April 5, 1932. R. P. SCHMIDT 1,852,939

BARBED WIRE STRINGING DEVICE

Filed Feb. 14, 1931

Fig. 1

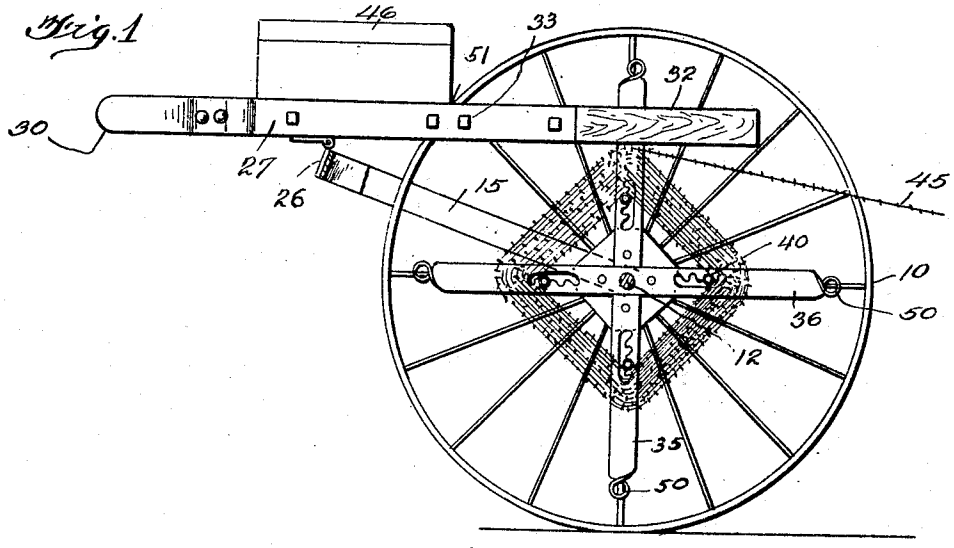


Fig. 2

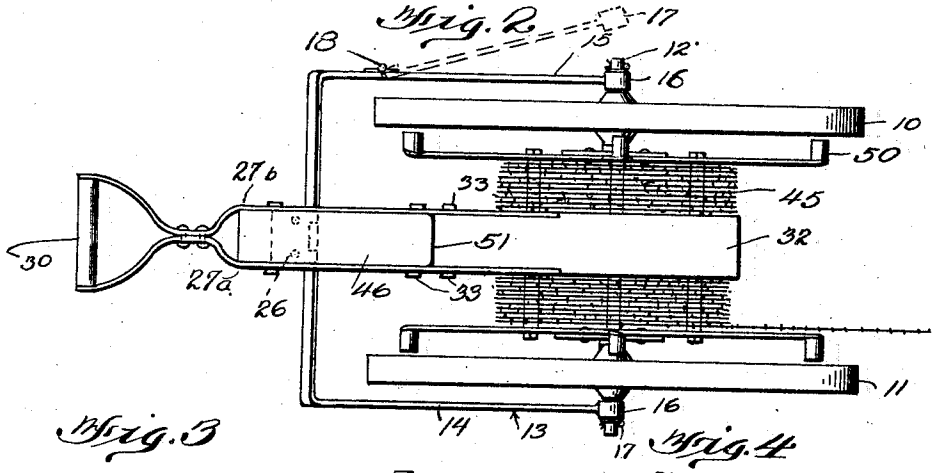


Fig. 3

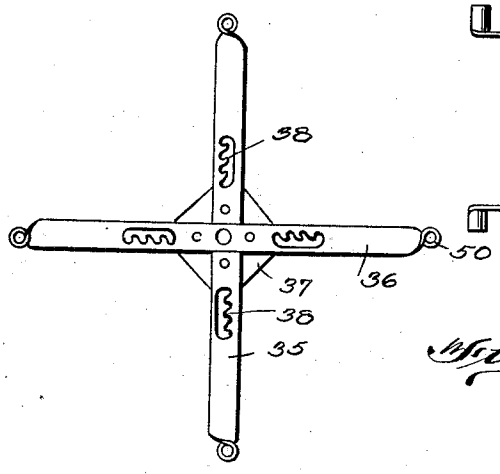


Fig. 4

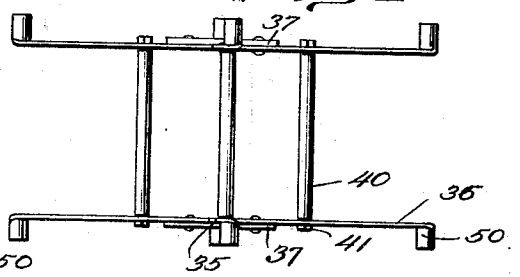
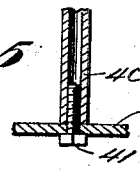


