March 14, 1944. G. F. NIDIVER 2,344,320

WIRE STRETCHER

Filed Feb. 20, 1943

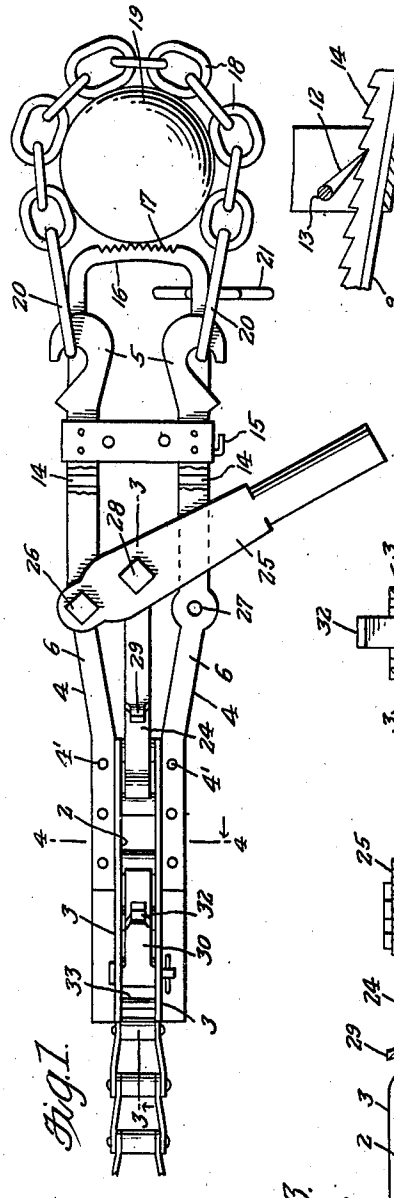


Fig. 1.

Fig. 5.

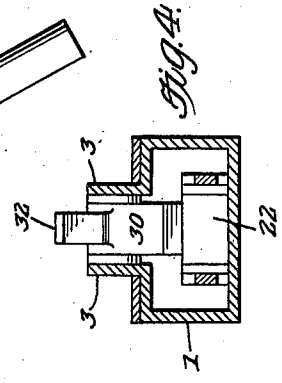


Fig. 4.

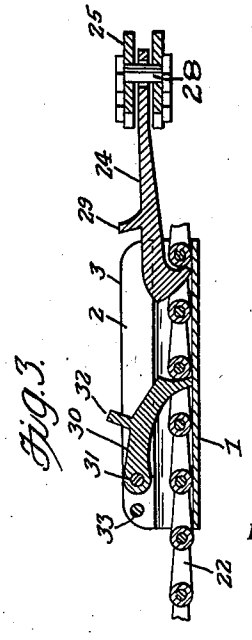


Fig. 3.

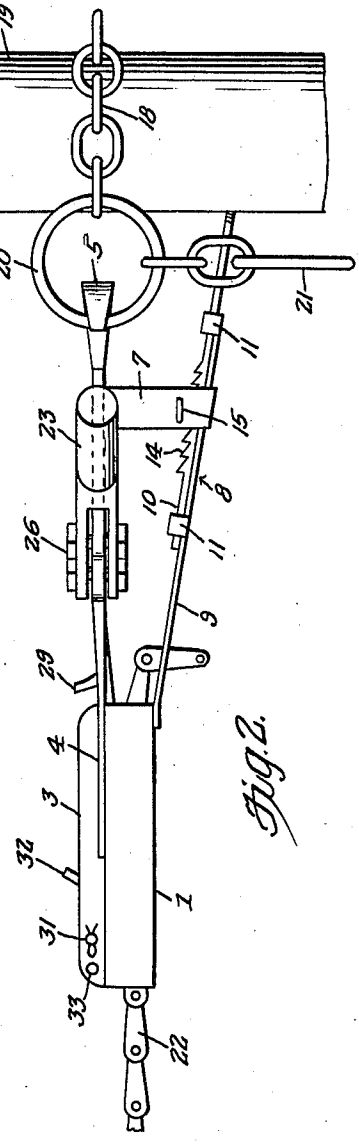


Fig. 2.

Inventor

G. F. Nidiver

By Clarence A. O'Brien and Harvey B. Jacobson

Attorneys

Patented Mar. 14, 1944 2,344,320

UNITED STATES PATENT OFFICE

2,344,320

WIRE STRETCHER

George F. Nidiver, Des Moines, Iowa

Application February 20, 1943, Serial No. 476,586

5 Claims. (Cl. 254—74)

My invention relates to improvements in wire stretchers of the type designed for attachment to a fence post to stretch fence wire.

Among the important objects of the invention are to provide a simply constructed device of the character indicated involving few parts, and which is easy to operate, safe, particularly designed to withstand the stresses and strains incident to stretching heavy gauge wire, adapted for quick attachment to different sizes of fence posts and use with equal facility at opposite sides of such posts, and which is comparatively inexpensive to manufacture.

