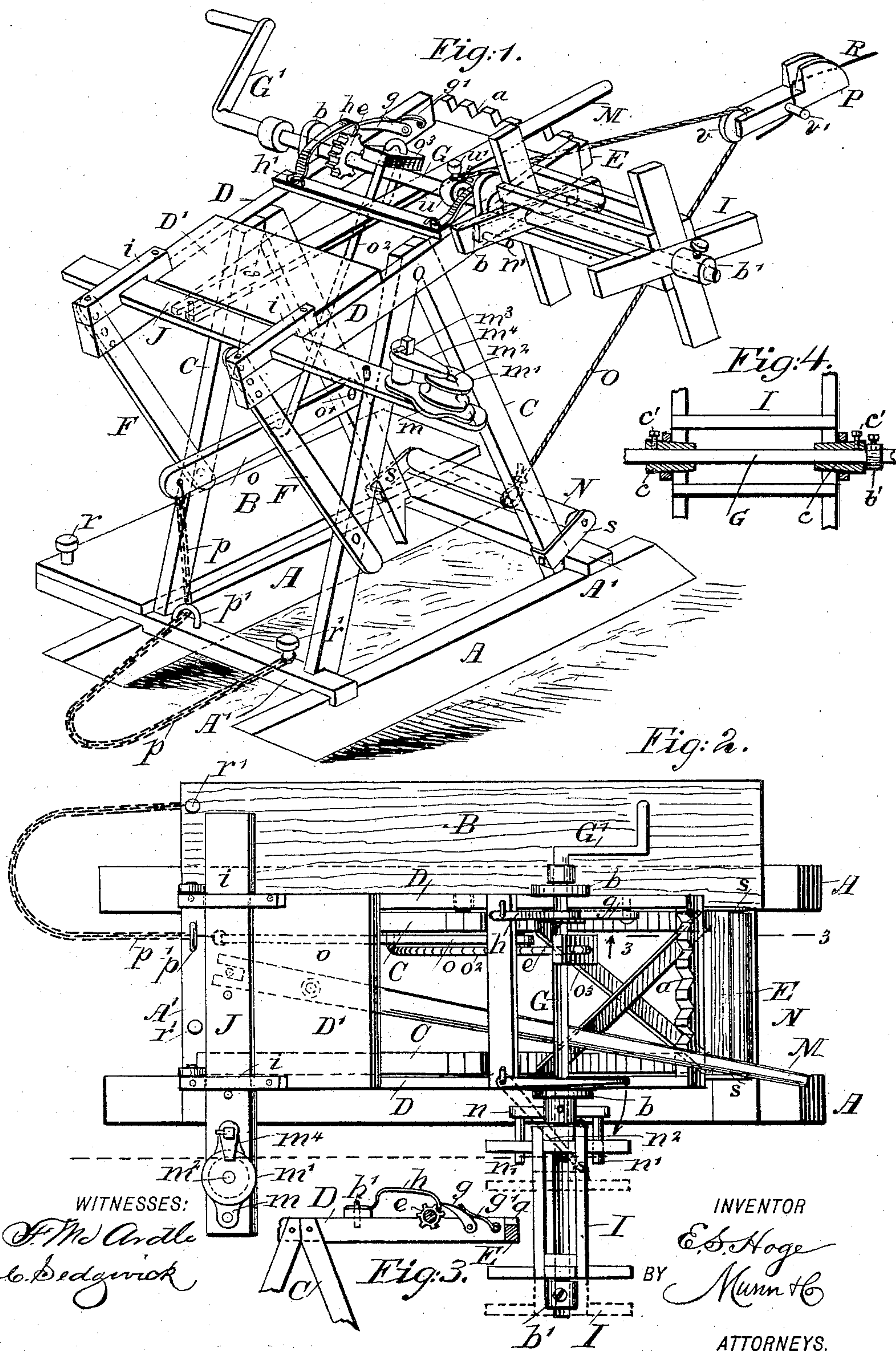


(No Model.)

E. S. HOGE.
WIRE STRETCHING AND REELING DEVICE.

No. 495,805.

Patented Apr. 18, 1893.



UNITED STATES PATENT OFFICE.

EDGAR S. HOGE, OF MORRIS, ILLINOIS.

WIRE STRETCHING AND REELING DEVICE.

SPECIFICATION forming part of Letters Patent No. 495,805, dated April 18, 1893.

Application filed January 4, 1893. Serial No. 457,245. (No model.)

To all whom it may concern:

Be it known that I, EDGAR S. HOGE, of Morris, in the county of Grundy and State of Illinois, have invented new and useful Improvements in Wire Stretching and Reeling Devices, of which the following is a full, clear, and exact description.

