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(54) **LOCKING TRAILER TONGUE EXTENSION ASSEMBLY**

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(58) **Field of Search** 280/491.2, 491.1, 280/491.5, 482, 420, 422

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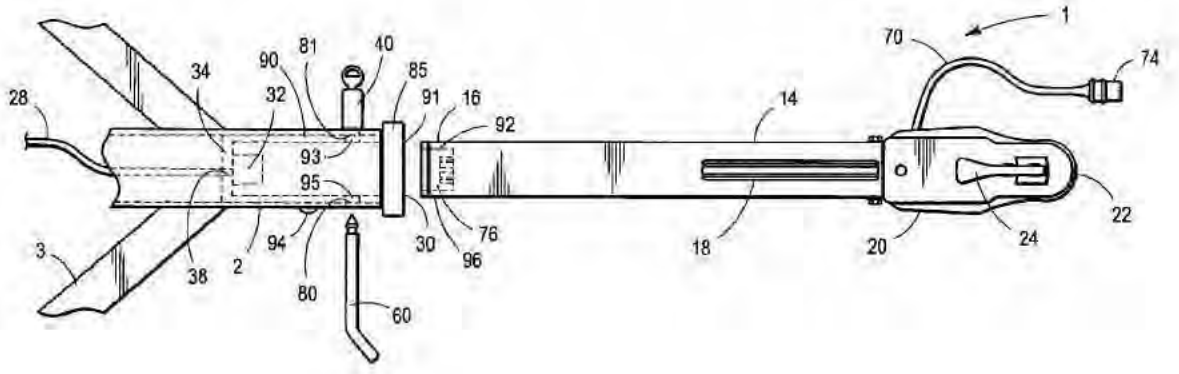
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(57) **ABSTRACT**

A trailer tongue extension assembly that includes a tubular trailer tongue, a removable extension, a first electrical connector disposed within the trailer tongue and a second electrical connector disposed within the removable extension. The first and second electrical connectors engage and disengage as the removable extension is installed or removed from the trailer tongue. A tongue pin is inserted either through registered holes in the tongue and the installed extension, or through aligned holes in the trailer tongue. A lock assembly secures the pin in the holes to, respectively, lock the extension on the trailer tongue or prevent the extension from being installed in the trailer tongue.

33 Claims, 4 Drawing Sheets



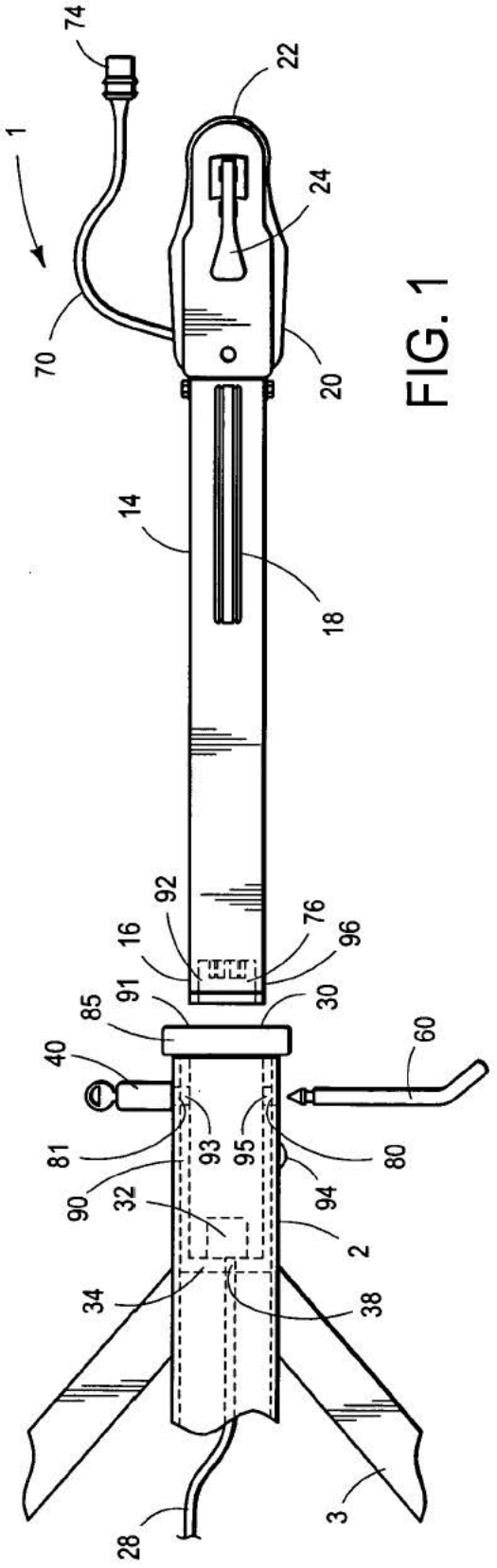

74
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70
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76
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FIG. 1

