

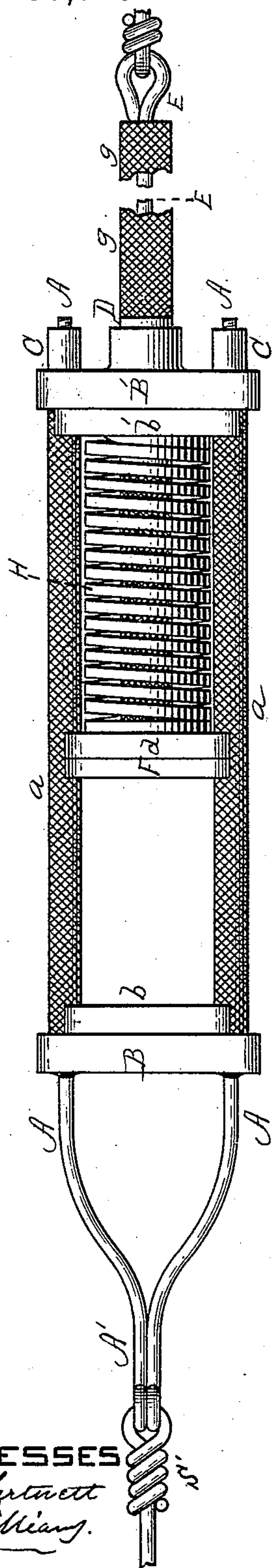
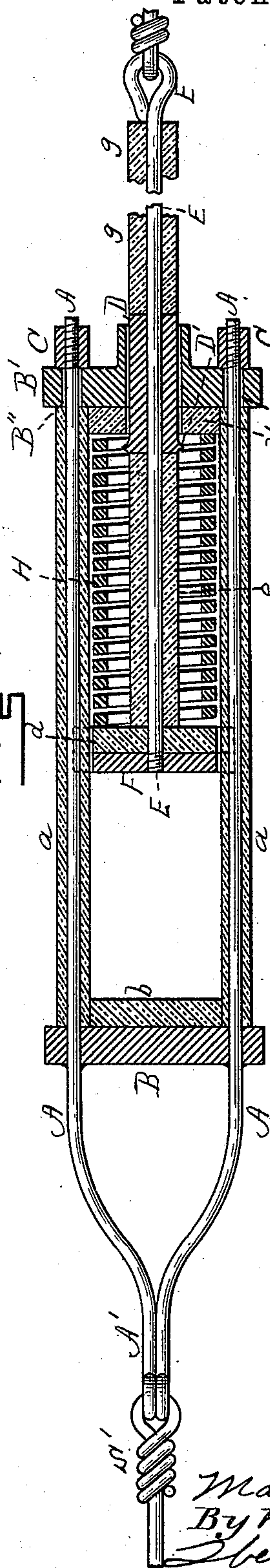
(No Model.)

M. KERSTEIN.

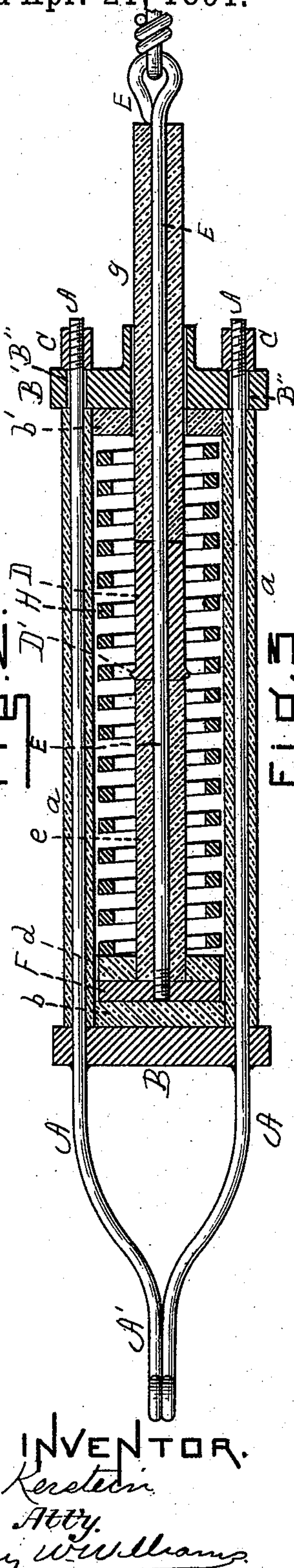
SAFETY DEVICE FOR OVERHEAD ELECTRIC WIRES.

No. 450,626

Patented Apr. 21, 1891.

