

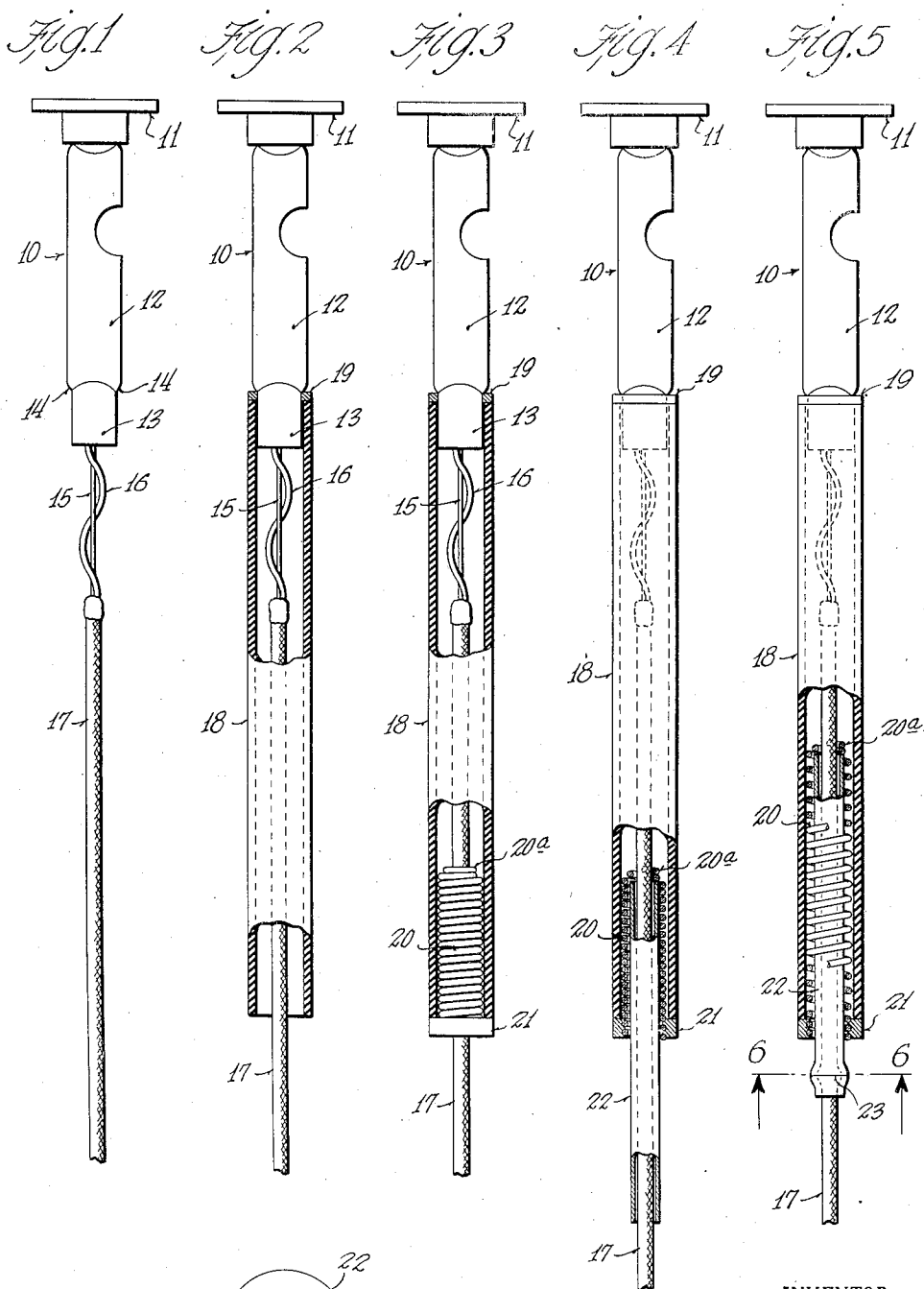
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FUSE LINK

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FUSE LINK

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2 Claims. (Cl. 200—117)

This invention relates to spring fuse-links and has for its principal object to provide a fuse-link which can be assembled more expeditiously and, therefore, manufactured more cheaply than like devices heretofore known—without detracting in any respect from the quality of the product.

The fuse-link of the present invention is an improvement, from the standpoint of manufacturing economy, upon the constructions of Figures 2 and 3 of Steinmayer U. S. Patent No. 2,270,225.

The invention resides both in the new article of manufacture hereinafter described, by way of example, and in the improved method of assembly.

