3 Sheets—Sheet 1.

# C. HODGSON.

## APPARATUS FOR TRANSPORTING LOADS ON WIRE ROPE.

No. 109,317. Patented Nov. 15, 1870.

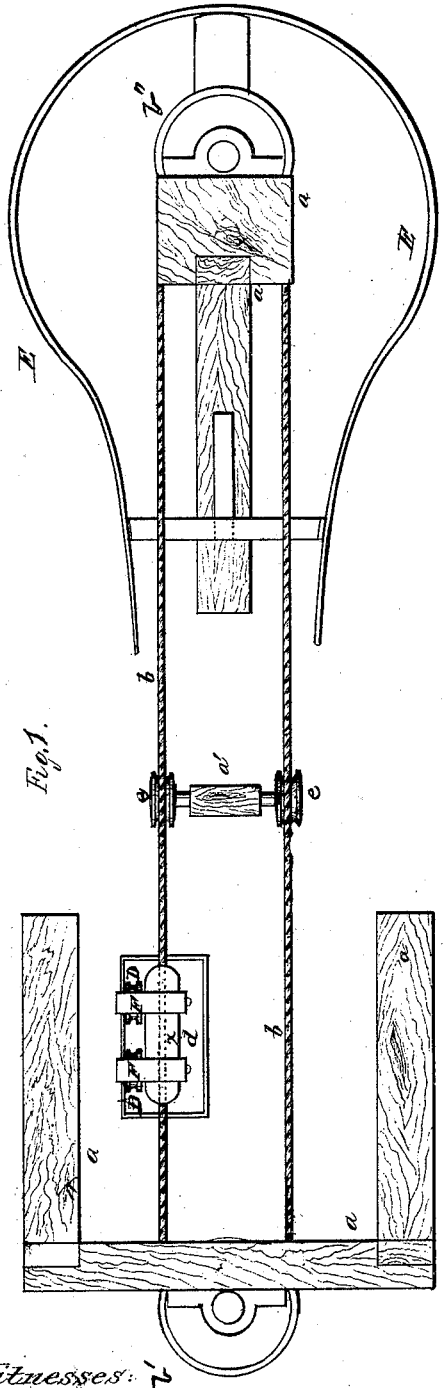

Fig. 1.

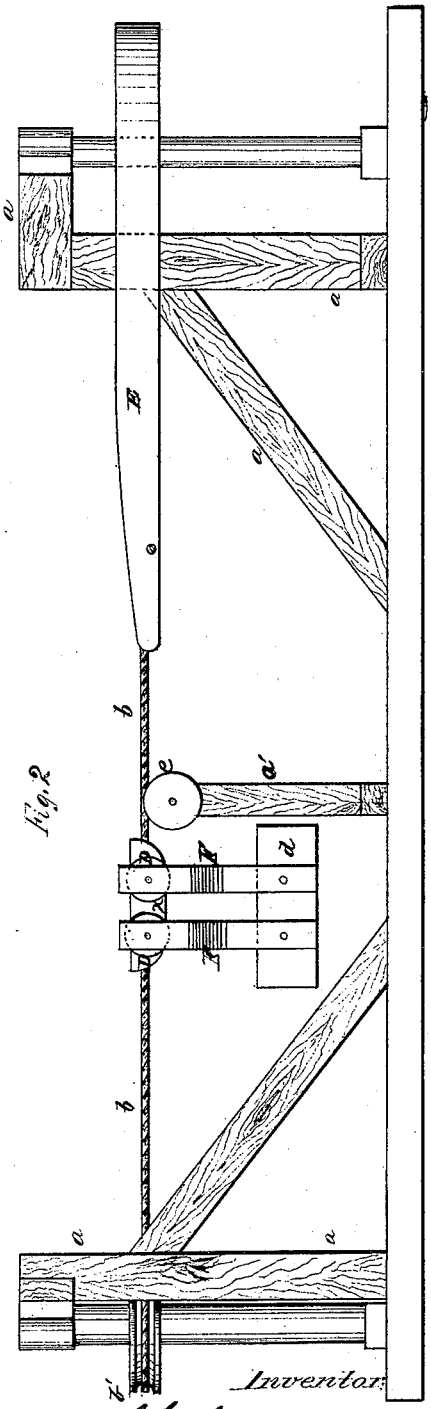

Fig. 2.

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## APPARATUS FOR TRANSPORTING LOADS ON WIRE ROPE.

