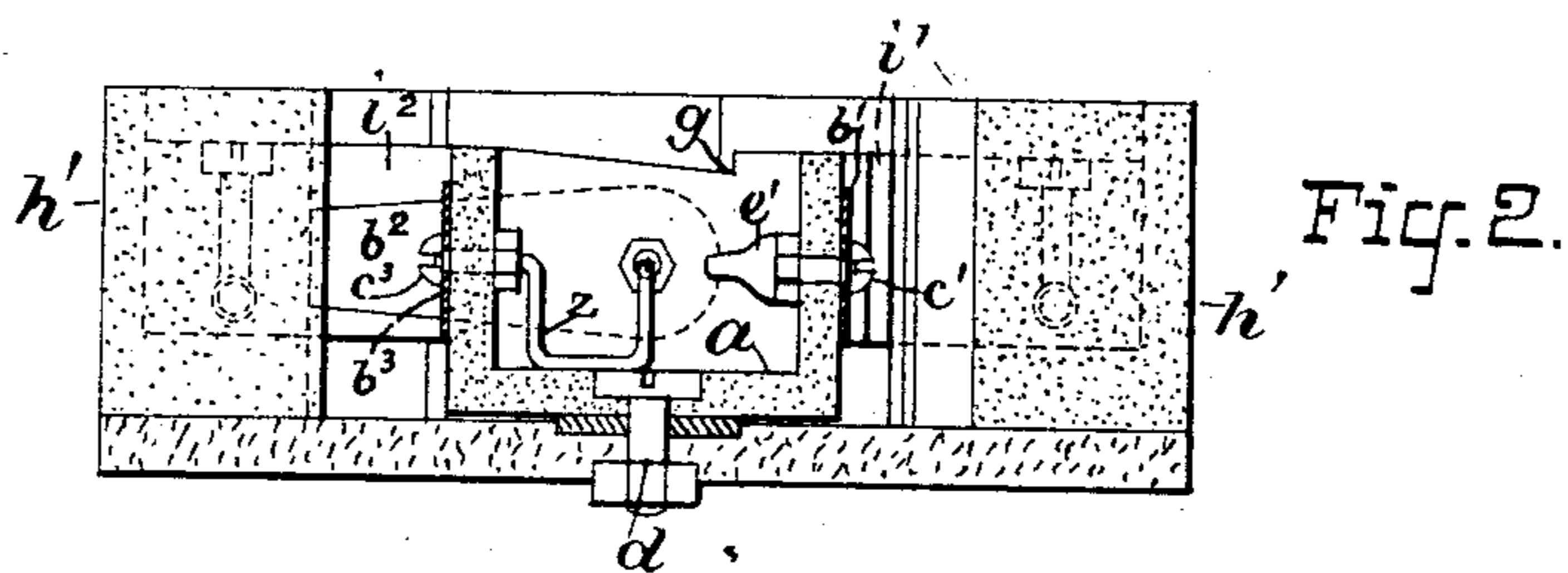
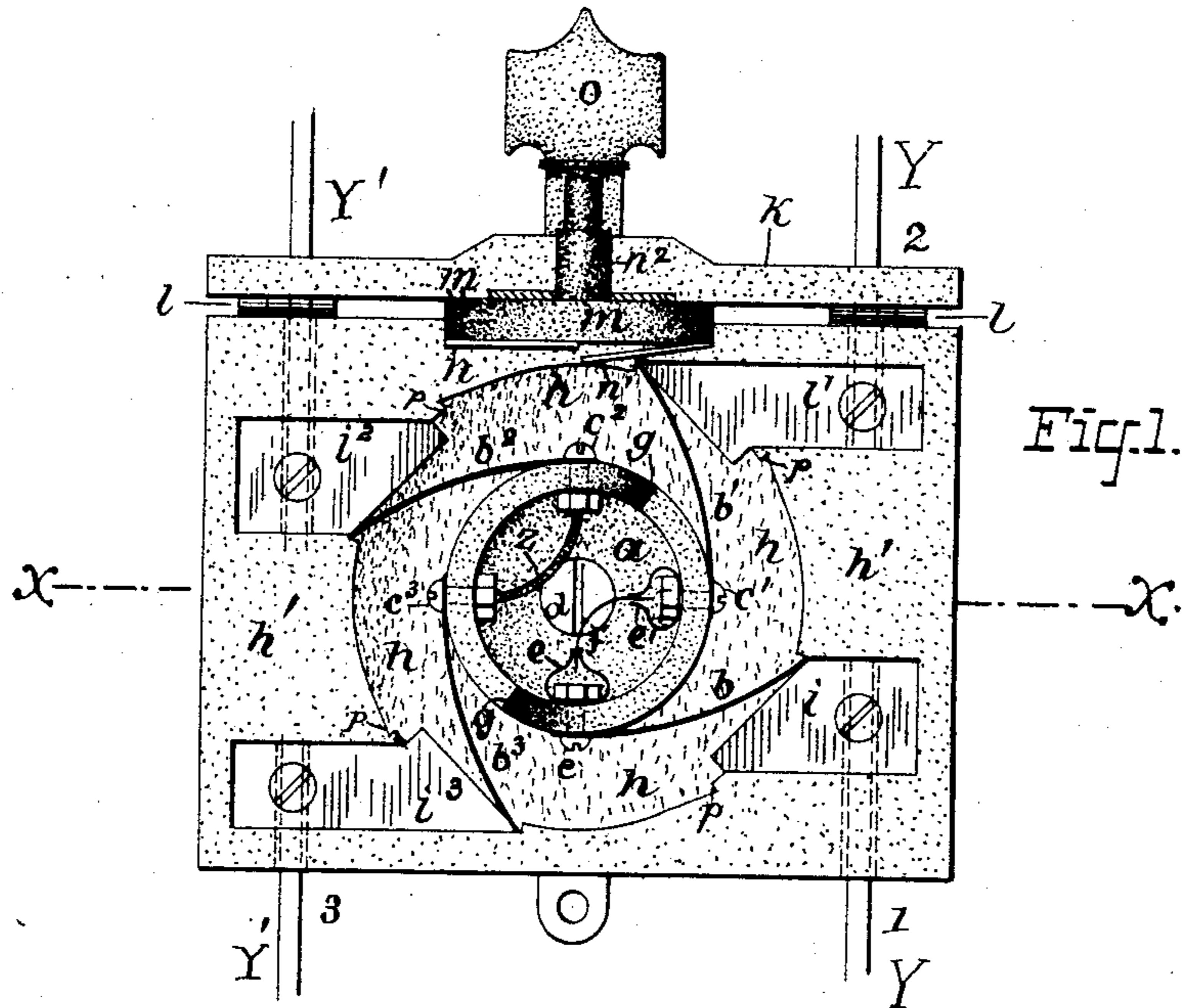


