(No Model.)

A. S. PECK.

WINDLASS.

No. 440,279. Patented Nov. 11, 1890.

Fig 1.

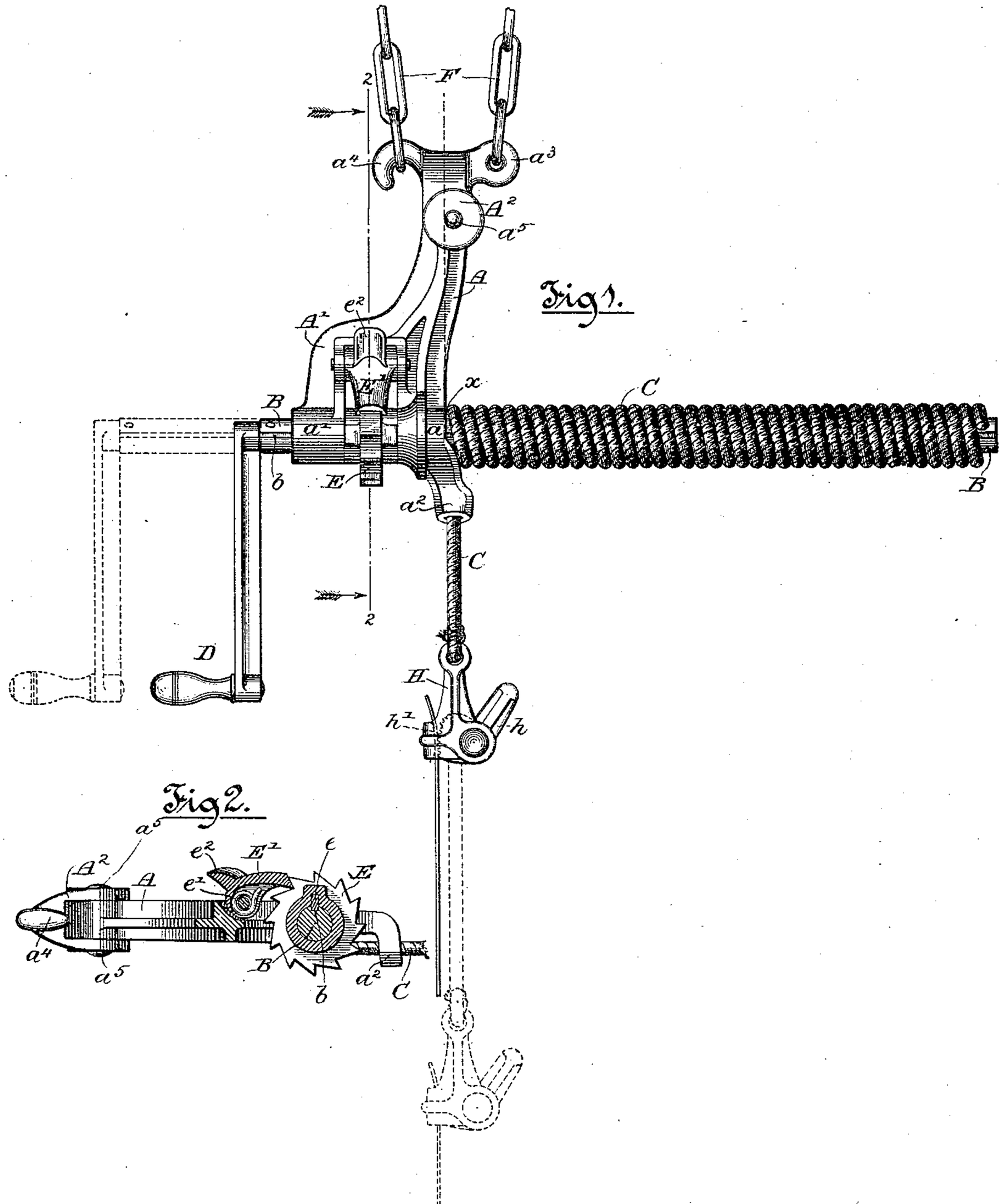

Fig 2.

