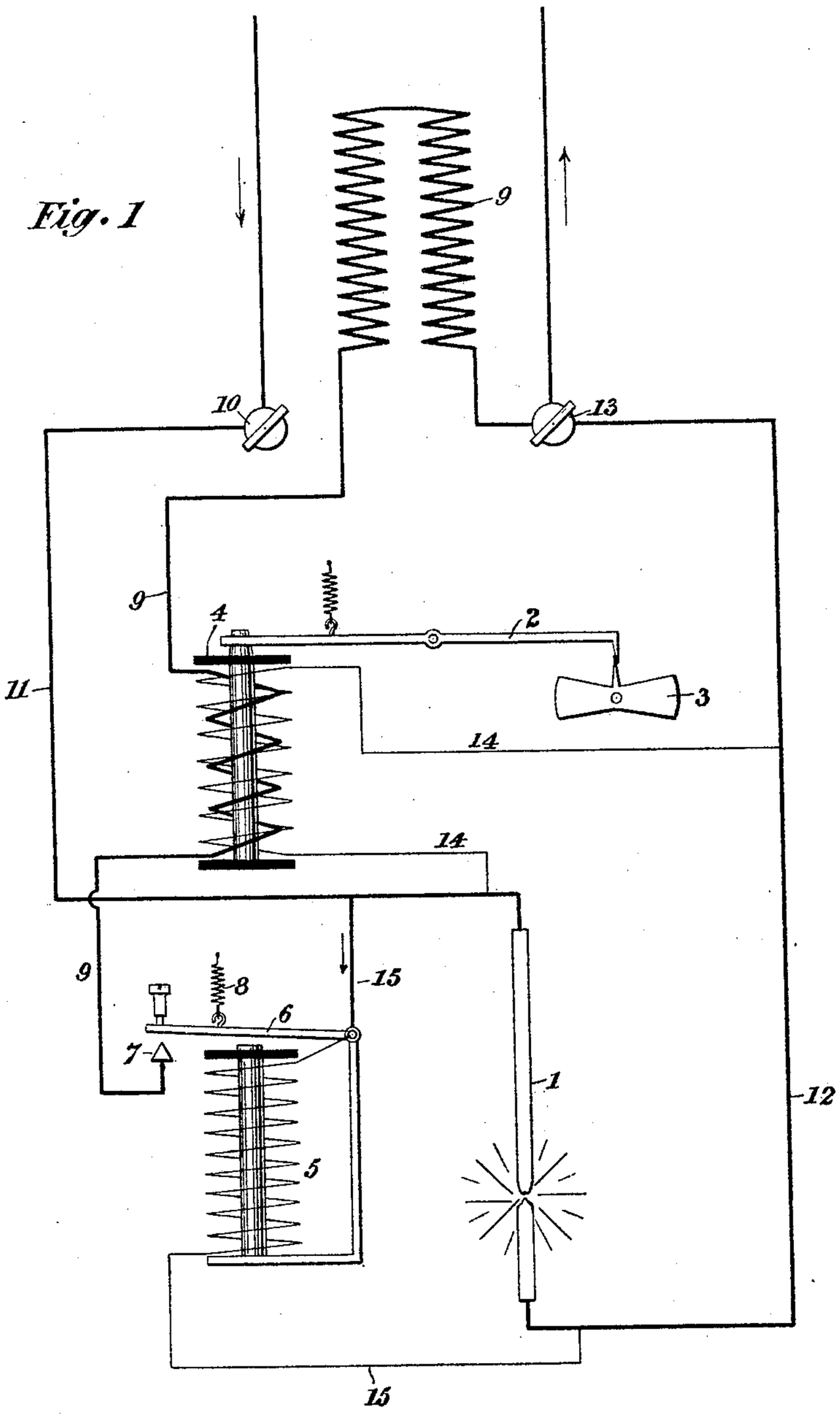
(No Model.) 2 Sheets—Sheet 1.

O. H. SWOBODA.

ELECTRIC ARC LAMP.

No. 524,357. Patented Aug. 14, 1894.

