(No Model.)

H. P. DAVIS & C. F. SCOTT.

FUSE BLOCK.

No. 541,473. Patented June 25, 1895.

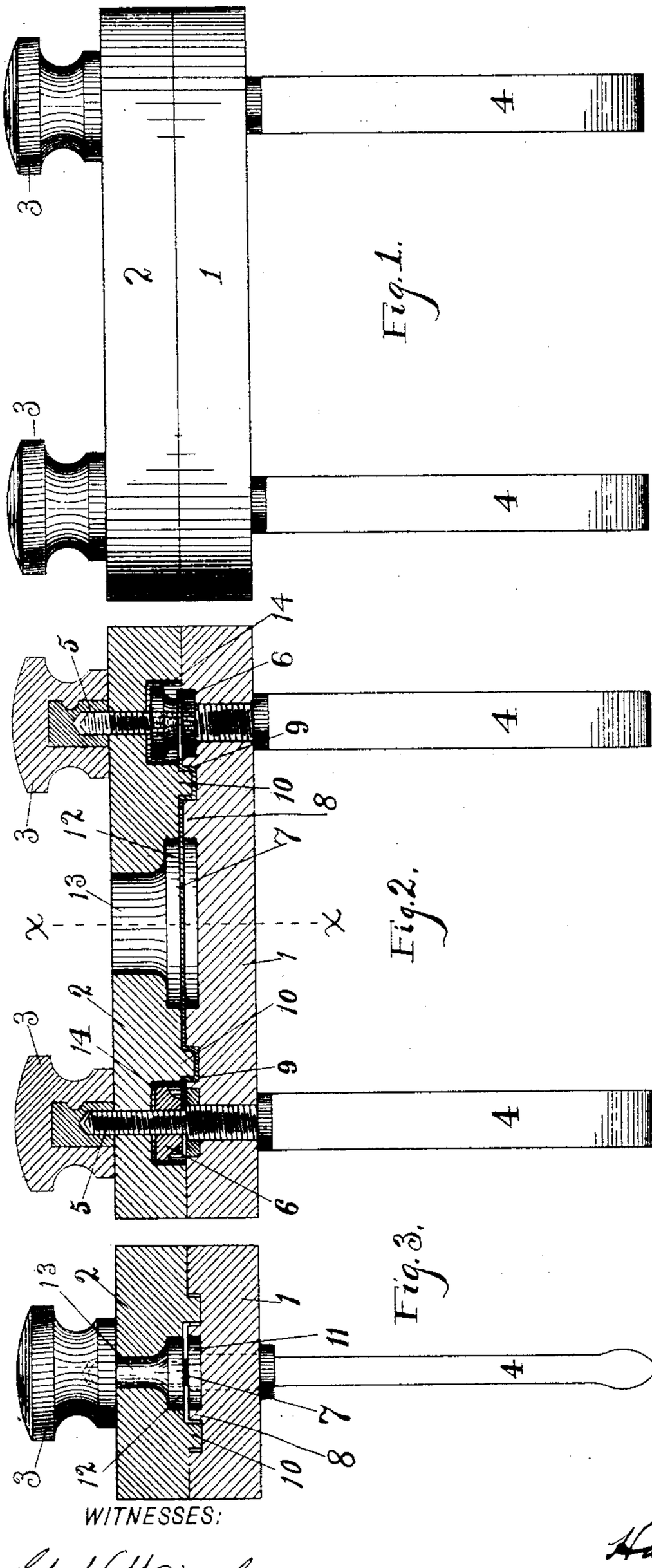

Fig. 1.

Fig. 2.

Fig. 3.

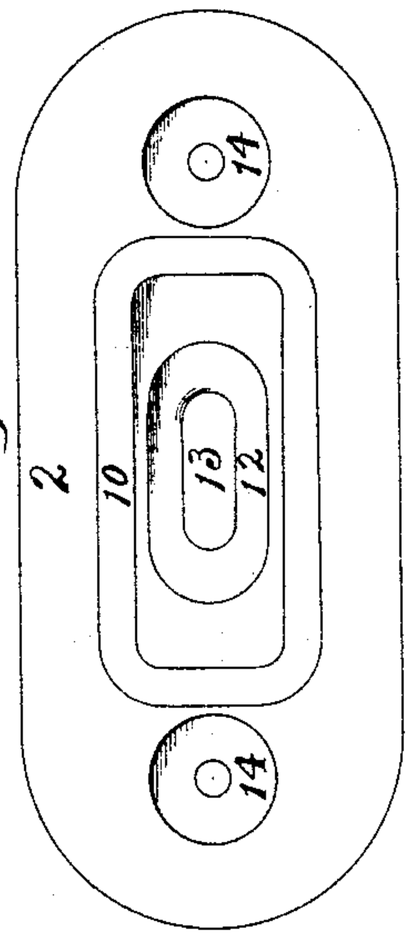

Fig. 5.