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UNITED STATES PATENT OFFICE.

ALBERT S. PECK, OF GENEVA, ILLINOIS, ASSIGNOR OF ONE-HALF TO SETH E. PECK, OF SAME PLACE.

WINDLASS.

SPECIFICATION forming part of Letters Patent No. 440,279, dated November 11, 1890.

Application filed April 15, 1890. Serial No. 348,006. (No model.)

To all whom it may concern:

Be it known that I, ALBERT S. PECK, of Geneva, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in Windlasses; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to the barrels or drums of windlasses for hoisting or coiling purposes generally; and the object of my invention is to provide a barrel or drum which shall automatically vary its length to accord with the number of coils of rope or cable which may be wound upon or unwound from said barrel or drum, thus insuring a regular and uniform winding of the rope or strand, and at the same time greatly simplifying the construction of the winding apparatus or windlass as a whole.

To this end my invention consists in certain peculiar and novel features of construction and arrangement, as herein illustrated and described, and more fully pointed out in the appended claim.

In the illustrations of the drawings, Figure 1 is a plan view of a windlass for straightening wire constructed in accordance with my invention. Fig. 2 is a sectional view on the line 2 2 of Fig. 1, showing the pawl-and-ratchet attachments to the barrel or drum.

In all kinds of hoisting and winding or coiling apparatus employing drums or barrels to receive and deliver the rope or other strand the drums or barrels, so far as I am aware, have been of predetermined and fixed lengths, and the rope or strand has been coiled longitudinally upon the drum until the entire available length of the drum becomes covered by the coils, and then the coiling continues in one or more layers, overlaying that part of the rope or strand first wound upon said drum or barrel. This necessitates a constant change in the position of the incoming or outgoing strand and its load, and also causes a continual changing of the working-strain upon the supports and frame-work of the windlass, as well as a constant chafing of the coils against and upon each other. Hence the windlass has to be made very heavy in order to last for any considerable time, and the rope or strand is rapidly worn out or quickly rendered imperfect. It will be seen from the ensuing description that I have devised means whereby in windlasses generally the position of the incoming or outgoing strand remains fixed, relative to the frame-work of the machine, so that the working-strain is rendered constant in direction, thus permitting a much lighter frame-work than would heretofore be serviceable and avoiding all chafing and wear in the coils.

Referring now to Figs. 1 and 2 of the drawings, my invention will be first described as applied to windlasses for straightening fence-wires, such being one of the uses to which the invention may be put. In the said figures, A designates the supporting bar or frame of the windlass, and A′ designates an L-shaped arm, which branches off laterally from the bar A. The outer end of said arm A′ is provided with a sleeve or bearing a', the axis of which is at right angles to the length of the bar A. Upon said bar A, at a point directly opposite the sleeve a', is a sleeve or bearing a similar to the sleeve a', and in true axial alignment therewith. These sleeves a a' form the bearings for the barrel or drum B, which in the present instance is shown as of elongated cylindrical form, extending transversely of the bar A and through the sleeves or bearings a a'. Said drum B turns freely in said bearings a a', and is permitted to move longitudinally therethrough, as will be hereinafter more fully explained. Upon the extremity of the bar A, adjacent to the bearing or sleeve a, and in extenuation of the bar A, is a sleeve a^2 the axis of which extends parallel with the bar A and at right angles to the axis of bearings a a'.

C designates a rope, one end of which is suitably attached to the outer end of the barrel B. Said rope is shown as coiled longitudinally around said barrel, with its free end or strand passing through the sleeve a^2.

