T. HUBERT.

TERMINAL BLOCK FOR HIGH TENSION APPARATUS.

APPLICATION FILED OCT. 17, 1907.

1,001,035. **Patented Aug. 22, 1911.**

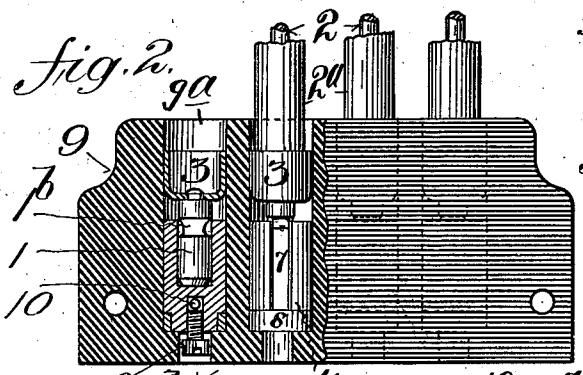

fig. 2.

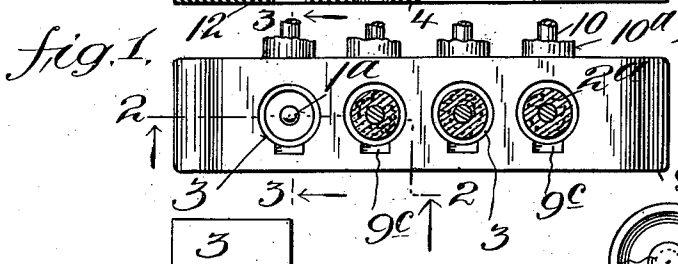

fig. 1.

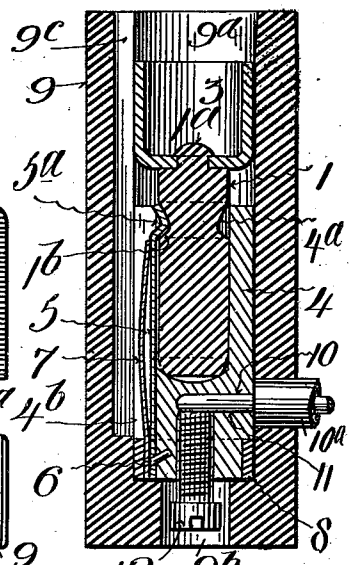

fig. 3.

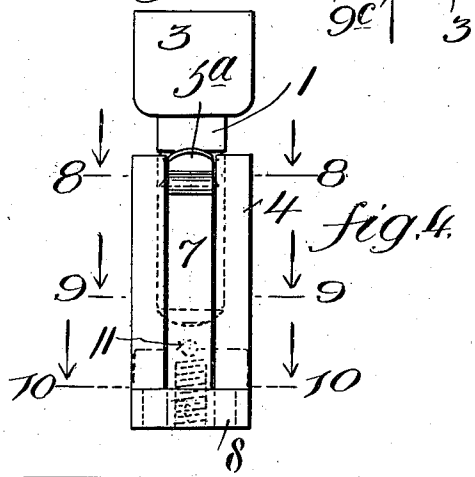

fig. 4.

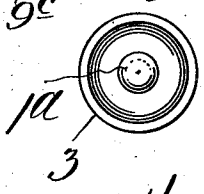

fig. 7.

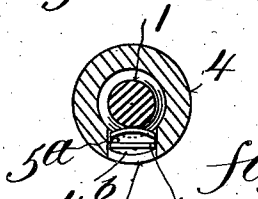

fig. 8.

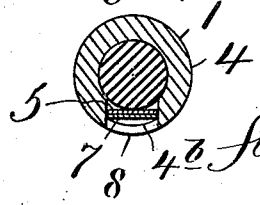

fig. 9.

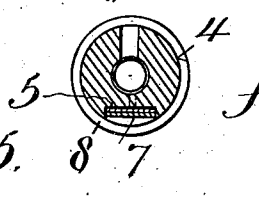

fig. 10.

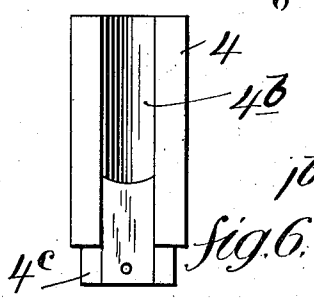

fig. 6.

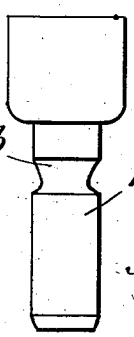

fig. 5.

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By his Attorney
A. R. Bourne

UNITED STATES PATENT OFFICE.

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TERMINAL BLOCK FOR HIGH-TENSION APPARATUS.

1,001,035. Specification of Letters Patent. Patented Aug. 22, 1911.

Application filed October 17, 1907. Serial No. 397,891.

To all whom it may concern:

Be it known that I, THEODORE HUBERT, a citizen of the United States, and resident of New York city, borough of Manhattan, in the county of New York and State of New York, have invented certain new and useful Improvements in Terminal Blocks for High-Tension Apparatus, of which the following is a specification.

The object of my invention is to permit ready connection and disconnection of electric conductors, such as a conductor with a contact or post, to the end that the parts may be held firmly together to make good electrical contact without danger of separation, and yet may be readily disconnected when required.

In carrying out my invention I provide a conductor or wire with a terminal or contact having a groove or recess, a contact or post having a socket to receive said terminal and provided with a spring to enter the recess of said terminal, which contact or post is connected with a line wire or conductor, whereby said terminal may be pushed into the socket in the contact or post and will be held firmly by the spring to make good electrical contact, and whereby said terminal may be readily pulled out of the contact from the spring. In the illustration of my invention shown in the accompanying drawings said contact or post is located within the bore of a suitable piece of insulation and a conductor or wire passes through said insulation and is secured to said contact or post, whereby the connections are inclosed by the insulation and leakage of current and jumping of sparks is prevented.