(No Model.)

C. G. PERKINS.
ELECTRIC SWITCH AND CUT-OUT.

No. 287,322.

Patented Oct. 23, 1883.



ATTEST:

J. A. Murdle
E. H. Edwards

INVENTOR:

Charles G. Perkins
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att'y

UNITED STATES PATENT OFFICE.

CHARLES G. PERKINS, OF NEW YORK, N. Y., ASSIGNOR TO THE IMPERIAL
ELECTRIC LIGHT COMPANY, OF SAME PLACE.

ELECTRIC SWITCH AND CUT-OUT.

SPECIFICATION forming part of Letters Patent No. 287,322, dated October 23, 1883.

Application filed May 10, 1883. (No model.)

To all whom it may concern:

Be it known that I, CHARLES G. PERKINS, a citizen of the United States, 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 an Electric Switch and Automatic Cut-Out, of which the following is a specification.

My invention relates to an electric safety-switch provided with four poles and automatic cut-out, the whole placed in the main electrical circuit between a generator and electric lamps.

The first part of my invention consists of a cylindrical box made of insulating material, provided with a swivel-pin on the bottom thereof. Said box is also provided with a series of flat metallic spring-blades fastened onto the exterior thereof and projecting therefrom. The upper end of the box is also provided with notches, which will be more fully described hereinafter.

The second part of my invention consists of two claspingsprings held to the interior of said cylindrical box by means of screws and nuts, said springs holding a strip of metal usually employed for cut-outs.

The third part of my invention consists of a block of insulating material having a circular aperture therein. Said block is provided with four metallic plates, representing the four poles, projecting slightly into the aperture and connected with the main-line wires leading from a generator to the electric lamps.