Other and subordinate objects are also comprehended by my invention, all of which, together with the precise nature of my improvements, will be readily understood when the succeeding description and claims are read with reference to the drawing accompanying and forming part of this specification.

In said drawing:

Figure 1 is a view in plan illustrating my improved wire stretcher in the preferred embodiment thereof,

Figure 2 is a view in side elevation,

Figure 3 is a view in longitudinal section taken on the line 3—3 of Figure 1,

Figure 4 is a view in transverse section taken on the line 4—4 of Figure 1 and drawn to an enlarged scale, and

Figure 5 is a fragmentary view partly in section and partly in side elevation of the yoke, the extension section of the brace frame and the locking dog for the extension frame and other parts of said frame.

Referring to the drawing by numerals, my improved wire stretcher in the illustrated embodiment thereof comprises a chain guide having the form of an elongated, substantially rectangular, flat bottomed housing 1 provided in the top thereof with a central longitudinal slot 2 of reduced width formed by a pair of longitudinal, laterally spaced, upstanding flanges 3 on said top.

Extending rearwardly from what constitutes the rear end of the housing 1 is a pair of flat grappling bars 4 having front ends bolted, as at 4', flat to the top of the housing 1 upon opposite sides of the pair of flanges 3. The grappling bars 4 are opposed edgewise in spaced apart relation, extend for a substantial distance from said housing 1, and terminate in a pair of grappling hooks 5 disposed flatwise in a common plane with said bars with open outer sides. From the rear end of the housing 1 the grappling bars 4 diverge relatively for a short distance, as at 6, to dispose the remainder of the bars in the rear of the housing further apart than the width of said housing and parallel for a purpose presently seen.

A rectangular, bar-like yoke 7 is fitted around the grappling bars 4 contiguous the grappling hooks 5 to depend therefrom crosswise thereof for a purpose also presently apparent. The top of the yoke 7 is bolted to said bars 4 to extend across and brace the same.

A brace frame 8 of flat bar-like material inclines downwardly and rearwardly from the bottom of the housing 1 and comprises a pair of side bars 9 underlying the grappling bars 4. The side bars 9 follow the contour of the bars 4 and extend through the yoke 7 to the bottom of which said bars are suitably connected. A U-shaped, barlike extension section 10 has its sides imposed on top of the bars 9 for sliding thereon forwardly and rearwardly along the same into different set positions and through guides 11 provided on the bars 9. The set positions of the section 10 of the brace frame 8 are established by a pair of locking dogs, as at 12, pivoted, as at 13, on the sides of the yoke 7 for ratcheting over ratchet teeth 14 and the sides of the extension section 10 and arranged so that said section is releasably locked in extended position against sliding forwardly. Hand grips, as at 15, extend from the pivots of the dogs 12 out of the sides of the yoke 7 and provide for releasing said dogs. The closed rear end 16 of the extension section 10 is adapted to extend across a fence post, and is toothed, as at 17, to bite into the post.

A link chain 18 is provided for looping around a fence post 19 and attachment by rings 20 on the same to the grappling hooks 5 to anchor the latter to said post so that the grappling bars 4 and housing 1 may be extended horizontally from one or the other side of the post. By setting the extension section 10 of the brace frame 9 to engage the rear end 16 thereof with the post 19 in the horizontally extended position of the grappling bars 4 and housing 1, said bars and housing will be maintained in said position against sagging. Extra rings 21 are provided on the chain 18 for use with larger sizes of posts 19 in a manner which will be clear.

A section of roller-type, sprocket chain 22 is slidably extended through the housing 1 for the attachment of fence wire, not shown, thereto in any suitable manner, to be stretched by rearward pull exerted on said chain.

For pulling the chain 22 rearwardly, a hand lever 23 and lever operated dog 24 are provided.

The hand lever 23 comprises a bifurcated inner end 25 straddling the grappling bars 4, crosswise, between the housing 1 and the yoke 7, and which is pivoted, as at 26, to one bar 4 for swinging forwardly and rearwardly. A stop pin 27 on the other bar 4 in front of said end 25 of the lever 23 limits forward swinging thereof. The dog 24 is of the usual type and is swiveled, as at 28, in the bifurcated end 25 of the lever 23 to extend forwardly therefrom between the bars 4 into the housing 1 and over said chain 22 for gravitational movement into said chain to clutch the rollers thereof.

As will be understood, the dog 24 is designed to be moved forwardly and rearwardly in the housing 1 by swinging of the hand lever 23 and is provided with a hook free end adapted to ride over the rollers of the chain 22 during forward movement of the dog and to hook over successive rollers under rearward movement of the dog to pull the chain step by step rearwardly and thereby stretch the wire attached to the chain. A finger grip 29 on the dog 24 provides for manually releasing the same from the chain 22, or in other words, the rollers thereof, by swinging of the dog upwardly.