Fig. 5



Inventor
RICHARD P. SCHMIDT

By Blair & Kilcoyne

Attorneys

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UNITED STATES PATENT OFFICE

RICHARD P. SCHMIDT, OF OTTAWA, ILLINOIS

BARBED WIRE STRINGING DEVICE

Application filed February 14, 1931. Serial No. 515,815.

This invention relates to improvements in reeling and unreeling apparatus and more particularly to apparatus for stringing and reeling wire.

In farming and grazing sections, it is the practice to string temporary fences for the purpose of establishing boundaries, enclosing fields, and the like. Where barbed wire is so used, it is extremely difficult and in many instances dangerous to handle. This is true to the extent that oftentimes the wire fence is broken down and the wire left to deteriorate rather than taking down the wire and reeling it for future use.

Accordingly, an object of my invention is the provision of simple and efficient apparatus by which wire, particularly barbed wire, may be unreeled from a roll or the like and strung to form a fence, and thereafter, when occasion demands, be again reeled, whereby the fence may be put up, taken down, and moved from place to place as necessary. A further object is to provide an improved wire stringing apparatus by which wire may be unreeled and strung under tension to form a fence. A further object is to provide a wire stringing apparatus in which the wire roll is braked against free spinning or turning to thus enable the wire to be laid or strung under tension. A further object is to provide a wire reeling device by which wire extending in lengths may be coiled on a reel or spool for transporting or for subsequent restringing. A further object is to provide an apparatus for reeling and stringing wire, which necessitates only one operator, thereby materially reducing time and labor costs in setting up and taking down fences.

Other objects will be in part obvious and in part hereinafter pointed out in connection with the following analysis of this invention, wherein is illustrated one of the various possible embodiments of the present invention, together with certain modifications in detail.

In the drawings—

Fig. 1 is a vertical longitudinal section through my improved apparatus, illustrating the relation of the wire spool to the carriage, draft yoke and combined pull brake and bar.

Fig. 2 is a plan view of the apparatus shown in Fig. 1.

Fig. 3 is a side view of the spool structure.

Fig. 4 is a further view of the spool.

Fig. 5 is a detail in section of the wire roll adjusting means.

Referring now to the drawings, I provide a wheeled carriage constituted by the wheels 10, 11 and axle 12, the wheels being freely rotatable on the axle. A normally U-shaped draft yoke, generally indicated at 13, has at the end of the side pieces 14, 15, thereof, enlarged hubs 16 through which axle 12 extends. Cotter pins 17 or equivalent restraining means are provided in suitable apertures in the axle and function to hold the draft yoke in properly assembled relation therewith. One side piece 15 of the draft yoke is hinged as at 18 adjacent the cross piece thereof, and upon removal of its associated cotter pin from the axle, the hinged section of the side piece 15 may be swung from its normal position away from the axle (as shown in dotted lines, Fig. 2) to thus permit the wheel 10 of the carriage structure to be removed from the axle for purposes to be hereinafter described.

The draft yoke on its cross piece carries a hinge 26, one leaf of which is fixed with the draft yoke and the other leaf being bolted or otherwise secured to a combined pull and brake bar 27. The bar 27 may comprise two strap irons 27*a*, 27*b*, spaced at their front ends for the reception of a handle 30 which may be readily grasped by an operator. The other ends of the strap irons, which extend rearwardly, are spaced by a tool box 46 to the bottom of which the other leaf of the hinge 26 is secured and by a block 32, preferably of wood, which extends beyond the ends of the straps and functions as a brake shoe, as will be hereinafter described more fully. The box 46 and the braking block 32 are bolted or otherwise secured to the straps as at 33.