This invention relates to improvements in reeling and stretching devices, for wire used for fence making, check rowing and like purposes; and has for its objects, to provide a simple and convenient power drawn machine, which will be adapted to reel up wire, or pay wire out from a reel and stretch the wire as it leaves the reel.

To these ends my invention consists in the construction and combination of parts, as is hereinafter described and claimed.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of the machine arranged to stretch a fence wire or a check row wire. Fig. 2 is a plan view of the device arranged to reel up a barbed fence wire that has been uncoiled, or to take up a check row wire. Fig. 3 is a partly sectional and broken detail of construction on the line 3—3 and opposite the arrow in Fig. 2, and Fig. 4 is a broken and partly sectional view of a reel support that is part of the invention.

The machine in brief, comprises a framed structure having a reel on one side adapted to rotate in either direction and be locked as may be required, the reel being supported on a crank handled shaft, and a ratchet being connected with said shaft to facilitate such an action of parts.

A wire guiding mechanism of a novel construction is another feature of the invention, and a simple and effective brake device is another part of the improvement.

The entire device is designed to be drawn by any suitable means, preferably by a draft animal, when in use either as a reeling device or as a wire stringer and stretcher.

The frame of the machine is by preference made as represented in Figs. 1 and 2, consisting of two base timbers A, in runner form, held parallel and spaced apart a proper distance by the cross-bars A', which project from

one side of the connected runners for the support of a foot-board B, that is secured upon the projecting end of the cross-bars parallel with the runner to which it is adjacent. On the runners A, two similar A-shaped frames C made of wood or iron are erected, having a suitable height, and upon their tops two similar parallel bars D, are pivoted near their longitudinal centers so as to vibrate from a horizontal plane. At the rear end of the bars D, a cross-bar E, is secured thereto at its ends, on which bar a rack *a*, is formed or secured.

From the forward members of the A-shaped frames C, two prop-braces F, of equal length incline outwardly as indicated in Fig. 1, these pieces being pivoted near their lower terminals upon the sides of the parts they engage, and near their upper ends are adjustably and laterally secured upon the ends of the frame bars D. These prop braces each have a series of spaced perforations formed in them near their upper ends, to receive a securing bolt for each brace, which bolts pass through holes in the frame bars D, and serve to secure said bars at any point of equal inclination on the prop braces.

At a proper distance from the pivot centers of the frame bars D, a transverse shaft G, is rotatably secured, by its loose engagement with perforated ears *b*, oppositely affixed on the frame bars. The shaft G, is extended to a sufficient length at each side of the frame bars D, for effective service, one end being adapted for the reception of a wire holding reel I, of the usual form. When the center hole in the reel frame I, is so proportioned in diameter that the shaft G, will neatly fit therein, said reel is preferably held in place on the shaft by a removable collar *b'*, secured upon the shaft outside of the reel, by a set screw or other suitable means.

In order to permit reels having center holes of different diameters to be secured upon the shaft, tapered sleeves, or circular wedges *c*, are slid upon the shaft as indicated in Fig. 4, so that by an enforced insertion of these wedges within the large holes of the reel, the latter will be centered upon the shaft G, the adjustment of set screws *c'*, screwed into the wedges, serving to bind the latter upon the shaft after said wedges are properly inserted

within the opposite holes of the reel, the collar b' being placed upon the outer end of the shaft G to prevent an outward movement and consequent displacement of the reel. The end of the shaft G, that projects from the side of the frame opposite the reel I, has a crank handle G' , formed upon or secured to it, to enable an operator to rotate the shaft while standing upon the foot-board B.

On the shaft G, near the inner side of the frame bar D, nearest to the crank handle G' , a ratchet wheel e , is secured, and on the rear side of the shaft a pawl g , is forwardly projected, which pawl is pivoted upon the side of the frame bar D, so as to mesh with the ratchet wheel, a spring g' , serving to hold the pawl in engagement with the wheel. For efficiency in service, the ratchet wheel is furnished with teeth adapted for locking engagement in either direction, as it is necessary in utilizing the machine for reeling up wire, or stretching it, that the shaft G, should be adapted for a rotation in either direction, and be held to prevent a retrograde movement when rotated either to the right or left, as occasion may require.

The preferred means for effecting the adjustment of parts just mentioned, consists in providing a hook-shaped pawl h , loosely secured by its end h' , upon the frame bar D, as plainly shown in Fig. 3, the other end of said pawl being bent so as to hook over the ratchet wheel e , and enter between two teeth thereon. The other pawl g , is lifted when the pawl h , is to be used, and then allowed to rest upon the latter named piece, its contact therewith being enforced by the spring g' .