It will be evident that the barrel B being movable lengthwise through its bearings a a', by pulling upon the free end of the rope C the barrel will be revolved axially in its bearings, and will at the same time be drawn longitudinally through said bearings toward

the position indicated by the dotted lines in Fig. 1, the sleeve a^2 serving as the fulcrum-point from which the rope as it uncoils draws the barrel B endwise, as stated. It will also be evident that when the barrel is turned so as to wind or coil the rope upon it the longitudinal pressure of the successive coils against the outer side of the bar A at x will move said barrel endwise toward the right. Thus the tensional working-strain is maintained constantly at the sleeve a^2, and comes always endwise upon the frame-bar A, so that said bar is effectively strong for its purpose, although of the light construction shown. In said Fig. 1 I have shown a simple crank-handle D, secured upon one end of the barrel B, as the means for turning said barrel to wind or coil the rope C thereon, and I have also provided a pawl-and-ratchet attachment for preventing the rope from unwinding from the barrel at the wrong time. E designates a ratchet-wheel, which is splined upon the barrel B between the bearings or sleeves a a', the barrel having a longitudinal seat or groove b to receive the spline e, so as to cause the ratchet-wheel to turn with the barrel and at the same time to permit said barrel to move lengthwise through the ratchet-wheel.

E′ designates a pawl, which is pivoted upon the arm A′ and which is provided with a coiled spring e', the pressure of which serves to keep the point of the pawl in engagement with the teeth of the ratchet-wheel E. A thumb-piece e^2 is formed upon the pawl E′, so that by pressing upon the thumb-piece the pawl may be lifted out of engagement with the ratchet-wheel E when the rope C is being uncoiled from the barrel B.

Upon the end of the bar A, opposite from the sleeve a^2, is pivoted a T-piece A^2, one arm of which is formed with an eye a^3 and the opposite arm of which constitutes a hook a^4, as shown. One end of a chain F is secured in the eye a^3 of the T-piece and the hook a^4 is inserted into a link at the opposite end of the chain, the latter being passed around a stake or other support adapted to take the strain off wire to be straightened.

To the free end of the rope C is attached the usual wire-gripping device, consisting of the frame H, a lever h eccentrically pivoted thereto and bearing at its inner end against a shoulder h' on the frame H.

The operation of this wire-straightening windlass embodying my invention is too obvious to require further detailed description.

It is manifest that in this construction the load to be raised always exerts its strain on exactly the same place on the frame, and that this strain comes in line with the support of the frame, by reason of which I am enabled to construct said frame much lighter than would otherwise be required, and at the same time produce a device more easily worked.

It is obvious that the longitudinally-movable barrel may be effectively applied to various other forms of windlasses, and that in any event it greatly improves and simplifies the windlass as a whole and renders the same much more durable than it would otherwise be.

It will be observed that the center of the pivot a^5, which unites the T-piece A^2 to the bar A, is not in line with the bearing-surface of face x, but is slightly forward thereof—that is to say, said surface x is at all times nearer to the handle D than it is to a line drawn vertically from the center of such pivot a^5. By this construction I am enabled to entirely dispense with the sleeve or guide a^2.

It is manifest that by reason of the pivotal connection aforesaid a downward tension upon the rope C would have a tendency to cause the outer end of the barrel B, on which the rope C is wound, to move slightly downward or away from the said pivot and thus strain the parts. Moreover, if the outer end of the barrel B be thus depressed from the horizontal, the rope C would not tend at all times to bear against the surface x. Now, by pivoting the bar A slightly to the rear of the line of direction of said downward strain of the rope C, the tendency will be just the reverse of that described—to wit, to cause the outer end of said bar B to assume the horizontal or an upward position until the point of the strain and the point of support are practically in line, when of course the rope C will crowd in and down against the face x.

I claim as my invention—

In a windlass, the combination, with a bearing-frame, of a winding drum or barrel of uniform diameter throughout its length, said drum being supported in suitable bearings in said frame and being also provided with a slot or groove throughout its length, and a ratchet-wheel mounted upon said drum and engaged with said longitudinal slot or groove by means of a spline or key, said ratchet-wheel being supported against lateral movement by said bearing-frame, whereby the rope may be wound upon practically the entire length of the drum, substantially as described.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

ALBERT S. PECK.

Witnessess:
C. CLARENCE POOLE,
GEORGE W. HIGGINS, Jr.