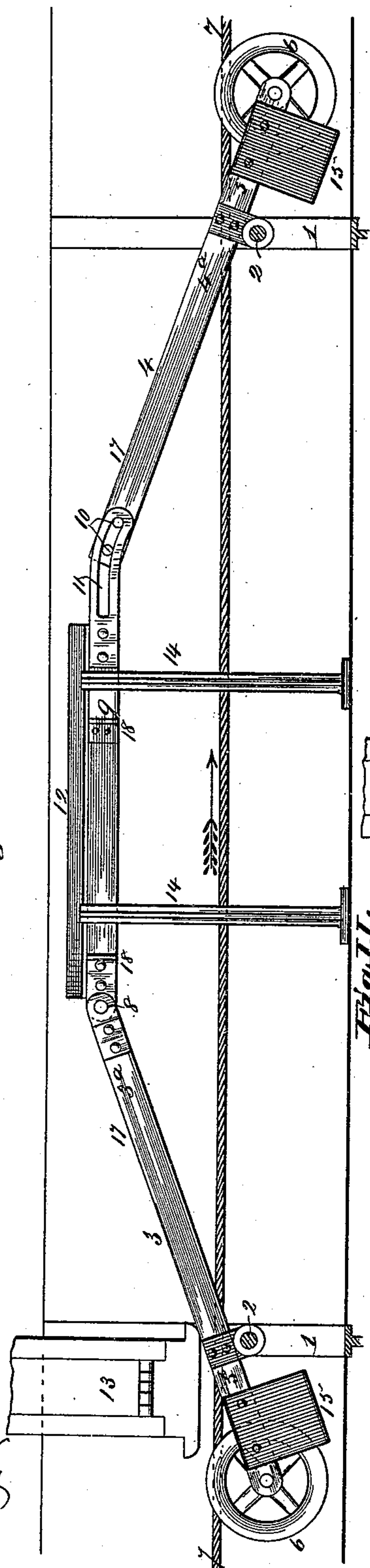
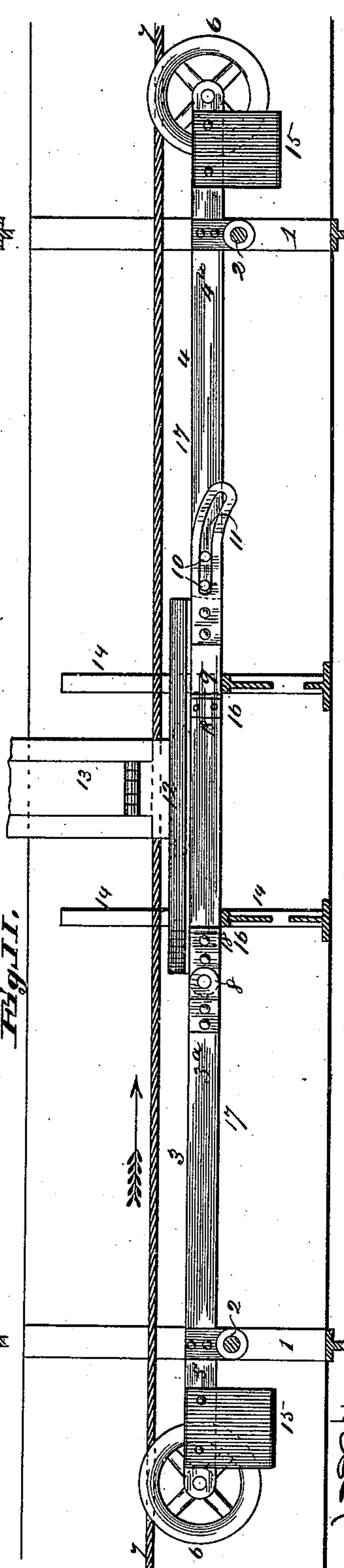


J. B. FRENCH.  
AUTOMATIC CABLE LIFTER.

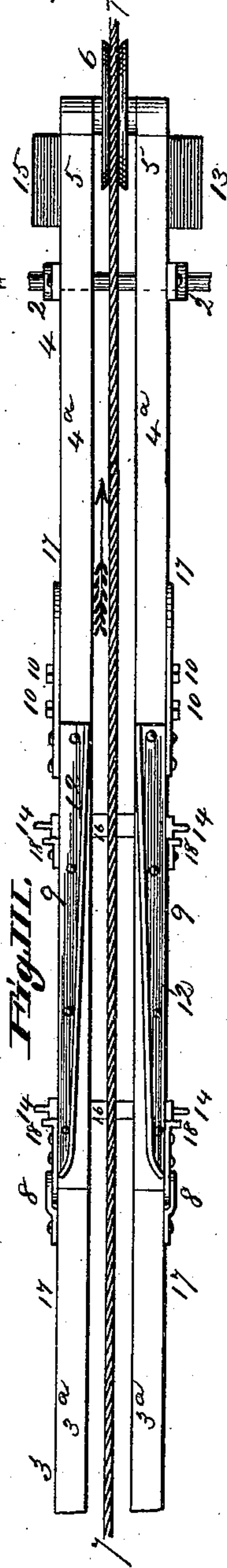
Patented Feb. 10, 1891.