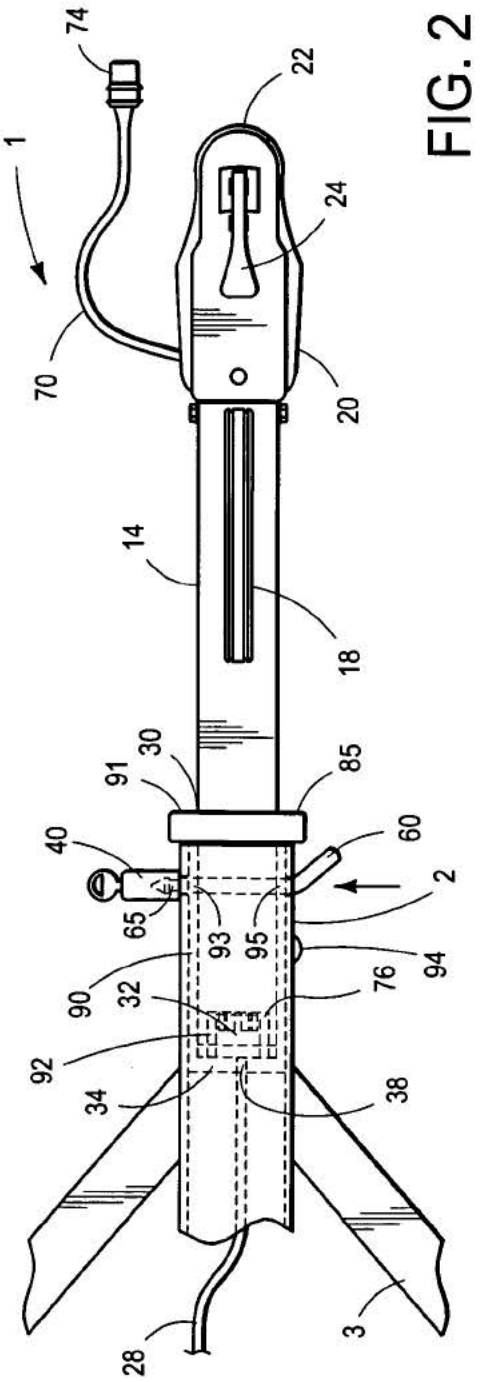

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FIG. 2

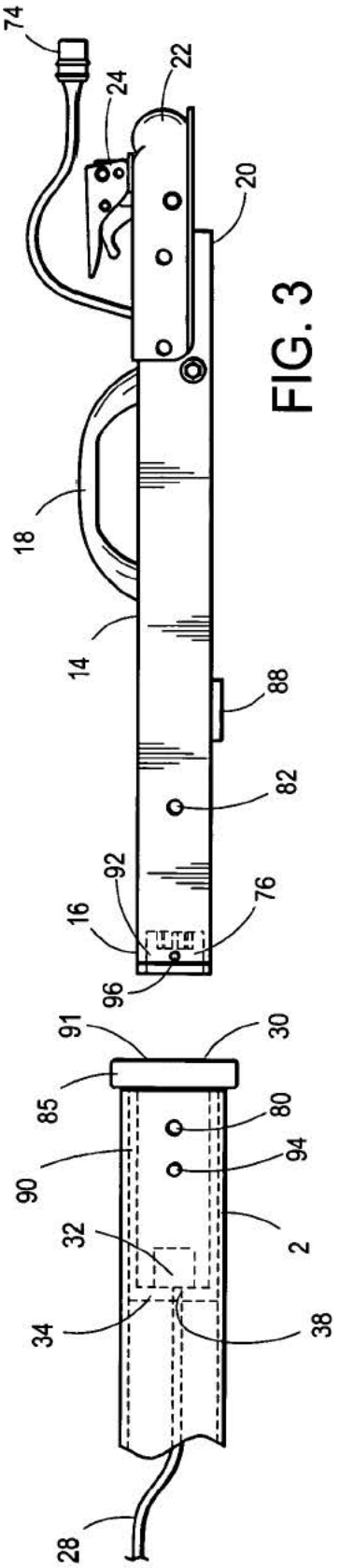

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FIG. 3

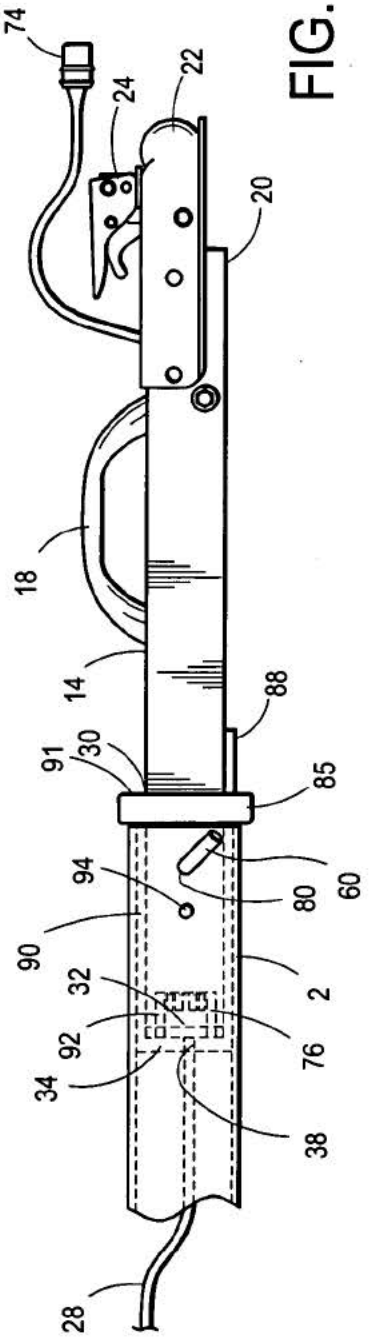

74
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FIG. 4

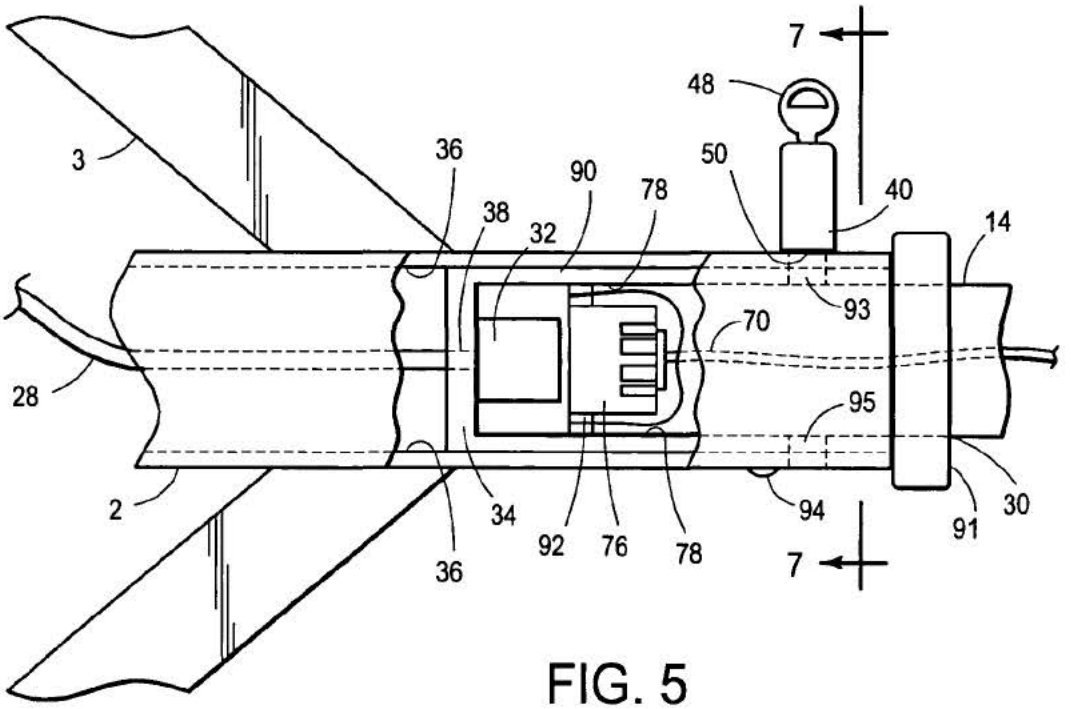

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FIG. 5

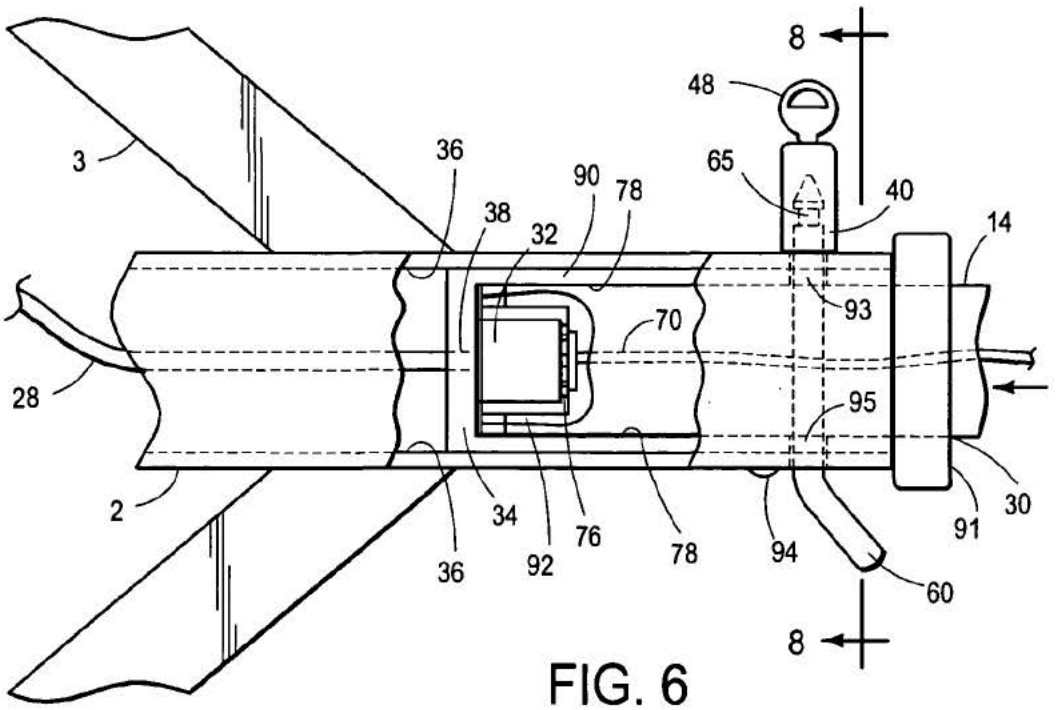

8
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FIG. 6

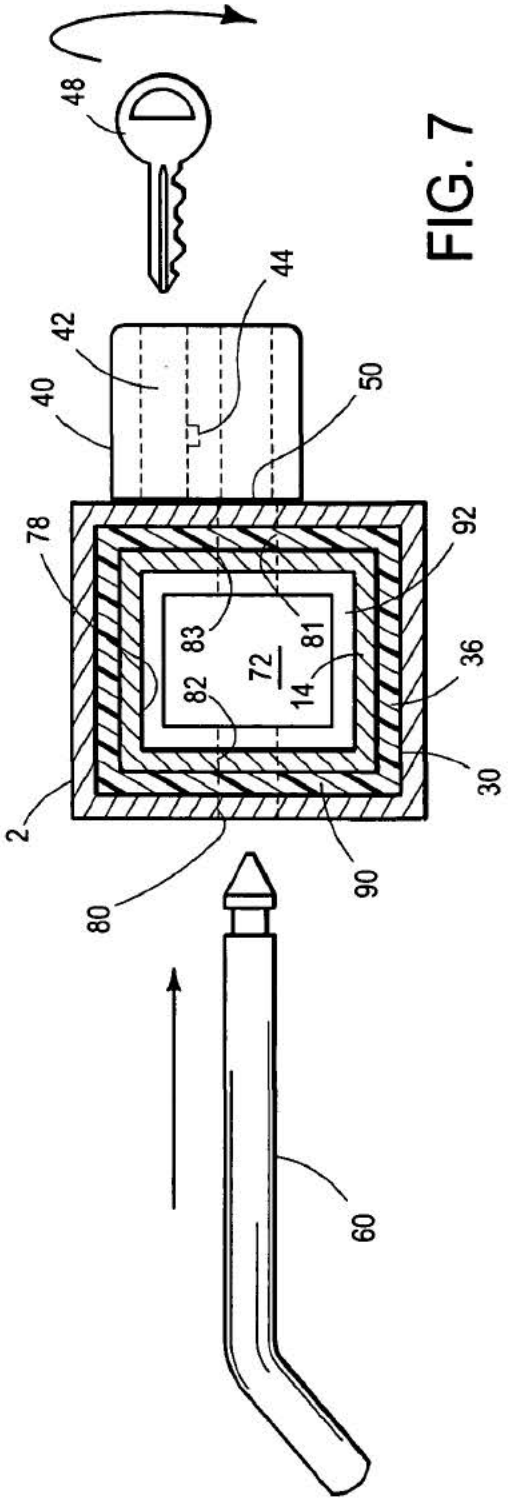

48
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FIG. 7

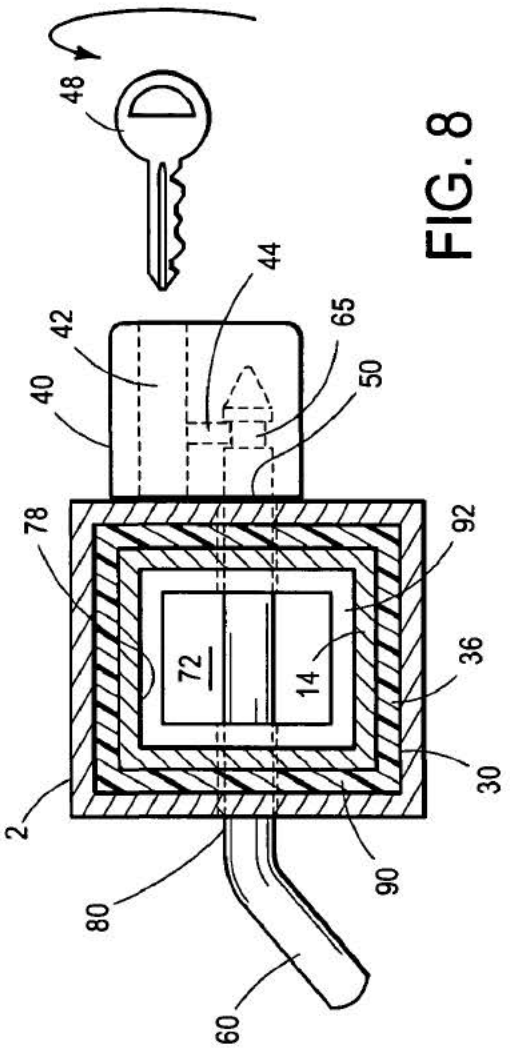

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FIG. 8

LOCKING TRAILER TONGUE EXTENSION ASSEMBLY

FIELD OF THE INVENTION

This invention relates generally to trailer tongues and, in particular, to trailer tongue extension assemblies.

BACKGROUND OF THE INVENTION

Trailers are used to tow boats, off road vehicles, motorcycles, campers, snowmobiles, and other recreational and work equipment. Generally, the trailer is connected by a tongue to a towing vehicle such as a pickup, truck, sports utility vehicle, or car. The trailer tongue is connected to the towing vehicle by a hitch on the end of the tongue that connects with a matching hitch on the towing vehicle. In this way the trailer and its contents, for example a boat or other equipment, can be towed to a lake, worksite, or campsite for use.

Trailers also have electrical wiring connected to their rear lights and safety equipment. This electrical wiring must be connected, usually by a plug, to the electrical system of the towing vehicle. Such connection permits the towing vehicle to energize the lights and safety equipment of the trailer when it and/or its contents are being towed on roads and highways. In other words, the break lights, backup lights, turn indicators, running lights, and such other safety devices of the trailer are made to operate in accord with the actions of the towing vehicle's own signals and devices.

When the trailer and it contents are not in use they are frequently stored in a garage or other enclosure to protect them from the both elements and theft. Trailer tongues must be of sufficient length to maintain a proper distance between the towing vehicle and the trailer. More specifically, if the trailer tongue is too short, the towing vehicle will not be permitted to affectively turn as the rear of the vehicle binds against the front of the trailer. To permit a desirable turning characteristics, the trailer tongue is typically extended from the body of the trailer.

