March 30, 1948. J. W. GARRISON 2,438,746

HOT LINE JUMPER STICK

Filed Feb. 2, 1946 2 Sheets-Sheet 1

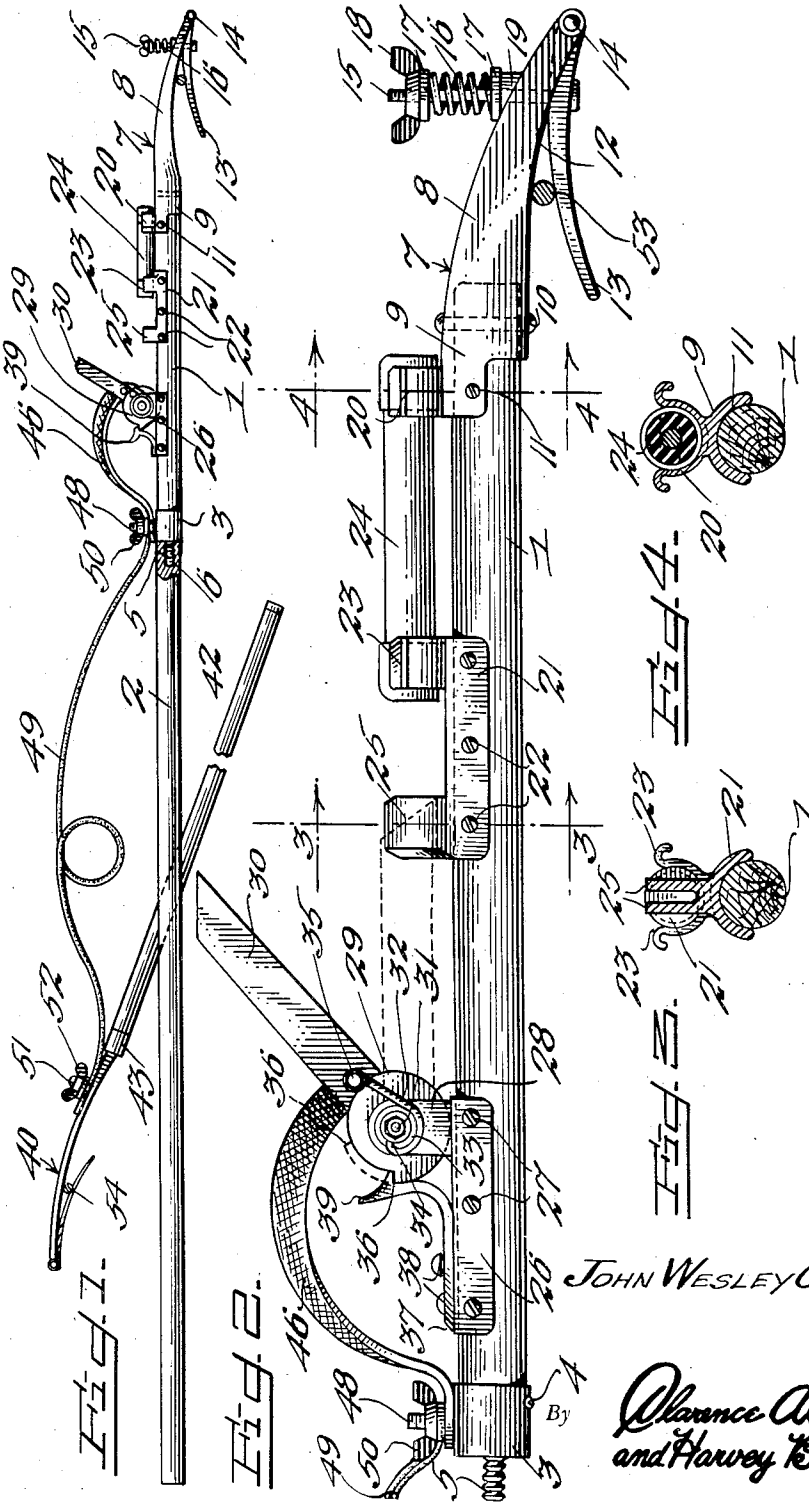


Fig. 1.



Fig. 2.



Fig. 4.



Fig. 5.