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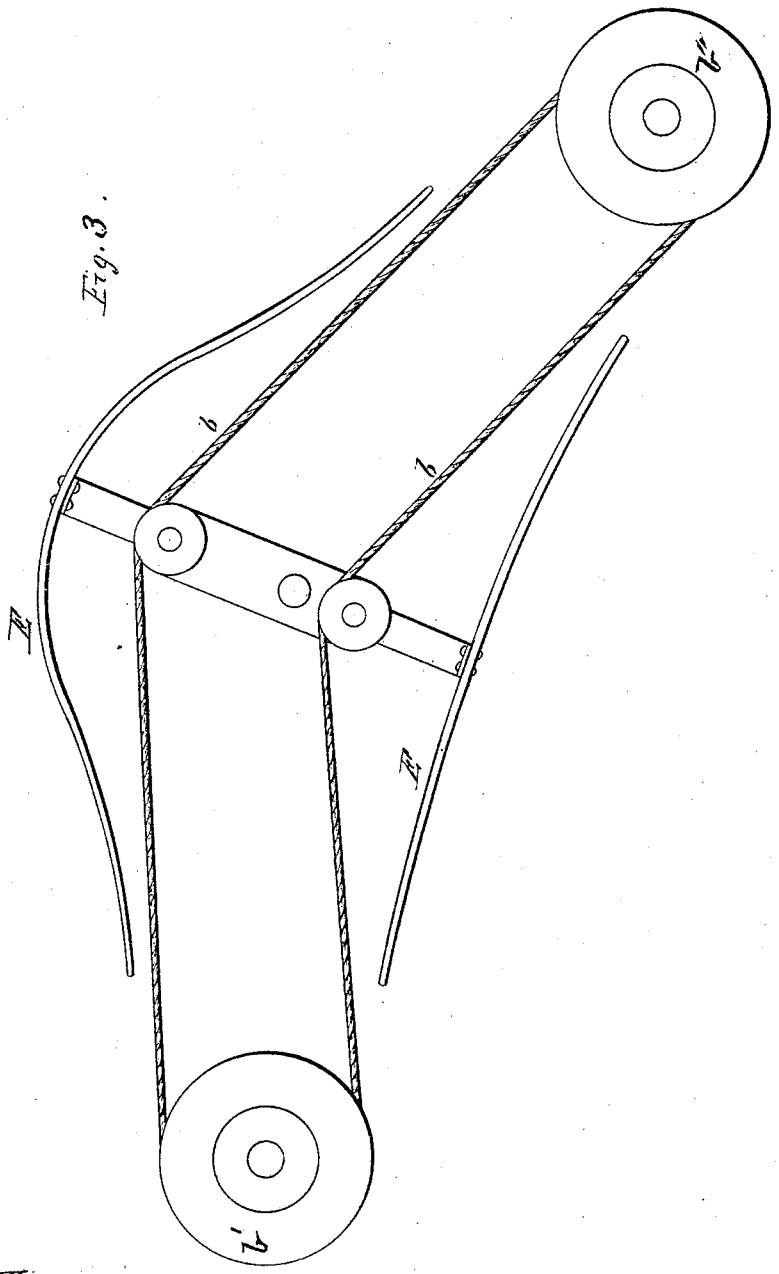
Fig. 3.

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3 Sheets—Sheet 3.

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## APPARATUS FOR TRANSPORTING LOADS ON WIRE ROPE.

