(No Model.)

A. S. FRENCH.

MECHANISM FOR APPLYING POWER TO ROPES FOR HOISTING.

No. 260,964. Patented July 11, 1882.

Fig. 1.

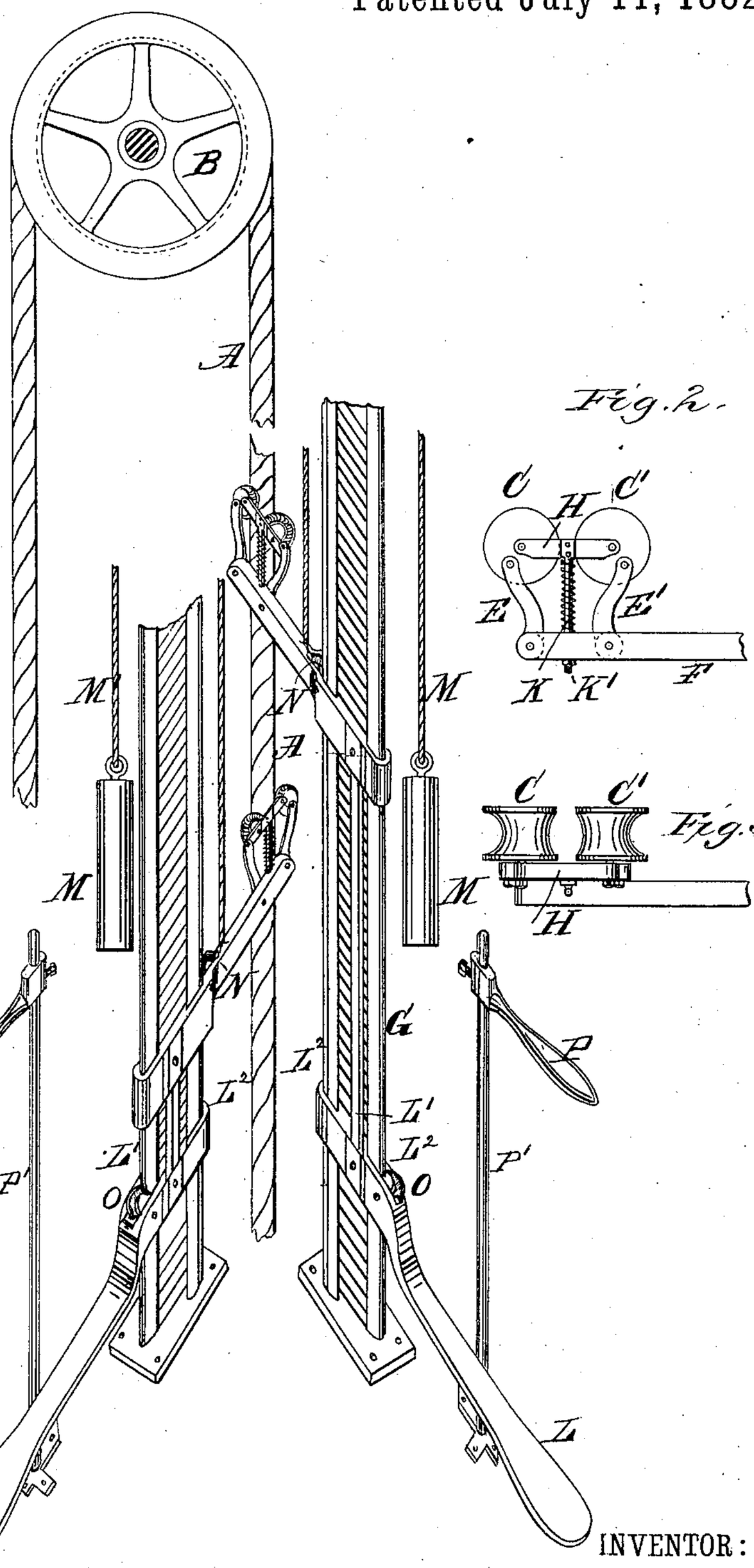

Fig. 2.

Fig. 3.

WITNESSES:

F. L. Ourand.

C. J. Williamson.

INVENTOR:

Alvah S. French

per Boyd Eliot

ATTORNEY.

UNITED STATES PATENT OFFICE.

ALVAH S. FRENCH, OF NEW YORK, N. Y.