One problem with the trailer tongues is that they are frequently too long to fit in the garages in which the trailer and its contents are being stored. The trailer may, for example fit in the garage, but the length of the tongue is such that it sticks out from the garage and prevents the garage door from being shut to secure the trailer and its contents.

In view of this, it is useful for trailer tongues to have removable extensions that can be connected to the trailer tongue when the trailer and its contents are being towed and disconnected when the trailer and its contents are in storage, thus shortening the overall length of the trailer and tongue. Another advantage of trailer tongue extensions is that they can be removed when the trailer is at a worksite, campsite, lake, or storage garage to prevent thieves from connecting the trailer to their own vehicles and towing them away. The trailer tongue extension is secured to the trailer tongue by a pin that extends through both the tongue extension and the trailer tongue.

Where a trailer tongue extension system is employed, current systems mandate that the electrical wiring must either bypass, and be manually connected outside of, the extension or have an additional manual connection outside of the tongue at or near the location where the tongue extension fits into the trailer tongue. Such connections expose additional portions of the wiring to the elements and subject them to damage at lake, campsites, or work sites. Further, with an exposed harness it is possible that ground

debris such as plants or shrubs may snag the passing harness and un-couple the connectors. In addition, the introduction of multiple sets of connectors introduce more opportunity for connectivity failure, due, for example, to corrosion or improper fitting and bending. And, of course, an operator can forget to connect the wiring once the tongue extension is engaged.

In further addition, should the connection inadvertently separate it is likely that at least one connector and wire harness will drag on the ground as the trailer is towed. Such dragging may quickly result in a connector that is beyond use, a potential dangerous condition for the transport of the trailer as well as costly in time and resources to remedy.

