

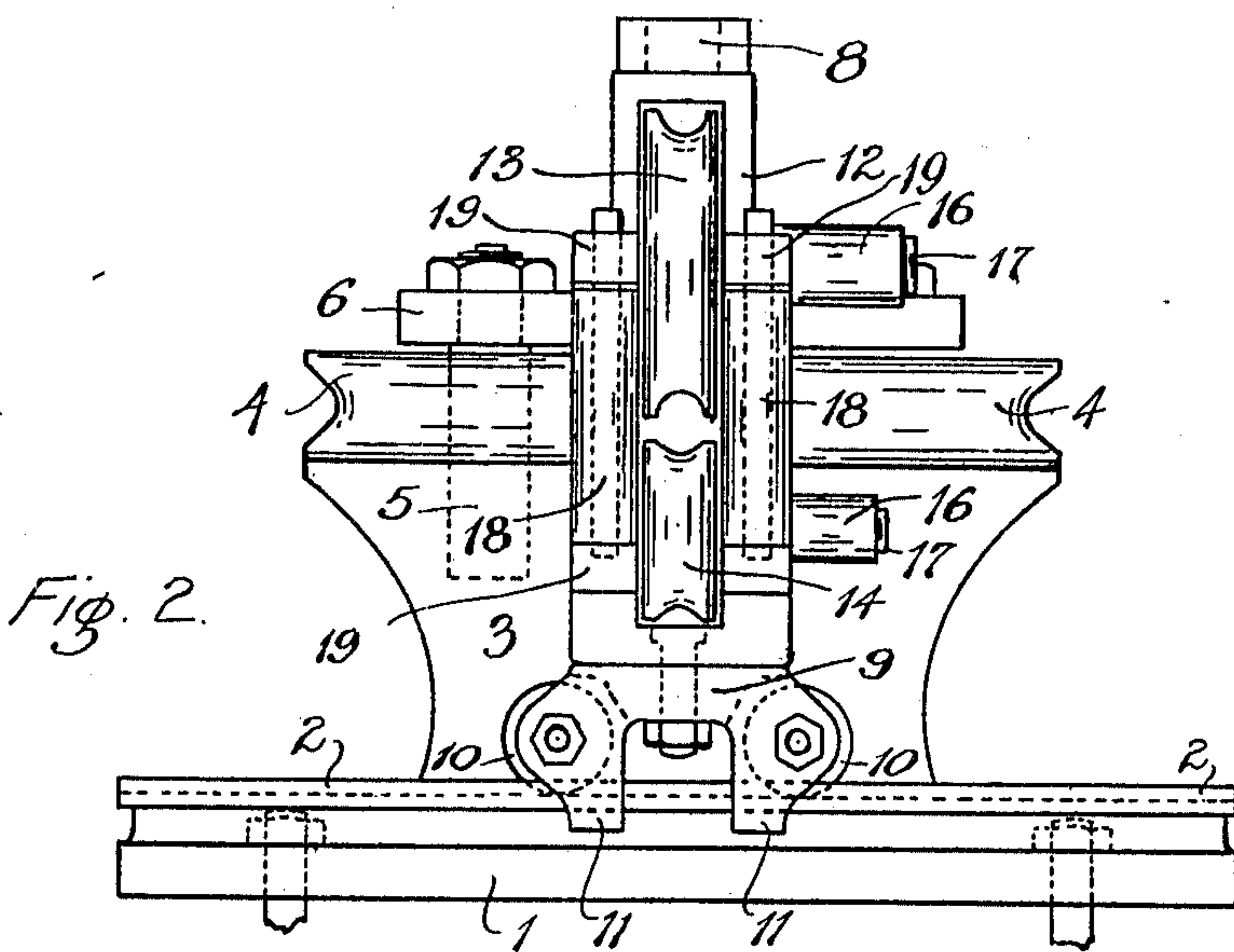
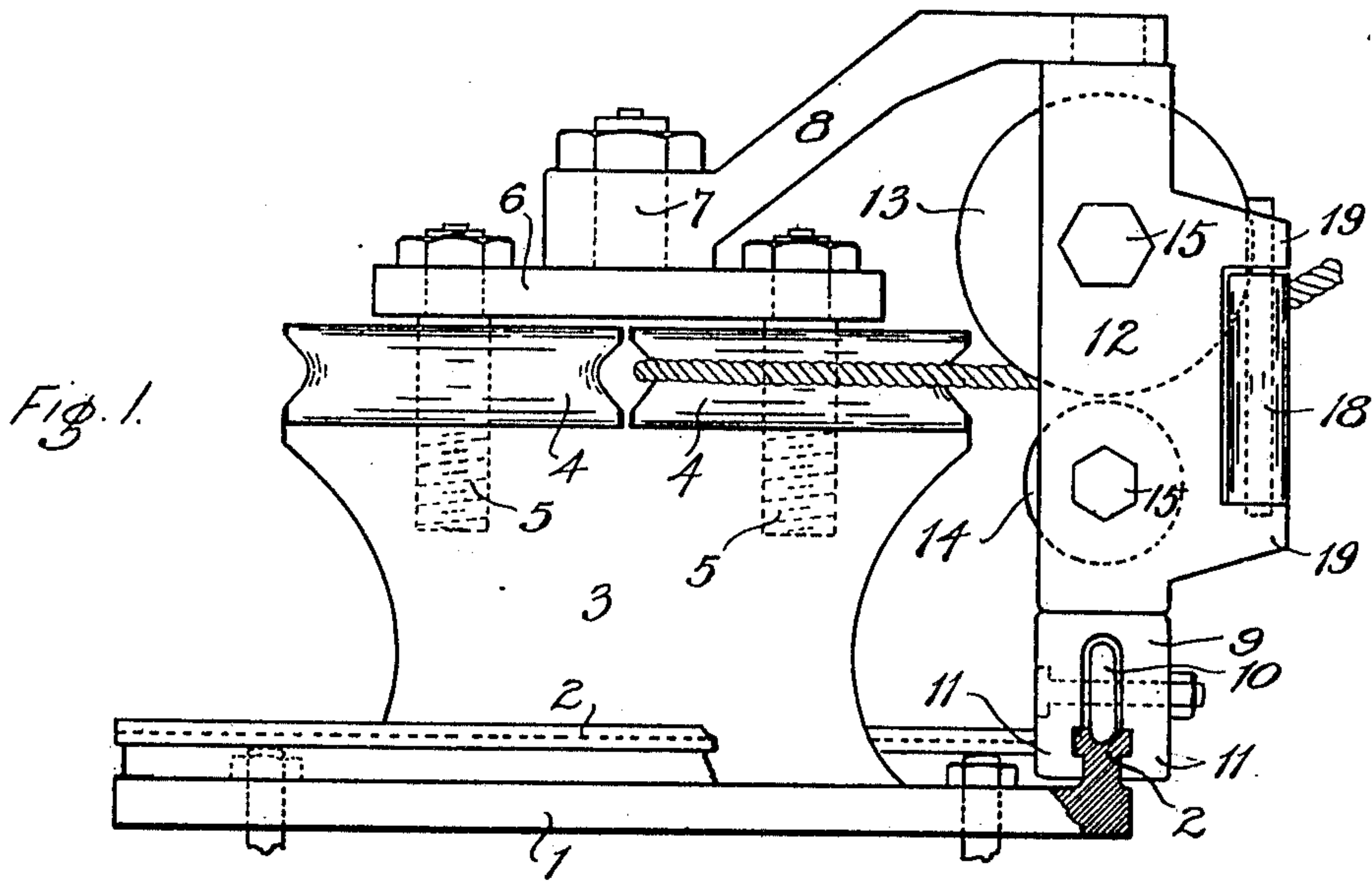
A. ISAAC.  
FAIR-LEADER.

