Dec. 5, 1967 J. S. BROWN 3,356,341

WINDING AND STRETCHING ATTACHMENT FOR WIRE FENCES

Filed Feb. 9, 1967 2 Sheets-Sheet 1

Fig. 1

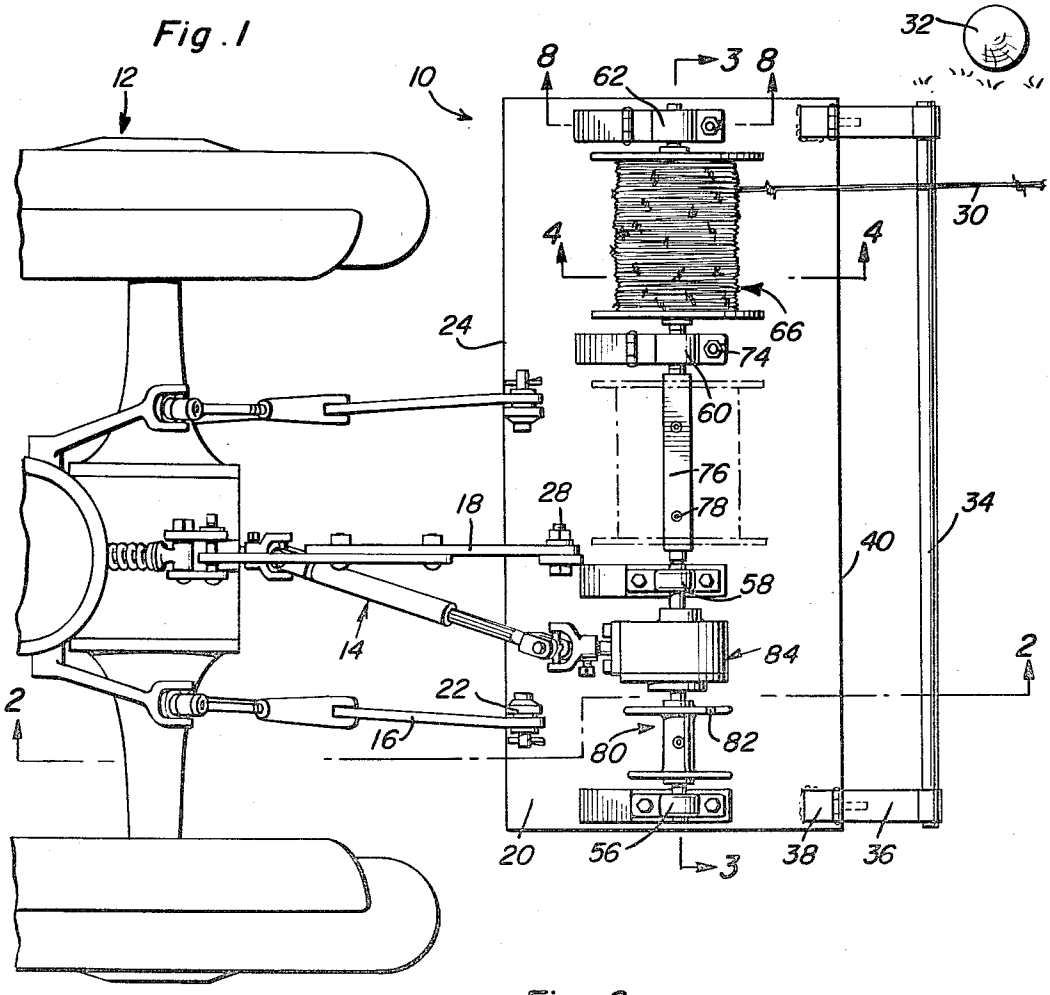


Fig. 6

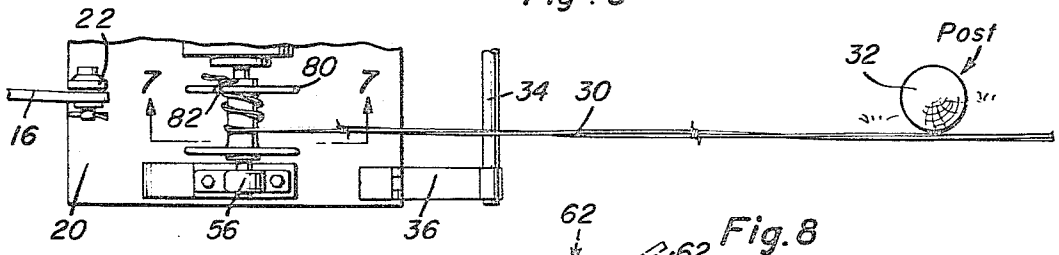


Fig. 7

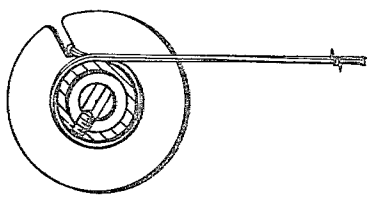
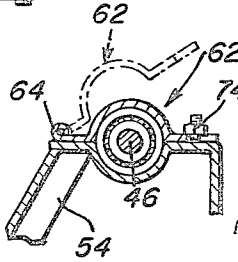