Near the front ends of the frame bars D, a transverse guide bar J, is held to slide longitudinally, by the clip plates i , secured above said bar, there being suitably shaped notches cut either in the clip plates, or upper edges of each frame bar D, to afford slots wherein the guide-bar will slide freely without improper looseness. The guide bar J, projects on the side of the machine frame parallel with the reel I, and far enough to adapt it to control the delivery of wire upon said reel, throughout the length of the latter; and to further this end a guide box is provided, comprising a bracket plate m secured upon the top of the guide bar, near the end opposite the reel, a grooved pulley m' , being loosely supported by a central stud m^2 , upon the plate m ; and on a parallel upright stud m^3 projecting from the plate m , the keeper plate m^4 , is removably secured.

Between the frame bars D, a lever M, is located, which is pivoted upon the lower side of a transverse table D' , attached to the frame bars as indicated in Fig. 1; one end of said lever being loosely connected with a pin or a like projection on the lower side of the guide bar J, and its opposite end is extended rearwardly below the shaft G, and adapted to engage with any one of the teeth on the rack a .

On the shaft G, between the frame and reel, a two pronged driver n , is mounted and there-to secured by a cross pin or like means, the driver having its prongs n' , projected between adjacent arms on the reel I, so as to be adapted to engage the latter and drive it in either direction when the shaft is rotated.

A brake lever o , is pivoted by its rear end upon the inner side of a rearwardly inclined member of the A-shaped frame that is nearest to the footboard B, and on its side at a suitable distance from the pivot point o' , a hook-bar o^2 , is pivoted, having its body upwardly and rearwardly projected of a sufficient length to permit its upper hook-shaped end to embrace the shaft G, over which it is hooked, and a block o^3 strung upon the hook portion of the bar o , before the shaft is engaged, has a bearing upon the top surface of the latter, and forms the frictional portion of the brake device. From the front end of the lever o , a chain or rope p , is downwardly extended and made to pass through a staple p' , from the rear side of the latter, said staple being firmly secured in the front cross-bar A' , near its longitudinal center.

Upon the upper surface of the front cross-bar A' the draft pins r r' are secured so as to project above it a proper distance to receive one end of the chain p , that is free to be so adjusted. The draft pins r r' are located, one near the outer end of the cross-bar A' , whereon the footboard B, is secured, penetrating the latter as represented in Fig. 1, the other draft pin being inserted into the cross-bar near the A-frame which is adjacent to the reel I.

Upon the inner edges of the rearwardly inclined members of the A-frames C, a pull-bar N, is secured by the similar bracket plates s , which latter are bent at one end to lap upon the inner edges of the inclined frame pieces, to which they are attached, their outer ends being affixed upon corresponding ends of the pull-bar.

A collar u , is secured upon the transverse shaft G, with a headed screw bolt u' , so as to afford ready means to connect an end of a straining rope O, with the shaft, the other end of said rope being looped upon or tied to the pull-bar N.

A clamping device P, is provided, consisting of an elongated block having one end furcated to receive between the members thus produced, a pulley or antifriction roller v , that is thereto pivoted, as shown in Fig. 1. The other end of the clamping piece P, is curved on the edge, and on this curved surface at the center of width, the block is V-grooved, and on one side of the block a pin v' , is projected. The straining rope O, is strung through the end of the clamp P, so as to engage its bight with the roller thereon when draft strain is applied to the clamp P.

When the machine is to be used to stretch a check row wire such as R, in Fig. 1, or it may be a barbed fence wire strand that has

been attached by one end to a post at some distance from the point where stretching force is to be applied, the near end of such wire is removably gripped in the clamping block P, by placing its body in the V-groove of the block, and bending the wire at a right angle so as to locate it below the pin v' , which will lock the block upon the wire and permit draft strain to be applied thereto by a forward movement of the entire machine, or by a rotation of the shaft G, in the right direction which will wrap a portion of the rope O upon the said shaft. It will be seen that the barbed wire that has been paid out from the reel I, may be stretched by the means just described, before it is severed from the coiled portion of the same on the reel, and after the stretched wire has been secured to a post or other stable object, it can then be detached from the coil sustained on the reel.

When barbed wire is to be unwound from the reel to place it as a fence wire, the draft chain p , is connected at its end that is not engaged by the lever o , to the draft pin r' , so as to throw the bight of the draft chain nearer the transverse center of the frame of the machine, when a draft animal is hitched thereto, the same connection of parts being had when the stretching clamp P, is in service. When the barbed wire or a check row wire is being paid out from the reel I, the draft strain applied to the chain p , will lift the front of the machine a few inches and thus cause the sloping rear ends of the runners A, to enter the ground traversed by the device, and hold the machine from a rearward movement, if from any cause there is a relaxation of draft strain on the chain p . It will be noticed, that when wire is unwound from the reel I, the draft strain applied to the chain p , will automatically set the brake device, and cause the block o^3 , to press with proper force upon the shaft G, to measurably restrict its rotation, and thus prevent a too free delivery of the wire from the reel.