My invention also comprises the novel details of improvement hereinafter more fully set forth and then pointed out in the claims.

Reference is to be had to the accompanying drawings forming part hereof, wherein, Figure 1 is a plan view illustrating my improvements; Fig. 2 is a side view, partly in section on the line 2, 2, in Fig. 1; Fig. 3 is a cross section, enlarged, on the line 3, 3, in Fig. 1; Fig. 4 is a detail view of the connections removed from the insulation; Fig. 5 is a detail of the terminal of the conductor, Fig. 6 is a detail of the contact or post to receive said terminal; Fig. 7 is a plan view of the terminal and its cap; Fig. 8 is a section on the line 8, 8, in Fig. 4; Fig. 9 is a section on the line 9, 9, in Fig. 4, and Fig. 10 is a section on the line 10, 10, in Fig. 4.

Similar numerals of reference indicate corresponding parts in the several views.

At 1 is a terminal or contact to be connected with a conductor 2, and said terminal is shown provided with a cap 3 secured thereto by a lug 1^a of the terminal passing through a hole in the cap and riveted over, making a firm electrical connection therewith, which cap fits over the end of the insulation 2^a of the conductor, and the conductor 2 is secured to the lug 1^a, or cap 3, or both, as by solder, whereby terminal 1 is firmly secured to the conductor. Said terminal is adapted to slide into and from a socket 4^a in a contact or post 4 which is provided with a spring 5 having a projection 5^a at its outer end adapted to enter a groove or recess 1^b in terminal 1 to retain the latter in contact 4 and make firm electrical connection therewith. Said spring is shown held to contact 4 at its lower end by a pin 6, and said spring plays in a vertical slot or opening 4^b in a wall of contact 4.

At 7 is an outer spring bearing against spring 5, and at 8 is a ring fitted around the reduced end 4^c of contact 4 and inclosing the adjacent ends of springs 7 and 5, whereby said springs are securely bound to contact 4.

Contact 4 and its springs are shown located within the bore 9^a of a block of insulation 9, such as rubber or fiber and at 10 the bared end of a conductor enters a hole 11 in contact 4, the insulation 10^a being received within a suitable hole in insulating block 9 (see Fig. 3), a screw 12 threaded into a hole in contact 4 serving to bind conductor 10 securely to said contact. Said screw is shown located in an opening 9^b in insulating block 9, whereby conductor 10 may be passed through insulation 9 and fitted to contact 4 after the latter has been placed in bore 9^a, and said conductor thereby assists in securing contact 4 within said block. Contact 4 is preferably fitted snugly within said bore 9^a of block 9 and ring 8 is thereby held firmly in position on contact 4 and the springs are secured from displacement. Block 9 is shown provided with a groove 9^c communicating with bore 9^a and with slot 4^b to permit the springs to have free play as required.

Block 9 may be provided with one or more

bores 9^a and contacts 4 with conductors 10 connected respectively therewith to receive the terminals 1 of a corresponding number of conductors 2.

With the arrangements described the terminals 1 with their caps 3 may be pushed into the bores 9^a of block 9 to engage the terminals with contacts 4 and springs 5, whereby the terminals 1 will be securely held in electrical connection with said contacts, and all the joints will be inclosed within the insulation 9 to prevent leakage of current and jumping of sparks. To disconnect terminal 1 from its contact 4 it is merely necessary to pull conductor 2 whereby terminal 1 will slide from contact 4 and spring 5, the projection 5^a of the spring and the groove 1^b of terminal 1 being so shaped as to permit ready insertion and withdrawal of terminal 1.

My improvements are particularly adapted for use with high tension currents, such as those used in ignition systems for gas engines utilizing induced high tension currents, as from high tension magnetos, with jump-spark plugs, although my improvements are equally applicable in other electrical circuits.

Having now described my invention what I claim is:

1. The combination of an insulating block having a bore provided with a groove offset from and communicating with said bore and extending parallel therewith and opening through the end of the block at the open end of the bore, with a contact fitted in said bore and having a socket to receive a terminal and having a slot extending lengthwise and communicating with said socket, said slot being alined with and opening into said groove, a spring connected with the contact and located within said slot and projecting into the socket to engage a terminal in said socket, and a conductor passing through an opening in the insulator and entering a hole in said contact in a direction transverse to the axis thereof, said conductor having insulation received in said opening and closing the same, and a screw passing through an axially disposed hole in the insulating block, entering said contact and bearing against the bared end of said conductor.

2. The combination of an insulating block having a plurality of bores located side by side, each opening through the same wall of block and separate from each other, with a contact fitted in each bore and each contact having a socket to receive a terminal and each having a slot communicating with its socket, a separate spring connected with each contact and located within the corresponding slot to engage a terminal in the corresponding socket, conductors passing through separate openings in the insulating block and entering a transversely disposed hole in the corresponding contact, and a screw threaded in each contact in the direction of the axis thereof and engaging the corresponding conductor and fitting in an opening in the insulating block.

3. In an electrical connector, a metallic terminal connecting member having a pair of intersecting holes, interengaging parts entering said intersecting holes comprising an end of a conductor wire and a binding screw adapted to secure said wire in place, and a housing block of insulating material provided with a recess to receive the terminal connecting member and also having holes disposed at an angle to each other for the conductor wire end and for its binding screw, whereby one of said interengaging parts serves to lock the terminal connecting member within the housing block.

Signed at New York city, in the county of New York and State of New York this 8th day of October, A. D. 1907.

THEODORE HUBERT.

Witnesses:
T. F. Bourne,
Marie F. Wainright.