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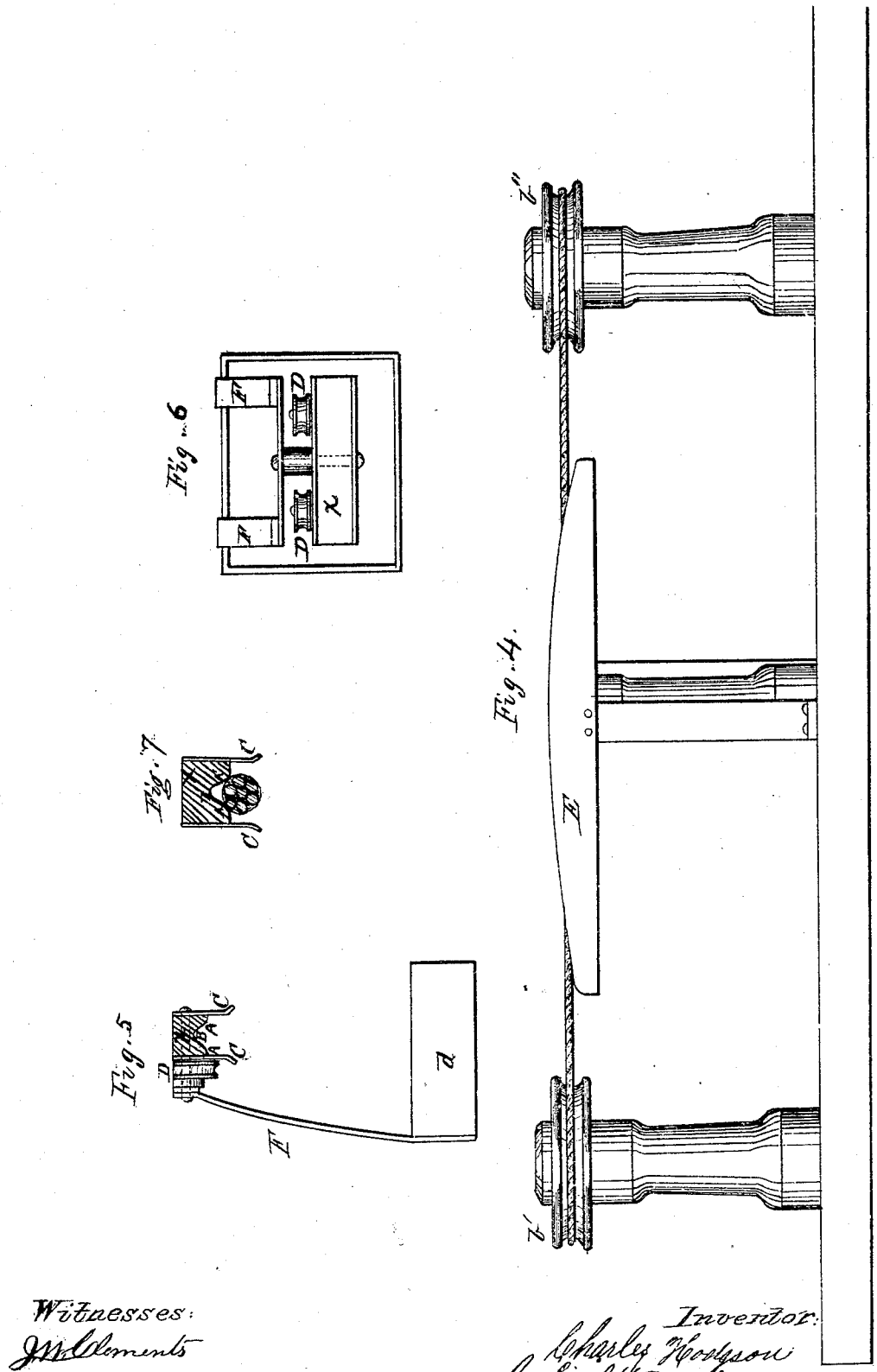


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# United States Patent Office.

CHARLES HODGSON, OF RICHMOND, ENGLAND.

Letters Patent No. 109,317, dated November 15, 1870.

## IMPROVEMENT IN APPARATUS FOR TRANSPORTING LOADS ON WIRE ROPES.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that CHARLES HODGSON, of Richmond, in the county of Surrey, England, has invented or discovered certain "Improvements in the Apparatus employed in Transporting Loads by means of Wire Ropes."

Now know ye that I, the said CHARLES HODGSON, do hereby declare that the following is a full, true, and exact description of the said invention, reference being had to the drawing hereunto annexed, and to the figures and letters marked thereon; that is to say:

My improvement consists—

First, in the form and construction of the hook or block which rests upon the rope, and which embodies in itself three distinct features, viz: the form of the hook for grasping the rope, the application to it of wheels for running upon rails to be placed close to the rope at the extremities or at curves, for the purpose of enabling the cars conveying the loads in continuous succession to be run onto or delivered from the rope at any point without its being necessary to stop or slack the speed of the said rope and the hanger which carries the car, so that no matter what inclination the block may take in following the rope or in passing over a pulley, the hanger will always be vertically suspended.

Second, in the adapting or fixing of rails beside the rope in such a manner as shall enable the block above described to leave the rope on its wheels and pass away from it without allowing the guards to touch, grind against, or stop the moving rope.

In the accompanying drawing—

Figure 1 represents a plan view of my invention.

Figure 2 is an elevation of the same.

Figure 3 is a plan view, showing the side rails for passing a change of direction in the rope.