Fig. 8



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Dec. 5, 1967 J. S. BROWN 3,356,341

WINDING AND STRETCHING ATTACHMENT FOR WIRE FENCES

Filed Feb. 9, 1967 2 Sheets-Sheet 2

Fig. 2

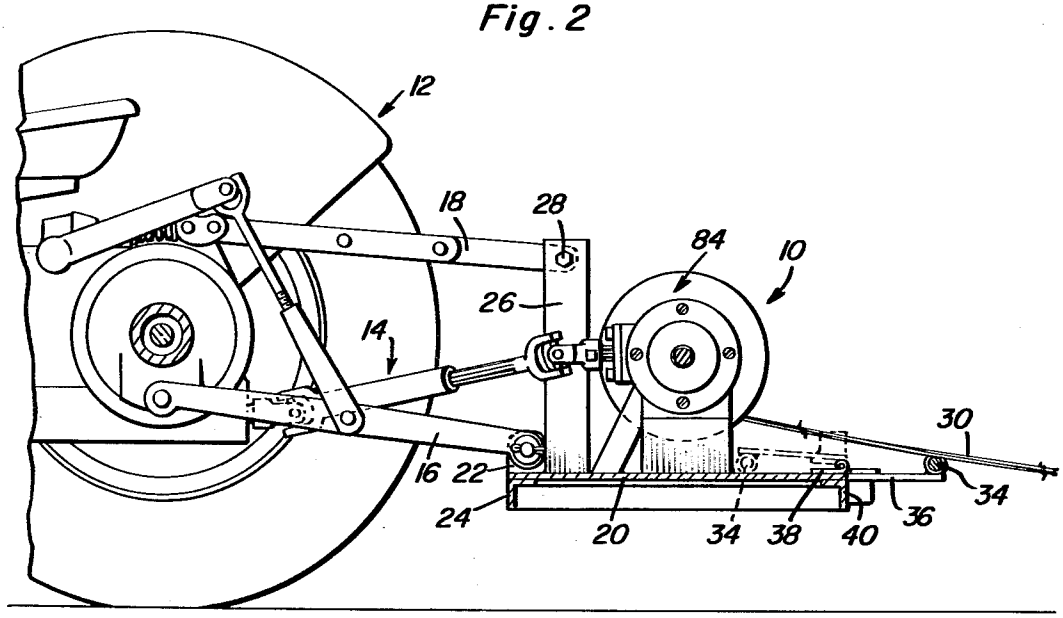


Fig. 3

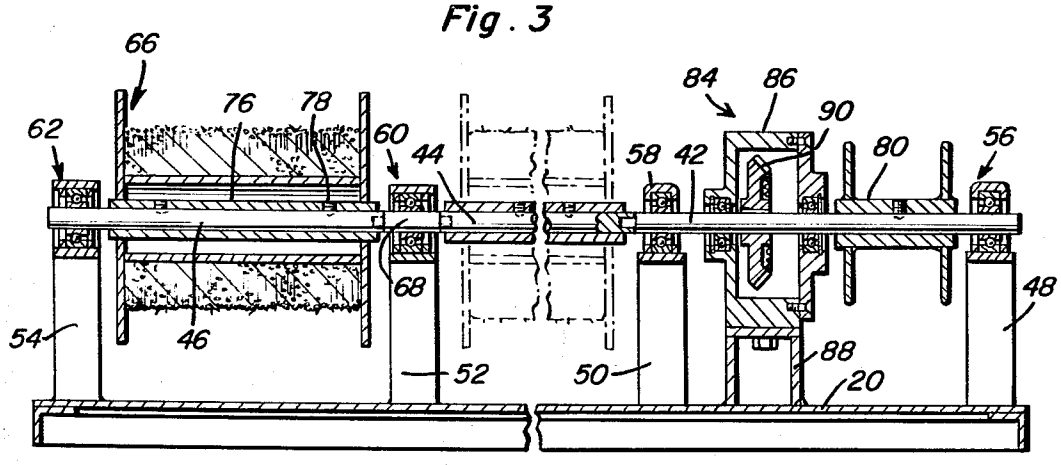


Fig. 4

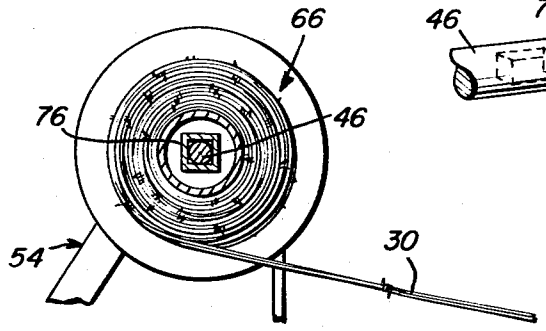
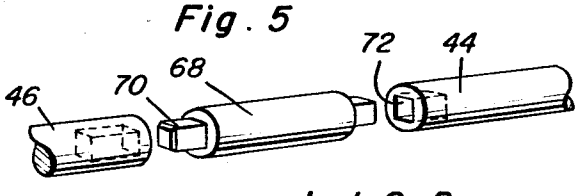


Fig. 5



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WINDING AND STRETCHING ATTACHMENT FOR WIRE FENCES

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ABSTRACT OF THE DISCLOSURE

A power operated winding attachment for tractors having power hitch and drive take-off mechanisms. A hitch supported platform mounts a common shaft assembly carrying a wire stretching reel and a removable spool of barbed wire driven from the power take-off of the tractor.

Background of the invention

This invention relates to the construction of barbed wire fences and more particularly to an attachment for tractor vehicles through which barbed wire is unreeled and stretched during the construction of a barbed wire fence.

In connection with the construction of barbed wire fences, the handling of the spools of barbed wire from which the barbed wire is unreeled and tacked to the fence posts, presents a problem as well as a hazard because of the injury that may result from uncontrolled coiling of the wire. Thus, many prior art wire reeling or winding attachments are unsatisfactory for barbed wire type of fence construction. Further, prior art wire winding attachments do not provide facilities for both controllably unreeling and stretching barbed wire as well as to accommodate easy replacement of exhausted spools of barbed wire.

Summary of the invention

In accordance with the present invention therefore, an attachment is provided for tractor towing vehicles having a power take-off drive whereby barbed wire may be controllably unreeled and maintained under constant tension. Toward this end, the attachment includes a shaft assembly having one or more removable sections facilitating the removable mounting of spools of barbed wire, the shaft assembly being positively driven from the power take-off through a right angle drive. Thus, barbed wire may be unwound from its spool while the vehicle is stationary.

A further feature of the present invention is to provide an attachment for towing vehicles such as tractors having a shaft assembly including removable shaft sections keyed together by an element which is rotatably supported by a hinge bearing so as to facilitate disassembly of the shaft sections and removable mounting of spools of barbed wire thereon. The shaft assembly may also permanently mount a rewinding or stretching reel to which the barbed wire may be anchored.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout.