APPLICATION FILED JULY 26, 1909.

969,873.

Patented Sept. 13, 1910.

2 SHEETS—SHEET 1.



Inventor

Archie Isaac

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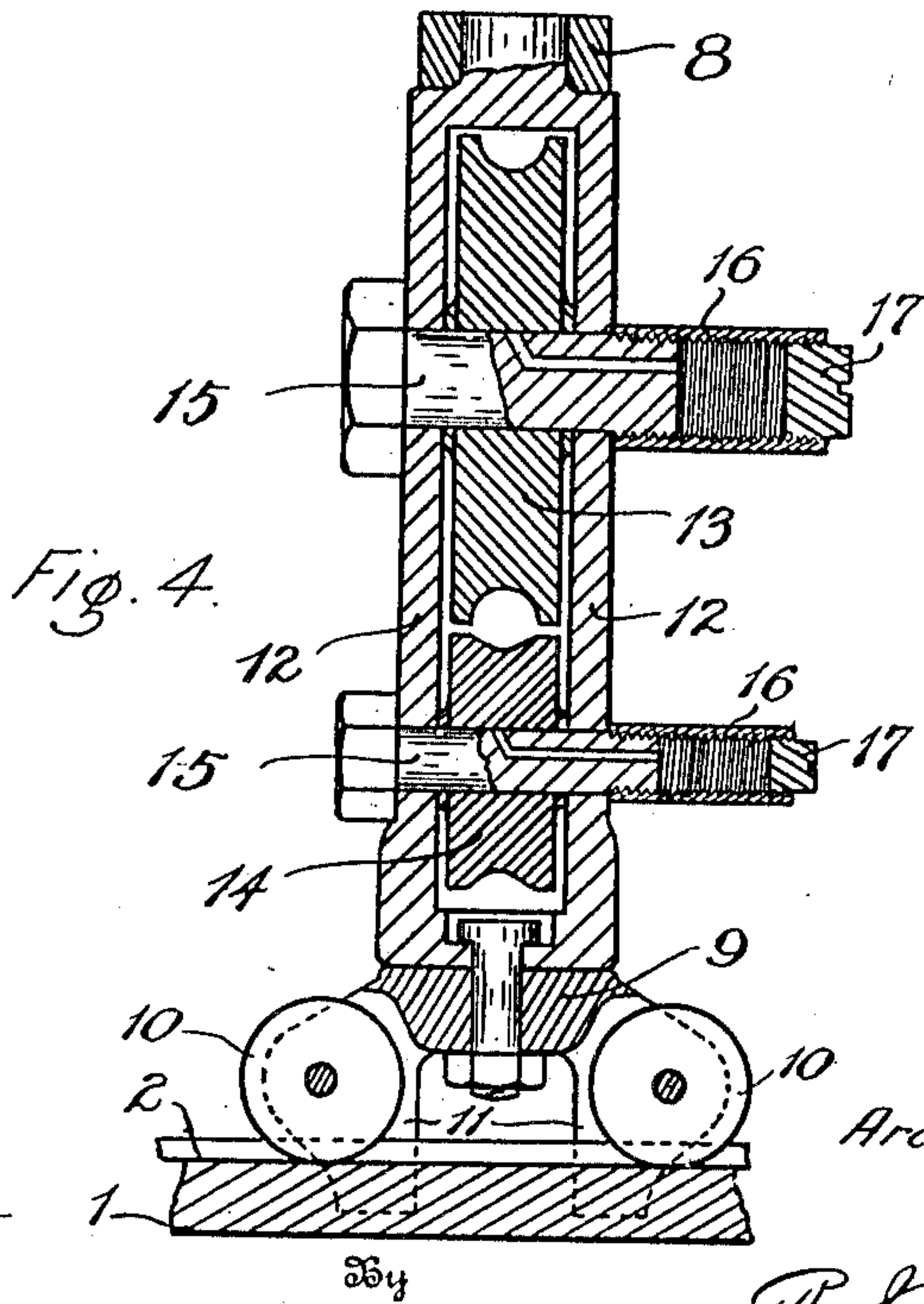
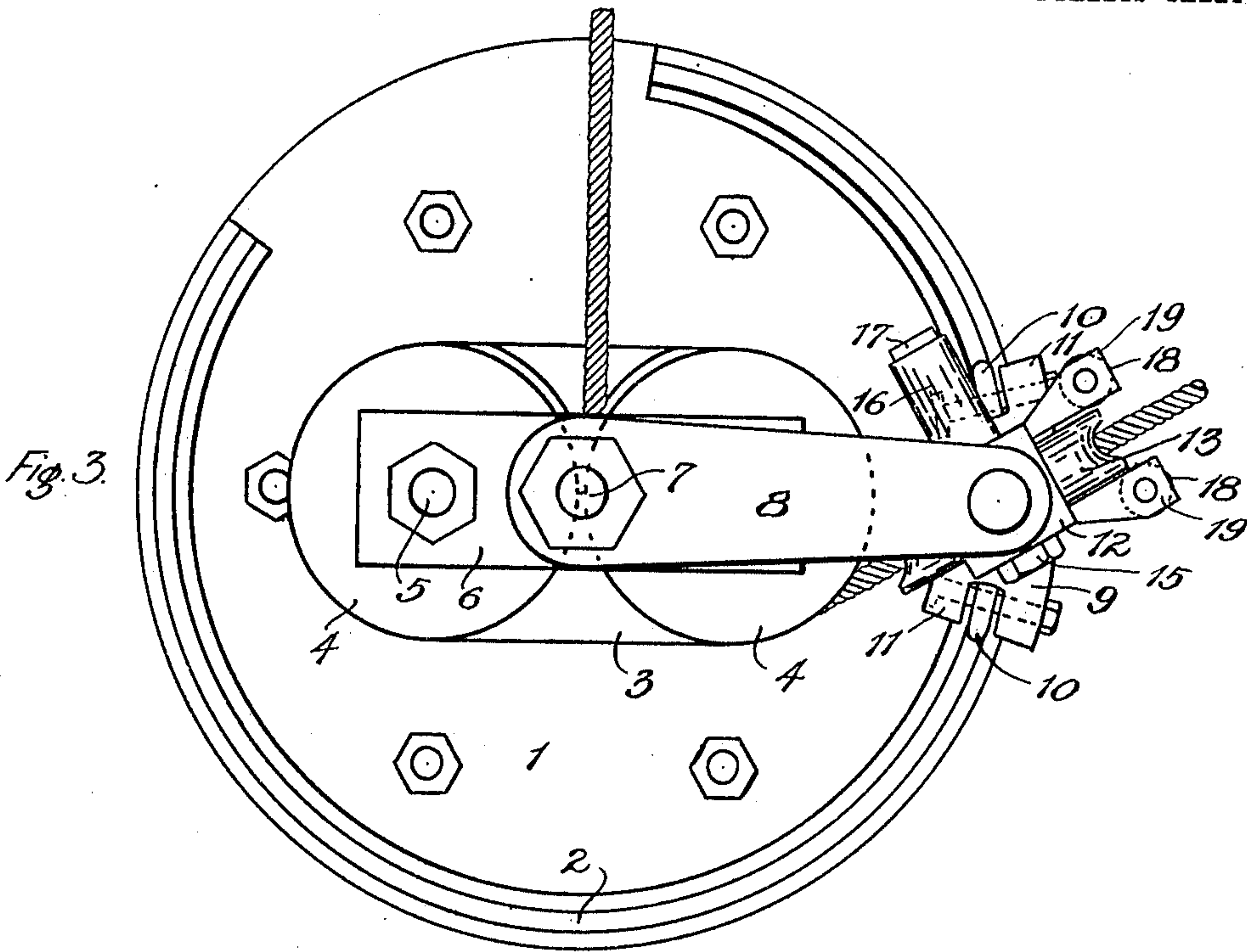
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# UNITED STATES PATENT OFFICE.

