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DEVICE FOR HANDLING ROPE AND THE LIKE.

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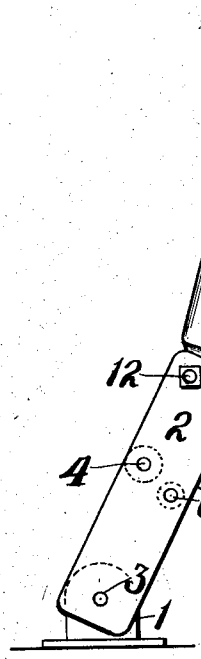

Fig. 1

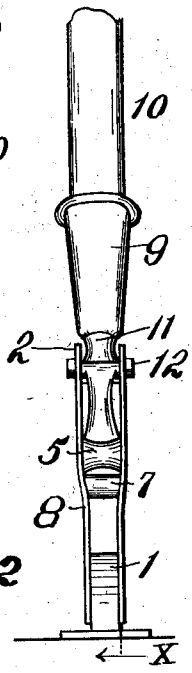

Fig. 2

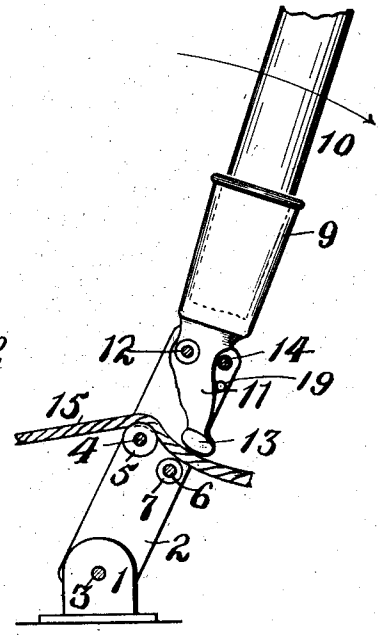

Fig. 3

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UNITED STATES PATENT OFFICE.

JOSEPH S. SOUREK, OF BATH TOWNSHIP, SUMMIT COUNTY, OHIO.

DEVICE FOR HANDLING ROPE AND THE LIKE.

1,038,013. Specification of Letters Patent. Patented Sept. 10, 1912.

Application filed August 2, 1911. Serial No. 641,956.

To all whom it may concern:

Be it known that I, JOSEPH S. SOUREK, a citizen of the United States, residing at Bath township, in the county of Summit and State of Ohio, have invented new and useful Improvements in Devices for Handling Rope and the Like, of which the following is a specification.

This invention relates to improvements in devices for handling or pulling a rope or other similar flexible member and adapted to be used in those places where the use of a device such as a winch or windlass is not available such as inconvenience of location or for any other reason.

The object of the invention is to produce a simple and efficient device for gripping and advancing a rope or similar flexible member to exert a strong pull thereon for various purposes such, for instance, as tightening the strands of a wire fence, raising objects of great weight, starting automobiles when stalled in the mud or sand of the roadway, etc.

My invention aims to provide a suitable device for such purposes which will be comparatively inexpensive to manufacture, easy to operate and capable of exerting great force in pulling a rope or similar flexible member, and which will be provided with means for gripping the rope or flexible member that the gripping-members of the device exert great clamping qualities when engaging the member.

A further object is to provide one of the gripping-jaws where it engages the rope in its taut condition with a roller or sheave so that as the jaw is moved in unison with the device during its inoperative stroke and along the taut portion of the flexible member it will produce no wear thereon, the flexible member running on the periphery of the roller whereby all fraying and wear on the flexible member is eliminated.

With the foregoing and other objects in view, the invention consists in the novel construction, combination and arrangement of parts constituting the invention to be hereinafter specifically described and illustrated in the accompanying drawings which form a part hereof wherein is shown the preferred embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which come within the scope of the claims hereunto appended.

In the drawings in which similar references indicate like parts in the different figures, Figure 1, is a view in side elevation of a device embodying this invention; Fig. 2, is a view in front elevation looking from the left in Fig. 1; and Fig. 3, is a vertical sectional view on line X of Fig. 2.

Before entering upon a detailed description of this invention, it will be stated that in the specification and claims the words "flexible member" will be used generically to designate any type of similar device such as a chain, hawser, cable, wire or wire-rope, in order to save unnecessary repetition.

The device is adapted to be fulcrumed upon some convenient object, by having its lower end secured thereto, and in the drawings a suitable fulcrum is indicated by the standard 1, which standard may itself be mounted upon anything movable or immovable, and it will be entirely within the scope of this invention to mount the lower or fulcrum end of this device upon a frame of any desired configuration. The device embodies a gripping-member and a gripping-lever adapted to coöperate to grip or engage the flexible member so that when the gripping-lever is moved it produces a pull on the rope, and is, by preference, one which automatically grips the rope when moved in one direction but releases it when moved in the opposite direction.