The fourth part of my invention consists of a circular block made of insulating material, mounted with a ring of flat spring metal, a portion of which projects therefrom. The said block is also provided with an upright passing through a cover hinged to the main structure. Said upright projection is connected with a suitable handle, to be operated when opening and closing the circuit.

In the drawings, Figure 1 represents a plan view of the safety-switch and automatic cut-out, with its cover raised in a perpendicular position, and shown in section. Fig. 2 represents a vertical section taken on line $x x$.

Similar letters refer to similar parts throughout the drawings, in which—

a represents the cylindrical box, with flat springs $b b' b^2 b^3$ fastened thereto by means of

the screws and nuts $c c' c^2 c^3$, the whole turning on the swivel-connection d . $e e'$ are the claspingsprings, holding the cut-out wire or strip f in position. g are the notches on the upper end of the cylindrical box a . The box a is arranged within the aperture h of the main block h' , which is provided with the metallic plates $i i' i^2 i^3$, representing the four poles connected with the main-line wires. k is the cover, held to the main block h' by the hinges l . m is the circular block of insulating material, provided with the flat spring n , with the portion n' thereof projecting therefrom, and is also provided with an upright projection, n^2 .

Mode of operation: Whenever the cut-out wire shall have been properly adjusted, the cover is closed and ready to perform its functions. If more current should attempt to pass through the cut-out than could be accommodated by the lamps, the wire forming the said cut-out will melt and thus break the circuit. If the attendant desires to break the circuit, he should turn the switch-handle o until the portion n' comes in contact with one of the notches g , which will cause the box a to turn and carry with it the springs $b b' b^2 b^3$ until they shall have snapped off from the plates $i i' i^2 i^3$, thus cutting out the four poles, the result of which prevents a short circuit between the lamps and the source of electric energy. The circuit may again be closed by turning the handle further on. When the circuit is broken in this manner, the springs fall into the notch p , which prevents said springs from coming in contact with the metallic plates representing the four poles of the switch-box when by accident they should be turned the other way. When the circuit shall have been broken by the melting of the cut-out wire, another may be placed therein without difficulty and immediately.

The circuit.—The current passes through the positive main-line wire y and enters the block at 1; thence to the plate i , to the spring b , from which it passes to the screw c ; thence to the claspingspring e , to the cut-out wire f , from which it passes to the spring e' ; thence to the screw c' , to the spring-blade b' ; thence to the plate i' , from which it passes to the main-line wire y at 2, to the lamps, through which it passes to the negative main-line wire y' , to the

plate i^2 ; thence to the spring b^2 , to the screw c^2 ; thence to the wire z , to the screw c^3 , from which it passes to the blade b^3 ; thence to the plate i^3 , to the negative main-line wire at 3,
 5 back to the source of electric energy.

I am aware that combined switches and cut-outs have heretofore been made with four poles; but I am not aware that they have ever been made with devices for quickly breaking or
 10 closing the main circuit, thus preventing the current from burning or destroying the switch mechanism.

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

1. In combination with controlling mechanism of an electric switch having four poles and automatic cut-out, the cylindrical box a , having notch g , swivel-pin d , spring-blades b
 20 $b' b^2 b^3$, screws $c c' c^2 c^3$, claspingsprings $e e'$, and cut-out wire z , substantially as shown and described.

2. In combination with the circuit closer and breaker of an electric switch and automatic cut-out, the circular block m , flat spring n , and projection n' , in combination with the upright projection n^2 , handle o , and cover k ,
 25 substantially as shown and described.

3. The combination, substantially as shown and described, of the cylindrical box a , swivel-pin d , spring-blades $b b' b^2 b^3$, screws $c c' c^2 c^3$,
 30 claspingsprings $e e'$, cut-out wire f , block h' , aperture h , metallic plates $i i' i^2 i^3$, circular block m , flat spring n , projection n' , handle o , and cover k , all forming a complete safety-switch with four poles and automatic cut-out.
 35

Signed at New York, in the county of New York and State of New York, this 7th day of May, A. D. 1883.

CHARLES G. PERKINS.

Witnesses:

J. A. HURDLE,
 GEORGE BECKER.