It is also desirable and useful to be able to lock trailer extensions onto the trailer tongue when they are connected and lock them out of a trailer tongue when they are disconnected and not in use. This may be accomplished by a key-operated, spring-biased lock assembly that causes a lock pin to be inserted in a groove or slot in the tongue pin, which is inserted through the trailer tongue and trailer extension. Such locks prevent the tongue from being removed by thieves and prevent thieves or other unauthorized persons from connecting the tongue extension to the trailer tongue when the tongue extension is not connected to, or removed from, the trailer tongue.

However, even with such removal of the trailer tongue extension, the electrical wire harness remains at issue. There may be short pig-tail harness that should be stored as well. In addition, the remaining plug on the trailer, may become fouled with debris during storage. Further, as the plug is fully exposed it provides no additional theft deterrence.

Hence, there is a need for an improved trailer tongue extension assembly which overcomes one or more the drawbacks identified above. The present invention accomplishes this objective.

SUMMARY OF INVENTION

The invention provides an improved trailer tongue extension assembly.

In particular, and by way of example only, according to an embodiment of the present invention, this invention provides a trailer tongue extension assembly including: a tubular trailer tongue having a removable extension; a first electrical connector disposed within the trailer tongue; and a second electrical connector disposed within the removable extension; wherein the first and second electrical connectors engage and disengage as the removable extension is installed or removed from the trailer tongue.

Moreover, according to an embodiment thereof, the invention may provide a trailer tongue extension assembly including: a tubular trailer tongue of a first size, having at least one open end and an internal channel (i.e., a hole in the tubular trailer tongue) at least partially along a longitudinal axis from the open end; a first electrical connector disposed within the internal channel or hole in the tongue; a tubular tongue extension of a second size, having a mating end structured and arranged to slip fit into the opening of the trailer tongue, and a second electrical connector disposed at least partially within the mating end and structured and arranged to mate with the first electrical connector; and a binder or attacher configured to bind the tongue extension to the trailer tongue when the tongue extension is slip-fit into the trailer tongue.