ARCHIE ISAAC, OF TACOMA, WASHINGTON.

## FAIR-LEADER.

969,873.

Specification of Letters Patent. Patented Sept. 13, 1910.

Application filed July 26, 1909. Serial No. 509,496.

*To all whom it may concern:*

Be it known that I, ARCHIE ISAAC, a citizen of the United States of America, residing at Tacoma, in the county of Pierce and State of Washington, have invented certain new and useful Improvements in Fair-Leaders, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to fairleaders and has for its object to provide such a device which will guide the cable being wound on the drum of a hoisting engine so that it will lie evenly on all parts of the drum and will not become piled at any point thereon.

15 Further objects are to lengthen the life of the cable and of the guiding sheaves by reducing the wear thereof, to mount the guiding sheaves so that they will always lie in line with the pull on the cable, and to mount all the parts thereof so that any part may be easily removed for repair or renewal.

20 I attain these and other objects by the devices and mechanisms illustrated in the accompanying drawings in which—

25 Figure 1 is a front elevation of my improved fairleader showing the cable pulling upward and at about right-angles to its normal position; Fig. 2 is a similar view showing the guide sheaves swung to the normal or straight front position; Fig. 3 is a plan showing the cable bent at an angle greater than a right-angle; and Fig. 4 is a vertical cross-section of the guide sheaves and their carrier.

Similar numerals of reference refer to similar parts throughout the several views.

30 The base 1 of this fairleader is circular in form and is bolted firmly to the bed-plate of the hoist or to some other suitable holding means. A grooved T-rail 2 is formed almost the entire distance around the edge of the base 1, a short space being left toward the rear so that the carriage of the guide sheave carrier may be mounted thereon. The center of curvature of the rail 2 is coincident with the center of the plate 1. A curved and rounded block 3 extends upward from the center of the base 1 and is of sufficient size to mount on its upper surface the two horizontal grooved sheaves 4. These sheaves 4 are mounted on heavy pins 5 screwed into the said block 3. The yoke 6 joins the pins 5 above the sheaves 4, and carries a vertical pivot pin 7 which

