(No Model.) 2 Sheets—Sheet 1.

T. N. SHAW.

CUT-OUT FOR ELECTRIC LAMPS.

No. 303,402. Patented Aug. 12, 1884.

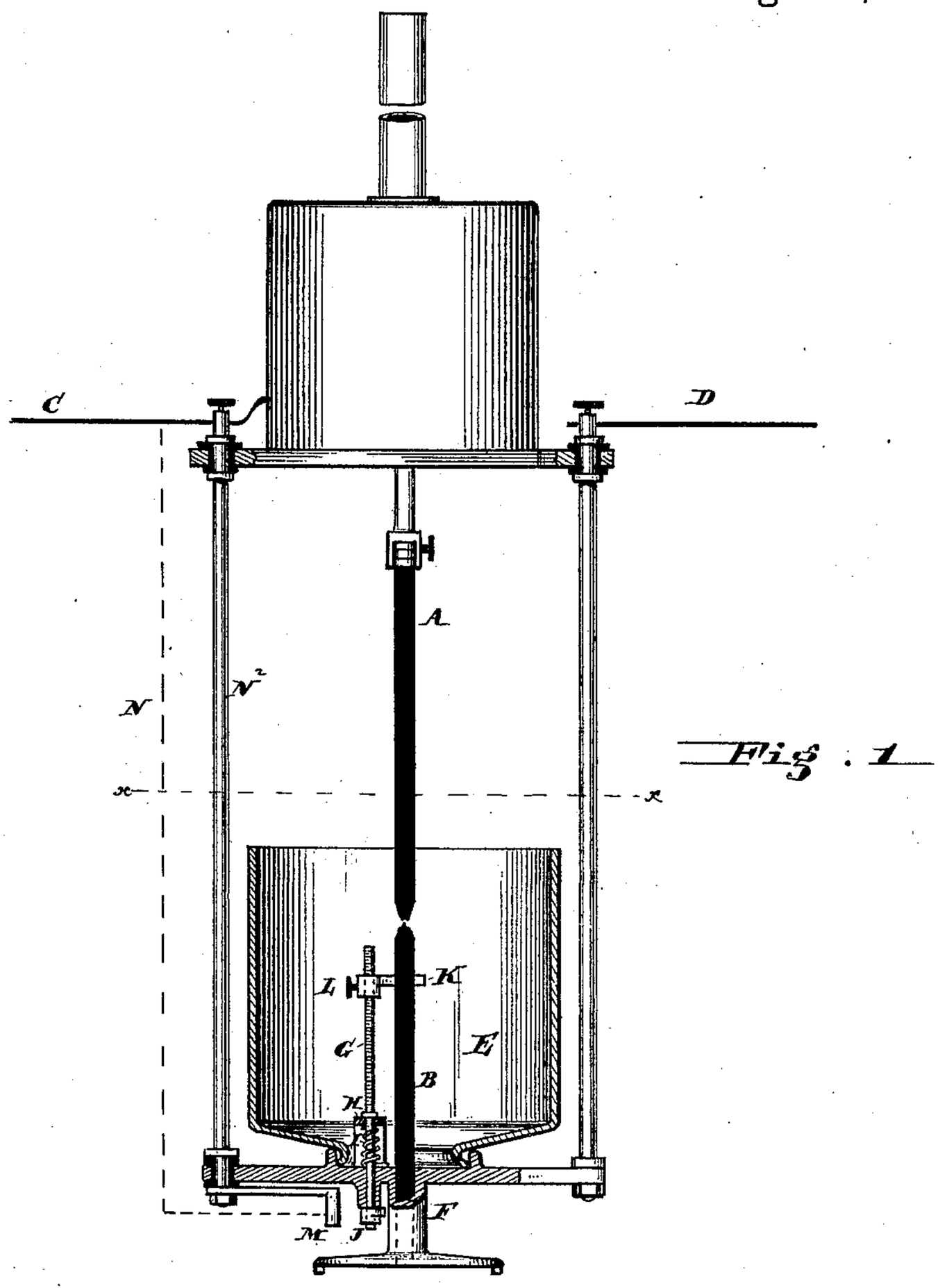

Fig. 1

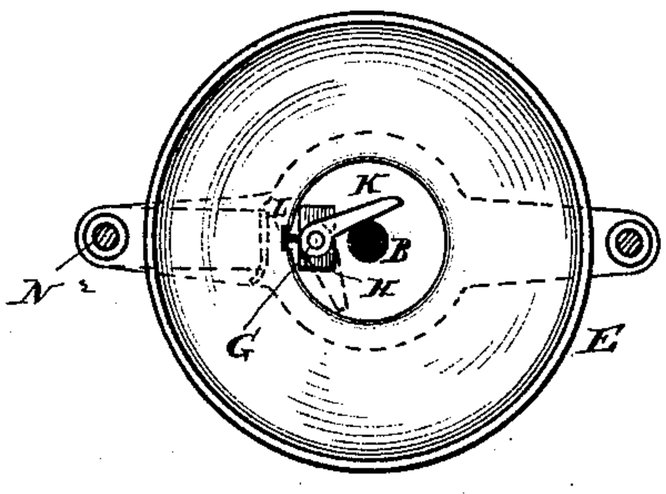

Fig. 2

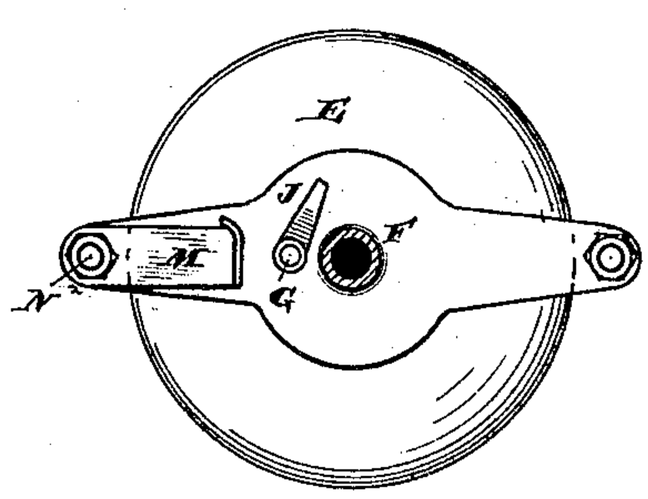