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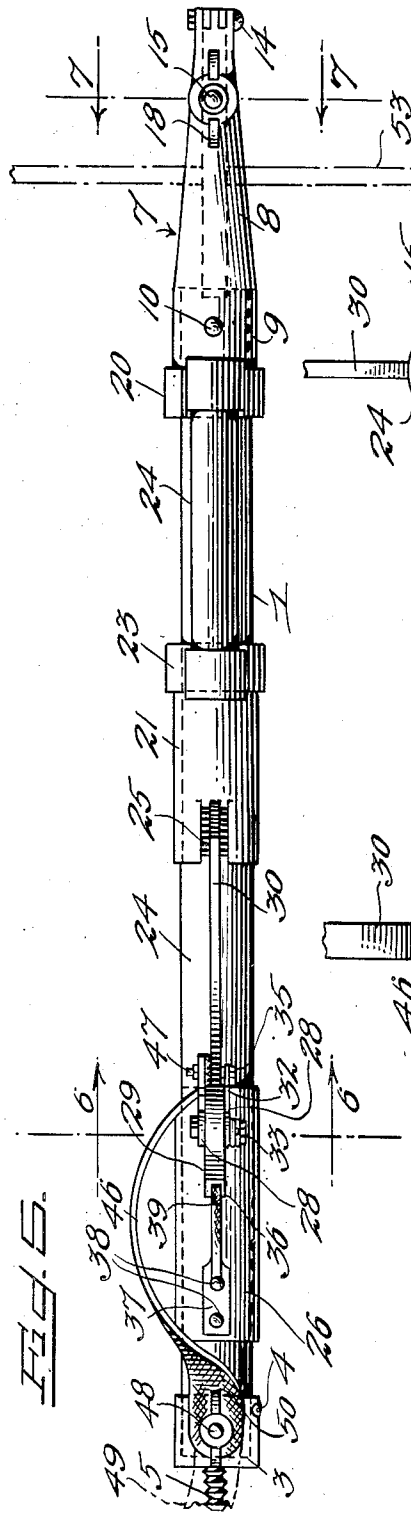


Fig. 5.

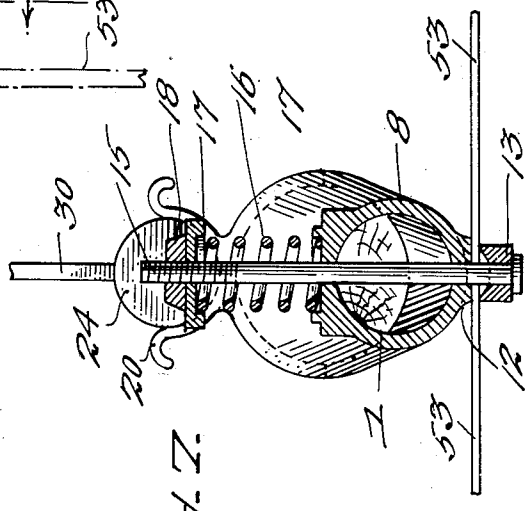


Fig. 7.

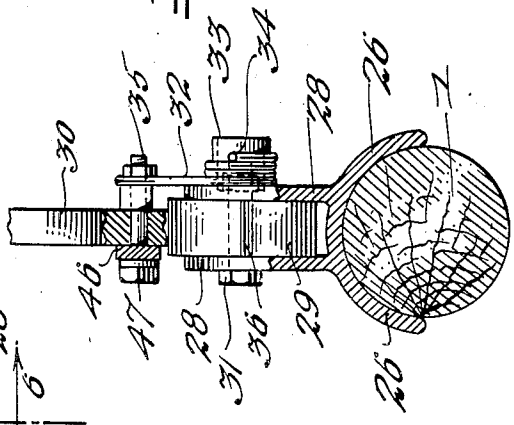


Fig. 9.

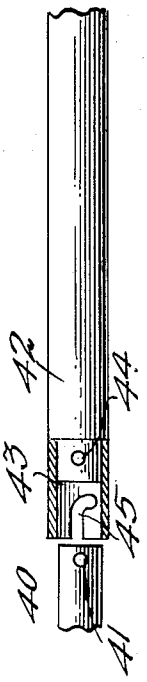


Fig. 8.

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# UNITED STATES PATENT OFFICE

2,438,746

## HOT LINE JUMPER STICK

John Wesley Garrison, Oceanside, Calif.

Application February 2, 1946, Serial No. 645,084

2 Claims. (Cl. 200—51)

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My invention relates to improvements in hot line jumper sticks for picking up cold lines and connecting the same to high tension hot lines, the primary object in view being to provide a simply constructed, easily handled device for establishing a temporary jumper connection between a cold line and a hot line with perfect safety and for the purpose of maintaining service over the lines preparatory to installing a permanent jumper connection between the same.