The spool or reel on which the wire roll is mountable and from which it may be unreeled is comprised of spaced sets of cross arms 35, 36 secured at right angles to each

other by hub plates 37. Two sets of toothed slots 38 are provided in each of the cross arms 35, 36, the slots being spaced substantially equi-distantly from the center of the spool as defined by the junction of the cross arms. Extending transversely between the sets of cross arms are a plurality of transverse elements 40 having their end portions interiorly threaded for engagement with threaded studs or bolts 41 which extend through the toothed slots 38, the heads of the bolts being disposed exteriorly of the spool. In mounting a roll of wire which is to be strung on the spool, one set of cross arms 35, 36 forming one side of the spool is removed by suitable unthreading of bolts 41 to permit disconnection from the transverse bars 40, and the roll of wire, which is annular in conformation, is threaded over the bars to rest on the under cross arms, or other side of the spool, which may be disposed horizontally. Thereupon the cross arms previously removed are laid on the coil and connection made with bars 40 as by threading the bolts 41 lightly into said bars. By reason of the toothed slots 38, the bars may thereupon be adjusted into a position to securely engage the interior of the roll, and the bolts 41 tightened, whereby the wire roll is securely mounted on the spool and prevented from turning or spinning with respect thereto.

When it is desired to mount the spool carrying the wire coil on the carriage, the cotter pin 17 adjacent the hinged section of side piece 15 is removed, and the side piece 15 of draft yoke 13 is swung away from the axle, permitting removal of wheel 10. The spool is then threaded on to the axle 12, it being understood that the axle extends through the hub plates of the spool. The wheel 10 is thereupon put back on axle 12, the side piece 15 of the draft yoke swung inwardly over the axle 12 and cotter pin 17 is inserted whereupon the wheels 10, 11 are properly spaced by the spool, the spool being thereupon properly mounted with respect to the carriage for the operation of stringing.

It will be understood that during the operation of mounting the spool on the carriage, the pull and brake bar 27 is moved so that the brake shoe 32 is raised, as permitted by hinge 26. Upon lowering of the bar 27 into substantially horizontal position as shown in Fig. 1, the brake shoe 32 engages the wire coil, and the barbs of the wire are imbedded into the wood piece which consequently acts as a brake preventing the spool from free turning.

To string the wire, the free end 45 of the wire coil is nailed or otherwise secured to a post, such as a corner post, and the operator pulls the carriage in the direction of the fence to be laid. As draft is so exerted, the end of the pull bar 27 carrying the brake 32 is automatically toggled downwardly, the braking force exerted by the shoe of the wire coil being thus proportional and responsive to the draft force necessary to advance the carriage. This retardation of spinning of the wire roll thus permits the wire to be strung under tension. The operator, with suitable tools carried in the tool box 46, may, as the carriage is advanced, secure the tensioned wire to the post or posts forming a part of the fence structure.

By reference to Figs. 3 and 4, it will be seen that the ends of the cross arms 35, 36 forming the spool structure are extended to form handle portions 50 which may be readily grasped by the operator in taking down fence wire and coiling it on the reel or spool. The reeling of lengths of wire, such as encountered when taking down a fence, may be effected by securing a free end of the wire to a transverse bar 40 of the spool, and thereafter, by grasping handles 50 of the spool, turning the same about axle 12 of the carriage. As the wire is reeled, the carriage may roll due to the free mounting of the wheels 10, 11 on axle 12, and the carriage is thus advanced, without attention of the operator, as the length of wire is restrung on the spool.

After a fence has been taken down and the wire reeled as hereinbefore described, the spool carrying the roll may be removed from the carriage and stored, or the rolls may be removed from the spools and tied for transport or storage, or for further restraining.

Thus the apparatus as above described has the advantage that it requires only one operator and further avoids the possibility of the operator being cut by the barbs of the wire. By reason of the hinged relation of the pull and brake bar 27 to the draft yoke 13, the brake shoe 32 carried by the brake bar is automatically adjusted to effect proper braking whereby to prevent the spool of wire from spinning, regardless of the size of the roll or coil of wire mounted on the spool. The brake shoe 32 may be readily removed when worn and a new shoe replaced. The design and structure of the apparatus is such that the wire, either in stringing or reeling, is maintained at all times at a sufficient height from the ground as to keep it free and clear of dirt, weeds, bushes, and the like.

Without further analysis the foregoing will so fully reveal the gist of this invention that others can by applying current knowledge readily adapt it for various applications without omitting certain features that, from the standpoint of the prior art, fairly constitute essential characteristics of the generic or specific aspects of this invention, and therefore such adaptations should and are intended to be comprehended within the meaning and range of equivalency of the following claims.

