

(No Model.)

W. L. STEVENS.

SAFETY BOX FOR ELECTRIC CIRCUITS.

No. 316,077.

Patented Apr. 21, 1885.

Fig. 1.

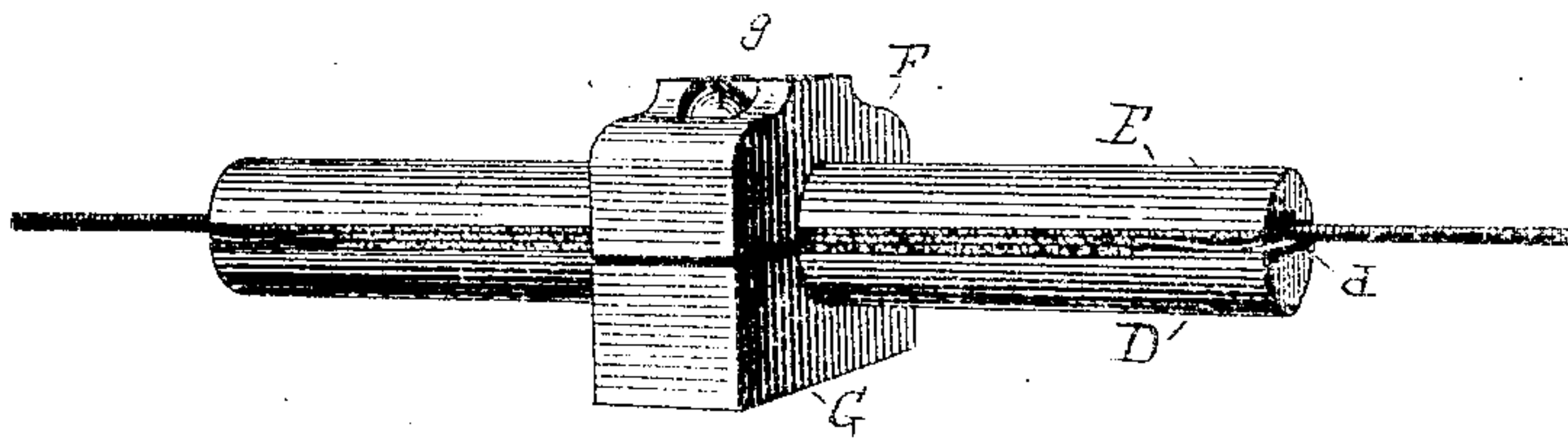


Fig. 2.

