Aug. 8, 1961 J. PERSIAUX 2,995,339

METAL CABLE HAULAGE AND HOISTING APPLIANCE

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FIG. 1

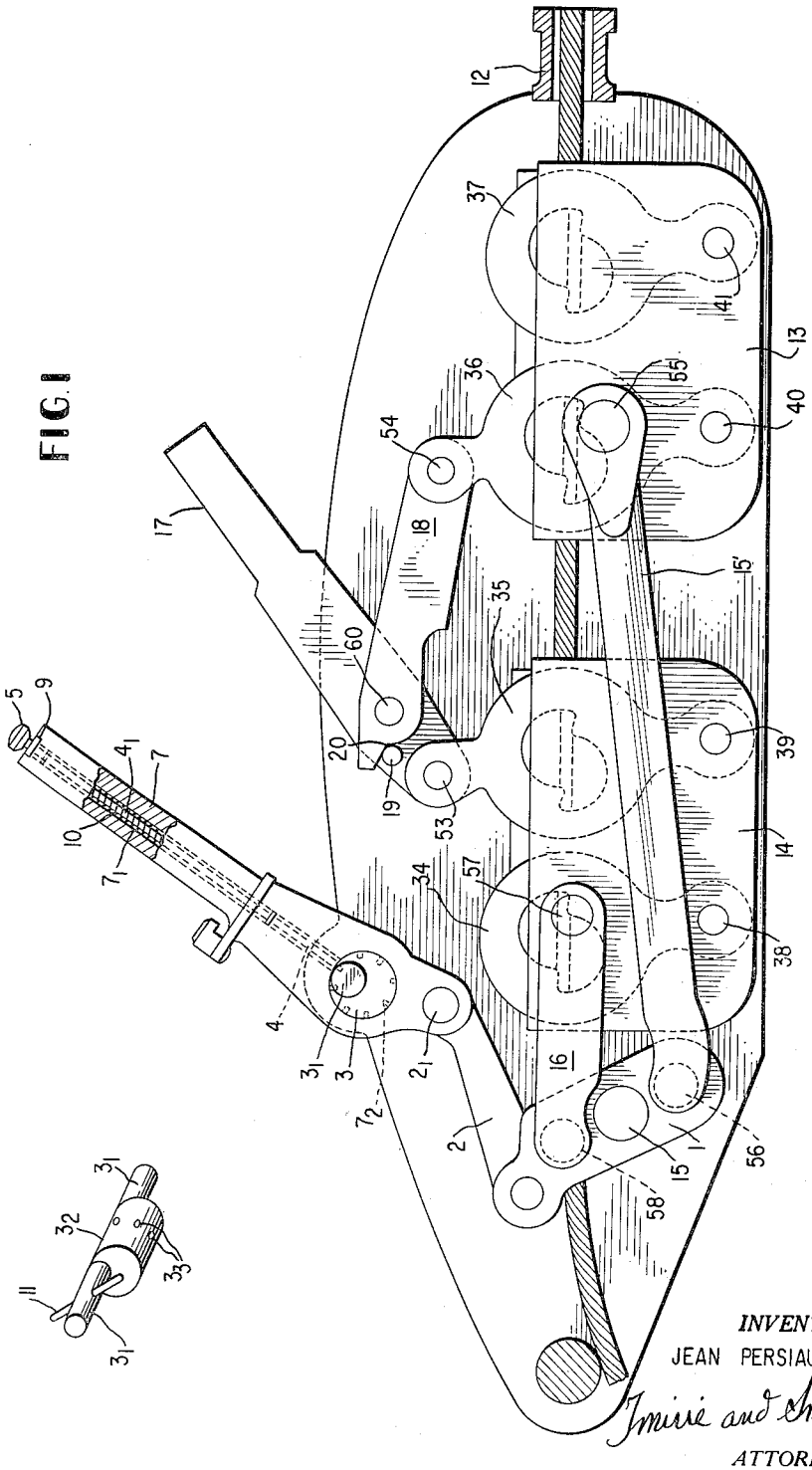

FIG. 2

INVENTOR.
JEAN PERSIAUX
Imirie and Smiley
ATTORNEY

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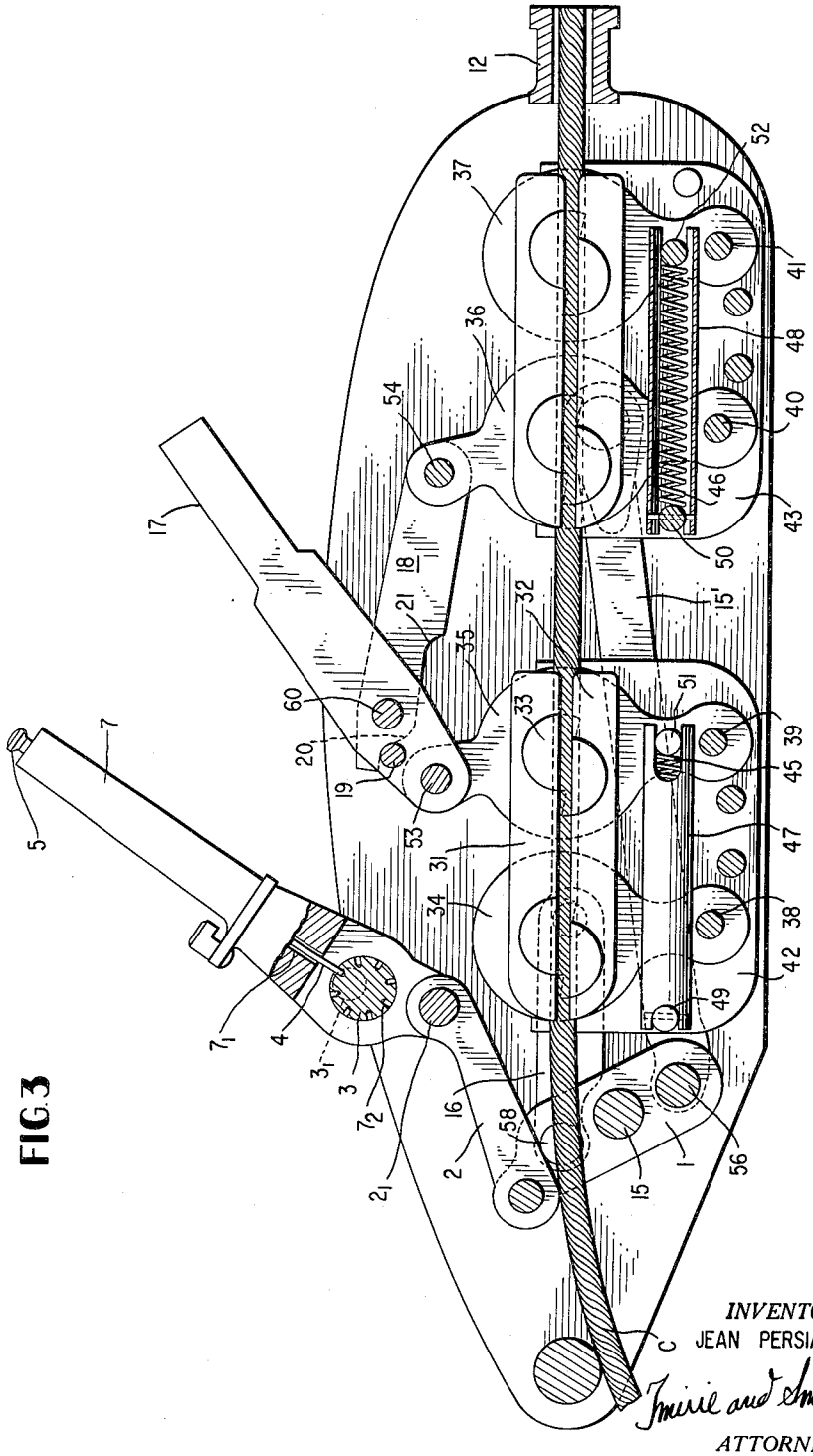

FIG 3

INVENTOR.
JEAN PERSIAUX

Mirie and Smiley

ATTORNEY

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2,995,339

METAL CABLE HAULAGE AND HOISTING APPLIANCE

Jean Persiaux, Lannoy, France, assignor to Societe d'Exploitations des Brevets et Appareils Tirfor, dite Tirfor S.A., Paris, France

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3 Claims. (Cl. 254—76)

A first purpose of the invention is to produce a metal cable haulage and hoisting appliance; enabling the user's effort to be adapted at any moment to the displaced load.