# Fig. 1.



# Willoughby



Attest;  
S Cotton  
S H Knight

Inventor:  
John B. French.  
By Knight Bros  
Attys.



# UNITED STATES PATENT OFFICE.

JOHN B. FRENCH, OF ST. LOUIS, MISSOURI.

## AUTOMATIC CABLE-LIFTER.

SPECIFICATION forming part of Letters Patent No. 446,337, dated February 10, 1891.

Application filed October 27, 1890. Serial No. 369,476. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN B. FRENCH, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Automatic Cable-Lifters for Cable Railroads, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

10 This is a device for automatically carrying the cable up between the jaws of the grip and closing the jaws upon the cable.

The features of novelty will be set forth in the claims.

15 Figure I is a side elevation showing the cable below the grip and the latter about to act on the levers. Fig. II is a side elevation showing the cable elevated and between the jaws of the grip. Fig. III is a detail top view of the device with parts in position shown in Fig. II.

20 1 1 are standards within the conduit giving fulcrum-bearing at 2 to the levers 3 and 4, made, preferably, of angle-iron. The shorter arm 5 of each lever carries a grooved pulley 6, over which the cable 7 runs. Each lever consists of two parallel bars 3<sup>a</sup> or 4<sup>a</sup>, as the case may be, and the pulley 6 has bearing between the bars, the cable passing between the bars when the parts are in the position shown in Fig. I. Each of the bars 3<sup>a</sup> is hinged at 8 to a horizontal bar 9, which at the other end is connected to one of the bars 4<sup>a</sup> by a slip-joint of any suitable description. I have shown for this purpose two studs 10 upon the side of the bar 4<sup>a</sup>, which work in a curved slot 11 of the bar 9. The form of the slot is such that the bars 9 are at all times in a substantially horizontal position, whether elevated, as in Fig. I, or depressed, as in Fig. II. One of the studs 10 at each joint may be dispensed with and the slot 11 made straight instead of curved, as in practice the bars 9 will in any case have a horizontal position when the grip is passing over them, which is all that is really essential. It will be seen, also, that the weight of the cable would depress both pulleys equally when they are in the lower position, and thus the bars 9 would be held in horizontal position when elevated, as in Fig. I, even with a single pin 10 in each slot 11.

12 are inclined bars secured to the tops of the bars 9, and whose office is to close the jaws of the grip 13 upon the cable as the grip passes over the bars 9. 55

The bars 12 are preferably made of angle-iron. In order to guide the bars 9 in their vertical movements and to prevent their spreading asunder, vertical guides 14 are provided, such guides being firmly attached to the conduit at top and bottom. 60

15 are counterbalance-weights which depress the pulley ends 5 of the levers and raise the bars 9 into their normal position, as seen in Fig. I. The weight of the pulleys and cable may be sufficient to render the weights 15 unnecessary. 16 are stop-bars extending from guide to guide and limiting the descent of the bars 9. 70

18 are projections on the bars 9, which bear against the guides 14 when the bars are in their lower position, as seen in Figs. II and III, and which preserve the fulcrum-pin and hinge of the lever 3 from the strain which would otherwise come upon them from the friction of the grip against the inclined bars 12. 75

The operation is as follows: The cable is supposed to be below the jaws of the grip, as seen in Fig. I, and the grip, traveling in the direction indicated by the arrow, comes in contact with the bars 3<sup>a</sup> and depressing their longer arms 17 depresses also the bars 9 and the longer ends 17 of the bars 4<sup>a</sup>. This will lift the pulleys and cable into the position seen in Fig. II, bringing the cable between the jaws of the grip, and as the grip passes over the bars 9 the jaws are closed upon the cable by the inclined bars 12. As the grip moves along the bars 4<sup>a</sup>, the pulleys descend and the parts take their normal position, as seen in Fig. I. 80 85 90

I claim as my invention—

1. The combination, in a device for lifting cables, of the two levers 3 and 4, each bearing a grooved pulley 6 at one end and at the other end connected to the horizontal bars 9, substantially as set forth. 95

2. The combination, in a device for lifting cables, of the two levers 3 and 4, each bearing a grooved pulley 6 at one end, and the bars 9, hinged at one end to the lever 3 and having slip-joint connection at the other end with the lever 4, substantially as set forth. 100

3. The combination, in a device for lifting cables, of the two levers 3 and 4, and the bars 9, hinged at 8 to the lever 3, carrying at one end the pulley 6 and connected at the other 5 end to the lever 4 by parts having slots 11 and by studs 10 on the bars 9 and lever 4, respectively.
4. The combination, in a device for lifting cables and applying the grip thereto, of the 10 two levers 3 and 4, carrying at one end the pulleys 6, adapted to support the cable, the horizontal bars 9, connected to the end of the levers opposite to the pulleys, the inclined bars 12, adapted to close the jaws of the grip, and the guides 14, all substantially as and for 15 the purpose set forth.

JOHN B. FRENCH.

In presence of—

SAML. KNIGHT,

THOMAS KNIGHT.