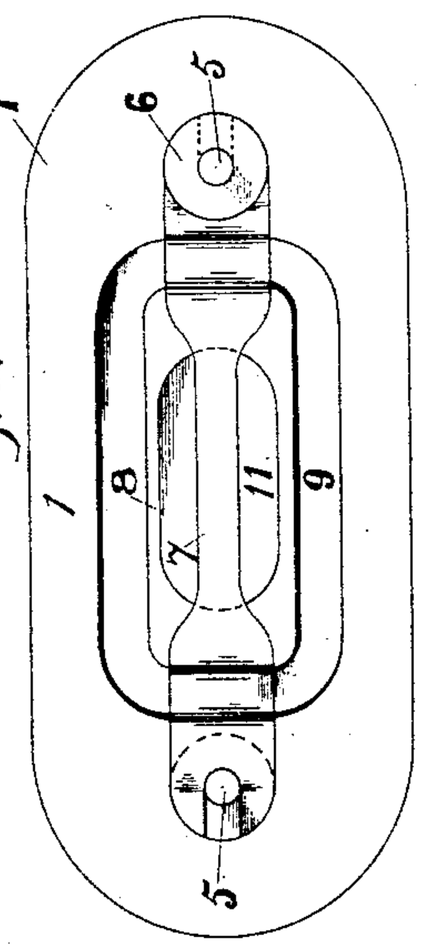

Fig. 4.

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UNITED STATES PATENT OFFICE.

HARRY P. DAVIS AND CHARLES F. SCOTT, OF PITTSBURG, PENNSYLVANIA, ASSIGNORS TO THE WESTINGHOUSE ELECTRIC AND MANUFACTURING COMPANY, OF SAME PLACE.

FUSE-BLOCK.

SPECIFICATION forming part of Letters Patent No. 541,473, dated June 25, 1895.

Application filed October 23, 1893. Serial No. 488,876. (No model.)

To all whom it may concern:

Be it known that we, HARRY P. DAVIS and CHARLES F. SCOTT, citizens of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Fuse-Blocks, (Case No. 554,) of which the following is a specification.

Our invention relates to fuse blocks employed for the protection of electric circuits, and it has for its object the production of a simple and efficient means whereby an ordinary fuse may be readily introduced into and supported in an electric circuit, and whereby the vapors produced by the destruction of the fuse may be disposed of in such manner as to preclude any injury to the terminals between which the fuse is interposed.

Our invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the fuse-block. Fig. 2 is a longitudinal section of the same, the terminals, one end of the fuse, and one binding nut or post therefor being in elevation. Fig. 3 is a transverse section of the fuse-block on line *x x* of Fig. 2. Fig. 4 is a plan view of the base of the fuse-block, and Fig. 5 is a similar view of the inside of the cover.

As shown in the drawings, our fuse block comprises a base 1 and a cover 2, both of which are preferably formed of some hard wood, such as lignum vitæ. It is evident, however, that these parts may be constructed of any other desired non-conducting material. The terminals 4, of the fuse block are preferably constructed and arranged so as to be readily connected with and disconnected from the permanently placed terminals of the electric circuit into which the fuse is to be introduced. The form of fuse block terminals which we have found most convenient for practical use is that shown in the drawings, but other forms and arrangements of these parts may be employed if desired. The portions, 5, of these terminals, 4, are provided with screw threads, as shown, and are made of sufficient length to extend through both the base and cover and to project somewhat beyond the outer surface of the latter. These projecting ends are engaged by nuts, 3, formed of non-conducting material, which serve as handles and also, in connection with the parts 5, to bind the base and cover securely together. The screw-threaded portions of the terminals are also provided with metallic nuts 6, which serve to bind the terminals and base together and also to press the ends of the fuse firmly against the terminals, thereby insuring good electrical connection between the said parts. Each end of the fuse is provided with a recess into which fits the corresponding terminal, whereby any accidental displacement of the fuse with reference to the adjacent parts of the device is prevented.