Another purpose of the invention is to secure a rapid advance of the hauling cable while working with a small load.

Another purpose of the invention is to produce a haulage and hoisting appliance whose speed can be varied while remaining under load.

As a non-limitative illustration the accompanying drawings represent a device according to the invention, in which—

FIG. 1 is a view in elevation of the device shown with the front half of the housing removed,

FIG. 2 is a perspective view of the eccentric, and

FIG. 3 is a longitudinal sectional view of the device.

The hauling cable enters the appliance in question by a guide 12 and then passes between two mobile jaws 13 and 14.

It will be hereafter supposed that the device is movable along a cable secured at a fixed point and that said device is pulling a load affixed to the device. On the contrary the device could be maintained fixed and could be used for pulling the cable to which the load would be secured. It may further be acting on a cable assuming any position between the horizontal and vertical positions.

Movable jaws 13 and 14 are known in design and comprise in a manner similar as the one described in the U.S. patent to Faure, 2,585,101, two clamping blocks 31—32 each comprising on each side two half-pins 33 engaging corresponding openings in levers 34, 35 and 36, 37 arranged in symmetrical pairs on each side of clamping blocks 31—32. These pairs of levers respectively pivot on shafts 38—39 and 40—41 connecting pairs of symmetrical plates 42 and 43 located inside housing 44 which comprises mechanism assembly.

In each jaw levers 35 and 36 have an extending arm supporting pins 53 and 54 which connect them respectively to a lever 17 and to a link 18 constituting the backward motion mechanism of the device.

Each jaw comprises further a spring 45 or 46 located inside tube 47 or 48 and having one end resting on a fixed pin 49 or 50 interconnecting the plates of each jaw and having the other end in contact with a pin 51 or 52 integral with pair of levers 35 or 37. These springs tend to urge towards the right the levers and clamping blocks assembly of each jaw, said clamping blocks being forced to slightly grip cable C. On the contrary, when the jaws are moved towards the left by means of the levers hereafter described, the action of the openings in the levers on the corresponding half-pins 33 tends to release cable C. However, when the device is in operation, the two jaws always move in opposite directions, getting near each other or away from each other, in such manner that there is always one jaw gripping the cable while the other is sliding relatively to said cable.

In the case considered above in which the device to which a load is secured is moving on the cable towards the right, the two jaws are actuated by a linkage comprising, a shaft 15 mounted in cylindrical bearings provided in the housing and to which double crank 1 is secured. The two jaws are connected to crank 1 by means of, in the case of jaw 13, a connecting rod 15' pivotally mounted at one end on the side of jaw 13 by means of pin 55 and, at the other end, connected by means of pin 56 to one end of crank 1.

In the case of jaw 14, a connecting rod 16 pivotally mounted at one end on the side of jaw 14 by means of pin 57 and, at the other end, connected by means of pin 58 to the other end of crank 1.

To ensure the displacement of the device towards the left relatively to the cable, the two jaws 13 and 14 are controlled by lever 17 which, on one hand, is connected to levers 35 of jaw 14 by means of pin 53 and, on the other hand, is connected to levers 36 of jaw 13 by means of pin 54, a link 18 and pin 60.

Lever 17 pivots around pin 19 and, when moved in the direction corresponding to the anchorage of the device, will cause the opening of jaw 14 and the closing of jaw 13.

The connecting rod 18 is made so as to have two notches 20 and 21 whereby it respectively abuts at the end of the top stroke and the end of the bottom stroke, on the oscillation pivot of the lever 17 controlling the movement, thus preventing the two jaws from striking against each other when descending.

The double crank 1 which controls the movement of the jaws is itself controlled, according to the present invention, by a connecting rod 2 connected to a lever 7 the effective length of which is variable by means of pivot pin 2_1.