A holding dog 30, similar to said dog 24, but reversely arranged relative to the dog 24, is pivoted, as at 31, in between the flanges 3 at the front end of the housing 1 for vertical swinging into and from obstructing relation to the rollers of said chain 22 to hold said chain against forward movement under the tension exerted by the stretched wire. The holding dog 30 may be swung upwardly and forwardly by a finger grip 32 into an idle position against a stop pin 33 extending between the flanges 3 at the front end of the housing 1.

The foregoing will, it is believed, suffice to impart a clear understanding of my invention, since the manner in which the same is designed to be used and operated has been set forth in connection with the description of the parts thereof.

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 wire stretcher for attachment to a fence post comprising an elongated housing, a pair of laterally spaced grappling bars extending from one end of the housing and terminating in a pair of grappling hooks, a chain adapted to be looped around said post and for attachment to said hooks to anchor said bars and housing to the post to extend horizontally from one side thereof, a stretcher chain movable lengthwise through said housing step by step and adapted for the attachment of wire thereto for stretching under such movement thereof, manipulative means to move said stretcher chain step by step, and means estending between said housing and post to maintain the housing and grappling bars against sagging out of horizontal position.

2. A wire stretcher for attachment to a fence post comprising an elongated housing, a pair of laterally spaced grappling bars extending from one end of the housing and terminating in a pair of grappling hooks, a chain adapted to be looped around said post and for attachment to said hooks to anchor said bars and housing to the post to extend horizontally from one side thereof, a stretcher chain movable lengthwise through said housing step by step and adapted for the attachment of wire thereto for stretching under such movement thereof, manipulative means to move said stretcher chain step by step, and means extending between said housing and post to maintain the housing and grappling bars against sagging out of horizontal position, said manipulative means including a hand lever pivoted on one grappling bar for movement in opposite directions, a chain operating dog adapted to extend from said lever into said housing and endwise movable in opposite directions by said lever, said dog having a hooked free end for ratcheting over said stretcher chain under movement thereof in one direction and hooking into said stretcher chain under movement thereof in the opposite direction and being swiveled at its other end on said lever for gravitational movement of the hooked end thereof into said stretcher chain.

3. A wire stretcher for attachment to a fence post comprising an elongated housing, a pair of laterally spaced grappling bars extending from one end of the housing and terminating in a pair of grappling hooks, a chain adapted to be looped around said post and for attachment to said hooks to anchor said bars and housing to the post to extend horizontally from one side thereof, a stretcher chain movable lengthwise through said housing step by step and adapted for the attachment of wire thereto for stretching under such movement thereof, manipulative means to move said stretcher chain step by step, and means extending between said housing and post to maintain the housing and grappling bars against sagging out of horizontal position, said manipulative means including a hand lever pivoted on one grappling bar for movement in opposite directions, a chain operating dog adapted to extend from said lever into said housing and endwise movable in opposite directions by said lever, said dog having a hooked free end for ratcheting over said stretcher chain under movement thereof in one direction and hooking into said stretcher chain under movement thereof in the opposite direction and being swiveled at its other end on said lever for gravitational movement of the hooked end thereof into said stretcher chain, and a holding dog pivoted in said housing for ratcheting movement into and out of said stretcher chain.

4. A wire stretcher for attachment to a fence post comprising an elongated housing, a pair of laterally spaced grappling bars extending from one end of the housing and terminating in a pair of grappling hooks, a chain adapted to be looped around said post and for attachment to said hooks to anchor said bars and housing to the post to extend horizontally from one side thereof, a stretcher chain movable lengthwise through said housing step by step and adapted for the attachment of wire thereto for stretching under such movement thereof, manipulative means to move said stretcher chain step by step, and means extending between said housing and post to maintain the housing and grappling bars against sagging out of horizontal position, said last-mentioned means including an extensible frame inclining downwardly from said housing to said post and having a toothed curved free end for biting into the side of the post said end being adapted to extend crosswise of said post.

5. A wire stretcher for attachment to a fence post comprising an elongated housing, a pair of laterally spaced grappling bars extending from

one end of the housing and terminating in a pair of grappling hooks, a chain adapted to be looped around said post and for attachment to said hooks to anchor said bars and housing to the post to extend horizontally from one side thereof, a stretcher chain movable lengthwise through said housing step by step and adapted for the attachment of wire thereto for stretching under such movement thereof, manipulative means to move said stretcher chain step by step, and means extending between said housing and post to maintain the housing and grappling bars against sagging out of horizontal position, said last-mentioned means including an extensible frame including downwardly from said housing to said post beneath said grappling bars and comprising a pair of laterally spaced fixed frame bars, an extensible U-shaped section slidably mounted on said frame bars and having a toothed curved end for biting into the side of the post said end being adapted to extend crosswise of said post, a yoke depending from said grappling bars and supporting said frame, and coacting devices on said section and yoke for maintaining the section in different extended positions.

G. F. NIDIVER.