In yet another embodiment thereof, the invention may provide a trailer tongue extension assembly including a trailer tongue forming a longitudinal inside opening. The

trailer tongue has a first electrical plug attached to an inside wall of the longitudinal inside opening. A tongue extension sized to slide into the longitudinal inside opening. The tongue extension has a second electrical plug attached to the end so that when tongue extension slides into the longitudinal opening of the trailer tongue the second electrical plug mates with the first electrical plug.

These and other features and advantages of the preferred apparatus and method will become apparent from the following detailed description taken in conjunction with the accompanying drawings which illustrate, by way of example the principles of the invention

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a top view of an inventive trailer tongue extension assembly showing a tongue extension separated and disconnected from a trailer tongue and a pin outside of, and disconnected from, the trailer tongue, the tongue extension, and a locking assembly; a key is shown inserted in the locking assembly; and dashed lines show plugs installed inside the trailer tongue and tongue extension;

FIG. **2** is a top view of the inventive trailer tongue extension assembly showing the tongue extension inserted into and connected to the trailer tongue and, via dashed lines, the pin inserted into and through the trailer tongue and tongue extension and into the locking assembly; the key is removed and separate from the lock assembly; and dashed lines also show the trailer tongue plug and the tongue extension plugs mated and connected;

FIG. **3** is a side view of the trailer tongue and tongue extension of FIGS. **1** and **2** showing the tongue extension separated from and disconnected from the trailer tongue;

FIG. **4** is a side view of the trailer tongue and tongue extension of FIGS. **1** and **2** showing the tongue extension inserted into and connected to the trailer tongue and the pin inserted into and through the trailer tongue and tongue extension and into the locking assembly; dashed lines also show the trailer tongue plug and the tongue extension plugs mated and connected;

FIG. **5** is a top view of a portion of the trailer tongue extension assembly showing the tongue extension inserted part of the way into the trailer tongue; a broken away portion shows the plugs of the trailer tongue and tongue extension in close proximity, but unconnected;

FIG. **6** is a top view of a portion of the trailer tongue extension assembly showing the tongue extension fully inserted into the trailer tongue; a broken away portion shows the plugs of the trailer tongue and tongue extension mated and connected;

FIG. **7** is a cross sectional view of the trailer tongue extension assemble taken along lines **7**—**7** of FIG. **5** showing the pin outside of and disconnected from the trailer tongue assembly;

FIG. **8** is a cross sectional view of the trailer tongue extension assemble taken along lines **8**—**8** of FIG. **6** showing the pin inserted through the trailer tongue and tongue extension and into the locking assembly.

DETAILED DESCRIPTION

Before proceeding with the detailed description, it is to be appreciated that the present invention is not limited to use or application in conjunction with a specific type of locking trailer tongue extension assembly. Thus, although the present invention is, for the convenience of explanation, depicted and described with respect to typical exemplary embodiments, it will be appreciated that this invention may be applied with other types of locking trailer tongue extension assemblies.

Turning now to the drawings, FIGS. **1**, **2**, **3** and **4** show a locking trailer tongue extension assembly **1** embodying the present invention. The trailer tongue extension assembly **1** has a tubular trailer tongue **2** connected to a trailer part **3** of trailer (not shown), a removable tubular trailer tongue extension **14**, and an attacher **60**. The tubular trailer tongue has at least one open end **30**, and an internal channel **72** at least partially along a longitudinal axis from the open end **30**. A first electrical connector is disposed within the internal channel. In at least one embodiment, the electrical connector **32** is a plug, appropriate oriented towards the open end **30**.

The tubular trailer tongue extension **14** has a mating end **16** structured and arranged to slip fit into the open end **30** of the trailer tongue **2**. A second electrical connector **76** is disposed at least partially within the mating end **16** and is structured and arranged to mate with the first electrical connector **32**. In at least one embodiment the second electrical connector **76** is a mating plug to electrical connector **32**. A handle **18** is provided on the tongue extension **4** to lift it into place, slide it into and out of the trailer tongue **2**, and move it from one location to another.

As illustrated in FIG. **2**, when the tongue extension **14** is slip fit into the opening **30** of the trailer tongue **2** to assemble the tongue extension assembly **1**, the electrical connectors **38** and **76** are mated. It is to be appreciated that in assembled form, the electrical connectors **38** and **76** are advantageously enclosed within the assembly, protecting them from road and ground debris as well as weather and or other elements.

As best shown in FIGS. **5** and **6**, the electrically operated lights and other equipment on the trailer (not shown) are attached to electrical wires or wiring **28**. Wiring **28** is extended through a hole **38**, provided in trailer tongue support **34**, and connected to the first electrical connector **32** that is attached to a trailer tongue support **34**. Trailer tongue support is in turn firmly attached to the inside walls **36** of the inside of the trailer tongue **2**. As noted below, the first electrical connector **32** may also be attached to a removable holder [**90**] that slides into the open end **30** in the tongue **2**.

Electrical wires or wiring **70** is also run through the tubular tongue extension **14**. As shown in FIGS. **1** and **2**, the wiring **70** exits the tongue extension through an opening (not shown) near the hitch **22** and is connected to a connector **74** that may be attached to a mating connector (not shown) in or on the towing vehicle. The other end of the wiring **70** that runs through the inside of the tongue extension **14** is connected to the second electrical connector **76**. With respect to FIGS. **5** and **6**, electrical connector **76** is attached to a support that is in turn attached to the inside walls **78** of the tongue extension **14** (attachment not shown). As noted below, the second electrical connector **76** may also be attached to a removable holder [**92**] that slides into the mating end **16** of the tongue extension **14**.

As noted above, the second electrical connector **76** is shaped such that it mates with trailer tongue plug **32**. When the electrical connectors **76** and **32** are mated, the electrical wiring **28** of the trailer is connected to the electrical wiring harness of the towing vehicle, such that the vehicle electrical harness provides electricity to the trailer electrical harness **28**. As such, the towing vehicle is capable of energizing and operating the lights and other equipment in or connected to the trailer **3**.

As may be appreciated from the illustration, the first electrical connector **32** is substantially inaccessible from the open end without the trailer tongue extension **14**. As such,

during periods of storage, the first electrical connector is protected. In addition, the integral internal placement of the first electrical connector **32** serves as a theft deterrent for the connector and can not easily be reached for connection by anything other than the tongue extension **14**. In at least one embodiment, electrical connector **38** may be keyed to mate only with the second electrical connector **76** of the tongue extension **14**. Such keyed mating advantageously assists in theft deterrence, for without a mating connector the electrical wiring **28** of the trailer will not be activated by the towing vehicle.