When the device is used to stretch a wire after it has been delivered from the reel I, the pawl h , is made to engage the ratchet wheel e , and the pawl g , located upon the hook shaped pawl as before explained, which will prevent the reel from rotating its upper side rearwardly and also hold the shaft G.

Should the device be needed to wrap up wire that has been extended, this is effected by coiling the wire on the reel from the front side of the machine; and to permit such an operation, the hook shaped pawl h , is disengaged from the ratchet wheel e , so as to permit the other pawl g , to be spring pressed into engagement with the teeth of the wheel, this arrangement of parts allowing the operator on the foot board B, to reel up the wire from the front of the machine.

When the device is employed to reel up barbed wire, it is best to hook the end of the draft chain p , over the outer draft pin r , which will remove the draft animal farther from the

wire that is being wrapped upon the reel so as to prevent injury to the beast while at such work.

It will be evident that the pawl g , is to be employed to hold the shaft G, when the wire is paid out from the top of the reel I, rearward, and the curved pawl h , employed if the wire on the reel is fed from the lower side of the reel and rearwardly from the machine.

The peculiar construction of the guide box through which the wire passes to the reel I, enables an operator to release the wire in case a knotted place wedges between the stud m^3 and the pulley, which can be quickly effected by a temporary removal of the keeper plate that bears loosely upon the pulley. It will be seen, that when wire is being reeled upon the reel I, the proper vibration of the lever M, will lay the wire regularly and thus permit an operator riding on the footboard B, to reel up the wire properly while he drives the horse that pulls the machine.

The peculiar means provided to connect the clamping block P, with the rear of the machine, permits the block to be adjusted at any desired distance from the ground, within the range of the straining rope O, by changing the position of the block P, so as to alter the height of the bight of the rope, in an obvious manner. By means of the collar and set screw on the shaft G, the upper end of the straining rope O, may be laterally adjusted, and the lower end of the rope may be slid on the pull bar N, so that the straining rope may be laterally adjusted on the machine as occasion requires.

The lateral projection of the reel I from the frame of the machine, is of advantage in the stringing of fence wire, as it permits the disposition of the barbed wire close to the line of fence posts, while the draft animal has room to walk without crowding against the posts at the risk of injury from barbed wires that are already secured thereto. It is also intended to facilitate the stretching of the wire by sliding the reel I, away from the driver n , and holding it so with a hook n^2 , see Fig. 2, which will allow the crank shaft to be rotated and the reel to remain stationary, when stretching a portion of wire which has been paid out from the reel rearwardly.

Having fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A wire reeling and stretching apparatus comprising the upright frame, the vertically rocking adjustable frame pivoted between its ends to the upper end of the upright frame and having a reel shaft journaled in its rear end, one end of the shaft projecting beyond the side of the frame and provided with two removable conical sleeves $c c$ to engage a reel and each provided with a set screw, and the laterally adjustable guide bar on the rear end of the rocking frame and provided with a guide box for the wire, substantially as set forth.

2. A combined wire reel and stretcher comprising the frame; the shaft having connections for receiving and engaging a reel, a rope or chain secured at its lower end to the rear
5 lower portion of the frame and connected at its upper end with said reel shaft; a longitudinally grooved block having a pulley at its inner end engaging said rope or chain and provided on its side in rear of the groove with a
10 pin *v'* substantially as set forth.

3. In a wire reeling device, a frame structure composed of runners, A-shaped upright frames thereon, parallel frame bars pivoted at the vertices of the upright frames, trans-
15 verse pieces secured on the parallel frame bars, and prop braces pivoted at their lower ends to members of the upright frames, and adjustably secured at their upper ends to the parallel bars, substantially as described.

20 4. The combination with the frame and the reel shaft of a longitudinally extending vertically rocking lever pivoted to the frame below said shaft and having an upwardly extending arm carrying a brake block to engage
25 the reel shaft, and a draft connection secured

to the front end of the frame extending up to the free end of the lever, substantially as set forth.

5. In a wire-reeling device, the combination with a progressively movable frame, a rotatable transverse crank shaft thereon, and a driven reel on one end of the crank shaft projected beyond the frame, of a brake device composed essentially of a lever pivoted by one end on an upright member of the frame, a
35 hook bar loosely joined by its lower end to said lever near its longitudinal center, and adapted to hook upon the crank-shaft with its upper end, a brake block on said hooked end resting on the crank shaft, and a draft chain
40 attached by one end to the outer end of the lever, then passed through a staple on the lower front of the frame, and thence extended to and secured upon a draft pin below on the front of the frame, substantially as described. 45

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Witnesses:

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S. D. HOLDERMAN.