MECHANISM FOR APPLYING POWER TO ROPES FOR HOISTING.

SPECIFICATION forming part of Letters Patent No. 260,964, dated July 11, 1882.

Application filed December 16, 1881. (No model.)

To all whom it may concern:

Be it known that I, ALVAH S. FRENCH, residing in the city, county, and State of New York, have invented a Mechanism for Applying Power to Ropes for Hoisting, &c., of which the following is a specification.

The object of this invention is to increase the power of the operator in pulling on a rope, as for hoisting and other similar purposes; and the invention consists chiefly in providing clamping devices for grasping the rope and connecting them to pedals and in such proximity to fixed handles that the operator may not only apply his entire weight upon the rope to draw it down, but also exert his entire lifting power, as will hereinafter appear.

The drawings represent at Figure 1 the parts in perspective, in which A is the hand-rope of a hoisting-wheel, B, of the old and well-known form.

Instead of pulling on the rope by hand, as now done, clamping devices are used to grasp the rope, and in the form here shown (to which I do not limit myself) they consist of two sheaves or grooved rolls, C and C′, (shown enlarged at Figs. 2 and 3,) pivoted eccentrically to the ends of upright arms E and E′, which are pivoted to an arm, F, that is mortised at one end and arranged to slide upon an upright, G, fastened upon the floor.

The centers of these rolls C and C′ are pivoted to the ends of a bar or link, H, that holds the centers always the same distance apart, and said bar has a spring at K around a guide-rod, K′, that extends from the bar or link H down through the arm F, and said spring is constantly tending to keep the rolls pressed upward, and thereby close the space between them, and thereby cause them to act like two eccentrics when they are pulled down upon the rope.

The arm F is connected to a pedal below at L by a rod or link, L′, and said pedal is mortised at L^2 to slide on the same upright, G, that guides and supports the arm F, so that the operator by pressing upon it draws down the arm F, and by the friction of the rolls on the rope causes them to clamp it tightly and thereby draw down upon it. As shown, there are two of these clamping devices arranged at an angle to each other, so that the pedals are a convenient distance apart for the operator to stand upon them and operate them alternately to draw down upon the rope; but only one may be used.

The arms and pedals are raised by counter-weights M, suspended by cords M′ over a wheel or pulleys above, (not shown;) but these weights are barely sufficient to raise the clamping devices and their arms and the pedals and to allow the rolls C and C′ to slide up on the rope A.

To further enable the operator to exert all his force upon the rope A, handles, as at P, are provided upon rods P′, extending out in such proximity to the pedals that the operator may not only thereby steady himself upon the pedals, but may pull upon them to the extent of his lifting power, and thus by working the pedals alternately and lifting at the same time can operate to the extent of his weight and strength.

When two or more clamping devices are used they are arranged one above the other at such a distance apart that they will not interfere with each other in their rise or descent.

It must be evident that such a combination of devices may be placed in the car of an elevator and drawn up on a rope passing through the car.

It is also evident that such an apparatus may be used on board of vessels for hoisting sails and for any other purpose where a result is to be accomplished by drawing upon a rope.

In cases where a number of men are required to draw upon a rope the pedals might be extended on both sides, so that four or more might be operating at the same time.

Having thus described my invention, I desire to claim—

1. The combination, with a rope, as for hoisting purposes, of one or more clamping devices connected with pedals to be operated alternately or otherwise, as hereinbefore set forth.

2. The combination of the rolls or sheaves pivoted eccentrically to vibrating arms, and with a link pivoted at each end to their centers, and a reacting spring, all mounted upon a supporting arm or bracket, as hereinbefore set forth.

3. The clamping device supported on a sliding arm connected to a pedal arranged to move

up and down upon a guide, as and for the purposes hereinbefore set forth.

4. The clamping device connected to a pedal and a reacting weight for raising the same, as and for the purposes hereinbefore set forth.

5. The combination, with a single rope, of the clamping devices and pedals and guides with handles in such relation to the pedals that the operator may both use his weight and exert his strength in drawing on the rope, as hereinbefore set forth.

In witness whereof I have hereunto subscribed my name and affixed my seal in the presence of two subscribing witnesses.

ALVAH S. FRENCH. [L. S.]

Witnesses:

EUGENE N. ELIOT,

EDMUND DAY.