An opposite vehicle connection end **20** (i.e., opposite the mating end **16**) of the tongue extension **14** is provided with a hitch **22** and hitch clamp **24** so that the tongue extension **14** can be connected to a hitch (not shown) on the towing vehicle (not shown) that fits within the hitch **22** on the tongue extension **14** and may be clamped or otherwise secured thereto for towing.

As shown in FIGS. **1**, **2**, **4**, **7** and **8**, the tongue extension assembly **1** includes an attacher **60** structured and arranged to attach the tongue extension **14** to the trailer tongue **2**. In at least one embodiment, the attacher is a tongue pin **60** passing through an aligned set of holes (**80**, **81**, **82**, and **83**) in the trailer tongue **2** and the trailer extension **14**. More specifically, holes **80** and **81** are positioned substantially in line to one another on opposite sides of trailer tongue **2**. Likewise holes **82** and **83** are positioned substantially in line to one another on opposite sides of trailer tongue extension **14**.

When trailer tongue extension **14** is slip-fit into in the open end **30** and internal channel **72** of trailer tongue **2** such that the first and second electrical connectors **32** and **76** are properly mated, the holes **80**, **81**, **82** and **83** properly align to accept the insertion of trailer tongue pin **60**. In at least one embodiment, the alignment of the holes **80–83** is substantially transverse to the longitudinal axis of the trailer tongue extension assembly **1**. As shown, the attacher **60** ensures the first electrical connector **32** and the second electrical connector **76** remain mated when the tongue extension **14** is slip-fit into the open end **30** of the trailer tongue **2**.

As best shown in FIGS. **7** and **8**, in at least one embodiment, a lock assembly **40** is attached to the outside or trailer tongue **2**. The locking mechanism **42** is shown schematically (via dashed lines) in FIGS. **7** and **8**. Such lock mechanisms are common and known in the art. One such lock mechanism contains a lock pin **44** that is biased or spring-biased in the extend position, as shown in FIG. **8**. As shown in FIG. **1**, a key **48** is inserted into the lock mechanism of the lock assembly **40**. When the key is turned and held against the bias of the lock mechanism **42**, the lock pin **44** is retracted, as shown in FIG. **7**. The locking assembly also has an interior slot or opening **50** into which a tongue pin **60** may be inserted.

In the exemplary lock assembly **40** and lock mechanism **42** described above, the tongue pin **60** has a slot or groove **65** into which the lock pin **44** is inserted when the key **48** is released or turned in the opposite direction from that in which it is turned when the lock pin **44** is retracted. When the lock pin **44** is inserted in the slot or groove **65** of the tongue pin **60**, the tongue pin **60** cannot be removed or pulled out of from the slot or opening **50** in the lock assembly **40**.

The exemplary lock assembly **40** is shown in the drawings and described above as attached to the trailer tongue **2**; however, as may be apparent, it is not necessary to attach the lock assembly **40** to the trailer tongue **2**. The lock assembly **40** may be separate from the trailer tongue **2** and used as described above. In such case, when the lock assembly tongue pin **60** is inserted through holes **80–83** and into the lock assembly **40**, and the lock pin **60** is inserted in the tongue pin slot or groove **65**, the lock assembly **40** locks the tongue pin **60** locks the trailer tongue **2** and trailer tongue extension **14** to one another regardless of whether the lock assembly **40** is attached to trailer tongue **2**. When the key **48** is turned so that the lock pin is removed from the pin slot **65**, and the tongue pin **60** is removed from holes **80–83**, the lock assembly **40** may simply be reattached to the tongue pin **60** as described above without inserting the tongue pin through holes **80–83** and placed in a separate location for safe keeping.

Engaging the tongue pin **60** through holes **80** and **81** of the trailer tongue **2** and into the lock assembly **40**, when the tongue extension **14** has been removed, is an advantageous theft deterrent. More specifically, the tongue pin **60** may be inserted through holes **80** and **81** in the trailer tongue **2** and then locked again as described above to prevent the tongue extension **14** (or the tongue extension of another trailer) from being inserted into the trailer tongue **2**. The locked presence of the tongue pin **60** passing transversely through the internal channel **72** prevents mating between the first electrical connector **32** and the second electrical connector **76**.

Of course, the tongue pin **60** could also be inserted through and locked in tongue extension **14** in the same manner as described above with respect to trailer tongue **2**—i.e., by inserting and locking the tongue pin **60** through holes **82** and **83** of the tongue extension **14**. In this case, the tongue extension could not be fully inserted into tongue **2**, because the lock assembly **40** and tongue pin **60** so attached to the tongue extension **14** would not fit within the inside opening **30** in the tongue **2**.

In a preferred embodiment of the trailer tongue extension assembly **1**, the tongue plug **32** and the tongue extension plug **76** are installed in cup-like holders or containers **90** and **92**, respectively, which are made of plastic or some other suitable material. The holder **90** has an inside longitudinal opening **91** that has an inside dimension sufficient to permit tongue extension **14** to be inserted therein. The container or holder **90** also has holes **93** and **95** that align with the holes **80–83** when the tongue extension **14** is fully inserted into the opening **91** of the holder **90**. Specifically, the tongue plug **32** is installed in the cup like holder or container **90**, which slides into the longitudinal opening **30** in the tongue **2**. Tongue extension plug **76** is installed in cup-like holder or container **92**, which slides into the longitudinal inside opening **72** of the tongue extension **14** at the insertion end **16** thereof. The cup-like holder or container **90** may be secured in may be secured in the tongue **2** by a set screw **94**, and the cup-like container **92** may be secured in the tongue extension **14** by a set screw **96**. An advantage of the use of the cup-like containers **90** and **92** is that the plug **32** with its connected wiring **28** and the plug **76** with its connected wiring **70** may be installed, respectively, in the cups **90** and **92** before the cups **90** and **92** are inserted in the longitudinal inside openings **30** and **32**, respectively, of the tongue **2** and the tongue extension **14**. Another advantage of the use of the cup-like holders **90** and **92** is that they may be easily removed for repair by undoing the respective set screws **94** and **96** and sliding the holders **90** and **92** out of the tongue **2** and tongue extension **14**, respectively.