Brief description of the drawing figures

FIG. 1 is a top plan view showing the attachment of the present invention in use and associated with a tractor vehicle.

FIG. 2 is a side sectional view taken substantially through a plane indicated by section line 2—2 in FIG. 1.

FIG. 3 is a sectional view taken substantially through a plane indicated by section line 3—3 in FIG. 1.

FIG. 4 is a transverse sectional view taken substantially through a plane indicated by section line 4—4 in FIG. 1.

FIG. 5 is a perspective view of parts of the shaft assembly associated with the attachment of the present invention.

FIG. 6 is a partial top plan view showing the attachment in use during another fence constructing operation.

FIG. 7 is a transverse sectional view taken substantially through a plane indicated by section line 7—7 in FIG. 6.

FIG. 8 is a partial transverse sectional view taken substantially through a plane indicated by section line 8—8 in FIG. 1.

Description of the preferred embodiment

Referring now to the drawings in detail, the winding attachment generally denoted by reference numeral **10** in FIGS. 1 and 2, is shown in trailing relation to a towing vehicle such as a conventional tractor **12** having a universal power take-off shaft **14** and a power operated, three-point hitch mechanism including the lower lift arms **16** and the upper link arm **18** to which the attachment is hitched.

The attachment **10** includes a platform **20** supported in spaced relation above the ground by the hitch mechanism. A pair of pivot brackets **22** are fixed to the platform adjacent the forward edge **24** thereof in laterally spaced relation to each other so as to be pivotally connected to the lower lift arms **16** of the hitch mechanism. A standard **26** is also fixedly mounted on the platform between the pivot brackets **22** so as to establish a pivotal connection **28** to the upper link arm **18** of the hitch mechanism. The platform is thereby supported in a horizontal position adjustably spaced above the ground by means of the hitch mechanism in accordance with the load imposed thereon in a manner well known. Barbed wire **30** may extend rearwardly from the platform for attachment to fence posts **32**, the wire being guided over a guide rod **34** supported at opposite ends by the arms **36** hinged to the platform **20** by the hinge brackets **38** adjacent the rear edge **40**. When not in use, the guide rod may be pivotally retracted to the position as shown by dotted line in FIG. 2.