The central portion of the base 1 is hollowed out to form a chamber or recess 11. Surrounding this chamber or recess 11 is a depression or groove 9, the two forming a projecting ridge 8. Although this groove or depression is shown as surrounding the chamber 11, it is obvious that those portions extending along the sides of the chamber might be omitted if desired. We prefer the arrangement shown, however, since it serves to give greater rigidity to the structure as a whole, and tends to prevent rupture or warping of the parts by the violent expansion of the air which occurs when the fuse is destroyed.

The cover 2 is provided with a projecting ridge 10 of such size and so located as to enter and fit loosely in the groove 9 alongside the ridge 8. If two short grooves were employed in lieu of the continuous groove 9 in the base, it is obvious that it would be necessary to employ two corresponding projecting ridges in the cover to co-operate therewith. The cover is also provided with recesses or chambers, 14, for the reception of the nuts 6, and with a central opening, 13, for the escape of the gases caused by the blowing of the fuse. We have shown the lower part of the opening 13 as enlarged to form a chamber or recess 12, adjacent and corresponding in size and position to the chamber or recess 11 in the base 1, the two forming, in fact, a single expansion chamber. It is obvious that this chamber may be formed entirely in either the base or the cover, if desired. We wish

it to be understood also that the parts shown and described as pertaining to the base may pertain to the cover, and vice versa, the structure and mode of operation being practically the same if said parts are reversed.

The operation of our invention is as follows: Upon destruction of the fuse by reason of excessive current in the circuit, the air within the central recess or chamber will be suddenly and intensely expanded by heat and the vaporized metal violently projected through the opening, thus preventing the formation of a permanent arc between the fuse block terminals. The advantage of this form of construction resides in the fact that it contains a minimum number of parts consistent with satisfactory operation and effectively provides against any possible injury to the terminals upon destruction of the fuse. Furthermore, as we prefer to make the nuts 3 of insulating material, all conducting parts of the fuse block will be protected when the block is in use, and it may therefore be handled without any danger of receiving injury from the currents in the circuit.

We claim as our invention—

1. A fuse block comprising a base and cover, terminals extending through both of said parts, a fuse having its ends in engagement with said terminals, means co-operating with the terminals for clamping said base, terminals and fuse together, and means engaging the ends of the terminals for clamping the cover to the base, substantially as described.

2. A fuse block comprising a fuse-supporting base, a cover therefor, a fuse, terminals having screw-threaded ends projecting through said base and cover, metal nuts thereon for binding the fuse against the same, and insulating nuts engaging the outer ends of the terminals and serving to clamp said base and cover together, substantially as described.

3. In a fuse block, a fuse-supporting base and a cover therefor, in combination with two metallic terminals having threaded ends projecting through the base and cover, metallic nuts adapted to screw over said ends and lie within the cover for the purpose of forming binding posts, and non-conducting nuts adapted to screw on to said ends, for the purpose of fastening the cover in place, substantially as described.

4. In a fuse block, a fuse-supporting base having a chamber and a depression surrounding said chamber, fuse terminals and a fuse between the same, in combination with a cover fitting over said terminals and provided with a projection fitting into the depression on said base, and also with a perforation communicating with said chamber in the base, substantially as described.

5. A two-part fuse block provided with terminals and an intermediate expansion chamber or recess having a blow-out opening, each of said parts having a ridge or projection between each of the terminals and said recess, the ridge of the one part being located beside that of the other, a fuse having its ends in engagement with the terminals, and means for clamping the same between the two parts of the block, substantially as described.

6. A two-part fuse block provided with terminals, an intermediate expansion chamber and an outlet therefrom, one of said parts having a ridge surrounding the chamber and the other part having a ridge surrounding the first-named ridge, a fuse connecting the terminals, and means for clamping the same between the two parts of the block, substantially as described.

In testimony whereof we have hereunto subscribed our names this 18th day of October, A. D. 1893.

HARRY P. DAVIS.
CHAS. F. SCOTT.

Witnesses:
HAROLD S. MACKAYE,
HUBERT C. TENER.