[illegible]

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WITNESSES

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SAFETY DEVICE FOR OVERHEAD ELECTRIC WIRES.

SPECIFICATION forming part of Letters Patent No. 450,626, dated April 21, 1891.

Application filed January 30, 1891. Serial No. 379,718. (No model.)

To all whom it may concern:

Be it known that I, MAX KERSTEIN, a subject of the Emperor of Germany, residing in Boston, in the county of Suffolk and State of Massachusetts, have invented an Improved Device for Automatically Insulating a Broken Wire in an Electrical Circuit, of which the following is a specification.

This is a device intended for application to an electric wire, more particularly an electric-light wire, whereby on the accidental breakage of such wire the broken end will be instantly and automatically insulated, thus rendering it harmless in case it should fall upon another wire or any object or person, and it is intended as an improvement upon the invention described in my Letters Patent numbered 438,814, and granted October 21, 1890, to which reference is made.

The improvement consists, essentially, in the substitution for the cylindrical box A, lined with insulating material *b*, as described in said Letters Patent, of a pair of rods or wires made of conductive material and covered with insulating material, said rods connecting a pair of metallic bars, all arranged as below described, and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of my improved device as applied to an electric-light wire. Fig. 2 is a longitudinal section of the same. Fig. 3 is a longitudinal section of the device in the position assumed when the wire has become broken and is insulated by the operation of the device.

In Figs. 1 and 2 small portions are represented as broken out.

Similar letters of reference indicate corresponding parts.

A A represent two parallel wires or rods of conductive material, and B B' are metallic cross-bars. These wires A are rigidly secured in the cross-bar B and extend therefrom through openings B'' in the cross-bar B', being held in said cross-bar by the nuts C on the threaded ends of said wires. The other ends of the wires A meet at A'. The portions of the wires between the two cross-bars are covered with insulating material *a*.

b b' are blocks or linings of insulation secured to the inner surfaces of the cross-pieces

B B', respectively, and extending from the insulation on one wire A to that on the other. The cross-piece B' is centrally perforated to receive a cylindrical block or piston D, of conductive material, which lies normally in the position shown in Figs. 1 and 2, and is provided with a flange D', whereby it is prevented from being pulled entirely through said perforation. This block or piston is rigidly secured to the metallic rod E, whose inner end is secured to a head F and whose outer end is adapted to be secured to the electric wire S. The head F is lined on its inner surface with the insulation *d*, and the portion of the rod or wire E between the insulation *d* and the block or piston D is covered with insulation *e*, while the outer portion is covered with insulation *g*. A spiral spring H lies between the head F and the cross-piece B'. The head F and its insulation-lining *d* extend from the insulation on one wire A to that on the other and are grooved at their ends, so as to fit over and slide upon said wires. The ends A' of the wires A are secured by means of the wire S' to the insulator, say, on the supporting-pole of an electric-light wire, while the outer end of the wire E is secured to the true electric wire S and makes a part of the circuit.

When no breakage has occurred, the device is in the position shown in Fig. 2—that is, with the spring H contracted by the pulling of the wire E upon the head F, exactly as in the Letters Patent above referred to the spring E is contracted by the pulling of the rod D with its head D'. The metallic block or piston D lies within and in contact with the metallic cross-piece B'; hence the current passes from the wire S through wire E, through the block or piston D, cross-piece B', and wires A to the wire S'. Now if a breakage occurs in the wire S the spring *e* carries the head F and wire E back into the position shown in Fig. 3, and as the insulation *g* around the wire E lies within the cross-piece B' the wires A are completely insulated, thus rendering the broken portion of the wire S perfectly harmless.

This improvement, by doing away with the cylindrical box shown in the Letters Patent above referred to and employing the wires or rods A and cross-pieces B B', renders the in-

vention more simple in construction and less expensive and particularly adapted for use in connection with electric-light wires.

Having thus fully described my invention, 5 what I claim, and desire to secure by Letters Patent, is—

A device for automatically insulating a broken wire in an electrical circuit, comprising the following parts, viz: a pair of rods or 10 wires, as A, of conductive material, cross-pieces B B', connected by said rods or wires, a piston D, of conductive material, which connects with the electric wire, said piston being

normally electrically intermediate with said electric wire and said rods or wires A and 15 cross-pieces, a piston-rod E, head F, and spring H, and suitably-distributed insulating material, whereby when breakage of the wire occurs the piston is withdrawn by the spring and the piston and rod or wire E insulated 20 from the cross-pieces and wires or rods A, substantially as set forth.

MAX KERSTEIN.

Witnesses

HENRY W. WILLIAMS,
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