To the accomplishment of the above, and subordinate objects presently appearing, a preferred embodiment of my invention has been illustrated in the accompanying drawings, set forth in detail in the succeeding description, and defined in the claims appended hereto.

In said drawings:

Figure 1 is a view in side elevation illustrating my improved hot line jumper stick in the preferred embodiment thereof and with the switch open,

Figure 2 is a similar view of the head section and parts carried thereby, drawn to an enlarged scale,

Figure 3 is a view in transverse section taken on a line 3—3 of Figure 2,

Figure 4 is a similar view taken on a line 4—4 of Figure 2,

Figure 5 is a view in plan of the head section with the parts carried thereby,

Figure 6 is a view in transverse section taken on a line 6—6 of Figure 5 and drawn to a further enlarged scale,

Figure 7 is a view in transverse section, taken on a line 7—7 of Figure 5,

Figure 8 is a fragmentary view partly in plan and partly in longitudinal section and illustrating the manner in which the handle for the cold line clamp is adapted to be connected thereto.

Referring to the drawings by numerals, my improved hot line stick, as illustrated, comprises a head section 1 of any suitable length and thickness and which is preferably cylindrical and formed of oil impregnated hard wood for insulating purposes, and a handle section 2 of the same material. A rear end ferrule 3, of suitable insulation material, is fitted flush on the head section 1 and riveted thereto, as at 4. A threaded axial stud 5 on the ferrule 3 for turning into a socket 6 in the front end of the handle section 2 provides for detachably connecting said sections together.

A hot line clamp 7 is provided on the front end of the head section 1. The clamp 7 comprises a hollow shank 8 extending forwardly from said section 1 and curving to one side of the section with a stepped socket forming rear end 9 fitting over the front end of said section 1 and riveted thereto as at 10, 11. The shank 8 tapers forwardly and is formed with a flattened, longitudinally curved, clamping face 12 on the same side of the head section 1 as that toward which said shank is curved. Opposed to the clamping face 12 is a flattened, rod-like, rearwardly tapering, clamping finger 13 curved reversely relative to the curvature of the face 12 and diverging with respect thereto. The clamping finger 13 is pivoted at its front end to the front end of the shank 8, as at 14, for movement toward the face 12 into clamping relation thereto. The clamping finger 13 is spring loaded to assume clamping relation. For this purpose, a bolt 15 is suitably extended transversely through the clamping finger 13 and the shank 8 adjacent to the pivot 14, to extend laterally from the shank 8, and a coil spring 16 is provided on said bolt 15 between a pair of washers 17 on the bolt, one of which is backed by a wing-nut 18, and the other of which seats on a boss 19 on said shank. As will be clear, the shank 8 and clamping finger 13 form a rearwardly opening hook on the head section 1 for yieldingly clamping lines between the same, and which is adapted to yieldingly open to accommodate and clamp lines of different sizes with a wedging action. The described clamp 7 has suitably fixed to the rear end 9 thereof, on the side of the head section 1 opposite that toward which the shank 8 curves, a lateral spring clip 20 for a purpose to be explained. The shank 8, clamping finger 13 and clip 20 are formed of brass to provide a good electrical conductor of high voltage current.

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A bridge member 21 of semi-circular cross-section and conductive metal, preferably brass, is secured by screws 22 to the head section 1 intermediate the ends of said section and on the same side thereof as the clip 20. The bridge member 21 is provided with a lateral front end clip 23 for cooperation with the clip 20 to grip the ends of a suitable fuse member 24 of the usual cartridge type, as shown. A pair of laterally spaced contact ears 25 are provided on the other end of the bridge member 21 and which form the terminal on one side of a knife-blade switch, the other parts of which will now be described.

Adjacent to the rear end of the head section 1, and on the same side thereof as the bridge member 21, is an elongated knife-blade mounting 26, preferably of arcuate cross-section and formed of brass, and which is secured to said section by screws 27 and provided with a pair of front end,

laterally spaced, bearing ears 28. A disc 29, of copper, with a radial knife-blade 30 formed thereon is pivoted as at 37 between said ears 28 for oscillation to swing said blade forwardly and rearwardly into and out of bridging engagement with the contact ears 25. A coil spring 32 circumposed on a collar 33 on one ear 28 has one end connected, as at 34, to said collar and its other end suitably connected to a stud of conductive material and which extends transversely through the knife-blade 30 and is designated 35. As will be apparent, the spring 32 urges the disc 29 and the knife-blade 30 in a direction to swing said blade into bridging engagement with the contact ears 25.