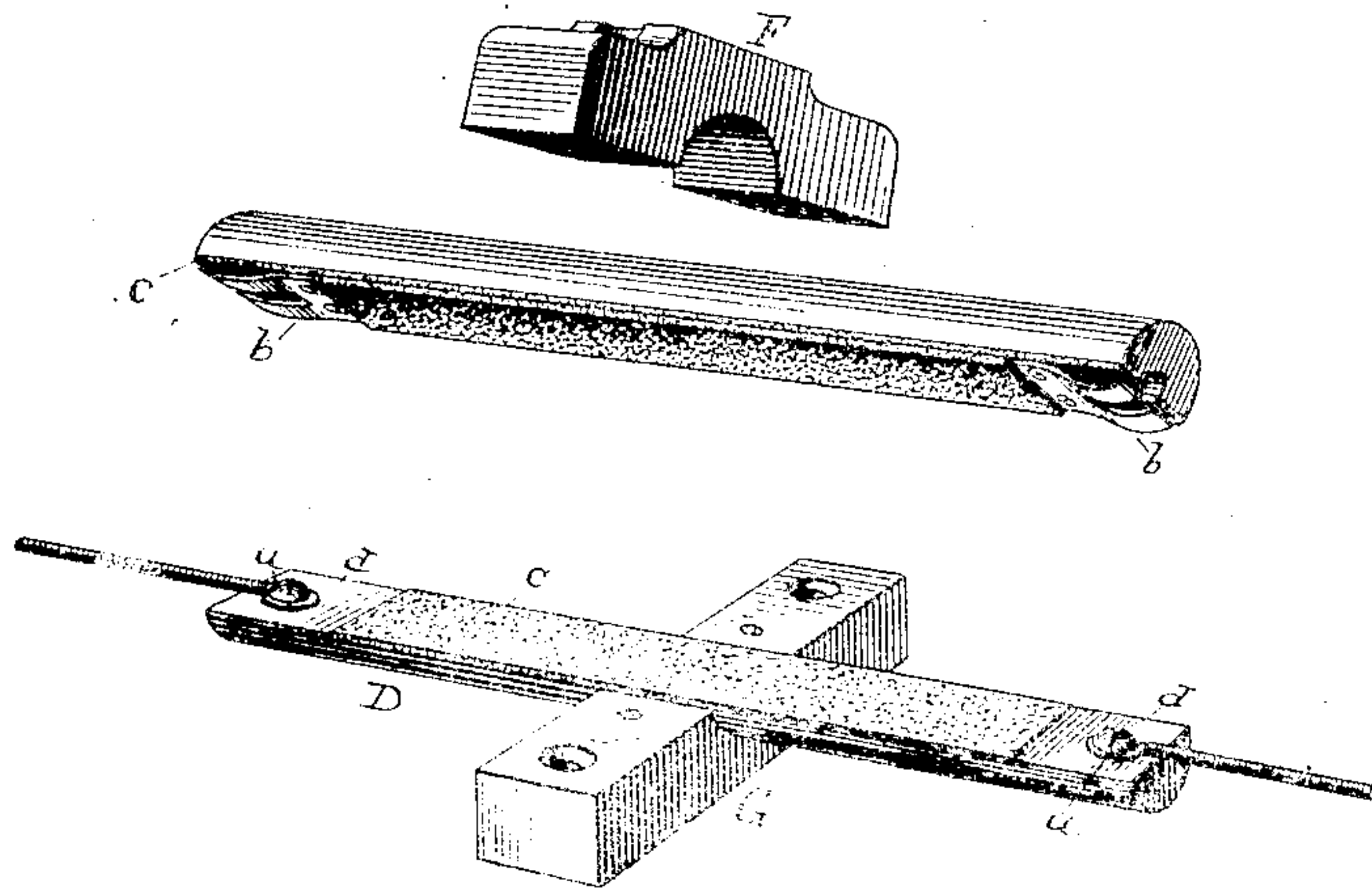
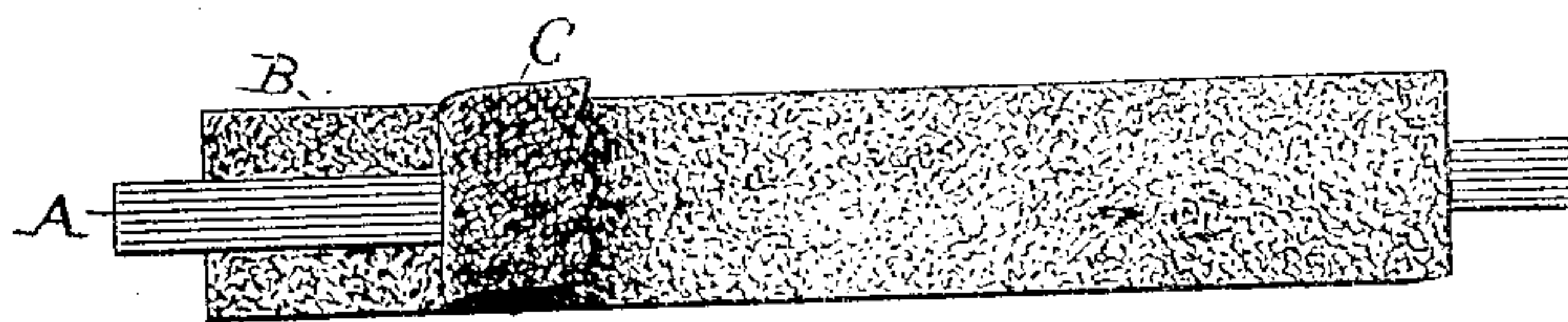


Fig. 3.