Fig. 1



Witnesses
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W. C. Pinckney

Inventor
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(No Model.) 2 Sheets—Sheet 2.

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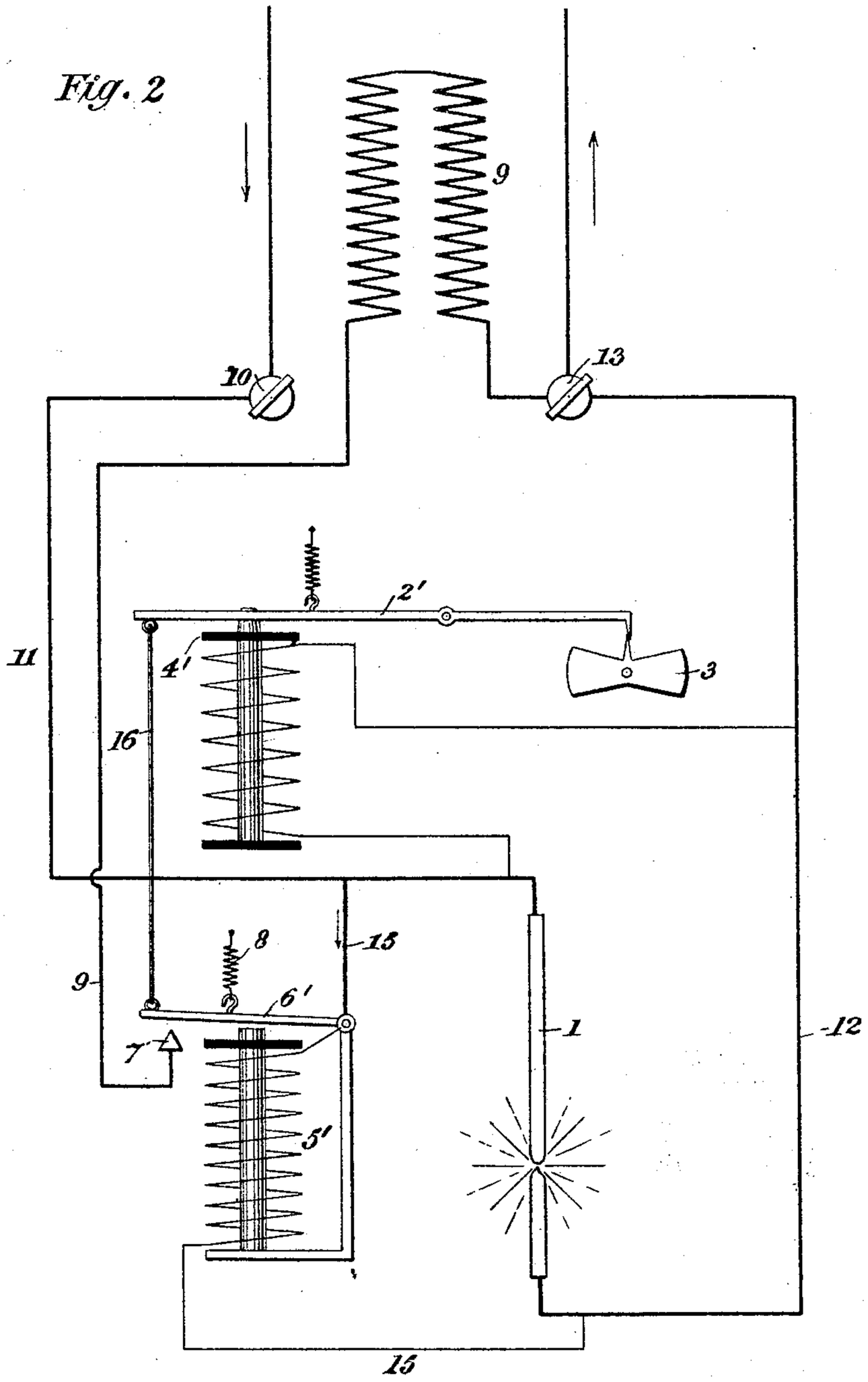
Fig. 2



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UNITED STATES PATENT OFFICE.

