FENCE WIRE STRETCHING DEVICE

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to fence construction, and in particular relates to a vehicle-mounted device for stretching fence wire, such as electric wire, between fence support structures such as posts.

2. Description of the Related Art

It is difficult and time-consuming to stretch lengths of fence wire, such as electric wire, between posts or other fence support structures. Typically the wire made of aluminum, steel, stainless steel or other fencing material is in a large, heavy spool. To make the fence, the wire is pulled from the spool which is located in a vehicle, such as in the back of a pickup truck. The wire is attached to an initial post, and then unwound to be long enough to reach the next post, stretched taut, and attached to the next post. Because of the distance between posts and the weight of the intervening wire, it is very difficult for one person to pull the wire taut enough, and generally two people are required.

There are known devices for holding the spool of wire in a particular position in or on the vehicle. Generally these devices do not provide a way of providing tension or tautness to the wire. The patent of Popps (U.S. Pat. No. 7,530,522) does provide a way to spool fencing from a vehicle that includes a frame that is configured to be attached to a motor vehicle, a pivotable cradle on the frame, a gripper assembly that is made of a gripper shoe, vertical axle and a gripper frame that rotates about the vertical axle and places the gripper shoe into contact with the spool of wire when manual force is placed on the handle by the operator of the motor vehicle. The rolls of wire are placed on the vertical cradle and wire is threaded between the gripper shoe and a fence guide. This prior device is a large complicated device with many parts that is preferably configured so that a handle of the device is accessible by the operator of a tractor on which the device is mounted. The means of attaching to a vehicle includes use of grip pins and a center mount.

It is therefore an object of the invention to provide an easily attachable and detachable portable fence wire stretching device that may be attached by one person to a standard trailer hitch adaptor and that extends behind the vehicle horizontally at the level of the hitch. It is a further object to provide a fence wire stretching device on which a roll of wire may be easily placed, and when sufficient wire has been pulled from the roll, the wire may be pulled taut and held in a taut position.

Other objects and advantages will be more fully apparent from the following disclosure and appended claims.

SUMMARY OF THE INVENTION

The invention herein is a fence wire stretching device having a square shape made up of five leg portions, three of which form three of the sides of the square. The fourth side of the square has a proximal leg portion and a distal leg portion that are pivotally attached together. The distal leg portion swings outward at an angle from the proximal leg portion so that the wire clamp mechanism is in an open position, and may then be pivoted back to be coaxial with the proximal leg so that the wire clamp mechanism is in a closed position. A vehicle attachment means is located at a first corner of the square, and a wire clamp mechanism is located at second corner of the square opposite the vehicle attachment means. A wire spool holding rod extends centrally across the square between a third corner and a fourth corner of the device, and is openably attached to the square so that a spool of fence wire may be slipped over the wire spool holding rod.

Other objects and features of the inventions will be more fully apparent from the following disclosure and appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a perspective rear view of the fence wire stretching device of the invention in a closed position, mounted on a vehicle.

FIG. **2** is a perspective rear view of the fence wire stretching device of FIG. **1** in an open position, mounted on a vehicle.

FIG. **3** is a perspective side view of the fence wire stretching device in the closed position, mounted on a vehicle.

FIG. **4** is a perspective front view of the fence wire stretching device in the open position.

FIG. **5** is a perspective view of one of the L brackets of the fence wire stretching device attached to a corner of the device.

FIG. **6** is a perspective view of the pivotable junction of legs A**1** and A**2** of the fence wire stretching device of the invention.

FIG. **7** is an upper plan view of the fence wire stretching device of the invention in a closed position.

FIG. **8** is an upper plan view of the fence wire stretching device of the invention in an open position.

FIG. **9** is a partial side view of the joined leg portions A**1** and A**2** of the invention.

FIG. **10** is a partial side view of the wire spool holding rod of the invention.

FIG. **11** is a perspective view of the fence wire stretching device with a spool of wire mounted on it and the wire end held in the wire clamp mechanism of the invention.

FIG. **12** is a cross-sectional view of the clamp mechanism of the invention.

DETAILED DESCRIPTION OF THE INVENTION AND PREFERRED EMBODIMENTS THEREOF

The invention herein is a fence wire stretching device on which a spool of fence wire, such as electrical wire may be held. The wire is spooled out in as known in the art, and when a sufficient length of wire has been pulled from the spool, the fence wire stretching device is used to clamp the wire and hold it tight as the vehicle is used to pull the wire from a distal place of attachment, such as a fence post.

As shown in the figures (e.g., FIGS. **1-4** and **7-8**), the fence wire stretching device **10** of the invention is preferably generally in the shape of a square with four sides **12** and four 90-degree corners. The fence wire stretching device is made of five leg portions, which are a first leg divided into smaller leg portions A**1** and A**2** that together are along one of the four sides of the device **10**, and three single piece legs B, C, and D, each of which is along another side of the device to form the square shape. The leg portions form equal length sides of the device **10** when the device **10** is assembled. Leg portions A**1** and A**2** (together the first leg portion of the invention) are pivotally attached together so that the distal leg A**2** may swing outward at an angle from proximal leg A**1** as shown in FIG. **2** so that the wire clamp mechanism is in an open position, and may then be pivoted back to be coaxial with proximal leg A**1** as shown in FIG. **1** so that the wire clamp mechanism is in a closed position. Leg portions B, C and D, are respectively referred to as the second, third, and fourth leg portions, with the four leg portions together forming a square as discussed and shown herein.