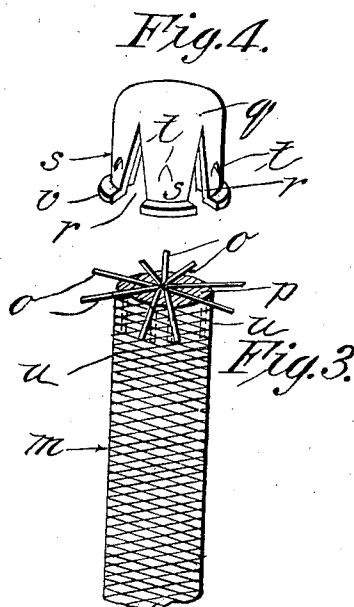
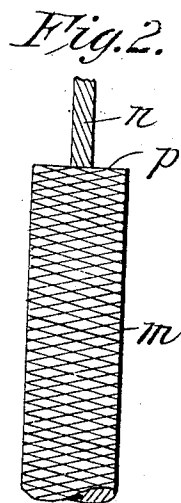
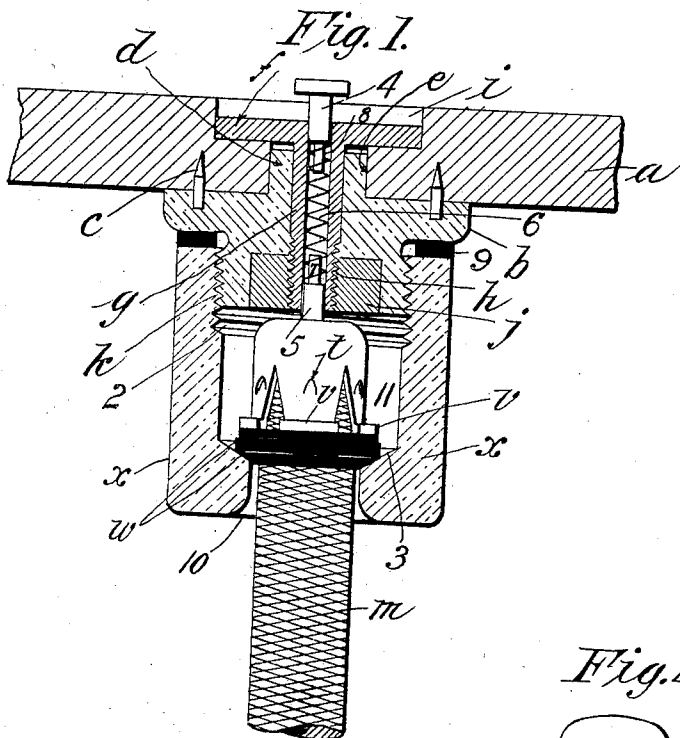


No. 883,135.

PATENTED OCT. 9, 1906.

E. B. JACOBSON.
HIGH TENSION TERMINAL FOR SPARK COILS.
APPLICATION FILED FEB. 7, 1906.



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UNITED STATES PATENT OFFICE.

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HIGH-TENSION TERMINAL FOR SPARK-COILS.

No. 833,135.

Specification of Letters Patent.

Patented Oct. 9, 1906.

Application filed February 7, 1906. Serial No. 299,877.

To all whom it may concern:

Be it known that I, EDWARD B. JACOBSON, a citizen of the United States of America, residing at Pittsfield, in the county of Berkshire and State of Massachusetts, have invented new and useful Improvements in High-Tension Terminals for Spark-Coils, of which the following is a specification.

This invention relates to high-tension terminals for spark-coils; and it has for its object to provide a device that can be readily attached to the end of the cable leading to the sparking plug of internal-combustion engines and means for readily securing the cable to the coil-box for making a good contact and at the same time without any danger of receiving a shock from the coil.

The invention is especially adapted for automobiles, but may be used for stationary engines or any high-tension coil or induction-coil.

In the drawings forming part of this application, Figure 1 is a vertical sectional view through the operative parts. Fig. 2 is a detail view of the end of the cable, showing the insulation cut away. Fig. 3 is a view of the end of the cable, showing the core-wires separated prior to applying the connecting-cap. Fig. 4 is a detail perspective view of the cap used for making contact with the core-wires of the cable.

Referring to the drawings in detail, *a* designates a portion of the casing of the box containing the coil.

b is a circular piece of insulation, preferably hard rubber, secured to the casing *a* by means of the small sharp spurs *c*, which are driven into the wooden casing of the box.

d designates a hub on the piece *b* for engaging an opening *e* of the casing *a*.

f designates a disk-shaped piece of metal having an integral depending hollow hub or boss *g* at right angles thereto and screw-threaded at its lower end, the screw-threads being on the exterior thereof and designated by the letter *h*. The circular-shaped piece *f* is sunk into the side of the casing *a* at the recessed part *i*.

Screwed onto the lower end of the hub or tubular boss *g* is a metallic nut *j* for securely locking the parts *b* and *f* to the casing *a*. This nut is shown flush with the lower end of the insulating-piece *b*. The exterior lower

end of the insulating-piece *b* is screw-threaded, as shown at *k*, the purpose of which will be explained below.