Fig. 3

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(No Model.) 2 Sheets—Sheet 2.

T. N. SHAW.

CUT-OUT FOR ELECTRIC LAMPS.

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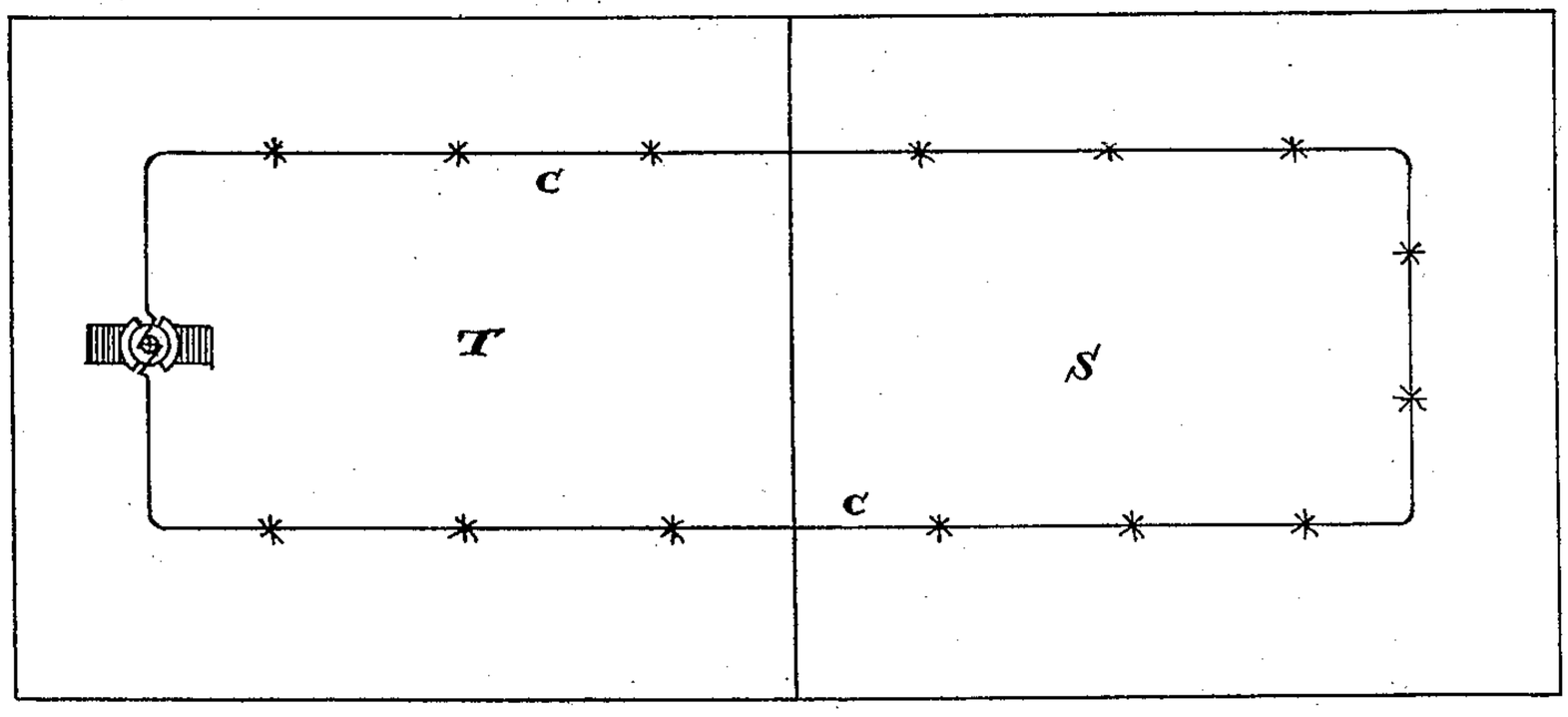