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SAFETY-BOX FOR ELECTRIC CIRCUITS.

SPECIFICATION forming part of Letters Patent No. 316,077, dated April 21, 1883.

Application filed September 10, 1881. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM L. STEVENS, a citizen of the United States, and a resident of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Safety-Boxes for Electric Circuits, of which the following is a specification, reference being had to the drawings accompanying and forming a part of the same.

The object of my present invention is to produce a safety strip or link for use in circuits carrying currents of high tension which shall fuse when the flow of current becomes abnormal, and which shall prevent the continuance of such flow by preventing the formation of the arc which, in devices heretofore devised, is apt to follow the disruption of the metallic path of the current.

In carrying out my invention I select strips of a fusible metal or alloy of proper length and cross-section, and inclose them in a sheath or envelope of non-conducting incombustible material. Such envelopes or sheaths I make of two strips of asbestos paper or similar substance secured together by glue with the fusible strip between them. These strips I subject to pressure while drying.

For applying the safety-strips I use a split wooden cylinder with permanent contacts secured thereto, to which the ends of the safety-strips and the wires of the circuit are connected. I also use a clamping device for holding the two portions of the cylinder together, and for maintaining the connections perfect.

With safety-boxes thus constructed I have found it possible to short-circuit the current of forty arc lamps through a strip three or four inches in length without the formation of an arc between the terminal contacts. This highly important result is due, so far as I have been able to ascertain, to the following causes: By gluing or cementing the strips of asbestos over a fusible strip under pressure a solid body is formed, in which the space left by the fusion of the metal strip is so contracted as to prevent or check the passage of the arc. This effect is still further increased by the use of the clamping device, which operates to close up completely the space left by the fusion of the safety-strip, by compressing the yielding sides of the asbestos sheath together, and thus interposing a non-conduct-

ing body between the terminals of the safety-box.

I will describe the most convenient and practicable form of safety-box constructed on this principle which I have devised by reference to the accompanying drawings.

Figure 1 is a perspective view of the box in condition for use. Fig. 2 is a perspective view of the several parts of the same detached. Fig. 3 is a view of an inclosed safety-strip, showing a portion of one of the infusible strips removed.

A is a strip or ribbon of fusible metal or alloy, the length or cross-section of which will vary according to the current which it is designed to carry without fusing.

B C are flat strips or sheets of asbestos paper or any like infusible non-conducting substance. They are somewhat shorter than strip A, and are brought together over the strip A and fastened by glue. Pressure is applied while the glue is drying.

D E are the two halves of a split wooden cylinder. At the ends of part D are secured metal plates *d*, to which the line-wires of a circuit are connected by the screws *a*, or otherwise. An inclosed safety-strip is laid on the face of the part E, and its projecting ends clamped under spring-plates *b b*. When the two parts D E are brought together, the circuit will be completed between the plates *d* through the strip A.

Any convenient form of clamp may be used to bind the parts together. That shown consists of two wooden blocks, F G, secured together by the screws *g*. This safety-box may be inserted at any desired point in a circuit, and used generally for all purposes to which such devices are usually applied.

It is, of course, obvious that many kinds of split or sectional holder may be employed with the inclosed safety-strip, and that the form of the same may be greatly varied without affecting its functions.

It is desirable that the holder be of insulating material, and preferable that the inner faces, as in the present instance, be covered with a thin sheet of asbestos or like material, (shown at *c*.)

What I claim is—

1. The combination of the sectional holder, the sheathed or incased safety-strip, and the

clamp, constructed and arranged in substantially the manner specified.

2. The combination, with the part D of a safety-strip holder having contact-plates secured thereto, of the part E, with corresponding contact-plates, a sheathed or incased safety-strip connecting the said contact-plates, and a clamping device for binding the parts D and E together, as herein set forth.
- 10 3. The combination, with a fusible safety-

strip, of an envelope of non-conducting inflammable material consolidated by pressure, as and for the purpose set forth.

In testimony whereof I have hereunto set my hand this 3d day of September, 1884.

WILLIAM L. STEVENS.

Witnesses:

W. FRISBY,

PARKER W. PAGE.