I claim:

1. In apparatus of the character described, the combination of a carriage including an

axle, a spool carrying a roll of wire or the like mounted for rotation on said axle, a draft member operatively related to said axle, and a pull bar flexibly connected to said draft member and provided with a braking element operative to engage the roll, whereby to prevent free rotation thereof.

2. In apparatus of the character described, the combination of a carriage including an axle, a spool carrying a roll of wire or the like mounted for rotation on said axle, a draft member operatively related to said axle, and a pull bar flexibly connected to said draft member and provided with a braking element operative to engage the roll, the braking force of said element being proportional to the draft force transmitted to said carriage.

3. In apparatus of the character described, the combination of a carriage including an axle, a spool carrying a roll of wire and the like mounted for rotation on said axle, a draft member operatively related to said axle, a pull bar hinged to said draft member and carrying at one end a braking element operative to engage the roll whereby to prevent free rotation of the spool.

4. In apparatus of the character described, the combination of a carriage including an axle, a spool carrying a roll of wire or the like mounted for rotation on said axle, a draft member operatively related to said axle, a pull bar hinged intermediate its ends to the draft member and carrying at one end a braking element operative to engage the roll whereby to prevent free rotation of the spool.

5. In apparatus of the character described, the combination of a carriage including an axle, a spool carrying a roll of wire or the like mounted for rotation on said axle, a draft member operatively related to said axle, a pull bar hinged intermediate its ends to the draft member and carrying at one end a handle, and at its other end a braking element operative to engage the roll whereby to prevent free rotation of the spool.

6. In apparatus of the character described, the combination of a carriage comprising spaced wheels and an axle, a draft yoke having side pieces for connection with the axle, one of which is movable from such connection whereby an adjacent wheel may be removed from the axle, a spool arranged for rotation on said axle, said spool being mountable on and removable from said axle upon disconnection of the movable side piece and adjacent wheel from said axle, and a combined pull bar and spool brake operatively related to said yoke.

7. In apparatus of the character described, the combination of a carriage comprising spaced wheels and an axle, a draft yoke having side pieces for connection with the axle, one of which is movable from such connection whereby an adjacent wheel may be removed from the axle, a spool arranged for rotation on said axle, said spool being mountable on and removable from said axle upon disconnection of the movable side piece and adjacent wheel from said axle, and a pull bar having a hinged connection with said draft yoke for transmitting draft to the carriage, and operative to exert a rotation retarding force on the spool.

8. In apparatus of the character described, the combination of a carriage comprising spaced wheels and an axle, a draft yoke having side pieces for connection with the axle, one of which is movable from such connection whereby an adjacent wheel may be removed from the axle, a spool arranged for rotation on said axle, said spool being mountable on and removable from said axle upon disconnection of the movable side piece and adjacent wheel from said axle, and a pull bar hinged intermediate its ends to the draft yoke and carrying at one end a brake element operative to prevent free rotation of the spool.

9. In apparatus of the character described, a carriage comprising spaced wheels and an axle, a spool mounted on the axle, a draft yoke operatively connected with said axle, a pull bar hingedly connected to said yoke, the spool comprising cross arms and members extending therebetween, a roll of wire or the like arranged on the spool, the spool being mounted for free rotation on said axle, and means operatively related to said pull bar and effective through said roll for imparting a rotation retarding force on said spool.

10. In apparatus of the character described, a carriage comprising spaced wheels and an axle, a spool mounted on the axle, a draft yoke operatively connected with said axle, a pull and brake bar having a hinged connection intermediate its ends with said yoke and having at one end a handle and at the other end a brake element, the spool comprising spaced cross arms and transverse elements extending therebetween, said elements being adjustable radially from the center of the spool, and a roll of wire or the like operatively held by said transverse elements between the spaced cross arms, the brake element being arranged to engage the roll whereby to prevent free turning of the spool.

11. In apparatus of the character described, a carriage comprising spaced wheels and an axle, a spool mounted on the axle, a roll of wire or the like mounted on the spool, the spool comprising spaced cross arms and transverse elements extending therebetween, one or both of said cross arms being removable from said transverse elements, said transverse elements being adjustable with respect to the cross arms whereby to securely hold the roll, a draft yoke operatively connected with said axle, said spool being rotat-

able on the axle, means operative through the roll to retard free rotation of the spool, and the cross arms being provided with gripping handles at their end portions.

Signed at Ottawa, Illinois, this 2nd day of February, 1931.

RICHARD P. SCHMIDT.