Referring to the cable end of the device, *m* designates a heavily-insulated cable having the core-wires *n*, which before being separated are shown twisted together in Fig. 2 in the ordinary manner but with the insulation cut away for a portion of their length.

o designates the position of the core-wires of the cable after being untwisted and bent down flat onto the squared end *p* of the insulation of the cable.

q designates the metallic cap or thimble for clamping the end of the cable *m* and for forming a good electrical connection between the cap and the core-wires *n*. In the cap are the V-shaped slits *r* for the purpose of imparting to the lower edge of the cap or thimble a close fit to the cable *m*, and in case the cable is a comparatively small one the tongues *s* between the slits can be bent inward against the same.

t designates small spurs that are punched in the sides of the cap. These spurs point upwardly, as shown, and are for the purpose of pressing into the sides of the cable and securely preventing the cap from being withdrawn after the same is pushed down onto the end of the cable after the core-wires have been evenly separated, as shown in Fig. 3. In the act of pushing the cap *q* onto the end of the cable the wires *n* are bent downward over the edge of the same, as shown in dotted lines at *u*.

v designates a flange on the cap or thimble piece *q*. Before the cap is placed on the cable one or more rubber washers *w* are slipped onto the cable and against which the flange *v* rests when clamped to the piece *b* by the cup-shaped connecting-piece *x* of hard rubber, which is internally screw-threaded at its upper end, as designated at 2. The interior of this piece *x* has an inclined shoulder at 3 for engaging the rubber washers *w* and tightly clamping them between the two flanges *v* and 3.

4 designates a small T-shaped piece of metal, (preferably brass,) to which a terminal of the coil-spring 6 is attached.

5 designates a small cylindrical piece of brass to which the spring 6 is attached by tightly engaging the stem 7 on the piece 5.

The spring 6 at its opposite end tightly engages the stem 8 on the piece 4. The parts 4, 5, and 6 have a loose sliding fit within the hollow hub *g*.

5 9 designates a rubber washer or gasket between the lower shoulder of the piece *b* and the upper edge of the connecting-piece *x* for making a water and air tight joint.

The cable *m* passes through an opening 10 in the lower side of the connecting-piece *x*, as shown, and opens into a much larger opening 11, which contains the end of the cable, cap-piece *q*, &c. To connect the cable *m* to the terminal cylindrical piece 5, (it being understood that the piece 4 is normally pushed downward by the coil resting thereon and the part 5 normally extending beyond the lower edge of the tube *g*.) the connecting cup-shaped piece *x* is brought upward against the 20 rubber washers *w* and the cap *q* is placed in engagement with the protruding piece 5. Continued upward pressure on the connecting-piece *x* against the spring 6 will effect the engagement of the threads 2 and *k*. Then 25 by simply rotating the connecting-piece *x* the rubber gasket 9 will be tightly clamped. It will thus be seen that the cap *q* and terminal piece 5 are therefore drawn together under pressure and a good electrical contact 30 made. To disconnect the cable, all that is necessary is to simply unscrew the connecting-piece *x*, as readily understood.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a high-tension terminal device, a cable, the core-wires thereof being separated and bent back upon the cable, a cap or thimble attached to the end of the cable and engaging the separated core-wires, and means 40 for locking the cable and cap to the coil-terminal.

2. A high-tension terminal device including a hollow hub or boss, two cylindrical 45 pieces slidably mounted therein, a spring connecting the cylindrical pieces, a cable, a cap on the end thereof, and means for drawing the cap and one of the cylindrical pieces together.

3. In a high-tension terminal device, a cable, a connecting-piece engaging the cable, a hub or boss secured to a coil-box, a conducting-cap on the end of the cable, conducting 50 means from the box to the cap, and interengaging means between the connecting-piece and hub or boss for drawing the cable firmly

against the conducting means from the box, as described.

4. A terminal-connecting device, a cable having the core thereof separated, a cap secured to the cable and in contact with the separated core, a hollow hub or boss secured to the coil-box, a terminal projecting beyond the hub or boss, and means for securing the cable to the box and bringing the cap and 60 terminal together.

5. In a terminal-connecting device, a cable, a cap engaging the separated ends of the core thereof, the cap having spurs or projections for engaging the outer surface of the 70 cable, a flange on the cap, a threaded boss or hub secured to a fixed support, a terminal projecting therefrom, a connecting-piece internally threaded at one end and having an inclined shoulder at the other for receiving 75 the cable, whereby when the connected piece is secured onto the boss or hub, the inclined shoulder is brought against the flange of the cap and the said cap is brought against the projecting terminal. 80

6. In an electrical terminal-connecting device for cables, the cable having its ends separated, a cap engaging said separated ends, a tubular element, a terminal projecting therefrom, an element secured to a fixed support, 85 a connecting-piece embracing the cable, and interengaging devices between said last-named element and the connecting-piece for drawing the parts together.

7. In a cable-connecting device for spark-coils, a conducting element carried by the box and having a tubular portion integral therewith, its outer end being threaded, slidable elements located within the tubular portion, a spring for connecting the slidable 95 elements, a threaded boss secured to the box, a nut within the boss and carried by the outer end of the tubular portion and flush with the end of the boss, a cable having separated core-wires, a cap engaging the separated 100 core-wires and inclosed by a connecting element, said connecting element being internally screw-threaded at one end and having a shoulder for exerting pressure on the cap whereby when the connecting element is 105 threaded onto the boss, the cap is drawn against one of the slidable elements within the tubular portion as described.

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