The variation of the effective length of lever 7 is furnished by a multiple position eccentric located in bore 7_2 provided in lever 7. The eccentric is provided on either side with two cylindrical pins bearing studs 3_1 engaging corresponding openings provided in the walls of the housing and comprises a central portion 3_2 which fits into bore 7_2. It is the axis of extending pins 3_1 which constitutes the axis of the eccentric and the pivot around which lever 7 oscillates.

According to one possible embodiment of the invention represented by the drawings, central portion 3_2 of the eccentric is provided with radial apertures 3_3 for receiving the end of a finger 4 housed inside the lever.

It is obvious that the circumferential displacement of the cylindrical bearings 3_1 in relation to the axis of the bore 7_2 provided in the body of the lever 7, determines a variation in the length from center to center 3_1, 2_1, and consequently, of the effective length lever 7. This lever has a longitudinal hole or passage 7_1 in which the finger 4 engages that has a rod 4_1. A retaining part 9 mounted at the top end of the lever 7, acts both for retaining a spring 10 and guiding the rod 4_1 of the finger 4. The rod 4_1 of the finger 4 is provided with a button 5 at its top end, enabling it to be actuated.

With the haulage appliance either at rest or under load, the operator can, by acting on the button 5, i.e., pulling on the rod 4_1 extended by the finger 4, bring out the end of this finger 4 from the body of the eccentric 3_2 and by action on a means such as a cotter pin 11, determine the rotation of the eccentric unit 3, to obtain the introduction of the end of the finger 4 into an aperture 3_3 determining an angular displacement of the lever, this displacement being selected by the operator.

The purpose of the spring 10 is to keep the finger 4 in position in one of the apertures 3_3 of the body 3_2 of the eccentric.

The control means such as the cotter pin is obviously placed in an accessible manner for the operator.

It goes without saying that the invention is not restricted to the examples of embodiment precisely described and shown and from which other alternatives can be pro-

duced without going outside the scope of the invention for that purpose.

For instance, the locking of the eccentric can be effected by means of a key or similar device.

What I claim is:

1. In a metal cable hauling and hoisting device having two jaws movable in opposite directions and ensuring the movement of the device relatively to the cable and a double crank connected to said jaws: a control lever coupled with said crank and provided near its lower end with a cylindrical bore; an eccentric including a cylindrical central portion rotatably mounted in the cylindrical bore of the control lever, and two cylindrical bearing studs acting as the pivot axis of the control lever, said cylindrical central portion being provided with a plurality of peripheral and radial apertures; and a locking finger for locking the eccentric relatively to the control lever, said locking finger being housed in a longitudinal passage of the control lever with the end of said finger engaging one of the radial apertures of the central portion of the eccentric.

2. In a metal cable hauling and hoisting device having two jaws movable in opposite directions and ensuring the movement of the device relatively to the cable and a double crank connected to said jaws: a control lever coupled with said shank and provided near its lower end with a cylindrical bore; an eccentric including a cylindrical central portion rotatably mounted in the cylindrical bore of the control lever, and two cylindrical bearing studs acting as the pivot axis for the control lever, said cylindrical central portion being provided with a plurality of peripheral and radial apertures; a locking finger for locking the eccentric relatively to the control lever, said locking finger being housed in a longitudinal passage of the control lever with the end of said finger engaging one of the radial apertures of the central portion of the eccentric; and a spring housed in the longitudinal bore of the control lever and urging the locking finger toward the eccentric.

3. In a metal cable hauling and hoisting device having two jaws movable in opposite direction and ensuring the movement of the device relatively to the cable and a double crank connected to said jaws: a control lever coupled with said crank and provided near its lower end with a cylindrical bore; an eccentric including a cylindrical central portion rotatably mounted in the cylindrical bore of the control lever, and two cylindrical bearing studs acting as the pivot axis of the control lever, said cylindrical central portion being provided with a plurality of peripheral and radial apertures; a locking finger for locking the eccentric relatively to the control lever, said locking finger being housed in a longitudinal passage of the control lever with the end of said finger engaging one of the radial apertures of the central portion of the eccentric; a spring housed in the longitudinal bore of the control lever and urging the locking finger toward the eccentric; and securing means located at the upper end of the lever for holding said spring in position.

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