In the accompanying drawing Figs. 1 to 5, inclusive, illustrate successive steps in the operation of assembling the new fuse-link—the finished product being depicted in Fig. 5. Fig. 6 is an enlarged cross-sectional view taken along the line 6—6 of Fig. 5.

The sub-assembly of Fig. 1 comprises an upper terminal member 10 having at its upper end a button-head contact 11 of conventional form. The shank of terminal member 10 is made of metal tubing which is flattened at 12 and unflattened at 13—shoulders being formed at 14 as a result of the flattening of portion 12.

Anchored to the lower end of terminal member 10 are the upper termini of a strain wire 15 and a fuse wire 16. The lower termini of which elements are attached by soldering or otherwise to the upper end of a long flexible leader 17. There is no novelty in the sub-assembly of Fig. 1, per se.

The next step in the assembling operation is illustrated in Fig. 2 and consists in attaching to the subassembly of Fig. 1 a fibre tube 18 and metal washer 19. The washer serves as a seat for shoulders 14 and could be omitted. Shank portion 13 is preferably a snug fit in tube 18.

Thereafter, as depicted in Fig. 3, there is inserted in the lower end of tube 18 an ejector assembly comprising a close-wound helical spring 20 and an annulus 21 which is internally threaded (see Fig. 4) and thus attached to the lower end of the spring. Spring 20 is a close but free fit in the bore of tube 18, and annulus 21 functions as an abutment for anchoring the lower end of the spring to the lower end of the tube. As will be evident from the drawing, flexible leader 17 extends axially through the ejector assembly comprising spring 20 and annulus 21—said assembly being slipped over the end of the leader prior to being inserted in tube 18.

The inside diameter of spring 20 is enough

larger than the outside diameter of the leader to result in an annular space for the reception of a metal tubular sleeve 22 which, as shown in Fig. 4, is next slipped over the free end of the leader and pushed upwardly into spring 20. The upper end of spring 20 is constricted diametrically at 20a to form a stop for engaging the upper end of sleeve 22.

By pushing upwardly on sleeve 22 (Fig. 4) spring 20 can be stretched and thus put under tension; and the amount of tension can easily be regulated and maintained uniformly at an optimum value through the use of a suitable tension-calibrated indicating tool in which either tube 18 or sleeve 22 can be held while the stretching of the spring is being carried out.

When the spring has been stretched to the specified tension, sleeve 22 is flattened, as indicated at 23, to effect a firm gripping engagement with the leader. This is more fully illustrated in Fig. 6.

The fuse-link herein described functions in the same manner as that of Figs. 2 and 3 of the previously mentioned Steinmayer Patent 2,270,225. When the fusible section blows, spring 20 collapses and ejects sleeve 22 together with leader 17 from the open end of the tube 18. The spring assembly itself drops out of the tube and may be carried along with the leader. The result is a practically instantaneous separation of the terminals within tube 18 between which the fusible section is normally connected, and this results in quick extinguishment of the arc.

It will be manifest that the assembling operation herein described can be performed very rapidly and does not entail the exercise of a high order of skill.

I claim:

1. The method of tensioning a strain type fuse link assembly including an insulating tube, a terminal secured to one end of said tube, a flexible leader extending out of the other end of the tube, and a strain section interconnecting said terminal and leader, said method comprising passing the free end of the leader through a helical spring and moving the spring to the interior of said tube, anchoring the corresponding ends of said tube and spring most remote from said terminal, passing the free end of the leader through a sleeve and moving the sleeve to the interior of said spring and into engagement with the end thereof remote from its anchored end, axially expanding the spring by opposed relative movements of said tube and sleeve, and crimping the end of said sleeve upon said cable adjacent the

corresponding anchored ends of said tube and spring.

2. The combination with a standard pre-assembled strain-type fuse link comprising a rigid terminal section, a strain fuse section secured at one end to the terminal section, a flexible leader secured to the other end of said fuse section, and an insulating tube secured to the rigid section and enclosing the fusible section and a portion of the flexible leader adjacent said fuse section; of a contractile spring disposed in said tube and surrounding that portion of said leader

disposed in said tube, the corresponding ends of said tube and spring being relatively anchored, and a sleeve disposed in said spring and surrounding said portion of said leader disposed in said tube, said sleeve engaging the end of said spring remote from said corresponding ends and projecting exteriorly of said tube and spring, the projecting end of said sleeve being crimped upon said flexible leader to hold said spring in expanded tensioned condition.

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