OTTO HANS SWOBODA, OF NEW YORK, N. Y., ASSIGNOR TO SIGMUND BERGMANN, OF SAME PLACE.

ELECTRIC-ARC LAMP.

SPECIFICATION forming part of Letters Patent No. 524,357, dated August 14, 1894.

Application filed July 19, 1893. Serial No. 480,884. (No model.)

To all whom it may concern:

Be it known that I, OTTO HANS SWOBODA, a subject of the Emperor of Germany, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Electric-Arc Lamps, of which the following is a specification.

My invention relates to electric arc lamps, and the object of my invention is to provide a shunt around the arc in combination with the carbon feeding mechanism. I accomplish this object by the means hereinafter described and claimed.

In the accompanying drawings forming part of this specification, Figure 1 represents diagrammatically an arc lamp embodying my invention. Fig. 2 represents a modification.

In carrying out my invention I use the arc lamp illustrated and described in application of S. Bergmann, filed January 10, 1893, Serial No. 457,947, and I have therefore considered it unnecessary to illustrate the entire lamp in this application.

Referring to the drawings 1 represents the carbons, 2 and 3 the escapement of the feeding mechanism and 4 the electro-magnet controlling the same.

The high resistance magnet 5 is placed in a shunt around the arc and when the latter is broken said magnet attracts its armature lever 6, closing the circuit and throwing the lamp resistance into the circuit around the arc. The armature lever 6, is held normally away from contact 7 by a spiral spring 8. The lamp resistance 9 is wound around magnet 4 before being connected with contact 7. The high resistance conductor 14 of magnet 9 forms a shunt circuit across the arc.

The circuits are as follows: The main current enters at binding post 10, passes through conductor 11, carbons 1, conductor 12 and out at binding post 13. A shunt 14 is provided across the arc including the electro-magnet 4 for operating the feeding mechanism.

The shunt 15 of high resistance forms a shunt around the arc, being connected at each side of the carbon to the main line.

The operation of the mechanism is as follows: Should the arc be broken the current would pass from binding post 10 to conductor 15 of the shunt circuit to conductor 12 and binding post 13. The effect of this would be to energize magnet 5 which would draw down its armature and close the circuit at 7, throwing the lamp resistance into the circuit. The current entering at binding post 10 passes then through the conductors 11 and 15 to armature lever 6 to contact point 7, to magnet 4 and resistance 9 to binding post 13. If the current passing through shunt 14 should not be sufficient to effect the feeding mechanism, the current passing through the lamp resistance 9 will be sufficient, through magnet 4, to draw down the armature 2 and release the fly 3, allowing the feeding to proceed. As soon as the arc is re-established the circuit at 7 is broken and the parts resume their normal action.

The modification shown in Fig. 2 is of the same construction in general as that shown in Fig. 1 with these differences: that the lamp resistance is not coiled around magnet 4′ and that the armature feeding lever 2′ is extended rearwardly and has connected to it at that end a downwardly extended rod 16′ which is connected at its lower end to the armature lever 6′ so that when magnet 5′ is energized and draws down its armature it also, through the medium of connecting rod 16′, draws down the armature feeding lever in a positive manner.

The construction shown in Fig. 1 is preferred.

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

1. In an electric arc lamp, the combination with a shunt around the arc normally controlling the feed mechanism, of a second shunt around the arc for energizing a magnet, and means interposed between such magnet and the feed mechanism for imparting to the latter when the arc is broken the energy of such magnet, substantially as set forth.

2. In an electric arc lamp, the combination with a shunt across the arc normally controlling the feed mechanism, of a second shunt across the arc controlling a normally

open circuit including in series a resistance and a coil about the feed controlling shunt magnet whereby when the arc is broken the lamp resistance is thrown around the arc and energizes the magnet which controls the operation of the feed mechanism, substantially as set forth.

Signed at New York, in the county of New York and State of New York.

OTTO HANS SWOBODA.

Witnesses:
W. H. BRINES,
J. WERTHEIMER.