Fig. 4.

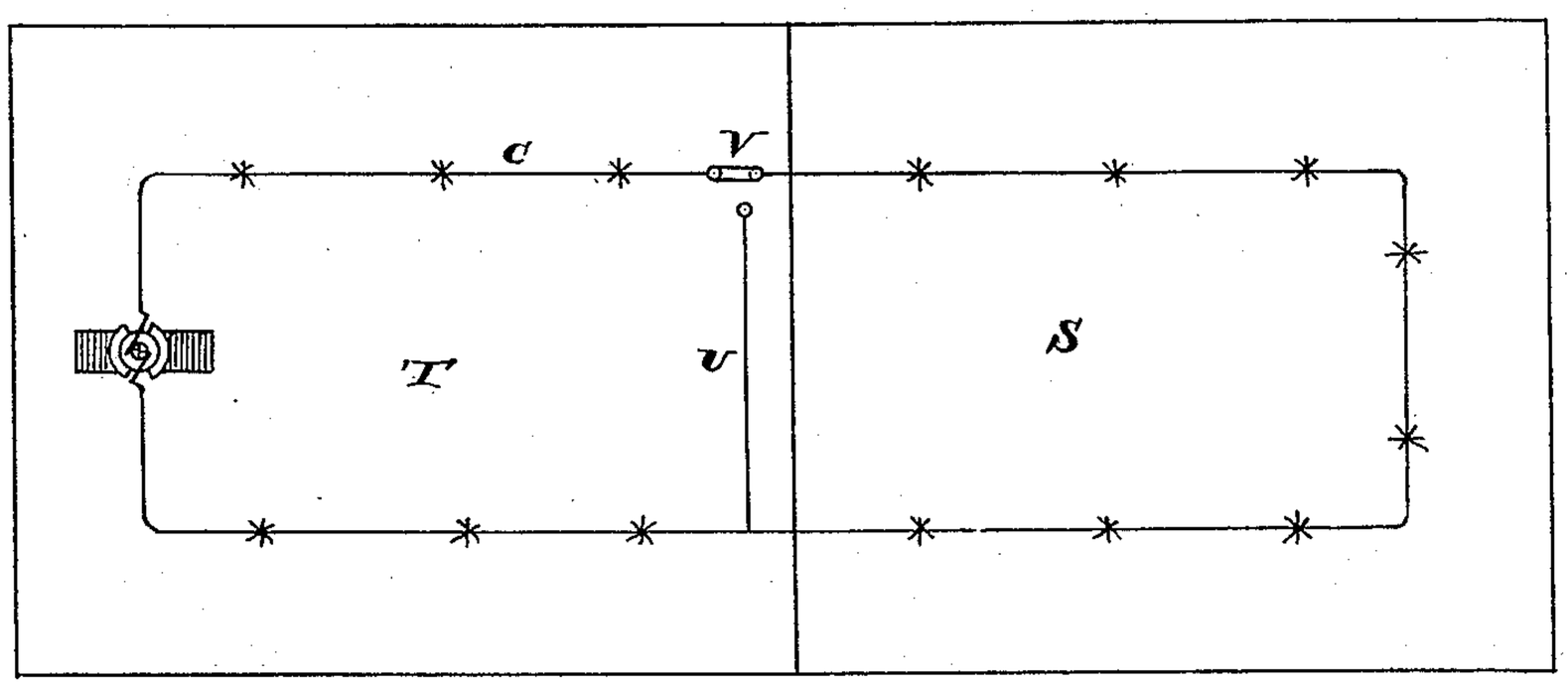

Fig. 5.

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UNITED STATES PATENT OFFICE.

THOMAS N. SHAW, OF PITTSTON, PENNSYLVANIA.