The gripping-member preferably includes a pair of upright spaced plates 2, provided at their lower ends with alined apertures through which extends a pin 3 whereby the gripping-member is pivotally connected with the fulcrum 1. Slightly above the center of the plates are alined openings in which is mounted a pin 4 to constitute an axle for a rotatable roller or sheave 5, preferably having a concave periphery. Spaced from the openings which hold the pin 4 and slightly below them are alined openings to receive the ends of a pin 6 having an enlarged and preferably irrevoluble median portion 7. The members 5 and 7 preferably extend between the plates 2, the space between the latter being slightly decreased at a point 8 below them. The faces of the roller 5 and pin 7 are arranged to constitute the gripping-face of the gripping-member.

The gripping-lever has at its upper terminus a socket-forming member 9 to receive the lower end of a handle 10, and below which is a jaw 11 through which and the plates 5 extends a pivot pin 12 for pivotally connecting the two elements of the device together. The lower end of the jaw 11 constitutes a gripping-face 13 which is adapted to coöperate with the members 5 and 7 for gripping a flexible-member. Positioned between the plates 2 and one side of the pivot pin 12 is a pin 19 for arresting the outward movement of the handle 11 carrying the jaw 13 when the latter is on its return stroke and free from gripping engagement with the flexible member. Positioned between the plates 2 and slightly above the pin 19 is a stop or abutment usually consisting of a pin 14 for arresting the movement of the handle 11 carrying the jaw 13 to arrest the latter from gripping the rope when desired. This abutment will usually be such as can be removed temporarily any time for a purpose to be later described.

The gripping or under face 13 of the jaw 10 is preferably smooth and convex so as not to wear the flexible member with which it engages, and the outer surface of the members 5 and 7 are also preferably free from corrugations or indentations which might tend to wear or fray the flexible-member used. The gripping face 13 of the jaw 10 and the outer or gripping-faces of the pin 7 and roller 5 coöperate to grip the flexible-member, indicated by the rope 15 when the handle 10 is swung in the direction of the arrow in Fig. 3, and to release the same when the handle 10 is moved in the opposite direction. When the handle 10 is moved in the direction reverse to the direction of the arrow the portion of the flexible-member over which the roller 5 travels is customarily under tension and as the roller moves over it it rotates to avoid wearing and fraying the rope, but in its operative stroke, in the direction of the arrow, the force exerted by the handle 10 presses the rope firmly against the pin 7 and the roller 5 to establish gripping relation, thereby arresting any rotation of the roller 5.

In order to move the handle and the side plates on their pivot 3 in the direction of the arrow and not cause engagement between the gripping members and the flexible member such for instance as when lowering a heavy weight attached to the left end of the flexible member in Fig. 3, or for shifting the position of the device with respect to the flexible member and not cause gripping engagement therewith, the pin 14 is inserted in the apertures prepared for it which locks the jaw 11 against movement with the gripping-face 13 remote from the gripping position and hence, the entire device may be moved in the direction of the arrow freely without affecting the flexible member in any manner.

I claim:

1. A device for advancing a flexible member embodying a gripping member comprising a pivotally-fulcrumed plate, a roller rotatably mounted on one face of said plate providing one gripping-face for said gripping member, a lever pivotally connected with said plate and provided with a jaw having a gripping-face opposing said rotatable gripping-face, said gripping-faces when said gripping-member and lever are moved in one direction gripping and moving said flexible-member in one direction and when moved in the opposite direction releasing said flexible member.

2. A device for advancing a flexible member embodying a gripping-member comprising a pivotally-fulcrumed plate, a roller rotatably mounted on one face of said plate, a fixed pin on said plate adjacent to said roller, said roller and pin in association providing a gripping-face for said gripping-member, a lever pivotally connected with said plate having a gripping-face opposing said rotatable gripping face, said jaws when said gripping-member and lever are moved in one direction gripping and moving said flexible-member in one direction and when moved in the opposite direction releasing said flexible member and permitting said roller to run thereon whereby wear on said rope is prevented.

3. A device for advancing a flexible-member embodying a gripping-member comprising a pair of parallel spaced plates pivotally fulcrumed, a roller rotatably mounted between them and providing a gripping-face for said gripping-member, a lever pivotally mounted between said plates and provided with a jaw having a gripping-face opposing said rotatable gripping-face, a removable stop on said gripping-member engaging said lever to limit the inoperative movement thereof for preventing said pivoted jaw from engaging said flexible member, said gripping faces when said gripping-member and lever are moved in one direction and when said stop is removed gripping and moving said flexible-member in one direction and when moved in the opposite direction releasing said flexible-member and permitting said roller to run thereon whereby wear on said rope is prevented.

4. A device for advancing a flexible member embodying a gripping-member comprising a pivotally-fulcrumed plate, a member mounted on one lateral face of said plate and provided with a portion constituting a gripping-face for said gripping-member, a lever pivotally mounted on said plate and provided with a jaw having a gripping-face opposing said first gripping-face, a removable stop carried by said gripping-member

and engaging said lever and operating when moved to its operative position to limit the movement of said lever to prevent the gripping-face on said lever from engaging said flexible member, said gripping-faces cooperating when said gripping-member and lever are moved in one direction and said stop is in its inoperative position for gripping and moving said flexible member in one direction, said gripping-faces being inoperative when said flexible member is moved in the opposite direction and said stop is in its operative position.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOSEPH S. SOUREK.

Witnesses:
A. L. McCLINTOCK,
C. E. HUMPHREY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."