extends upward therefrom. The axis of this pin 7 is vertically over the center of the base 1 and is also in line with the axes of the pins 5 and is equidistant therefrom. A radius arm 8 is mounted on the pivot pin 7 and extends therefrom so as to be over the rail 2. A carriage 9 is mounted on two wheels 10, which engage the groove in the rail 2, and has four lugs or feet 11, at its four corners, which extend downward and engage the upper and under surfaces of the head of the T-rail 2. This carriage 9 travels on the circular track 2 to any position thereon. The sheave carrier 12 is provided with pivotal connections with the carriage 9 and the radius arm 8, said connections being coaxial and being adapted to allow the carrier 12 to assume any desired position about the axis thereof. Since both the radius arm 8 and the carriage 9 travel about the same central axis of the fairleader, it is evident that the carrier will revolve about the same central axis as well as have a rotatory motion about the common axis of the upper and lower points thereof.

35 The guide sheaves 13 and 14 are mounted in the carrier 12, on stationary pins 15 therethrough, said pins 15 being provided with lubricating passages leading from their ends to the points at which the sheaves are supported. Long nuts 16 are screwed on the pins 15, and plugs 17 close the outer ends of the screw-holes in the nuts, thus forming a cavity within the nut adapted to receive the lubricant which can be fed forward to the sheaves by simply screwing the plugs 17 inward. The sheave 13 is mounted directly over the sheave 14 and they are adapted to guide the cable when it has a vertical bend, upward or downward. The lugs 11 hold the carrier down if the pull of the cable on the sheave 13 is upward, by engaging under the head of the rail 2; and the shoulders on these lugs 11, which bear on the upper surface of the rail 2, receive the strain if the pull of the cable on the sheave 14 is downward. A pair of long rollers 18 are mounted in vertical position in lugs or ears 19 extending in front of the carrier 12, one on each side of the cable-way, and are adapted to receive any sudden sidewise movement of the cable and thus prevent the wear of the carrier thereby. These rollers also serve to turn the fairleader into alinement with the cable if the cable shifts its position. It is evident then that the cable in passing



through my improved fairleader will bend easily part way around one of the sheaves 4 to adjust its horizontal position and will then bend around either sheave 13 or 14 to  
5 adjust its vertical position; and that the plane of the latter sheaves will automatically adjust itself to that of the cable so that the cable will always run true in the grooves in the sheaves and will not rub on  
10 the flanges thereof, as would be the case if the carrier were not itself pivoted to the carriage and radius arm. It is also evident that if any part of the fairleader becomes badly worn, it can be readily and quickly  
15 replaced without having to delay the hoisting operations for long or having to remove the fairleader entirely while it is being pulled apart and the worn part renewed.

Having described my invention, what I  
20 claim is:

1. In a fairleader, the combination of a base; a pair of fixed horizontal sheaves rotatably mounted thereon; a carrier revolvably mounted about the central axis of the base  
25 and rotatable about an axis parallel with the said central axis; and a pair of vertical rotatable sheaves mounted in said carrier.

2. In a fairleader, the combination of a base; a pair of fixed horizontal sheaves rotatably mounted thereon; a circular rail  
30 formed on said base; a radius arm pivotally mounted above the horizontal sheaves, the axis of the pivot being coaxial with said circular rail; a carrier mounted between said  
35 rail and said radius arm and having rotatory motion therebetween and revoluble motion about the center of the radius arm and

rail; and a pair of vertical rotatable sheaves mounted in said carrier.

3. In a fairleader, the combination of a 40 base; a pair of fixed horizontal sheaves rotatably mounted thereon; a circular rail formed on said base; a radius arm pivotally mounted above the horizontal sheaves, the axis of the pivot being coaxial with said circular rail; a carrier mounted between said 45 rail and said radius arm and having rotatory motion about a vertical axis therebetween and revoluble motion therewith; a pair of vertical rotatable sheaves mounted 50 in said carrier; and a pair of horizontal rollers mounted on each side of and in front of said carrier.

4. In a fairleader, the combination of a base; a pair of fixed horizontal sheaves rotatably mounted thereon, a circular T-rail 55 formed on said base; a radius arm pivotally mounted above the horizontal sheaves, the axis of the pivot being coaxial with said circular T-rail; a carriage engaging above and 60 below the head of said T-rail and adapted to move to any position thereon; a carrier mounted between said carriage and said radius arm and having rotatory motion about a vertical axis therebetween and revoluble motion therewith; and a pair of 65 vertical rotatable sheaves mounted in said carrier.

In testimony whereof I affix my signature in presence of two witnesses.

ARCHIE ISAAC.

Witnesses:

JOHN MILCANE,  
OLGA WING.