The disc 29 and knife-blade 30 are adapted to be cocked with said blade in disengaged position relative to the ears 25 to optionally maintain the knife switch open. For this purpose, the disc 29 is formed with a peripheral rear lug 36 and the mounting 26 is provided thereon with a bar-like catch 37 of resilient steel fixed, by rivets 38, to said mounting and having a curved trip end 39 adapted to snap over the lug 36 and to form a finger grip by means of which it may be retracted from over said lug to release the disc 29 and knife-blade 30, at will, for action by the spring 32 to swing said knife-blade 30 into engagement with the contact ears 25 and thereby close the described switch.

The described knife-blade 30 is designed to be electrically connected to a clamp 40 for hooking over a cold line, with a wedging action, and which is similar to the clamp 7 with the exception that it is of rigid construction and provided with a rear end pair of oppositely extending studs, as at 41, for attachment of a handle section 42 thereto similar to the handle section 2. The handle section 42 is provided with a suitable end ferrule 43 secured thereon, as at 44, and fitting over the rear end of the clamp 40 to be turned thereon to engage bayonet slots, as at 45, in the ferrule with the studs 41 so that said handle section 42 may be interlocked with the clamp 40.

The connection between the clamp 40 and the described knife-blade switch comprises a braided, flexible, copper strip 46 having one end fixed on the stud 35 by a nut 47 and its other end imposed on the ferrule 3 and fitted to a binding post 48 projecting from said ferrule. A flexible jumper tape 49 has one end fitted to the binding post 48 and clamped against the strap 46 by a wing nut 50 on the binding post. The other end of the jumper tape 49 is suitably connected to the clamp 40 by means of a binding post 51 on said clamp and a wing nut 52 on said binding post.

The manner in which this described invention is designed to be used and operated will be readily understood. By means of the handle section 2, the hot line clamp 8 is hooked over and engaged with a hot line 53, as shown in Figure 2, and the cold line clamp 40 is similarly hooked over a cold line 54, as shown in Figure 1, by means of the handle 42, the knife-switch, of course, being held open by cocking of the knife blade 30 and disc 29 in the manner already described. With the lines 53, 54 thus engaged, trip end 39 of the catch 37 may be released by a suitable implement so that the knife blade 30 will be swung by the spring 32 to engage the ears 25. With the knife blade thus closed, the current will pass through the clamp 7, fuse 24, bridge member 21, knife blade 30 and strap 46 to the jumper tape 49 to be conducted by said tape to the cold line clamp 40 and cold line 54. As will be seen, by virtue of my invention, an open jumper line connection may be provided between the hot line 53 and cold line 54 with good electrical connections at each end thereof and the jumper line then closed all with safety to the operator and no extra load is thrown on the hot line while the connection to the hot and cold lines is being made, the advantage of which will be manifest.



The foregoing will, it is believed, suffice to impart a clear understanding of my invention without further explanation.

Manifestly, the invention, as described, is susceptible of modification, without departing from the inventive concept, and right is herein reserved to such modifications as fall within the scope of the appended claims.

What I claim is:

1. A line stick for connecting a hot line to a cold line comprising an elongated head section of insulation material, a hot line clamp on one end of said head section, a handle extending from the other end of said head section for manipulating the same to engage said clamp with a hot line, a cold line clamp having a handle for manipulating the same to engage a cold line, a line of connection between said clamps including a flexible jumper tape, a switch in said line of connection mounted on said head section and including a pivoted blade spring actuated into switch closing position and adapted to be cocked to open the switch, and manipulative means for maintaining said member cocked and for releasing the same at will, said jumper tape including a short separate section attached at one end to said head section with its other end attached to said blade to one side of the pivot of said blade.

2. A line stick for connecting a hot line to a cold line comprising an elongated head section of insulation material, a hot line clamp on one end of said head section, a handle extending from the other end of said head section for manipulating the same to engage said clamp with a hot line, a cold line clamp having a handle for manipulating the same to engage a cold line, a line of connection between said clamps including a flexible jumper tape, a switch in said line of connection mounted on said head section including a pivoted member, spring actuated into switch closing position and adapted to be cocked to open the switch, and manipulative means for maintaining said member cocked and for releasing the same at will, said jumper tape being electrically connected to said member to one side of the pivot thereof, and a fuse on said head in said line of connection between the other side of said switch and the hot line clamp.

JOHN WESLEY GARRISON.


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