Rotatably mounted about a common horizontal axis spaced above the platform **20**, is a shaft assembly which includes a plurality of shaft sections **42**, **44** and **46**, as more clearly seen in FIG. 3. A plurality of laterally spaced journal brackets **48**, **50**, **52** and **54** are mounted on the platform and extend upwardly therefrom. The shaft section **42** is rotatably supported between the journal brackets **48** and **50** by means of a pair of permanent bearing assemblies **56** and **58** respectively mounted on top of the journal brackets **48** and **50**. Hinged bearing assemblies **60** and **62** are mounted on top of the journal brackets **52** and **54** in order to rotatably support the other shaft sections **44** and **46**. Each of the hinged bearing assemblies as more clearly seen in FIG. 8, is pivotally connected by a hinge **64** to the top of its journal bracket so that it may be pivotally displaced from the solid line position to the dotted line position. In this manner, the shaft section **44** or **46** may be removed from the shaft assembly in order to replace or install a spool **66** of barbed wire. When assembled, the shaft sections **44** and **46** are keyed to each other by means of an interconnecting key element **68** the opposite ends of which are provided with non-circular projections **70** received within non-circular sockets **72** in the adjacent ends of the shaft sections **44** and **46**. The key element **68** is rotatably supported by the hinged bearing assembly **60** disposed axially between the shaft sections **44** and **46**. Removable fastener assemblies **74** hold the hinged bearing assemblies in place during use of the attachment.

Each of the removable shaft sections **44** and **46** has a non-circular sleeve **76** secured thereto by setscrew fasteners **78** so as to removably mount thereon a spool **66** for rotation with the shaft assembly. One or more spools may be mounted on the shaft assembly by means of the removable shaft sections **44** and **46**. The shaft section **42** on the other hand permanently mounts adjacent the end bearing assembly **56**, a rewinding or stretching reel **80** to which the barbed wire may be anchored by means of an anchor slot **82** for example. The barbed wire may thereby be rewound or stretched as shown in FIG. 6. Also mounted on the shaft section **42** between the reel **80** and the bearing assembly **58**, is a right angle drive assembly generally referred to by reference numeral **84**.

The drive assembly includes a gear housing **86** fixedly mounted on the platform **20** by the bracket **88** through which the shaft section **42** extends. A driven bevel gear **90** is secured to the shaft sections and is in driving engagement with a drive bevel gear (not shown) to which the universal power take-off shaft **14** is drivingly connected. It will be apparent therefore, that rotation may be imparted to the shaft assembly while the vehicle is stationary at a forward or reverse speed ratio to the output of the power plant associated with the tractor vehicle. Further, because of the constant gear connection between the shaft assembly of the attachment and the power take-off drive mechanism, any wire being unwound or rewound will be maintained under constant tension. This attribute of the attachment is of particular significance since barbed wire has a tendency to coil and weave about making it very dangerous should tension be relieved at any time. It will be apparent therefore that the attachment of the present invention will be particularly useful in connection with the various operations in building barbed wire fences including the unreeling and stretching of barbed wire.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. In combination with a towing vehicle having a load supporting hitch mechanism and a power take-off, a winding and stretching attachment for barbed wire comprising, a platform supported by the hitch mechanism above the ground, a shaft assembly having a plurality of separable sections keyed to each other, means journaling said shaft assembly on the platform about a common axis, a stretching reel connected to one of said shaft sections having means for anchoring barbed wire thereto, means mounted by at least another of the shaft sections for removably receiving a spool of barbed wire, and gear means mounted on the platform for drivingly connecting the shaft assembly to the power take-off to controllably rotate said stretching reel and said spool about the common axis while the vehicle is stationary.

2. The combination of claim **1** wherein said journaling means for the shaft assembly includes, permanent bearing means rotatably supporting the shaft section to which the stretching reel is connected, and hinged bearing means rotatably supporting the other shaft section.

3. The combination of claim **2** wherein said shaft assembly further includes a key element removably mounted by said hinged bearing means and slidably interconnecting adjacent shaft sections.

4. The combination of claim **3** wherein said gear means comprises a right angle gear drive connected to the shaft section to which the stretching reel is connected.

5. The combination of claim **1** wherein said gear means comprises a right angle gear drive connected to the shaft section to which the stretching reel is connected.

6. In combination with a towing vehicle having a load supporting hitch mechanism and a power take-off, a winding and stretching attachment for barbed wire comprising, a platform supported by the hitch mechanism above the ground, a shaft assembly, means journaling said shaft assembly on the platform about a horizontal axis, a stretching reel connected to the shaft assembly, a spool of barbed wire, means removably mounting said spool on the shaft assembly and right angle drive means drivingly connecting the shaft assembly to the power take-off for controllably rotating the reel and spool and holding the barbed wire under tension at all times.

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