An end piece or sleeve **85** may be incorporated into the outer end of the cup- like holder or container **90** that is inserted into the longitudinal opening **30** in the tongue **2** attached to protect it from being damaged and to guide the

tongue extension **14** into the inside opening **98** in the holder **90**. Holder **92** may also have a lip or flange (not shown) that overlays or partly overlays the end of the tongue extension **14** so that the holder **92** does not slip too far into the longitudinal hole **72** of the tongue extension **14**. As illustrated in FIGS. **3** and **4**, in at least one embodiment, a stop **88** is attached to the bottom of the tongue extension **14** to prevent the tongue extension **14** from being inserted too far into trailer tongue **2** in order to prevent the electrical connectors **32** and **76** from being damaged during the insertion/attachment process.

Having described the above physical embodiment of the trailer tongue extension assembly **1**, the advantages of the described embodiments may be more fully appreciated with a brief description of the trailer tongue extension assembly **1** use and operation.

When the trailer tongue extension assembly **1** is to be assembled, the mating end **16** of the tongue extension **14** is inserted into the open end **30** of the trailer tongue **2** or, in the preferred embodiment, passed into the longitudinal opening **91** of the cup-like holder or container **90** until the holes **82** and **83** of the tongue extension **14** are in alignment or register with holes **80** and **81** of the trailer tongue **2** and holes **93** and **95** of the cup-like container **90**. The alignment of holes **80**, **81**, **82**, **83**, **93**, and **95** may also serve as a visual indication to the user that electrical connectors **32** and **76** have mated.

The tongue pin **60** is then inserted through aligned holes **80**, **81**, **82**, **83**, **93** and **95** and into the lock assembly **40** while the key **48** of the lock assembly **40** is turned to retract the lock pin **44**. When the tongue pin **60** is fully inserted in to the lock assembly **40**, the key **48** is allowed to return to its original position such that lock pin **44** is inserted into the groove or slot **65** in the tongue pin **60**, thus securing the tongue pin **60** in the lock assembly **40** and preventing the tongue extension **14** from being removed from the trailer tongue **2**. The key **48** may then be removed for safekeeping.

The tongue extension **14** may be removed from the trailer tongue **2** in order to shorten the tongue extension assembly **1** so that it may be fully enclosed in a garage. The tongue extension **14** may also be removed from the trailer tongue **2** at a lake, campsite, or worksite to prevent unauthorized users from connecting the trailer **3** to a towing vehicle and/or removing the trailer **3** from the site. In either case, the key **48** is turned against the bias or the lock mechanism **42** so that the lock pin **44** is retracted out of the slot or groove in the tongue pin **60**. The tongue pin **60** is then pulled out of the aligned holes **80–83**, **93**, and **95**.

When the tongue pin **60** has been removed from the aligned holes **80–83** **93**, and **95**, the tongue extension **14** may be pulled out of the trailer tongue **2**, decoupling the enclosed and mated first and second electrical connectors **32** and **76**. Removal of the tongue extender **14** shortens the overall length of the trailer tongue assembly **1** and may allows the trailer **3** to be enclosed in a garage or other storage facility that is shorter than the trailer **3** when the trailer tongue extension **14** installed in the trailer tongue **2**.

In order to prevent an unauthorized user from using the trailer tongue extension **14** to remove the trailer **3** from the garage, or from a lakeside, campsite, or worksite, the tongue pin **60** may be inserted in the aligned holes **80**, **81**, **93** and **95** of the trailer tongue **2** or in the aligned holes **82–83** of the trailer tongue extension **14**. As the lock pin **44** is inserted through holes **80–81**, **93**, and **95**, or through **82–83**, the key **48** of the lock assembly **40** is turned against the bias of the lock mechanism **42** to retract the lock pin **44**. The tongue pin **60** is then fully inserted into the lock assembly **40**, and the key **48** is allowed to return to its biased position so that the lock pin **44** with is inserted into the groove or slot in the tongue pin **60**, thus securing the tongue pin **60** in the lock assembly **40**.

In either position—i.e., inserted and locked in the trailer tongue **2** or the tongue extension **14**—the tongue pin **60** prevents the tongue extension **14** from being reinstalled in the trailer tongue **2**, thus preventing unauthorized use of the trailer tongue extension **14** or the removal of the trailer **3** from the its then location. Of course, the key **48** is removed from the lock mechanism **42** and the lock assembly **40** and kept in a location where it cannot be accessed or used by an unauthorized person.

Under appropriate circumstances, additional modifications may be made to the above described embodiments. For example, the tubular trailer tongue **2** and tubular tongue extension are cylindrical, having a substantially round cross section instead of a square cross section as shown in FIGS. **7** and **8**. In addition, the cross section may be rectangular, triangular, or other shape as appropriate for the given circumstance. Further, after the tongue pin **60** is inserted through the aligned holes **80–83**, **93** and **95** of the trailer tongue **2** and the tongue extension **14**, it may be locked by inserting a padlock arm through a hole in the end of the tongue pin **60** that has been inserted through all of the aligned holes **80–83**, **93**, and **95**.

While the invention has been described with reference to the preferred embodiment, it will be understood by those skilled in the art that various alterations, changes and improvements may be made and equivalents may be substituted for the elements thereof and steps thereof without departing from the scope of the present invention. In addition, many modifications may be made to adapt to a particular situation or material to the teachings of the invention without departing from the essential scope thereof. Such alterations, changes, modifications, and improvements, though not expressly described above, are nevertheless intended and implied to be within the scope and spirit of the invention. Therefore, it is intended that the invention not be limited to the particular embodiments disclosed as the best mode contemplated for carrying out this invention, but that the invention will include all embodiments falling within the scope of the appended claims.

We claim:

1. A trailer tongue extension assembly comprising:

a tubular trailer tongue attached to a trailer, the tubular trailer tongue having a removable extension;

a first electrical connector disposed within the trailer tongue; and

a second electrical connector disposed within the removable extension;

wherein the first and second electrical connectors engage and disengage as the removable extension is installed or removed from the trailer tongue.

2. The trailer tongue extension of assembly of claim **1** wherein the first electrical connector is disposed in a holder that is removably disposed within the trailer tongue.

3. The tongue extension assembly of claim **1**, wherein the second electrical connector is disposed in a holder that is removably disposed within the removable extension.

4. The trailer tongue extension assembly of claim **1**, wherein the first electrical connector and the second electrical connector are substantially enclosed within the assembly.