Figure 4 is an elevation of the same.

Figure 5 is a cross-section of the carriage and hanger.

Figure 6 is a plan of the same, showing one method of pivoting the hanger to the block; and

Figure 7 is a cross-section of the block for grasping the rope.

In carrying out my invention, I employ an endless wire rope, *b*, or wire, or band of steel or other metal, which rope or band I cause to travel by passing the bight at one of the ends of the intended line of transportation round a drum, *b*, driven by a suitable power, and keeping the said rope stretched by taking it round a movable drum, *b''*, at the other end of the line, which drum can be hauled out so as to tighten the rope.

Onto this rope, by means of the arrangements hereinafter described, I run or pass a series of hooked hangers, F F, supporting boxes or cars, *d d*, for transporting any kind of material.

In order to support this endless rope at all such points as may be necessary between the extremities of the line over which it forms a communication, and at the same time not to interrupt the passage of the cars, I employ pulleys or sheaves, *e e*, having a shallow or converging grooved seat which but little oversails the rope.

I round or chamfer off the outer side of the flanges of these pulleys, so as to suit the form of the wood block *x*, figs. 5 and 7, which forms the interior of the hook to be hereinafter described, and which rests upon the endless rope.

I so adapt the section of the rim of my pulleys to the section of this block in order that the passage of the block may be easy and that it shall not be worn by sharp flanges.

In fixing these supporting pulleys on the posts *a' a'* or other frame-work which it may be necessary to provide, I take care to place them in such a position that they shall overhang at least one half the width of the form of car employed on the endless rope, so that when the said cars arrive at the pulleys they shall pass by without touching the frame-work.

The hook or hanger which I employ consists, first, of a wood block, *x*, about one foot in length and three inches square, the under side of which rests on the endless rope, the sides A and A' sloping toward the groove B.

As already stated, the flanges of the pulleys *e e* are adapted to the shape of the sides A and A', so that they shall ride easily over said pulleys.

C C are sheet-iron guard-plates to give greater security on the rope.

D D are small wheels, which I attach to the hangers and blocks which rest on the rope.

E is the side rail provided for these wheels to run upon in order to engage or disengage the blocks from the endless rope, as hereafter to be described.

The groove B is so formed as not completely to admit the rope which rests against its corners, and is thus more perfectly held from slipping on inclines.

F F are the hangers, which are simply curved bars for supporting the car, so that the center of gravity of the car shall be brought vertically under the center of the rope, while the curve of the bars carries it clear of the pulleys *e* which support the rope.

These bars are pivoted to the wood supporting-block, *x*, as seen in fig. 6, or to the block and carriage, as seen in fig. 2, so that the carriage shall always hang vertically whatever the inclination of the rope may be.

I place the shunt-rails E beside the rope at such places as it may be desirable to disengage the cars from it, as at the extremities of the line, at stations, or

at sharp curves, and I so fix this rail that it shall at first incline upward relatively to the direction of the rope, as shown in figs. 2 and 4, so that the head or hook of the car having by its wheels taken onto the rail, shall run along it by momentum till the guard-plates are clear over the rope.

The guard-plates, being now at a higher level than the rope, the whole head or hook carrying the car is free to leave it, and may be conducted anywhere on the rail for loading, &c., and run again onto the rope by a similar disposition of rails.

Having thus described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. The wheels attached to the hook and block, and operating in reference to the endless rope, substantially as and for the purpose set forth.

2. The block or saddle, constructed as described, with a converging grooved seat to render it self-adhering to the moving wire or rope, yet readily disengaged therefrom when the pulley engages with the side rail, substantially as and for the purpose herein set forth.

3. The combination, with the block or saddle, of the guards and wheel or pulley, to enable the wheels to take the load and block off of the rope while the guards retain the blocks in a position to re-engage the rope when past the side rail, as herein shown and set forth.

4. The rails arranged close to the wire or other rope at the extremities of, or changes in direction in, the rope, for the purpose, and in the manner substantially as described.

5. The pendent frame, pivoted to the block so that the load will remain vertically suspended independent of the inclination of the rope, substantially as set forth.

In witness whereof, I, the said CHARLES HODGSON, have hereunto set my hand this 27th day of July, in the year of our Lord one thousand eight hundred and sixty-nine.

C. HODGSON.

Witnesses:

J. M. STIRLING,

GEORGE W. ORMUANNEY.

*Both of 21 Gresham Street, E. C., London.*