CUT-OUT FOR ELECTRIC LAMPS.

SPECIFICATION forming part of Letters Patent No. 303,402, dated August 12, 1884.

Application filed January 5, 1884. (No model.)

To all whom it may concern:

Be it known that I, THOMAS N. SHAW, of Pittston, county of Luzerne, and State of Pennsylvania, have invented an Improvement in Cut-Outs for Electric Lamps, of which the following is a specification.

My invention has reference to cut-outs for electric lamps; and it consists in mechanism fully set forth in the following specification and shown in the accompanying drawings, which form part thereof.

Cut-outs for electric lamps have been made by attaching to the feeding rod or holder for the upper carbon a contact-piece, which, when the carbon-holder has fully descended by the consumption of the carbons, touches another contact and short-circuits the lamp. Cut-outs have also been devised for double lamps (commonly known as "all-night lamps,") by causing the current to pass through one set of carbons alone, the lower carbon of which set is encircled by a ring, which keeps a spring-contact from touching the lower carbon or its holder of the other set. When this lower carbon of the first set is consumed, the ring is drawn between the upper and lower carbon, and allows the contact to touch the lower carbon or its holder of the other set, thereby causing the current to pass through the second of said sets of carbons.

The object of my invention is to enable an electric lamp to be so adjusted that it shall become extinguished or cut out of the main circuit at a given time to prevent the lower carbon being burned too close to the globe and cracking the same, and also to enable any lamp in a circuit to be automatically put out without interfering with those in other parts of the same circuit.

In the drawings, Figure 1 is an elevation of an electric lamp with the globe in section, and embodies my improvements. Fig. 2 is a sectional plan of same on line *x x*. Fig. 3 is a plan of the bottom looking upward. Fig. 4 shows how my improved cut-out automatically puts one room in darkness without interfering with the light in the other. Fig. 5 shows how this result was formerly accomplished by an auxiliary circuit.

A is the upper, and B the lower, carbon.

C is the line-wire as it enters the lamp and connects with carbon A.

D is the line-wire as it leaves the lamp and lower carbon, B.

E is the globe, and is supported by the holder F in the usual manner.

G is a vertical rod extending upward from said holder F, and substantially parallel to said carbon B, and is divided off in inches and fractions thereof. This rod is supported in bearings H, and carries at the bottom an arm, J, and at the top an adjustable arm, K, set in any desired position upon said rod by a screw, L. This arm K is pressed against the lower carbon by a spring, I, which acts upon the rod G to turn the same.

M is a stop or contact finger which is insulated from the holder F, and is electrically connected with the line-wire C by rod N^2 or wire N.

When the lower carbon, B, burns down sufficiently far, the arm K is thrust between the upper and lower carbon, and passes beyond, allowing the arm J to rest against pin M, and thereby completing the circuit from line C through wire N, holder F to line D, thereby practically cutting out the lamp.

If desired, the arm J may be so set that when it strikes the pin M the arm or plate K may rest between the carbons A and B, and thus the circuit would be complete through the lamp and also by wire N.

Referring to Fig. 4, S and T represent two rooms lighted by lamp in a single circuit, C. The lamps in room S may be set so as to automatically go out at a certain time without interfering with the burning of the lamp in room T, or any particular lamp in room S might be set to go out after burning a given time. In Fig. 5 is shown how it would be necessary to arrange the circuit if such an adjustble cut out were not used. In this case U is a cut-out circuit, and V a key to turn all of the current into the circuit U, cutting out that part of circuit C in room S. While I prefer the construction first set forth, I do not limit myself thereto, as it may be modified in various ways without departing from my invention.

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

1. The combination of carbons A B, adjustable arm K, set-screw L, rod G, support

H, spring I, arm J, contact M, and wires C, N, and D, substantially as and for the purpose specified.

2. The combination of the positive and negative carbons with arm K, rod G, to which said arm is adjustably secured, a spring to rotate said rod when the carbon frees said arm, and a short-circuiting switch controlled by said rod G to short-circuit the lamp in the line, substantially as and for the purpose specified.

3. The combination of the positive and negative carbon with arm K, rod G, having a scale marked thereon, to which said arm is adjustably secured, a spring to rotate said rod when the carbon frees said arm, and a short-circuiting switch controlled by said rod G to short-circuit the lamp in the line, substantially as and for the purpose specified.

4. The combination of carbons A B, arm K, rod G, spring I, arm J, contact M, holder F, and wires C, N, and D, substantially as and for the purpose specified.

In testimony of which invention I hereunto set my hand.

THOMAS N. SHAW.

Witnesses:

D. G. JAMES,

F. H. KYTE.