5. The trailer tongue extension assembly of claim **1**, wherein the extension slip-fits into the tubular trailer tongue.

6. The trailer tongue extension assembly of claim 2, wherein the extension slip-fits into the holder.

7. The trailer tongue extension assembly of claim 1, further including an attacher configured to attach the removable extension to the trailer tongue.

8. The trailer tongue extension assembly of claim 1, wherein the first electrical connector and the second electrical connector are mated electrical plugs.

9. The trailer tongue extension assembly of claim 1, wherein the first electrical connector is keyed to mate only with the second electrical connector of the extension.

10. The trailer tongue extension assembly of claim 1, wherein the first electrical connector is inaccessible from an open end of the trailer tongue without the trailer tongue extension.

11. The trailer tongue extension assembly of claim 1, further including a trailer electrical harness connected to the first electrical connector and a towing vehicle electrical harness connected to the second electrical connector.

12. The trailer tongue extension assembly of claim 11, wherein when assembled, the vehicle electrical harness provides electricity to the trailer electrical harness.

13. The trailer tongue extension assembly of claim 1, further including a lock structured and arranged to lock a tongue pin in place as it is passed through aligned holes of the trailer tongue and removable extension.

14. The trailer tongue extension assembly of claim 1, wherein the tubular trailer tongue and removable extension have a substantially rectangular cross section.

15. The trailer tongue extension assembly of claim 1, wherein the tubular trailer tongue and removable extension have a substantially square cross section.

16. A trailer tongue extension assembly comprising:

a tubular trailer tongue attached to a trailer, the tubular trailer tongue having at least one open end and an internal channel at least partially along a longitudinal axis from the open end;

a first electrical connector disposed within the internal channel;

a tubular tongue extension having a mating end structured and arranged to slip fit into the open end of the trailer tongue, and

a second electrical connector disposed at least partially within the mating end and structured and arranged to mate with the first electrical connector; and

an attacher configured to attach the tongue extension to the trailer tongue when the tongue extension is slip-fit into the trailer tongue.

17. The trailer tongue extension assembly of claim 16, wherein the first electrical connector and the second electrical connector are mated electrical plugs.

18. The trailer tongue extension assembly of claim 16, wherein the electrical connectors are enclosed within the tongue extension assembly when assembled.

19. The trailer tongue extension assembly of claim 16, wherein the first electrical connector is keyed to mate only with the second electrical connector of the tubular tongue extension.

20. The trailer tongue extension assembly of claim 16, wherein the first electrical connector is inaccessible from the open end without the trailer tongue extension.

21. The trailer tongue extension assembly of claim 16, wherein engaging the attacher when the tongue extension is removed from the open end of the trailer tongue prevents mating between the first and second electrical connectors.

22. The trailer tongue extension assembly of claim 16, wherein the attacher ensures the first electrical connector and the second electrical connector remain mated when the tongue extension is slip-fit into the opening of the trailer tongue.

23. The trailer tongue extension assembly of claim 16, further including a trailer electrical harness connected to the first electrical connector and a towing vehicle electrical harness connected to the second electrical connector.

24. The trailer tongue extension assembly of claim 23, wherein when assembled, the vehicle electrical harness provides electricity to the trailer electrical harness.

25. The trailer tongue extension assembly of claim 16, wherein the tubular trailer tongue and tubular trailer extension have a substantially rectangular cross section.

26. The trailer tongue extension of assembly of claim 16, wherein the first electrical connector is disposed in a holder that is slip-fit into the internal channel of the trailer tongue.

27. The tongue extension assembly of claim 16, wherein the second electrical connector is disposed in a holder that is slip-fit into an opening in the mating end of the removable extension.

28. A trailer tongue extension assembly comprising:

a tubular trailer tongue having a removable extension;

a first electrical connector disposed in a holder that is removably disposed within the trailer tongue; and

a second electrical connector disposed within the removable extension;

wherein the first and second electrical connectors engage and disengage as the removable extension is installed or removed from the trailer tongue.

29. A trailer tongue extension assembly comprising:

a tubular trailer tongue having a removable extension;

a first electrical connector disposed within the trailer tongue; and

a second electrical connector disposed in a holder that is removably disposed within the removable extension;

wherein the first and second electrical connectors engage and disengage as the removable extension is installed or removed from the trailer tongue.

30. A trailer tongue extension assembly comprising:

a tubular trailer tongue having a removable extension;

a first electrical connector disposed within the trailer tongue;

a second electrical connector disposed within the removable extension; and

a lock structured and arranged to lock a tongue pin in place as it is passed through aligned holes of the trailer tongue and removable extension;

wherein the first and second electrical connectors engage and disengage as the removable extension is installed or removed from the trailer tongue.

31. A trailer tongue extension assembly comprising:

a tubular trailer tongue having at least one open end and an internal channel at least partially along a longitudinal axis from the open end;

a first electrical connector disposed within the internal channel;

a tubular tongue extension having a mating end structured and arranged to slip fit into the open end of the trailer tongue, and

a second electrical connector disposed at least partially within the mating end and structured and arranged to mate with the first electrical connector;

an attacher configured to attach the tongue extension to the trailer tongue when the tongue extension is slip-fit into the trailer tongue;

wherein the attacher is a tongue pin passing through an aligned set of holes in the trailer tongue and the trailer extension.

32. A trailer tongue extension assembly comprising:

a tubular trailer tongue having at least one open end and an internal channel at least partially along a longitudinal axis from the open end;

a first electrical connector disposed within the internal channel;

a tubular tongue extension having a mating end structured and arranged to slip fit into the open end of the trailer tongue, and

a second electrical connector disposed at least partially within the mating end and structured and arranged to mate with the first electrical connector;

a lock structured and arranged to lock a tongue pin in place as it is passed through an aligned set of holes in the trailer tongue and trailer extension when the tongue extension is slip-fit into the trailer tongue.

33. A trailer tongue extension assembly comprising:

a tubular trailer tongue having at least one open end and an internal channel at least partially along a longitudinal axis from the open end;

a first electrical connector disposed in a holder that is slip-fit into the internal channel;

a tubular tongue extension having a mating end structured and arranged to slip fit into the open end of the trailer tongue, and

a second electrical connector disposed in a holder that is slip-fit into an opening in the mating end and structured and arranged to mate with the first electrical connector, and

an attacher configured to attach the tongue extension to the trailer tongue when the tongue extension is slip-fit into the trailer tongue.

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